WESTON SOLUTIONS, INC.

PO# 0094759

STANDARD LEVEL IV
REPORT OF ANALYSIS

WORK ORDER #17-07092-OR

September 27, 2017

EBERLINE ANALYTICAL/OAK RIDGE LABORATORY
OAK RIDGE, TN

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Eberline Services – Oak Ridge Laboratory

LABORATORY DATA SUPPORT CHECKLIST

MP-001-3

Eberline Services Work Order # 17-07092

The checklist items listed below are to be initialed by appropriate staff upon completion/verification.

Date for Partial	Initials	Date	Initials	Checklist Items
		7-18-17	JEB	Sample Log-In
		9/13/17	[illegible]	Data Compilation
		9/15/17	[illegible]	First Technical Data Review
		9-18-17	MLT	Second Technical Data Review
		9/19/17	[illegible]	Data Entry/Electronic Deliverable
		9/19/17	[illegible]	Case Narrative
		9/26/17	KBS	Electronic Deliverable Proof
		9/27/17	[illegible]	Samples Analyzed within Holding Time Yes? [X] No? [ ]
		9/27/17	[illegible]	QA/QC Review
				Client in Possession of Data Electronic or Hard Copy
				Invoiced by Laboratory

Technical/Clerical Corrections, Signatures Needed, Problems, Etc	Date/Initials

Date package approved by: [illegible] 9/27/17

Laboratory Manager Date

Copy No. _____

Radiochemistry Services

SECTION I

CHAIN OF CUSTODY

USEPA
DateShipped: 7/17/2017
CarrierName: FedEx
AirbillNo:

CHAIN OF CUSTODY RECORD
Case #: 445
Contact Name: Patrick Buster
Contact Phone: 903-348-3917

17-07092
REC'D JUL 18 2017

No: 2-071417-134807-0007
Cooler #:
Lab: Eberline Analytical
Lab Phone: 865-481-0683

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Lab QC	Sample_Remarks
	HTC-A08-BKGD01-4248-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:20	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-BKGD02-0006-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	15:56	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-BKGD02-0612-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	15:53	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-BKGD02-1218-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	15:50	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-BKGD02-1824-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	15:47	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-BKGD02-2430-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	15:44	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-BKGD02-3036-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	15:41	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-BKGD02-3642-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	15:38	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-BKGD02-4248-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	15:35	1	16 oz Poly Jar	N	Weight N/A
4	HTC-A08-S001-0006-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:01	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-S001-0612-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:58	1	16 oz Poly Jar	Y	Weight N/A
5	HTC-A08-S001-0612-02	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:58	1	16 oz Poly Jar	N	Weight N/A
6	HTC-A08-S001-1218-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	14:55	1	16 oz Poly Jar	N	Weight N/A
7	HTC-A08-S001-1824-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	14:52	1	16 oz Poly Jar	N	Weight N/A
8	HTC-A08-S001-2430-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	14:49	1	16 oz Poly Jar	N	Weight N/A
9	HTC-A08-S001-3036-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	14:46	1	16 oz Poly Jar	N	Weight N/A
10	HTC-A08-S001-3642-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	14:43	1	16 oz Poly Jar	N	Weight N/A
11	HTC-A08-S001-4248-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	14:40	1	16 oz Poly Jar	N	Weight N/A
12,13,14	HTC-A09-S001-0006-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	12:50	1	16 oz Poly Jar	Y	Weight N/A
15	HTC-A09-S001-0006-02	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	12:50	1	16 oz Poly Jar	N	Weight N/A
16	HTC-A09-S001-0612-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	12:48	1	16 oz Poly Jar	N	Weight N/A
17	HTC-A09-S001-1218-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	12:46	1	16 oz Poly Jar	N	Weight N/A

Special Instructions: Gamma Spec(EPA 901.0) analysis in jar "as is" for Ra-226 using 186keV peak for samples. From U decay chain "as is": Th-234, Pa-234 or Pa-234m, Pb-214, Bi-214. From the Th decay chain "as is": Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, Tl-208. For Gamma Spec (homogenized) after 21 day ingrowth: Ra-226 using Bi-214 and/or Pb-214. From U decay chain: Th-234, Pa-234 or Pa-234m. From Th decay chain: Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, Tl-208. Other radionuclides: Cs-137, K-40. Alpha Spec: Iso U (EPA 908.0 Modified): U-233/234, U-235/236, U-238. Iso Th (EPA 907.0 Modified): Th-230, 232, 228. No rocks should be removed, all samples to be pulverized.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all Samples all Analysis	Chad Conway-Weston	7-17-17/1600	[signature]	0930 7-18-17	

0005

USEPA

DateShipped: 7/17/2017

CarrierName: FedEx

AirbillNo:

CHAIN OF CUSTODY RECORD

Case #: 445

Contact Name: Patrick Buster

Contact Phone: 903-348-3917

17-07092

REC'D JUL 18 2017

No: 2-071417-134807-0007

Cooler #:

Lab: Eberline Analytical

Lab Phone: 865-481-0683

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Lab QC	Sample_Remarks
18	HTC-A09-S001-1824-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	12:44	1	16 oz Poly Jar	N	Weight N/A
19	HTC-A09-S001-2430-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	12:42	1	16 oz Poly Jar	N	Weight N/A
20	HTC-A09-S001-3036-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	12:39	1	16 oz Poly Jar	N	Weight N/A
	HTC-A09-S001-3642-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	12:37	1	16 oz Poly Jar	N	Weight N/A
	HTC-A09-S001-4248-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	12:35	1	16 oz Poly Jar	N	Weight N/A
	HTC-A09-S002-0006-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	09:48	1	16 oz Poly Jar	N	Weight N/A
	HTC-A09-S002-0612-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	09:46	1	16 oz Poly Jar	N	Weight N/A
	HTC-A09-S002-1218-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	09:44	1	16 oz Poly Jar	N	Weight N/A
	HTC-A09-S002-1824-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	09:42	1	16 oz Poly Jar	N	Weight N/A
	HTC-A09-S002-2430-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	09:40	1	16 oz Poly Jar	N	Weight N/A

Chad Conway

Special Instructions: Gamma Spec(EPA 901.0) analysis in jar "as is" for Ra-226 using 186keV peak for samples. From U decay chain "as is": Th-234, Pa-234 or Pa-234m, Pb-214, Bi-214. From the Th decay chain "as is": Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, Tl-208. For Gamma Spec (homogenized) after 21 day ingrowth: Ra-226 using Bi-214 and/or Pb-214. From U decay chain: Th-234, Pa-234 or Pa-234m. From Th decay chain: Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, Tl-208. Other radionuclides: Cs-137, K-40. Alpha Spec: Iso U (EPA 908.0 Modified): U-233/234, U-235/236, U-238. Iso Th (EPA 907.0 Modified): Th-230, 232, 228. No rocks should be removed, all samples to be pulverized.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all Samples all Analysis	Chad Conway-Weston	7-17-17/1600	[signature]	0930 7-18-17	

9000

EBERLINE SERVICES Oak Ridge Laboratory	Internal Chain of Custody	Work Order #	17-07092
		Lab Deadline	8/10/2017
		Analysis	UUISO - Level 4
		Sample Matrix	Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
Report on dry weight basis.	04	34	L1.5
	05	39	L1.5
	06	30	L1.5
	07	44	L1.5
	08	28	L1.5
	09	34	L1.5
	10	45	L1.5
	11	33	L1.5
	12	90	L1.5
Fraction 13 is MS of fraction 12. Fraction 14 is MSD of fraction 12.	13	87	L1.5
	14	87	L1.5
	15	122	L1.5
	16	44	L1.5
	17	41	L1.5
	18	47	L1.5
	19	36	L1.5
	20	60	L1.5

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1230	Kay Sang	8-2-17
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1040	Kay Sang	8-3-17
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1040	[illegible]	8-3-17
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	8/16/17 300
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	8/16/17 1540
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	9/11/17 0818
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	[illegible]
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	9/11/17 1746
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

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EBERLINE SERVICES Oak Ridge Laboratory	Internal Chain of Custody	Work Order #	17-07092
		Lab Deadline	8/10/2017
		Analysis	ThISO - Level 4
		Sample Matrix	Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
Report on dry weight basis.	04	34	L1.5
	05	39	L1.5
	06	30	L1.5
	07	44	L1.5
	08	28	L1.5
	09	34	L1.5
	10	45	L1.5
	11	33	L1.5
	12	90	L1.5
Fraction 13 is MS of fraction 12. Fraction 14 is MSD of fraction 12.	13	87	L1.5
	14	87	L1.5
	15	122	L1.5
	16	44	L1.5
	17	41	L1.5
	18	47	L1.5
	19	36	L1.5
	20	60	L1.5

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1230	[illegible]	8-2-17
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1040	[illegible]	8-3-17
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 840	[illegible]	8-3-17
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible] 8/4/17 3cw	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible] 8/16/17 1540	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible] 9/1/17 0818	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible] 9/1/0818	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB 9/11/17 1146	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

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EBERLINE Oak Ridge Laboratory	Internal Chain of Custody	Work Order #	17-07092
		Lab Deadline	See Comments
		Analysis	Gamma - Level 4
		Sample Matrix	SO

Comments

Re-Analysis: 2Fractions 04-12 & 15-20 only: 21 day ingrowth: Report Ac228, Bi212, Cs137, K40, Pa234m, Pb212, Ra224, Ra226 from Bi214/Pb214, Ra228 from Ac228, Tl208, Th234 & positives. Report on dry weight basis. EJT 07/19/17

~~Original Lab Deadline: 08/15/17~~
~~Rerun Lab Deadline: 08/15/17 Fractions 04-12 & 15-20 only: Quick County: Report Ac228, Bi212/214, Cs137, K40, Pa234m, Pb212/214, Ra224, Ra226 from 186 keV peak, Ra228 from Ac228, Tl208, Th234 & positives. Report on "AS-IS" basis.~~

Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
04	34	L1.5
05	39	L1.5
06	30	L1.5
07	44	L1.5
08	28	L1.5
09	34	L1.5
10	45	L1.5
11	33	L1.5
12	90	L1.5
15	122	L1.5
16	44	L1.5
17	41	L1.5
18	47	L1.5
19	36	L1.5
20	60	L1.5

	Location (circle one)					Technician Initials	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1230	Key Seg	8-2-17
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1185	Key Seg	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1145		8/3/17
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		8/3/17
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

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SECTION II

SAMPLE ACKNOWLEDGEMENT

Client Name	Contract/PO	Project Type	Date Received	Required Turnaround Days	Eberline Services Work Order
Weston Solutions, Inc.	0094759	Environmental	07/18/2017	28	17-07092
Project Name	**Client WO**	**Sample Disp**	**Lab Deadline**	**Internal Deadline**	**Client Deadline**
94759	Case #445	H	08/10/2017	08/14/2017	08/15/2017

Internal ID	Client ID	Sample Date	Matrix	Storage	Gamma	ThISO	UUISO																					Ttl
01	LCS	07/19/17	SO	L1.5	X	X	X																					3
02	BLANK	07/19/17	SO	L1.5	X	X	X																					3
03	DUP	07/19/17	SO	L1.5	X	X	X																					3
04	HTC-A08-S001-0006-01	05/16/17 15:01	SO	L1.5	X	X	X																					3
05	HTC-A08-S001-0612-02	05/16/17 14:58	SO	L1.5	X	X	X																					3
06	HTC-A08-S001-1218-01	05/15/17 14:55	SO	L1.5	X	X	X																					3
07	HTC-A08-S001-1824-01	05/15/17 14:52	SO	L1.5	X	X	X																					3
08	HTC-A08-S001-2430-01	05/15/17 14:49	SO	L1.5	X	X	X																					3
09	HTC-A08-S001-3036-01	05/15/17 14:46	SO	L1.5	X	X	X																					3
10	HTC-A08-S001-3642-01	05/15/17 14:43	SO	L1.5	X	X	X																					3
11	HTC-A08-S001-4248-01	05/15/17 14:40	SO	L1.5	X	X	X																					3
12	HTC-A09-S001-0006-01	05/16/17 12:50	SO	L1.5	X	X	X																					3
13	HTC-A09-S001-0006-01 MS	05/16/17 12:50	SO	L1.5		X	X																					2
14	HTC-A09-S001-0006-01 MSD	05/16/17 12:50	SO	L1.5		X	X																					2
15	HTC-A09-S001-0006-02	05/16/17 12:50	SO	L1.5	X	X	X																					3
16	HTC-A09-S001-0612-01	05/16/17 12:48	SO	L1.5	X	X	X																					3
17	HTC-A09-S001-1218-01	05/16/17 12:46	SO	L1.5	X	X	X																					3
18	HTC-A09-S001-1824-01	05/16/17 12:44	SO	L1.5	X	X	X																					3
19	HTC-A09-S001-2430-01	05/16/17 12:42	SO	L1.5	X	X	X																					3
20	HTC-A09-S001-3036-01	05/16/17 12:39	SO	L1.5	X	X	X																					3
		Totals Per Analysis (non QA samples)			15	17	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

EBERLINE SERVICES

Sample Log In Report

Oak Ridge Laboratory
601 Scarboro Rd.
Oak Ridge, TN 37830

Voice: (865) 481-0683
Fax: (865) 483-4621

Invoice
Accounts Payable
Weston Solutions, Inc.
1090 King Georges Post Road Suite 201
Edison, NJ 08837
Voice 732-585-4425
Fax

Contact
Smita Sumbaly
Voice 732-585-4410
Fax 732-225-7037

Report Data
Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837
Voice 732-585-4410
Fax 732-225-7037

0011

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Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST
MP-001-2

WORK ORDER # 17-07092

SAMPLE MATRIX/MATRICES: (CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

(CIRCLE EITHER YES, NO, OR N/A)

WERE SAMPLES:

Received in good condition?	Y	N	
If aqueous, properly preserved	Y	N	N/A

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	Y	N
Unbroken on outside of package?	Y	N
Present on samples?	Y	N
Unbroken on samples?	Y	N
Was chain of custody present upon sample receipt?	Y	N

IF THE RESPONSE TO ANY OF THE ABOVE IS **NO**, A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.

REMARKS: _____

SIGNATURE: James E. Bailey DATE: 7-18-17

SECTION III

CASE NARRATIVE

EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
601 SCARBORO ROAD
OAK RIDGE, TENNESSEE 37830
PHONE (865) 481-0683
FAX (865) 483-4621

EBS-OR-42721

September 27, 2017

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201
Edison, NJ 08837

CASE NARRATIVE
Work Order # 17-07092-OR

SAMPLE RECEIPT

This work order contains fifteen solid samples received 07/18/2017. These samples were analyzed for Isotopic Uranium, Isotopic Thorium and by Gamma Spectroscopy.

CLIENT ID	LAB ID	CLIENT ID	LAB ID
HTC-A08-S001-0006-01	17-07092-04	HTC-A09-S001-0006-01 MS	17-07092-13
HTC-A08-S001-0612-02	17-07092-05	HTC-A09-S001-0006-01 MSD	17-07092-14
HTC-A08-S001-1218-01	17-07092-06	HTC-A09-S001-0006-02	17-07092-15
HTC-A08-S001-1824-01	17-07092-07	HTC-A09-S001-0612-01	17-07092-16
HTC-A08-S001-2430-01	17-07092-08	HTC-A09-S001-1218-01	17-07092-17
HTC-A08-S001-3036-01	17-07092-09	HTC-A09-S001-1824-01	17-07092-18
HTC-A08-S001-3642-01	17-07092-10	HTC-A09-S001-2430-01	17-07092-19
HTC-A08-S001-4248-01	17-07092-11	HTC-A09-S001-3036-01	17-07092-20
HTC-A09-S001-0006-01	17-07092-12		

ANALYTICAL METHODS

Isotopic Uranium was analyzed using EPA Method 908.0 Modified. Isotopic Thorium was analyzed using EPA Method 907.0 Modified. Gamma Spectroscopy was performed using EPA Method 901.1 Modified.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 2-sigma value.

Minimum Detectable Activity (MDA) values for data represented in this report are sample-specific. MDA measurements are determined based on factors and conditions including instrument settings, aliquot size and matrix type.

SPECIAL CIRCUMSTANCES

Samples were dried and ground prior to analyses. Results are reported on a "dry weight" basis.

ANALYTICAL RESULTS CONTINUED

ISOTOPIC URANIUM

Samples were prepared by removing representative aliquots followed by mixed acid digestions as appropriate. Uranium was selectively extracted by ion exchange. Uranium was eluted, micro-precipitated and mounted on micro-porous filter media. Sample activities were then determined by alpha spectroscopy using energy specific regions of interest for Uranium-234, Uranium-235 and Uranium-238. Chemical recovery was determined by the use of a Uranium-232 tracer. Activity of the Uranium-232 tracer was determined by alpha spectroscopy using an energy specific region of interest.

Samples demonstrated acceptable results for all Uranium analyses. Chemical recovery was acceptable for all samples. The Uranium-233/234, Uranium-235/236 and Uranium-238 method blank demonstrated acceptable results. Results for the Uranium-233/234 duplicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Uranium-235/236 and Uranium-238 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Uranium-234 and Uranium-238 laboratory control sample demonstrated an acceptable percent recovery. Results for the Uranium-234 matrix spike demonstrated a low percent recovery. Due to the positive nature of this sample, resolution of the matrix spike addition was problematic. Results for the Uranium-238 matrix spike demonstrated an acceptable percent recovery. Results for Uranium-234 and Uranium-238 matrix spike duplicate demonstrated a low percent recovery. Once again, due to the positive nature of this sample, resolution of the matrix spike addition was problematic. This sample was not a viable candidate for matrix spiking due to its positive nature. Limiting activity in the sample due to inherent mass and activity considerations with Isotopic Uranium determinations precludes our ability to resolve matrix spike additions. Uranium-234 and Uranium-238 matrix spike and matrix spike duplicate results are statistically equivalent to the known with consideration of the result uncertainty. Both the matrix spike and matrix spike duplicates demonstrated an acceptable normalized difference. When matrix spikes are designated by the client, this is a condition that is out of the laboratory's control and failure of matrix spikes in these conditions is not a reason for rejection of data.

ISOTOPIC THORIUM

Samples were prepared by removing representative aliquots followed by mixed acid digestions as appropriate. Thorium was selectively extracted by ion exchange. Thorium was eluted, micro-precipitated and mounted on micro-porous filter media. Sample activities were then determined by alpha spectroscopy using energy specific regions of interest for Thorium-228, Thorium-230 and Thorium-232. Chemical recovery was determined by the use of a Thorium-229 tracer. Activity of the Thorium-229 tracer was determined by alpha spectroscopy using an energy specific region of interest.

Samples demonstrated acceptable results for all Thorium determinations. The Thorium-228, Thorium-230 and Thorium-232 method blank demonstrated acceptable results. Chemical recovery was acceptable for all samples. Results for the Thorium-228 duplicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Thorium-230 and Thorium-232 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Thorium-228, Thorium-230 and Thorium-232 laboratory control sample demonstrated an acceptable percent recovery. Results for the Thorium-228, Thorium-230 and Thorium-232 matrix spike and matrix spike duplicate demonstrated an acceptable percent recovery.

ANALYTICAL RESULTS CONTINUED

GAMMA SPECTROSCOPY

Samples were dried, homogenized and placed into appropriate gamma spectroscopy geometry containers. Samples were then sealed for 21 days to allow for ingrowth of Radon-222 and progeny. Samples were counted on High Purity Germanium (HPGe) gamma ray detectors. Energy lines from Lead-214 and Bismuth-214 were analyzed for determinations of Radium-226 activity.

Initially samples were counted on an "as received basis" and preliminary data only was emailed. After the initial count, samples were dried, pulverized and sealed for Radon-222 ingrowth. Samples demonstrated acceptable results for all gamma emitting radionuclides as reported. Results for the method blank demonstrated acceptable results for all gamma emitting radionuclides as reported. Results for the Potassium-40, Radium-226 and Radium-228 replicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Cobalt-60 and Cesium-137 laboratory control sample demonstrated an acceptable percent recovery.

CERTIFICATION OF ACCURACY

I certify that this data report is in compliance with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.

M.R. McDougall
Laboratory Manager

Date: 9/27/2017

Eberline Analytical wants and encourages your feedback regarding our performance providing radioanalytical services. Please visit http://www.eberlineservices.com/client.htm to provide us with feedback on our services.

SECTION IV

ANALYTICAL RESULTS SUMMARY

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07092**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
		21-day INGROWTH											
17-07092-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Cobalt-60	EPA 901.1 Modified	1.35E+02	5.27E+00			pCi/g
17-07092-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	8.44E+01	3.38E+00			pCi/g
17-07092-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Cobalt-60	EPA 901.1 Modified	1.25E+02	7.56E+00	9.91E+00	1.35E+00	pCi/g
17-07092-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	7.99E+01	9.77E+00	1.06E+01	1.61E+00	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	-4.91E-02	1.32E-01	1.32E-01	1.73E-01	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	1.16E-01	2.04E-01	2.04E-01	3.67E-01	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	6.21E-02	5.44E-02	5.45E-02	1.06E-01	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	3.47E-03	3.06E-02	3.06E-02	4.79E-02	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	-2.26E-01	3.74E-01	3.74E-01	5.31E-01	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	6.26E-01	3.06E+00	3.06E+00	3.37E+00	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	8.70E-03	3.55E-02	3.55E-02	5.68E-02	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	2.57E-02	5.06E-02	5.07E-02	8.56E-02	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	-5.14E-02	4.36E-01	4.36E-01	6.47E-01	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	6.21E-02	5.44E-02	5.45E-02	1.06E-01	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	-4.91E-02	1.32E-01	1.32E-01	1.73E-01	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	2.68E-01	3.99E-01	3.99E-01	6.33E-01	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	5.00E-02	7.66E-02	7.67E-02	1.41E-01	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	1.18E+00	1.96E-01	2.05E-01	3.84E-01	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	7.18E-01	4.79E-01	4.80E-01	7.67E-01	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	1.19E+00	1.85E-01	1.95E-01	2.97E-01	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	1.82E-01	6.19E-02	6.26E-02	1.08E-01	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	2.05E+01	2.21E+00	2.45E+00	7.86E-01	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	4.75E+00	4.37E+00	4.37E+00	7.61E+00	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	1.26E+00	1.41E-01	1.56E-01	2.04E-01	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	1.23E+00	1.30E-01	1.44E-01	2.20E-01	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	3.72E+00	1.21E+00	1.23E+00	2.30E+00	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	1.19E+00	1.85E-01	1.95E-01	2.97E-01	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	1.18E+00	1.96E-01	2.05E-01	3.84E-01	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	1.08E+00	1.27E+00	1.27E+00	2.13E+00	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	1.01E+00	1.68E-01	1.75E-01	1.54E-01	pCi/g

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CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07092**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	1.25E+00	1.98E-01	2.08E-01	3.83E-01	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	7.15E-01	4.45E-01	4.46E-01	7.04E-01	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	9.91E-01	1.44E-01	1.52E-01	1.77E-01	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	1.83E-01	6.37E-02	6.44E-02	9.01E-02	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	1.78E+01	1.98E+00	2.18E+00	1.12E+00	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	2.00E+00	4.36E+00	4.36E+00	7.15E+00	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	1.26E+00	1.43E-01	1.57E-01	2.33E-01	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	1.05E+00	1.68E-01	1.76E-01	2.48E-01	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	3.28E+00	1.22E+00	1.23E+00	2.63E+00	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	9.91E-01	1.44E-01	1.52E-01	1.77E-01	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	1.25E+00	1.98E-01	2.08E-01	3.83E-01	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	1.60E+00	1.12E+00	1.12E+00	1.84E+00	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	1.12E+00	1.53E-01	1.63E-01	1.51E-01	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	1.16E+00	2.03E-01	2.12E-01	3.56E-01	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	7.39E-01	4.64E-01	4.66E-01	7.34E-01	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	8.57E-01	1.44E-01	1.51E-01	2.03E-01	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	4.76E-02	5.17E-02	5.18E-02	8.56E-02	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	2.08E+01	2.48E+00	2.70E+00	1.17E+00	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	3.96E+00	4.86E+00	4.86E+00	8.24E+00	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	1.26E+00	1.42E-01	1.56E-01	2.09E-01	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	1.05E+00	1.29E-01	1.40E-01	1.86E-01	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	2.48E+00	1.22E+00	1.23E+00	2.36E+00	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	8.57E-01	1.44E-01	1.51E-01	2.03E-01	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	1.16E+00	2.03E-01	2.12E-01	3.56E-01	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	1.63E+00	7.84E-01	7.88E-01	1.28E+00	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	1.18E+00	1.77E-01	1.87E-01	2.27E-01	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07092**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	1.25E+00	2.84E-01	2.91E-01	4.46E-01	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	1.52E+00	7.47E-01	7.51E-01	1.16E+00	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	1.21E+00	1.82E-01	1.93E-01	7.43E-02	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	2.39E-02	6.71E-02	6.71E-02	1.05E-01	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	2.50E+01	2.86E+00	3.14E+00	1.13E+00	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	1.91E-01	7.02E+00	7.02E+00	1.09E+01	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	1.43E+00	1.75E-01	1.89E-01	3.10E-01	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	1.19E+00	1.59E-01	1.70E-01	2.55E-01	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	3.47E+00	1.53E+00	1.54E+00	3.51E+00	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	1.21E+00	1.82E-01	1.93E-01	7.43E-02	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	1.25E+00	2.84E-01	2.91E-01	4.46E-01	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	1.27E+00	1.34E+00	1.34E+00	1.77E+00	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	1.29E+00	2.19E-01	2.29E-01	2.86E-01	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	1.23E+00	2.90E-01	2.97E-01	9.93E-01	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	1.76E+00	8.27E-01	8.32E-01	1.23E+00	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	1.22E+00	2.55E-01	2.63E-01	2.99E-01	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	1.51E-03	1.07E-01	1.07E-01	1.47E-01	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	2.52E+01	3.23E+00	3.48E+00	1.45E+00	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	2.30E+00	5.07E+00	5.07E+00	1.65E+01	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	1.40E+00	1.97E-01	2.09E-01	2.81E-01	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	1.32E+00	2.10E-01	2.21E-01	3.64E-01	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	3.03E+00	1.84E+00	1.84E+00	3.16E+00	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	1.22E+00	2.55E-01	2.63E-01	2.99E-01	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	1.23E+00	2.90E-01	2.97E-01	9.93E-01	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	1.80E+00	1.48E+00	1.49E+00	2.24E+00	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	1.68E+00	2.84E-01	2.96E-01	7.56E-02	pCi/g

0020

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07092**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	1.35E+00	2.10E-01	2.21E-01	3.77E-01	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	8.36E-01	6.00E-01	6.02E-01	9.74E-01	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	9.53E-01	1.43E-01	1.51E-01	1.67E-01	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	-8.20E-03	5.28E-02	5.28E-02	7.77E-02	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	2.54E+01	2.84E+00	3.12E+00	8.08E-01	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	1.20E+00	5.58E+00	5.58E+00	8.79E+00	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	1.35E+00	1.46E-01	1.61E-01	2.11E-01	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	9.29E-01	1.20E-01	1.30E-01	1.38E-01	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	3.73E+00	1.43E+00	1.44E+00	2.43E+00	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	9.53E-01	1.43E-01	1.51E-01	1.67E-01	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	1.35E+00	2.10E-01	2.21E-01	3.77E-01	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	6.41E-01	7.97E-01	7.98E-01	1.24E+00	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	1.04E+00	1.68E-01	1.77E-01	2.28E-01	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	1.20E+00	2.41E-01	2.49E-01	3.79E-01	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	7.79E-01	4.44E-01	4.46E-01	9.46E-01	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	8.68E-01	1.68E-01	1.74E-01	2.37E-01	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	4.51E-02	6.23E-02	6.24E-02	1.02E-01	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	2.42E+01	2.75E+00	3.02E+00	1.55E+00	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	2.92E+00	7.13E+00	7.13E+00	1.13E+01	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	1.18E+00	1.57E-01	1.68E-01	2.47E-01	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	1.00E+00	1.62E-01	1.70E-01	2.36E-01	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	2.83E+00	1.41E+00	1.42E+00	2.80E+00	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	8.68E-01	1.68E-01	1.74E-01	2.37E-01	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	1.20E+00	2.41E-01	2.49E-01	3.79E-01	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	1.06E+00	1.30E+00	1.30E+00	1.72E+00	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	1.11E+00	1.90E-01	1.98E-01	1.15E-01	pCi/g

0021

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07092**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	1.04E+00	3.08E-01	3.13E-01	6.91E-01	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	5.79E-01	7.41E-01	7.42E-01	1.12E+00	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	9.07E-01	2.07E-01	2.12E-01	3.05E-01	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	1.78E-02	5.66E-02	5.67E-02	1.39E-01	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	2.28E+01	2.88E+00	3.11E+00	1.19E+00	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	-4.16E-01	1.05E+01	1.05E+01	1.48E+01	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	1.30E+00	1.76E-01	1.89E-01	2.71E-01	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	8.18E-01	1.96E-01	2.01E-01	3.39E-01	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	2.75E+00	1.53E+00	1.53E+00	3.06E+00	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	9.07E-01	2.07E-01	2.12E-01	3.05E-01	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	1.04E+00	3.08E-01	3.13E-01	6.91E-01	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	1.29E+00	1.31E+00	1.31E+00	1.96E+00	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	1.07E+00	2.34E-01	2.40E-01	2.87E-01	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	1.16E+00	1.86E-01	1.96E-01	3.46E-01	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	5.44E-01	4.15E-01	4.16E-01	7.38E-01	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	9.22E-01	1.47E-01	1.55E-01	1.83E-01	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	-1.70E-02	4.88E-02	4.88E-02	7.14E-02	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	2.38E+01	2.50E+00	2.79E+00	1.03E+00	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	6.61E+00	4.90E+00	4.91E+00	8.62E+00	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	1.35E+00	1.49E-01	1.64E-01	2.16E-01	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	9.77E-01	1.36E-01	1.45E-01	2.03E-01	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	2.78E+00	1.22E+00	1.23E+00	2.43E+00	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	9.22E-01	1.47E-01	1.55E-01	1.83E-01	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	1.16E+00	1.86E-01	1.96E-01	3.46E-01	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	1.11E+00	1.18E+00	1.18E+00	1.97E+00	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	1.20E+00	1.80E-01	1.90E-01	1.11E-01	pCi/g

0022

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07092**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07092-12	TRG	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	4.96E-01	3.59E-01	3.60E-01	6.61E-01	pCi/g
17-07092-12	TRG	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	4.65E-01	8.96E-01	8.96E-01	1.33E+00	pCi/g
17-07092-12	TRG	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	4.54E+01	2.15E+00	3.17E+00	5.65E-01	pCi/g
17-07092-12	TRG	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	-9.79E-01	2.05E-01	2.11E-01	1.92E-01	pCi/g
17-07092-12	TRG	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	2.21E+00	1.79E+00	1.79E+00	2.95E+00	pCi/g
17-07092-12	TRG	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	5.81E+01	1.94E+01	1.96E+01	3.02E+01	pCi/g
17-07092-12	TRG	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	4.17E-01	1.91E-01	1.92E-01	7.78E-01	pCi/g
17-07092-12	TRG	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	4.57E+01	2.48E+00	3.42E+00	6.17E-01	pCi/g
17-07092-12	TRG	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	8.57E+01	7.42E+00	8.62E+00	6.68E+00	pCi/g
17-07092-12	TRG	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	4.54E+01	2.15E+00	3.17E+00	5.65E-01	pCi/g
17-07092-12	TRG	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	4.96E-01	3.59E-01	3.60E-01	6.61E-01	pCi/g
17-07092-12	TRG	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	2.56E+01	4.51E+00	4.70E+00	6.69E+00	pCi/g
17-07092-12	TRG	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	4.07E-01	3.02E-01	3.03E-01	2.63E-01	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	2.94E-01	5.42E-01	5.42E-01	8.09E-01	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	1.04E-01	1.07E+00	1.07E+00	1.56E+00	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	3.93E+01	1.98E+00	2.82E+00	6.43E-01	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	7.50E-03	7.57E-02	7.57E-02	2.24E-01	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	1.03E+00	1.76E+00	1.76E+00	2.45E+00	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	5.62E+01	2.10E+01	2.12E+01	3.29E+01	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	-9.57E-01	4.03E-01	4.06E-01	5.38E-01	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	4.05E+01	2.55E+00	3.29E+00	8.87E-01	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	7.34E+01	7.18E+00	8.11E+00	6.90E+00	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	3.93E+01	1.98E+00	2.82E+00	6.43E-01	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	2.94E-01	5.42E-01	5.42E-01	8.09E-01	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	3.09E+01	4.05E+00	4.35E+00	5.40E+00	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	5.24E-01	4.22E-01	4.23E-01	3.23E-01	pCi/g

0023

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07092**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	1.17E+00	3.92E-01	3.97E-01	6.73E-01	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	8.02E-01	7.64E-01	7.65E-01	1.26E+00	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	3.97E+00	4.63E-01	5.06E-01	4.19E-01	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	1.05E-02	3.69E-02	3.69E-02	1.58E-01	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	2.11E+01	3.02E+00	3.21E+00	2.63E+00	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	8.12E+00	1.25E+01	1.25E+01	1.86E+01	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	1.42E+00	2.16E-01	2.28E-01	3.85E-01	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	4.08E+00	3.79E-01	4.33E-01	4.65E-01	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	2.01E+01	2.66E+00	2.86E+00	3.85E+00	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	3.97E+00	4.63E-01	5.06E-01	4.19E-01	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	1.17E+00	3.92E-01	3.97E-01	6.73E-01	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	6.99E+00	2.49E+00	2.52E+00	8.21E+00	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	1.31E+00	2.70E-01	2.78E-01	6.41E-02	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	1.04E+00	2.68E-01	2.73E-01	4.75E-01	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	6.85E-01	5.13E-01	5.14E-01	8.33E-01	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	3.93E+00	3.04E-01	3.64E-01	2.24E-01	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	-5.75E-02	6.25E-02	6.25E-02	8.46E-02	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	2.70E+01	2.75E+00	3.08E+00	1.39E+00	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	2.88E+00	5.93E+00	5.93E+00	9.33E+00	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	1.43E+00	1.63E-01	1.78E-01	2.98E-01	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	3.77E+00	2.91E-01	3.49E-01	3.56E-01	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	8.32E+00	1.58E+00	1.63E+00	3.37E+00	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	3.93E+00	3.04E-01	3.64E-01	2.24E-01	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	1.04E+00	2.68E-01	2.73E-01	4.75E-01	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	2.63E+00	1.52E+00	1.53E+00	2.50E+00	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	1.15E+00	1.73E-01	1.83E-01	1.49E-01	pCi/g

0024

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07092**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	1.42E+00	2.77E-01	2.87E-01	3.67E-01	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	7.93E-01	6.67E-01	6.68E-01	1.09E+00	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	1.98E+00	2.08E-01	2.32E-01	2.22E-01	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	-1.21E-02	2.44E-02	2.44E-02	9.53E-02	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	3.12E+01	3.52E+00	3.87E+00	1.42E+00	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	4.66E+00	6.71E+00	6.72E+00	1.11E+01	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	1.60E+00	1.74E-01	1.92E-01	2.81E-01	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	2.01E+00	1.91E-01	2.17E-01	2.38E-01	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	5.85E+00	1.65E+00	1.68E+00	3.21E+00	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	1.98E+00	2.08E-01	2.32E-01	2.22E-01	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	1.42E+00	2.77E-01	2.87E-01	3.67E-01	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	3.40E+00	1.02E+00	1.04E+00	1.69E+00	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	1.11E+00	1.85E-01	1.94E-01	2.17E-01	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	1.50E+00	2.56E-01	2.68E-01	4.07E-01	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	5.90E-01	5.50E-01	5.50E-01	9.07E-01	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	1.72E+00	2.23E-01	2.40E-01	2.84E-01	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	-4.75E-02	6.98E-02	6.99E-02	9.33E-02	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	2.62E+01	2.92E+00	3.22E+00	1.16E+00	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	-2.93E-01	7.17E+00	7.17E+00	1.08E+01	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	1.37E+00	1.79E-01	1.92E-01	2.82E-01	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	1.88E+00	2.28E-01	2.48E-01	3.10E-01	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	1.84E+01	2.25E+00	2.44E+00	3.26E+00	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	1.72E+00	2.23E-01	2.40E-01	2.84E-01	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	1.50E+00	2.56E-01	2.68E-01	4.07E-01	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	2.86E+00	1.35E+00	1.36E+00	1.87E+00	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	1.03E+00	1.84E-01	1.92E-01	1.09E-01	pCi/g

0025

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07092**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	8/24/2017	17-07092	Actinium-228	EPA 901.1 Modified	1.24E+00	2.90E-01	2.97E-01	6.29E-01	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	8/24/2017	17-07092	Bismuth-212	EPA 901.1 Modified	7.25E-01	7.17E-01	7.18E-01	1.18E+00	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	8/24/2017	17-07092	Bismuth-214	EPA 901.1 Modified	1.61E+00	2.69E-01	2.82E-01	3.88E-01	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	8/24/2017	17-07092	Cesium-137	EPA 901.1 Modified	2.36E-02	1.07E-01	1.07E-01	1.51E-01	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	8/24/2017	17-07092	Potassium-40	EPA 901.1 Modified	2.20E+01	2.83E+00	3.05E+00	1.50E+00	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	8/24/2017	17-07092	Protactinium-234m	EPA 901.1 Modified	4.09E+00	9.86E+00	9.86E+00	1.47E+01	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	8/24/2017	17-07092	Lead-212	EPA 901.1 Modified	1.11E+00	1.67E-01	1.77E-01	3.01E-01	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	8/24/2017	17-07092	Lead-214	EPA 901.1 Modified	1.62E+00	2.09E-01	2.25E-01	3.30E-01	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	8/24/2017	17-07092	Radium-224	EPA 901.1 Modified	3.69E+00	1.65E+00	1.66E+00	3.39E+00	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	8/24/2017	17-07092	Radium-226	EPA 901.1 Modified	1.61E+00	2.69E-01	2.82E-01	3.88E-01	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	8/24/2017	17-07092	Radium-228	EPA 901.1 Modified	1.24E+00	2.90E-01	2.97E-01	6.29E-01	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	8/24/2017	17-07092	Thorium-234	EPA 901.1 Modified	1.56E+00	1.68E+00	1.68E+00	2.80E+00	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	8/24/2017	17-07092	Thallium-208	EPA 901.1 Modified	1.11E+00	2.49E-01	2.56E-01	6.47E-02	pCi/g
17-07092-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	4.98E+00	1.79E-01			pCi/g
17-07092-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	5.98E+00	9.70E-01	1.12E+00	1.08E-01	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	-5.87E-04	4.41E-02	4.41E-02	1.14E-01	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	8.09E-01	2.35E-01	2.47E-01	7.10E-02	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	6.04E-01	1.86E-01	1.95E-01	7.40E-02	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	1.40E+00	3.59E-01	3.82E-01	9.65E-02	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	1.45E+00	3.57E-01	3.82E-01	6.68E-02	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	1.63E+00	4.07E-01	4.35E-01	1.04E-01	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	1.64E+00	4.09E-01	4.37E-01	1.05E-01	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	1.52E+00	3.65E-01	3.92E-01	7.76E-02	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	1.44E+00	3.82E-01	4.05E-01	1.01E-01	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	1.19E+00	3.06E-01	3.26E-01	8.20E-02	pCi/g
17-07092-12	MSO	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	2.28E-01	1.29E-01	1.30E-01	1.14E-01	pCi/g
17-07092-13	MS	HTC-A09-S001-0006-01 MS	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	7.97E+00	1.44E+00	1.62E+00	9.48E-02	pCi/g
17-07092-14	MSD	HTC-A09-S001-0006-01 MSD	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	6.87E+00	1.22E+00	1.38E+00	8.70E-02	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	5.52E-01	3.26E-01	3.30E-01	2.54E-01	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	1.50E+00	3.93E-01	4.17E-01	7.58E-02	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	1.41E+00	4.11E-01	4.32E-01	1.55E-01	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	1.35E+00	4.31E-01	4.50E-01	1.26E-01	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	1.04E+00	2.97E-01	3.13E-01	8.40E-02	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	9/11/2017	17-07092	Thorium-228	EPA 907.0 Modified	1.17E+00	3.45E-01	3.62E-01	1.16E-01	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

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EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07092**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07092-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	5.41E+00	1.46E-01			pCi/g
17-07092-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	6.43E+00	1.03E+00	1.30E+00	8.01E-02	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	5.38E-02	5.87E-02	5.91E-02	7.02E-02	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	5.95E-01	1.86E-01	2.00E-01	6.71E-02	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	6.87E-01	1.92E-01	2.10E-01	4.78E-02	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	1.25E+00	3.18E-01	3.53E-01	7.24E-02	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	1.33E+00	3.25E-01	3.64E-01	6.39E-02	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	1.58E+00	3.83E-01	4.30E-01	7.10E-02	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	1.46E+00	3.63E-01	4.05E-01	8.01E-02	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	1.00E+00	2.61E-01	2.89E-01	5.50E-02	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	1.23E+00	3.30E-01	3.63E-01	8.66E-02	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	1.08E+00	2.75E-01	3.06E-01	4.62E-02	pCi/g
17-07092-12	MSO	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	1.54E+01	2.73E+00	3.32E+00	8.45E-02	pCi/g
17-07092-13	MS	HTC-A09-S001-0006-01 MS	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	2.01E+01	3.38E+00	4.20E+00	8.11E-02	pCi/g
17-07092-14	MSD	HTC-A09-S001-0006-01 MSD	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	1.80E+01	2.94E+00	3.69E+00	5.93E-02	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	4.19E+01	1.14E+01	1.25E+01	1.67E-01	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	2.90E+00	6.50E-01	7.42E-01	6.28E-02	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	2.46E+00	6.03E-01	6.76E-01	1.21E-01	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	2.16E+00	5.87E-01	6.45E-01	1.37E-01	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	1.55E+00	3.81E-01	4.27E-01	7.05E-02	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	9/11/2017	17-07092	Thorium-230	EPA 907.0 Modified	1.29E+00	3.55E-01	3.89E-01	9.06E-02	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07092**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07092-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	4.98E+00	1.79E-01			pCi/g
17-07092-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	5.98E+00	9.70E-01	1.10E+00	1.00E-01	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	-7.48E-03	3.00E-02	3.00E-02	7.69E-02	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	4.64E-01	1.59E-01	1.64E-01	5.87E-02	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	5.69E-01	1.71E-01	1.78E-01	5.98E-02	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	1.07E+00	2.85E-01	3.00E-01	6.81E-02	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	1.26E+00	3.13E-01	3.32E-01	4.72E-02	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	1.52E+00	3.72E-01	3.95E-01	6.01E-02	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	1.37E+00	3.45E-01	3.66E-01	6.57E-02	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	1.25E+00	3.07E-01	3.26E-01	4.36E-02	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	1.33E+00	3.47E-01	3.66E-01	7.85E-02	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	1.13E+00	2.83E-01	3.00E-01	7.28E-02	pCi/g
17-07092-12	MSO	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	2.09E-01	1.18E-01	1.19E-01	1.10E-01	pCi/g
17-07092-13	MS	HTC-A09-S001-0006-01 MS	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	6.83E+00	1.24E+00	1.38E+00	9.02E-02	pCi/g
17-07092-14	MSD	HTC-A09-S001-0006-01 MSD	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	6.14E+00	1.09E+00	1.21E+00	5.92E-02	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	5.60E-01	3.03E-01	3.07E-01	1.52E-01	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	1.37E+00	3.58E-01	3.78E-01	7.52E-02	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	1.53E+00	4.19E-01	4.40E-01	9.26E-02	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	1.40E+00	4.26E-01	4.44E-01	1.12E-01	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	1.38E+00	3.49E-01	3.70E-01	5.20E-02	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	9/11/2017	17-07092	Thorium-232	EPA 907.0 Modified	1.13E+00	3.23E-01	3.38E-01	6.30E-02	pCi/g

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CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07092**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07092-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	8.14E+00	2.93E-01			pCi/g
17-07092-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	6.61E+00	8.93E-01	1.01E+00	7.13E-02	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	1.38E-01	8.40E-02	8.46E-02	5.31E-02	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	6.51E-01	1.94E-01	1.99E-01	8.44E-02	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	5.01E-01	1.60E-01	1.64E-01	6.99E-02	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	9.47E-01	2.28E-01	2.37E-01	7.19E-02	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	7.23E-01	1.91E-01	1.98E-01	6.54E-02	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	7.87E-01	1.85E-01	1.94E-01	4.77E-02	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	7.69E-01	2.08E-01	2.15E-01	6.96E-02	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	8.60E-01	2.28E-01	2.36E-01	8.35E-02	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	7.26E-01	2.27E-01	2.32E-01	1.09E-01	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	6.35E-01	1.83E-01	1.89E-01	7.97E-02	pCi/g
17-07092-12	MSO	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	3.26E+01	3.61E+00	4.29E+00	5.68E-02	pCi/g
17-07092-13	MS	HTC-A09-S001-0006-01 MS	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	3.62E+01	4.05E+00	4.80E+00	7.80E-02	pCi/g
17-07092-14	MSD	HTC-A09-S001-0006-01 MSD	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	3.66E+01	4.07E+00	4.83E+00	1.02E-01	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	3.99E+01	4.92E+00	5.68E+00	6.90E-02	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	3.67E+00	5.35E-01	5.95E-01	4.25E-02	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	2.32E+00	3.87E-01	4.21E-01	4.39E-02	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	1.68E+00	3.21E-01	3.43E-01	8.38E-02	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	1.78E+00	3.18E-01	3.43E-01	4.74E-02	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	9/11/2017	17-07092	Uranium-233/234	EPA 908.0 Modified	1.58E+00	3.30E-01	3.48E-01	6.75E-02	pCi/g

0029

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07092**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07092-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	3.40E-01	1.48E-01	1.50E-01	6.50E-02	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	1.15E-01	8.84E-02	8.88E-02	8.85E-02	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	1.84E-01	1.09E-01	1.10E-01	7.55E-02	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	1.82E-01	1.04E-01	1.04E-01	6.88E-02	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	1.67E-01	9.73E-02	9.80E-02	5.88E-02	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	9.40E-02	7.62E-02	7.65E-02	8.49E-02	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	5.97E-02	5.48E-02	5.49E-02	6.33E-02	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	5.06E-02	6.08E-02	6.09E-02	8.59E-02	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	4.16E-02	5.38E-02	5.39E-02	7.48E-02	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	7.19E-02	8.48E-02	8.49E-02	1.24E-01	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	9.55E-02	7.53E-02	7.56E-02	6.85E-02	pCi/g
17-07092-12	MSO	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	2.53E+00	4.61E-01	4.95E-01	6.11E-02	pCi/g
17-07092-13	MS	HTC-A09-S001-0006-01 MS	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	4.62E+00	7.14E-01	7.87E-01	8.01E-02	pCi/g
17-07092-14	MSD	HTC-A09-S001-0006-01 MSD	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	2.69E+00	4.86E-01	5.23E-01	7.88E-02	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	3.41E+00	6.53E-01	6.97E-01	1.22E-01	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	3.23E-01	1.30E-01	1.32E-01	6.01E-02	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	2.08E-01	1.07E-01	1.08E-01	7.79E-02	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	1.04E-01	7.45E-02	7.49E-02	5.54E-02	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	2.18E-01	1.04E-01	1.05E-01	5.10E-02	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	9/11/2017	17-07092	Uranium-235/236	EPA 908.0 Modified	1.22E-01	8.94E-02	8.98E-02	7.59E-02	pCi/g

0030

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07092**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07092-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	7.88E+00	2.84E-01			pCi/g
17-07092-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	6.79E+00	9.11E-01	1.03E+00	6.01E-02	pCi/g
17-07092-02	MBL	BLANK	07/19/17 00:00	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	5.47E-02	5.64E-02	5.66E-02	7.15E-02	pCi/g
17-07092-03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	6.65E-01	1.95E-01	2.01E-01	7.63E-02	pCi/g
17-07092-04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	7.53E-01	1.99E-01	2.06E-01	4.84E-02	pCi/g
17-07092-05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	7.71E-01	2.00E-01	2.08E-01	4.74E-02	pCi/g
17-07092-06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	1.03E+00	2.36E-01	2.47E-01	6.51E-02	pCi/g
17-07092-07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	6.96E-01	1.72E-01	1.79E-01	3.78E-02	pCi/g
17-07092-08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	9.81E-01	2.38E-01	2.48E-01	5.13E-02	pCi/g
17-07092-09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	9.36E-01	2.38E-01	2.47E-01	7.56E-02	pCi/g
17-07092-10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	6.52E-01	2.12E-01	2.17E-01	1.00E-01	pCi/g
17-07092-11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	7.50E-01	1.99E-01	2.06E-01	4.83E-02	pCi/g
17-07092-12	MSO	HTC-A09-S001-0006-01	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	3.27E+01	3.62E+00	4.31E+00	6.67E-02	pCi/g
17-07092-13	MS	HTC-A09-S001-0006-01 MS	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	3.83E+01	4.27E+00	5.07E+00	6.47E-02	pCi/g
17-07092-14	MSD	HTC-A09-S001-0006-01 MSD	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	3.63E+01	4.04E+00	4.80E+00	7.98E-02	pCi/g
17-07092-15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	4.14E+01	5.09E+00	5.89E+00	7.87E-02	pCi/g
17-07092-16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	3.77E+00	5.45E-01	6.08E-01	6.07E-02	pCi/g
17-07092-17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	2.18E+00	3.70E-01	4.01E-01	5.01E-02	pCi/g
17-07092-18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	1.61E+00	3.11E-01	3.31E-01	6.04E-02	pCi/g
17-07092-19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	1.56E+00	2.92E-01	3.12E-01	5.57E-02	pCi/g
17-07092-20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	7/18/2017	9/11/2017	17-07092	Uranium-238	EPA 908.0 Modified	1.37E+00	3.02E-01	3.17E-01	7.68E-02	pCi/g

0031

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

SECTION V

ANALYTICAL STANDARD

QA/QC REVIEWED
Date 1/16/95 Initials [illegible]

U-8

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Radionuclide:	U-238NAT	Customer:	TMA EBERLINE
Half Life:	(4.468 ± 0.005) x 10^9 years	P.O.No.:	OR2778
Catalog No.:	7338	Reference Date:	January 1 1995 12:00 PST.
Source No.:	479-50	Contained Radioactivity:	(Total U) 8.016 μCi
		Contained Radioactivity:	(Total U) 297 kBq

Description of Solution

a. Mass of solution: 65.2896 g in a 50 ml flame sealed ampoule

b. Chemical form: Uranyl Nitrate in H2O

c. Carrier content: None

d. Density: Approximately 1.3202 g/ml @ 20°C.

Radioimpurities

Refer to attached technical data sheet

Radioactive Daughters

Refer to attached technical data sheet

Radionuclide Concentration

(Total U) 0.1228 μCi/g.

Method of Calibration

Activity calculations are based upon known specific activity and mass.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:	±3.0%
b. Random uncertainty in assay:	±0.0%
c. Random uncertainty in weighing(s):	±2.0%
d. Total uncertainty at the 99% confidence level:	±3.6%

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).

ERIC ALLAS
QUALITY CONTROL

29 DECEMBER 1994
Date Signed

ISOTOPE PRODUCTS LABORATORIES
3017 N. SAN FERNANDO BLVD.
BURBANK, CALIFORNIA 91504
818·843·7000 FAX 818·843·6168

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
MP 009

CURRENT DATE: 7/12/2017 0:00

SOLUTION REFERENCE #: IPL 479-50 SOLUTION #: U-8

Principal Radionuclide	Half Life, Years	Half Life, Days
$^{234,235,238}U$	4.468E+09	1.632E+12

Radionuclide: $^{234,235,238}U$ Reference Date: 1/1/1995 0:00

Certified Activity: 8.016E+00 µCi

Certified Concentration: µCi per gram

Ampoule /Solution Gross: 97.6400 Weight, Grams

Empty Ampoule: 32.5020 Weight, Grams

Solution Net: 65.1380 Weight, Grams

Total Activity in Ampoule: 8.0160 µCi

Chemical Composition of Standard Solution

Uranyl nitrate in dilute HNO_3

Dilution Instructions: Dilution Solvent Used: 1M HNO_3

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 8.0160 µCi Which Equals 1.780E+07 dpm at the date listed above

And after dilution the activity of this solution is 1.77955E+04 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: June 28, 2018

Verified & Approved By _____ Date: 7/12/2017 0:00

QC Approval _____ Date: 7/25/17

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

MP-009
Solution Reference # IPL 479-50

Date 7/12/2017 0:00
Solution # U-8a

Principal Radionuclide	Half Life, Years	Half Life, Days
$^{234, 235, 238}U$	4.468E+09	1.632E+12

Radionuclide of Interest $^{234, 235, 238}U$
Parent Solution Conc. 1.7796E+04 dpm/ml

Reference Date 1/1/1995 0:00

Chemical Composition of Standard Solution
Uranly Nitrate in 1M HNO_3

Dilution Instructions:

Dilution Solvent Used 1M HNO_3

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 4.0000 ml
Total Activity: 7.1182E+04 dpm
Final Volume: 1000.00 ml

Final Activity Concentration: 7.1182E+01 dpm/ml

NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Isotopic Distribution as:
U-238 Atom % = 48.239 U-238 = 71.182 dpm/ml X 0.48249 = 34.345 dpm/ml
U-235 Atom % = 2.25 U-235 = 71.182 dpm/ml X 0.0225 = 1.602 dpm/ml
U-234 Atom % = 49.501 U-238 = 71.182 dpm/ml X 0.49501 = 35.236 dpm/ml
All values +/- 3.6%

Isotopic ratios from manufacturer's data sheet

Expiration Date: June 28, 2018

Verified & Approved By _____ Date: 7/12/2017 0:00

QC Approval _____ Date: 7/25/17

RECORD COPY

Tracer Solution for Environmental Analysis & Disequilibrium Studies

Product Description & Measurement Certificate

Description	Principal radionuclide:	**uranium 232** (U-232)	Product code: **UDP10050**
	Daughter Nuclide:	Th-228	Batch Number: 92/232/67

Measurement	Reference date:	01 March 2000
	Radioactive concentration U-232	6.739E+03 becquerels per gram of solution
	which is equivalent to	1.821E-01 microcuries per gram of solution
	Mass of solution	5.356 grams
	Volume of solution	5.035 millilitres
	Total activity of U-232	3.61E+04 becquerels
	which is equivalent to	9.76E-01 microcuries

Method of measurement (see reverse of this certificate)

Accuracy Random uncertainty is: ± 0.7% Systematic uncertainty: ± 0.5%
Overall uncertainty in the radioactive concentration quoted above: ± 1.7%
Overall uncertainty is defined on the reverse of this certificate.

Radionuclidic Purity Any radioactive impurities measured are listed below, expressed as percentages of the activity of the principle radionuclide at the reference date .

Th-228 and daughter activity removed 2 Feb 2000
U-232 daughters activity will increase with time. By alpha 88% U-232, 12% daughters on 1/3/00

Isotopic Purity The isotopic composition, expressed as atom per cent at the reference date .

Not measured

Chemical Composition Calculated weight of U-232, 4.42E-08 grams, as 2M HNO3 solution in a flame sealed glass vial.
This Tracer solution has been produced 'carrier free'.

Physical Data Recommended half life of uranium 232: 6.980E+01 years
Principle energies of alpha emissions (MeV): 5.263 31.7%, 5.320 68.0%
Branching ratio for alpha emission: 100%
Calculated specific activity of uranium 232: 8.167E+05 Bq per microgram U-232.

Remarks For safety information and notes to ensure correct usage by all persons handling this radioactive Tracer solution please read the instructions accompanying the package.

AEA Technology operates a quality management system which has been independently audited and approved to ISO 9001.

Approved Signatory

Roger Wiltshire

Project Ref. AE2315

Roger Wiltshire

Prepared and characterised in the UK, for world wide distribution by **Isotrak, AEA Technology, QSA.**

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
MP 009

CURRENT DATE: 11/7/2016 0:00
SOLUTION REFERENCE #: AEA/Amersham 92/232/67
SOLUTION #: U-10

Principal Radionuclide	Half Life, Years	Half Life, Days
^{232}U	7.200E+01	2.630E+04

Radionuclide: ^{232}U
Reference Date: 3/1/2000 0:00
Certified Activity: 9.760E-01 µCi
Certified Concentration: µCi per gram

Ampoule /Solution Gross: Weight, Grams
Empty Ampoule: Weight, Grams
Solution Net: Weight, Grams
Total Activity in Ampoule: 0.9760 µCi

Chemical Composition of Standard Solution
$^{232}U(NO_3)_6$ in 2M HNO_3

Dilution Instructions:

Dilution Solvent Used: 2M HNO_3

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 0.9760 µCi Which Equals 2.167E+06 dpm at the date listed above

And after dilution the activity of this solution is 2.167E+03 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: October 7, 2017

Verified & Approved By _____ Date: 11/7/2016 0:00

QC Approval _____ Date: 11/10/16

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

MP-009
Solution Reference # AEA/Amersham 92/232/67

Date 11/7/2016 0:00
Solution # U-10a

Principal Radionuclide	Half Life, Years	Half Life, Days
^{232}U	7.200E+01	2.630E+04

Radionuclide of Interest ^{232}U
Parent Solution Conc. 2.167E+03 dpm/ml

Reference Date 3/1/2000 0:00

Chemical Composition of Standard Solution
$^{232}U(NO_3)_6$ in 2M HNO_3

Dilution Instructions:

Dilution Solvent Used 2M HNO_3

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 10.0000 ml
Total Activity: 2.1670E+04 dpm
Final Volume: 1000.00 ml

Final Activity Concentration: 2.1670E+01 dpm/ml

NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: October 7, 2017

Verified & Approved By _____ Date: 11/7/2016 0:00

QC Approval _____ Date: 11/10/16

Th-18

Isotope Products Laboratories
An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Radionuclide:	Th-229	**Customer:**	EBERLINE SERVICES
Half-life:	7340 ± 160 years	**P.O. No.:**	00009633
Catalog No.:	7229	**Reference Date:**	15-Jan-02 12:00 PST
Source No.:	867-54	**Contained Radioactivity: (Th-229 only)**	1.013 µCi 37.48 kBq

Physical Description:

A. Mass of solution: 5.0147 g in 5 mL flame-sealed ampoule
B. Chemical form: $Th(NO_3)_4$ in 0.1M HNO_3
C. Carrier content: 10µg Th/mL
D. Density: 1.0016 g/mL @ 20°C.

Radioimpurities:

None detected (daughters in equilibrium)

Radionuclide Concentration: 0.2020 µCi/g, 7.474 kBq/g

Method of Calibration:

This source was prepared from a weighed aliquot of solution whose activity in µCi/g was determined using gamma ray spectrometry.

Peak energy used for integration: 193.5 keV
Branching ratio used: 0.0441 gammas per decay

Uncertainty of Measurement:

A. Type A (random) uncertainty: ± 0.7 %
B. Type B (systematic) uncertainty: ± 3.0 %
C. Uncertainty in aliquot weighing: ± 0.0 %
D. Total uncertainty at the 99% confidence level: ± 3.1 %

Notes:

- See reverse side for leak test(s) performed on this source.
- IPL participates in a NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).
- Nuclear data was taken from IAEA Technical Report Series No. 261.
- This solution has a working life of 5 years.

Quality Control — 9-Jan-02 Date Signed — IPL Ref. No.: 867-54

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

Rev.8; 1/10/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
MP 009

CURRENT DATE: 8/16/2017 0:00

SOLUTION REFERENCE #: IPL 867-54

SOLUTION #: Th-18

Principal Radionuclide	Half Life, Years	Half Life, Days
^{229}Th	7.340E+03	2.681E+06

Radionuclide: ^{229}Th

Reference Date: 1/15/2002 0:00

Certified Activity: 1.013E+00 µCi

Certified Concentration: µCi per gram

Ampoule /Solution Gross	8.7752	Weight, Grams
Empty Ampoule	3.7591	Weight, Grams
Solution Net	5.0161	Weight, Grams
Total Activity in Ampoule	1.0130	µCi

Chemical Composition of Standard Solution

$^{229}Th(NO_3)_4$ in 0.1M HNO_3

Dilution Instructions:

Dilution Solvent Used: 0.1 M HNO_3

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 1.0130 µCi Which Equals 2.249E+06 dpm at the date listed above

And after dilution the activity of this solution is 2.249E+03 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: August 11, 2018

Verified & Approved By _____ Date: 8/16/2017 0:00

QC Approval _____ Date: 8/16/17

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

Rev.7; 9/29/99
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

MP-009
Solution Reference # IPL 867-54

Date 8/16/2017 0:00
Solution # Th-18a

Principal Radionuclide	Half Life, Years	Half Life, Days
^{229}Th	7.340E+03	2.681E+06

Radionuclide of Interest ^{229}Th
Parent Solution Conc. 2.25E+03 dpm/ml

Reference Date 1/15/2002 0:00

Chemical Composition of Standard Solution
$TH(NO_3)_4$ in 0.1M HNO_3

Dilution Instructions:

Dilution Solvent Used 0.1M HNO_3

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 10.0000 ml
Total Activity: 2.2490E+04 dpm
Final Volume: 1000.00 ml

Final Activity Concentration: 2.2490E+01 dpm/ml

NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: August 11, 2018

Verified & Approved By _____ Date: 8/16/2017 0:00

QC Approval _____ Date: 8/16/17

QA/QC REVIEWED
Date 10/14/91 Initials MT 10/14/91

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Received
OCT 14 1991
TMA/Eberline
Oak Ridge Lab

Radionuclide	Th-230	Customer:	TMA EBERLINE
Half Life:	(7.54 ± 0.03) x 10^4 years	P.O.No.:	TT4944
Catalog No.:	7230	Reference Date:	November 1 1991 12:00 PST.
Source No.:	388-116	Contained Radioactivity:	1.036 µCi.

Description of Solution

a. Mass of solution: 5.0042 grams.
b. Chemical form: Th(NO3)4 in 0.1N HNO3
c. Carrier content: None added
d. Density: 1.0016 gram/ml @ 20°C.

Radioimpurities

See attached technical data sheet

Radioactive Daughters

See attached technical data sheet

Radionuclide Concentration

0.207 µCi/gram.

Method of Calibration

Weighed aliquots of the solution were assayed using a liquid scintillation counter.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration: ±2.0%
b. Random uncertainty in assay: ±0.5%
c. Random uncertainty in weighing(s): ±0.2%
d. Total uncertainty at the 99% confidence level: ±2.7%

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Notes

1. Nuclear data were taken from "Table of Isotopes", Seventh Edition, edited by Virginia S. Shirley.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay(and later NIST certification) of Standard Reference Materials. (As in NRC Regulatory Guide 4.15)

QUALITY CONTROL

ISOTOPE PRODUCTS LABORATORIES
1800 No. Keystone Street.,
Burbank, California 91504
(818) 843 - 7000

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

Rev.14; 10/10/2012
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
MP 009

CURRENT DATE: 2/28/2017 0:00

SOLUTION REFERENCE #: IPL 388-116 SOLUTION #: Th-1

Principal Radionuclide	Half Life, Years	Half Life, Days
^{230}Th	7.540E+04	2.754E+07

Radionuclide: ^{230}Thorium
Reference Date: 11/1/1991 0:00
Certified Activity: 1.036E+00 µCi
Certified Concentration: µCi per gram

Ampoule /Solution Gross: 9.2660 Weight, Grams
Empty Ampoule: 4.6218 Weight, Grams
Solution Net: 4.6442 Weight, Grams
Total Activity in Ampoule: 1.0360 µCi

Chemical Composition of Standard Solution
$^{230}Th(NO_3)_4$ in 0.1N HNO_3

Dilution Instructions:

Dilution Solvent Used: 0.1N HNO_3

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 1.0360 µCi Which Equals 2.300E+06 dpm at the date listed above

And after dilution the activity of this solution is 2.300E+03 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: February 1, 2018

Recertified By _____ Date: 2/28/2017 0:00

QC Approval _____ Date: 3/1/17

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

Rev.14; 10/10/2012
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

MP-009

Solution Reference # IPL 388-116

Date 2/28/2017 0:00

Solution # Th-1b

Principal Radionuclide	Half Life, Years	Half Life, Days
^{230}Th	7.540E+04	2.754E+07

Radionuclide of Interest ^{230}Thorium

Reference Date 11/1/1991 0:00

Parent Solution Conc. 2.30E+03 dpm/ml

Chemical Composition of Standard Solution

$^{230}Th(NO_3)_4$ in 0.1N HNO_3

Dilution Instructions:

Dilution Solvent Used 0.1N HNO_3

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 10.0000 ml
Total Activity: 2.2999E+04 dpm
Final Volume: 1000.00 ml

Final Activity Concentration: 2.2999E+01 dpm/ml

NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: February 1, 2018

Recertified By _____ Date: 2/28/2017 0:00

QC Approval _____ Date: 3/1/17

Th-18

Isotope Products Laboratories
An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Radionuclide:	Th-229	**Customer:**	EBERLINE SERVICES
Half-life:	7340 ± 160 years	**P.O. No.:**	00009633
Catalog No.:	7229	**Reference Date:**	15-Jan-02 12:00 PST
Source No.:	867-54	**Contained Radioactivity: (Th-229 only)**	1.013 µCi 37.48 kBq

Physical Description:

A. Mass of solution: 5.0147 g in 5 mL flame-sealed ampoule
B. Chemical form: $Th(NO_3)_4$ in 0.1M HNO_3
C. Carrier content: 10µg Th/mL
D. Density: 1.0016 g/mL @ 20°C.

Radioimpurities:

None detected (daughters in equilibrium)

Radionuclide Concentration: 0.2020 µCi/g, 7.474 kBq/g

Method of Calibration:

This source was prepared from a weighed aliquot of solution whose activity in µCi/g was determined using gamma ray spectrometry.

Peak energy used for integration: 193.5 keV
Branching ratio used: 0.0441 gammas per decay

Uncertainty of Measurement:

A. Type A (random) uncertainty: ± 0.7 %
B. Type B (systematic) uncertainty: ± 3.0 %
C. Uncertainty in aliquot weighing: ± 0.0 %
D. Total uncertainty at the 99% confidence level: ± 3.1 %

Notes:

- See reverse side for leak test(s) performed on this source.
- IPL participates in a NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).
- Nuclear data was taken from IAEA Technical Report Series No. 261.
- This solution has a working life of 5 years.

Ann U Khan — Quality Control

9-Jan-02 — Date Signed

IPL Ref. No.: 867-54

EBERLINE SERVICES

QUALITY CONTROL PROGRAM

MP-009

Rev.8; 1/10/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
MP 009

CURRENT DATE: 8/16/2017 0:00

SOLUTION REFERENCE #: IPL 867-54

SOLUTION #: Th-18

Principal Radionuclide	Half Life, Years	Half Life, Days
^{229}Th	7.340E+03	2.681E+06

Radionuclide: ^{229}Th

Reference Date: 1/15/2002 0:00

Certified Activity: 1.013E+00 µCi

Certified Concentration: µCi per gram

Ampoule /Solution Gross	8.7752	Weight, Grams
Empty Ampoule	3.7591	Weight, Grams
Solution Net	5.0161	Weight, Grams
Total Activity in Ampoule	1.0130	µCi

Chemical Composition of Standard Solution

$^{229}Th(NO_3)_4$ in 0.1M HNO_3

Dilution Instructions:

Dilution Solvent Used: 0.1 M HNO_3

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 1.0130 µCi Which Equals 2.249E+06 dpm at the date listed above

And after dilution the activity of this solution is 2.249E+03 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: August 11, 2018

Verified & Approved By _____ Date: 8/16/2017 0:00

QC Approval _____ Date: 8/16/17

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

Rev.7; 9/29/99
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

MP-009
Solution Reference # IPL 867-54

Date 8/16/2017 0:00
Solution # Th-18a

Principal Radionuclide	Half Life, Years	Half Life, Days
^{229}Th	7.340E+03	2.681E+06

Radionuclide of interest ^{229}Th
Parent Solution Conc. 2.25E+03 dpm/ml

Reference Date 1/15/2002 0:00

Chemical Composition of Standard Solution
$TH(NO_3)_4$ in 0.1M HNO_3

Dilution Instructions:

Dilution Solvent Used 0.1M HNO_3

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 10.0000 ml
Total Activity: 2.2490E+04 dpm
Final Volume: 1000.00 ml

Final Activity Concentration: 2.2490E+01 dpm/ml

NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: August 11, 2018

Verified & Approved By _____ Date: 8/16/2017 0:00

QC Approval _____ Date: 8/16/17

Eckert & Ziegler
Analytics

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

CERTIFICATE OF CALIBRATION

Standard Reference Source

GAS - 1602

SRS Number: 104852
Source Description: Sand in 16 Ounce PP Omega Jar Filled to Capacity
Product Code: 8401-EG-SAN
Customer: Eberline Analytical Corporation
P.O. Number: OR-1610009, Item 4

This standard radionuclide source was prepared from an aliquot measured gravimetrically from a master radionuclide solution calibrated with a germanium gamma-ray spectrometer system. Additional radionuclides were added gravimetrically from solutions calibrated by gamma-ray spectrometry, ionization chamber, or liquid scintillation counting. Calibration and purity were checked using germanium gamma-ray spectrometry. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology (NIST) 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."

Reference Date: 01-October-2016 12:00 PM EST

MGS Mixture

Isotope	Gamma-Ray Energy, keV	Half-Life, d	Activity, Bq	Flux, s^{-1}	Uncertainty u_A, %	u_B, %	U, %*	Calibration Method**
Am-241	59.5	1.580E+05	5.500E+03	1.976E+03	0.1	1.8	3.6	4π LS
Cd-109	88.0	4.614E+02	7.668E+04	2.837E+03	0.5	2.0	4.1	HPGe
Co-57	122.1	2.71E+02	2.240E+03	1.917E+03	0.4	1.7	3.4	HPGe
Ce-139	165.9	1.376E+02	2.655E+03	2.124E+03	0.4	1.7	3.6	HPGe
Hg-203	279.2	4.659E+01	6.065E+03	4.947E+03	0.3	1.7	3.5	HPGe
Sn-113	391.7	1.151E+02	4.528E+03	2.942E+03	0.4	1.9	3.9	HPGe
Cs-137	661.7	1.099E+04	2.240E+03	1.914E+03	0.7	1.9	4.1	HPGe
Y-88	898.0	1.066E+02	7.415E+03	6.948E+03	0.7	1.7	3.7	HPGe
Y-88	1836.1			7.356E+03	0.7	1.7	3.7	
Co-60	1173.2	1.925E+03	3.562E+03	3.557E+03	0.7	1.8	3.9	HPGe
Co-60	1332.5			3.561E+03	0.7	1.8	3.9	

Mixed Gamma (MGS) master solution is EZA's eight isotope mixture which is calibrated quarterly and consists of Cd-109, Co-57, Ce-139, Hg-203, Sn-113, Cs-137, Y-88, and Co-60. ***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results." ****Calibration Methods:** 4π LS - 4π Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber.

(Certificate continued on reverse side)

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia 30318

SECTION VI

QUALITY CONTROL SAMPLE RESULTS SUMMARY

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07092	UUISO Apex	1	pCi	g	Weston Solutions, Inc.

Laboratory Control Sample

Analyte		LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
U-234		81.24%	15.28%	100.00%	3.60%	8.14E+00	2.93E-01	6.61E+00	1.01E+00	U-8a	3.20E+01	3.60E+00	5.65E-01
U-238		86.11%	15.21%	100.00%	3.60%	7.88E+00	2.84E-01	6.79E+00	1.03E+00	U-8a	3.10E+01	3.60E+00	5.65E-01

Matrix Spike

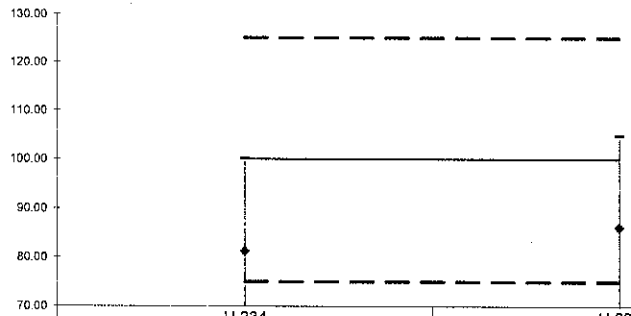
Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)
U-234	1.24	47.17%	7.70E+00	2.77E-01	3.62E+01	4.80E+00	3.26E+01	4.29E+00	1.06E+00	U-8a	3.20E+01	3.60	5.64E-01
U-238	0.54	75.37%	7.46E+00	2.68E-01	3.83E+01	5.07E+00	3.27E+01	4.31E+00	1.06E+00	U-8a	3.10E+01	3.60	5.64E-01

Duplicate Results / QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Duplicate Result	Duplicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
U-234	1.13	25.92	5.01E-01	1.64E-01	6.51E-01	1.99E-01	0.81	OK				INV	OK
U-238	0.60	12.38	7.53E-01	2.06E-01	6.65E-01	2.01E-01	0.86	OK				OK	OK
U-235	0.03	1.15	1.82E-01	1.04E-01	1.84E-01	1.10E-01		OK				NA	OK

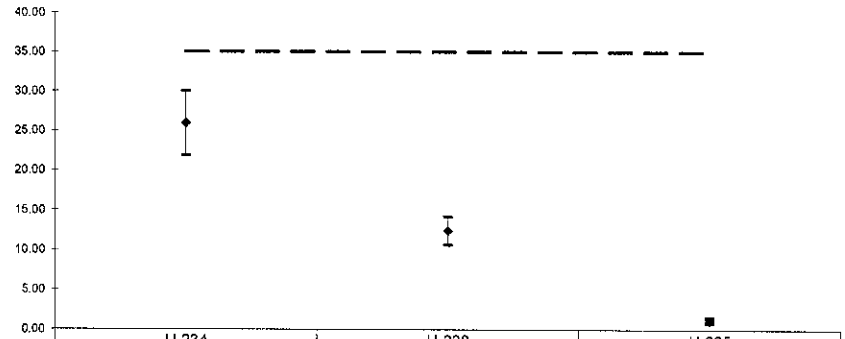
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07092	UUISO Apex	1	pCi	g	Weston Solutions, Inc.

LCS % Recovery



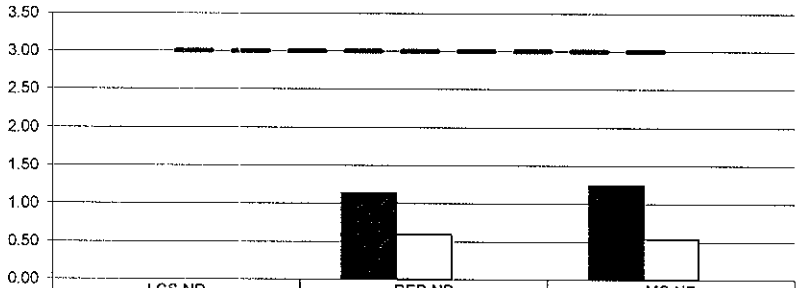
	U-234	U-238
Lower Error	62.36	67.30
Upper Error	100.12	104.91
%R	81.24	86.11
LCL	75	75
Mean	100	100
UCL	125	125

Replicate Sample RPD



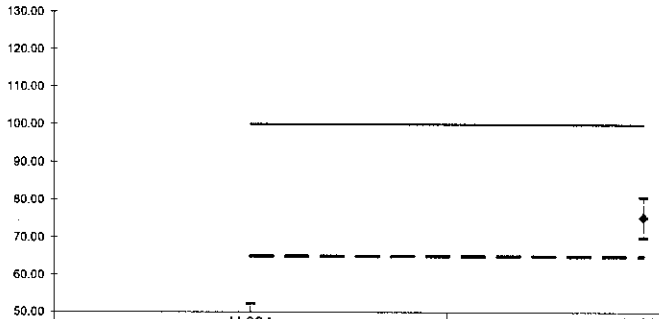
	U-234	U-238	U-235
Lower Error	30.00	14.15	1.48
Upper Error	21.83	10.60	0.81
RPD	25.92	12.38	1.15
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
U-234	0.00	1.13	1.24
U-238	0.00	0.60	0.54
	0.00	0.00	0.00
UCL	3	3	3

Matrix Spike % Recovery



	U-234	U-238
Lower Error	42.09	70.03
Upper Error	52.25	80.71
%R	47.17	75.37
LCL	65	65
Mean	100	100
UCL	135	135

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07092	UUISO Apex	1	pCi	g	Weston Solutions, Inc.

Laboratory Control Sample

Analyte		LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
U-234		81.24%	15.28%	100.00%	3.60%	8.14E+00	2.93E-01	6.61E+00	1.01E+00	U-8a	3.20E+01	3.60E+00	5.65E-01
U-238		86.11%	15.21%	100.00%	3.60%	7.88E+00	2.84E-01	6.79E+00	1.03E+00	U-8a	3.10E+01	3.60E+00	5.65E-01

Matrix Spike Duplicate

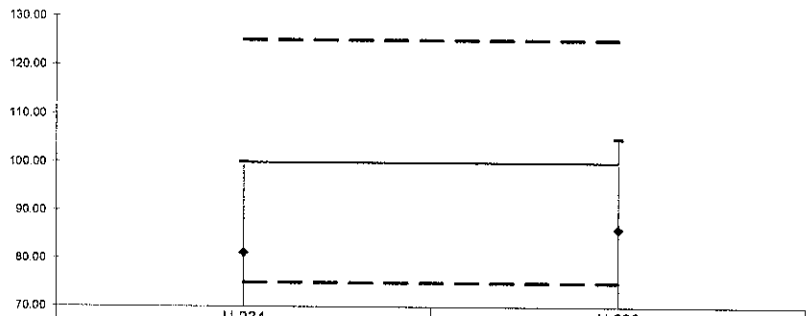
Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)
U-234	1.11	52.33%	7.70E+00	2.77E-01	3.66E+01	4.83E+00	3.26E+01	4.29E+00	1.06E+00	U-8a	3.20E+01	3.60	5.64E-01
U-238	1.15	49.11%	7.46E+00	2.68E-01	3.63E+01	4.80E+00	3.27E+01	4.31E+00	1.06E+00	U-8a	3.10E+01	3.60	5.64E-01

Duplicate Results / QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Duplicate Result	Duplicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
U-234	1.13	25.92	5.01E-01	1.64E-01	6.51E-01	1.99E-01	0.81	OK				INV	OK
U-238	0.60	12.38	7.53E-01	2.06E-01	6.65E-01	2.01E-01	0.86	OK				OK	OK
U-235	0.03	1.15	1.82E-01	1.04E-01	1.84E-01	1.10E-01		OK				NA	OK

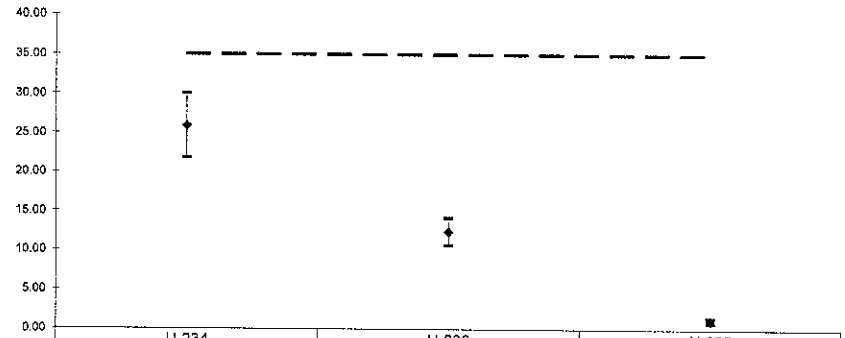
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07092	UUISO Apex	1	pCi	g	Weston Solutions, Inc.

LCS % Recovery



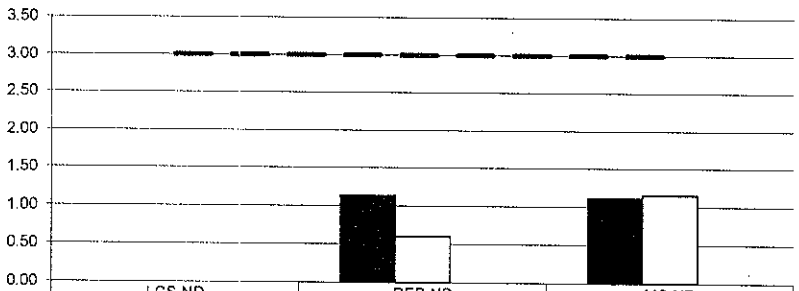
	U-234	U-238
Lower Error	62.36	67.30
Upper Error	100.12	104.91
%R	81.24	86.11
LCL	75	75
Mean	100	100
UCL	125	125

Replicate Sample RPD



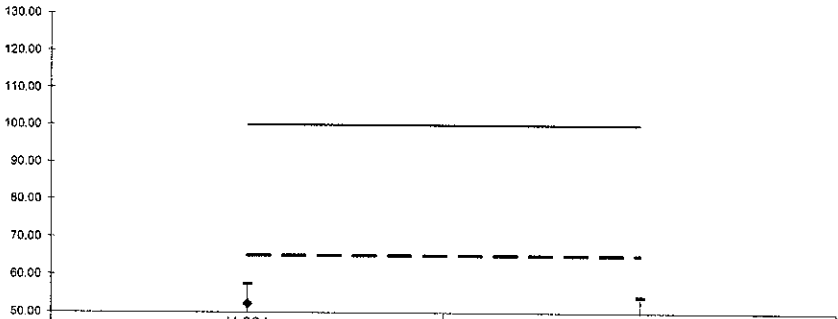
	U-234	U-238	U-235
Lower Error	30.00	14.15	1.48
Upper Error	21.83	10.60	0.81
RPD	25.92	12.38	1.15
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
U-234	0.00	1.13	1.11
U-238	0.00	0.60	1.15
	0.00	0.00	0.00
UCL	3	3	3

Matrix Spike % Recovery



	U-234	U-238
Lower Error	47.21	44.03
Upper Error	57.44	54.18
%R	52.33	49.11
LCL	65	65
Mean	100	100
UCL	135	135

0053

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07092	ThISO Apex	1	pCi	g	Weston Solutions, Inc.

Laboratory Control Sample

Analyte		LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
TH-228		120.07%	18.75%	100.00%	3.60%	4.98E+00	1.79E-01	5.98E+00	1.12E+00	Th-8b	1.04E+02	3.60E+00	1.07E-01
TH-230		118.86%	20.22%	100.00%	2.70%	5.41E+00	1.46E-01	6.43E+00	1.30E+00	Th-1b	2.35E+01	2.70E+00	5.11E-01
TH-232		120.09%	18.45%	100.00%	3.60%	4.98E+00	1.79E-01	5.98E+00	1.10E+00	Th-8b	1.04E+02	3.60E+00	1.07E-01

Matrix Spike

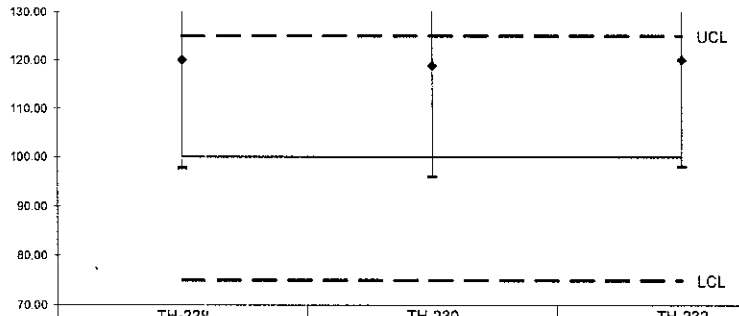
Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)
TH-228	0.33	103.72%	7.46E+00	2.69E-01	7.97E+00	1.62E+00	2.28E-01	1.30E-01	1.07E+00	Th-8b	1.04E+02	3.60	1.71E-01
TH-230	0.10	94.40%	5.00E+00	1.35E-01	2.01E+01	4.20E+00	1.54E+01	3.32E+00	1.07E+00	Th-1b	2.35E+01	2.70	5.04E-01
TH-232	1.18	88.76%	7.46E+00	2.69E-01	6.83E+00	1.38E+00	2.09E-01	1.19E-01	1.07E+00	Th-8b	1.04E+02	3.60	1.71E-01

Duplicate Results / QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Duplicate Result	Duplicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
TH-228	1.28	29.01	6.04E-01	1.95E-01	8.09E-01	2.47E-01	1.20	OK				INV	OK
TH-230	0.62	14.21	6.87E-01	2.10E-01	5.95E-01	2.00E-01	1.19	OK				OK	OK
TH-232	0.85	20.32	5.69E-01	1.78E-01	4.64E-01	1.64E-01	1.20	OK				OK	OK

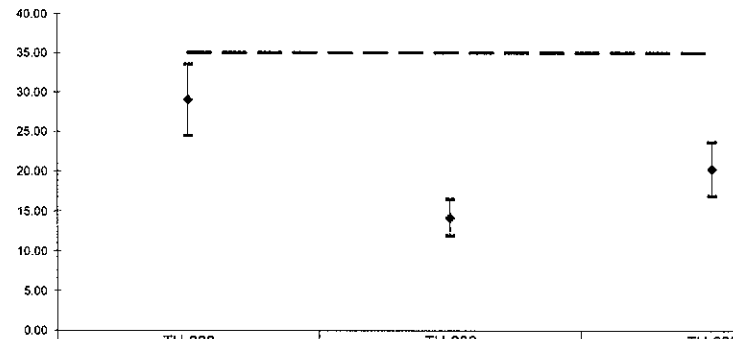
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07092	ThISO Apex	1	pCi	g	Weston Solutions, Inc.

LCS % Recovery



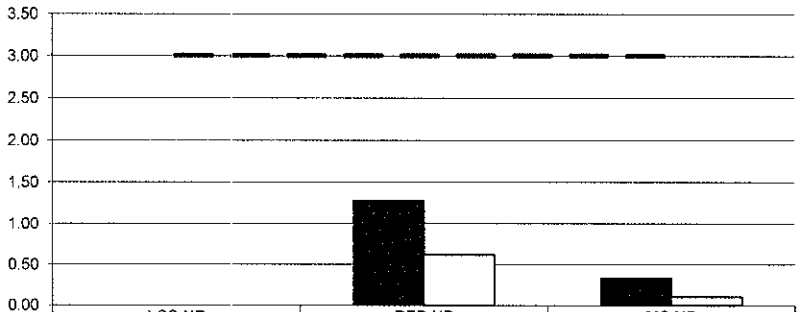
	TH-228	TH-230	TH-232
Lower Error	97.72	95.94	98.04
Upper Error	142.42	141.78	142.13
%R	120.07	118.86	120.09
LCL	75	75	75
Mean	100	100	100
UCL	125	125	125

Replicate Sample RPD



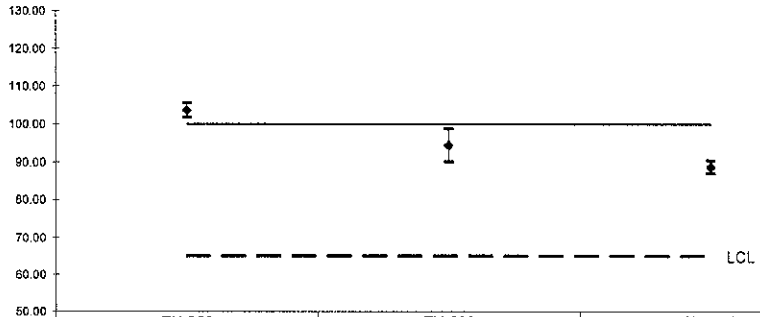
	TH-228	TH-230	TH-232
Lower Error	33.54	16.48	23.69
Upper Error	24.47	11.94	16.95
RPD	29.01	14.21	20.32
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
TH-228	0.00	1.28	0.33
TH-230	0.00	0.62	0.10
UCL	3	3	3

Matrix Spike % Recovery



	TH-228	TH-230	TH-232
Lower Error	101.83	90.07	87.11
Upper Error	105.61	98.73	90.40
%R	103.72	94.40	88.76
LCL	65	65	65
Mean	100	100	100
UCL	135	135	135

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07092	ThISO Apex	1	pCi	g	Weston Solutions, Inc.

Laboratory Control Sample

Analyte		LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
TH-228		120.07%	18.75%	100.00%	3.60%	4.98E+00	1.79E-01	5.98E+00	1.12E+00	Th-8b	1.04E+02	3.60E+00	1.07E-01
TH-230		118.86%	20.22%	100.00%	2.70%	5.41E+00	1.46E-01	6.43E+00	1.30E+00	Th-1b	2.35E+01	2.70E+00	5.11E-01
TH-232		120.09%	18.45%	100.00%	3.60%	4.98E+00	1.79E-01	5.98E+00	1.10E+00	Th-8b	1.04E+02	3.60E+00	1.07E-01

Matrix Spike Duplicate

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)
TH-228	0.72	91.75%	7.24E+00	2.61E-01	6.87E+00	1.62E+00	2.28E-01	1.30E-01	1.07E+00	Th-8b	1.04E+02	3.60	1.66E-01
TH-230	0.53	66.01%	3.98E+00	1.08E-01	1.80E+01	3.69E+00	1.54E+01	3.32E+00	1.07E+00	Th-1b	2.35E+01	2.70	4.02E-01
TH-232	2.09	81.90%	7.24E+00	2.61E-01	6.14E+00	1.21E+00	2.09E-01	1.19E-01	1.07E+00	Th-8b	1.04E+02	3.60	1.66E-01

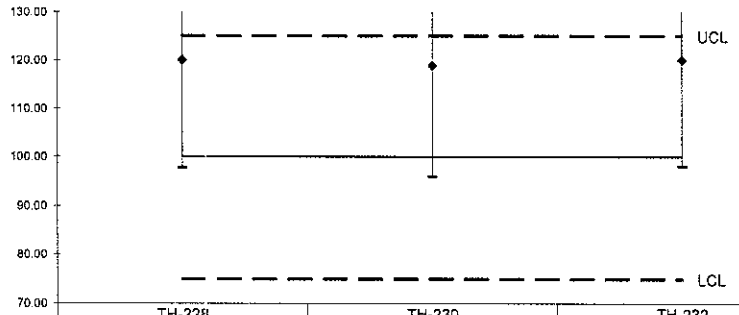
Duplicate Results / QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Duplicate Result	Duplicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
TH-228	1.28	29.01	6.04E-01	1.95E-01	8.09E-01	2.47E-01	1.20	OK				INV	OK
TH-230	0.62	14.21	6.87E-01	2.10E-01	5.95E-01	2.00E-01	1.19	OK				OK	OK
TH-232	0.85	20.32	5.69E-01	1.78E-01	4.64E-01	1.64E-01	1.20	OK				OK	OK

0056

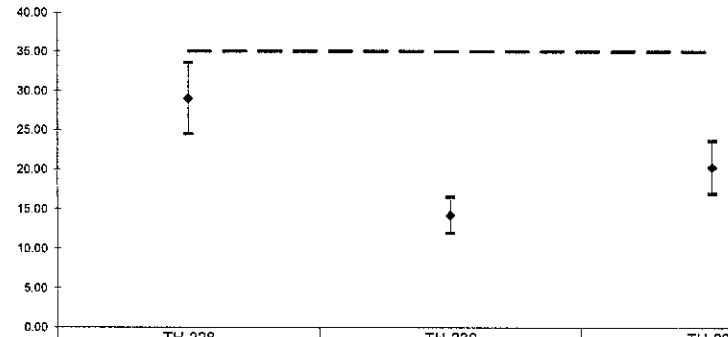
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07092	ThISO Apex	1	pCi	g	Weston Solutions, Inc.

LCS % Recovery



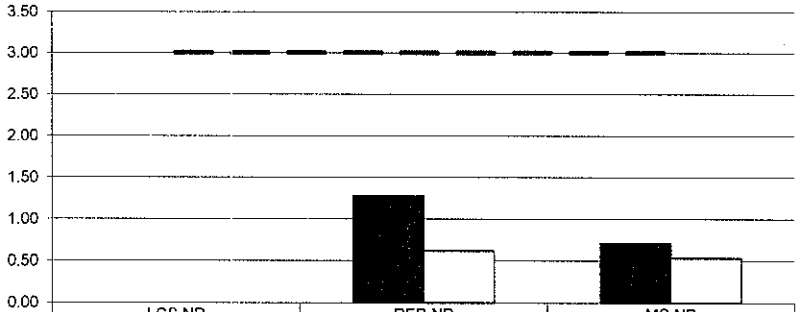
	TH-228	TH-230	TH-232
Lower Error	97.72	95.94	98.04
Upper Error	142.42	141.78	142.13
%R	120.07	118.86	120.09
LCL	75	75	75
Mean	100	100	100
UCL	125	125	125

Replicate Sample RPD



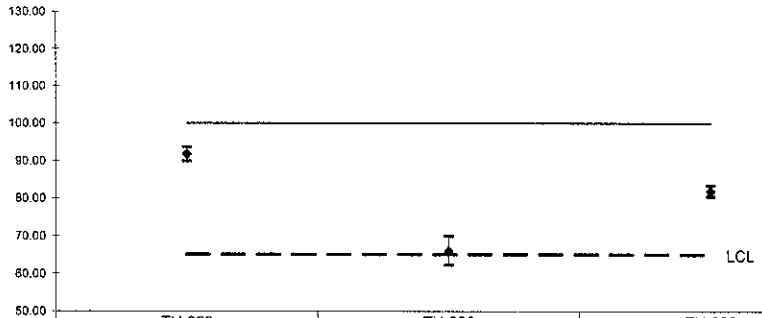
	TH-228	TH-230	TH-232
Lower Error	33.54	16.48	23.69
Upper Error	24.47	11.94	16.95
RPD	29.01	14.21	20.32
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
TH-228	0.00	1.28	0.72
TH-230	0.00	0.62	0.53
UCL	3	3	3

Matrix Spike % Recovery



	TH-228	TH-230	TH-232
Lower Error	89.87	62.21	80.43
Upper Error	93.63	69.81	83.38
%R	91.75	66.01	81.90
LCL	65	65	65
Mean	100	100	100
UCL	135	135	135

0057

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07092	Gamma	2	pCi	g	Weston Solutions, Inc.

Laboratory Control Sample

Analyte		LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
CO-60		92.35%	7.93%	100.00%	3.89%	1.35E+02	5.27E+00	1.25E+02	9.91E+00	GAS-1402	1.35E+02	5.27E+00	7.36E+02
CS-137		94.70%	13.26%	100.00%	4.01%	8.44E+01	3.38E+00	7.99E+01	1.06E+01	GAS-1402	8.44E+01	3.38E+00	7.36E+02

Matrix Spike

Analyte	*Normalized Difference*	*MS Actual % Rec*	*Expected MS Result*	*Expected MS Uncert*	*Actual MS Result*	*Actual MS CSU*	*Sample Result*	*Sample CSU*	*Sample Aliquot*	*Standard ID*	*Standard ACT (dpm)*	*Standard Error %*	*Standard Added (g)*

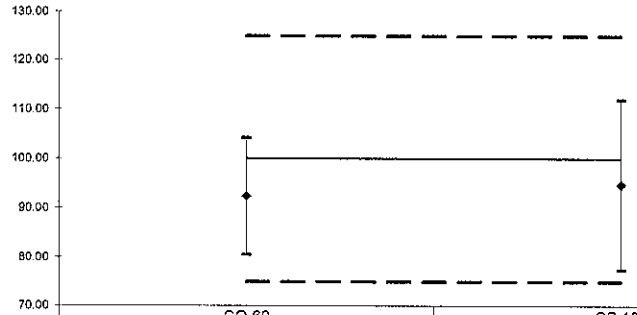
Duplicate Results / QC Summary

Analyte	*Normalized Difference*	*RPD*	*Original Result*	*Original CSU*	*Duplicate Result*	*Duplicate CSU*	*LCS Relative Bias*	*LCS % R*		*MS % R*	*MS ND*	*Rep RPD*	*Rep ND*
K-40	1.61	14.08	1.78E+01	2.18E+00	2.05E+01	2.45E+00	0.92	OK		<CS-137	K-40>	OK	
RA-226	1.54	17.92	9.91E-01	1.52E-01	1.19E+00	1.95E-01	0.95	OK		<CO-60	RA-226>	OK	OK
RA-228	0.49	5.96	1.25E+00	2.08E-01	1.18E+00	2.05E-01					RA-228>	OK	OK

0058

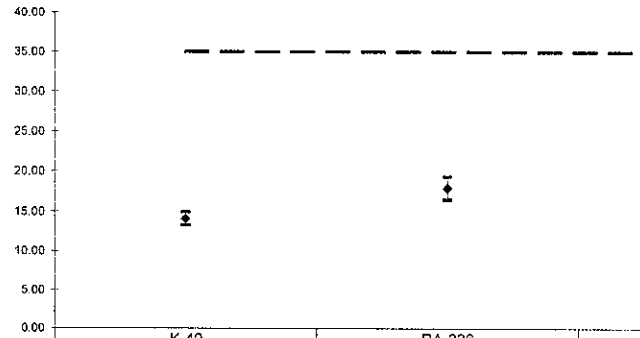
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07092	Gamma	2	pCi	g	Weston Solutions, Inc.

LCS % Recovery



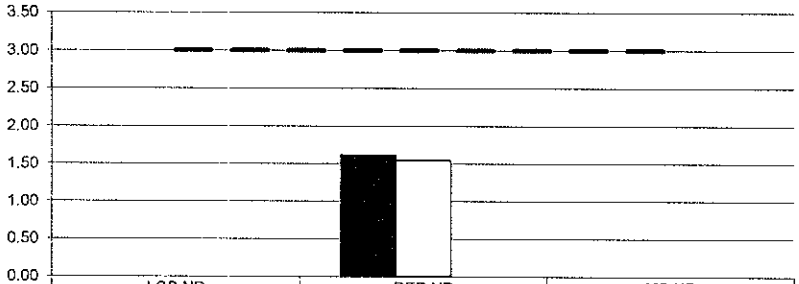
	CO-60	CS-137
Lower Error	80.52	77.44
Upper Error	104.18	111.97
%R	92.35	94.70
LCL	75	75
Mean	100	100
UCL	125	125

Replicate Sample RPD



	K-40	RA-226	RA-228
Lower Error	14.93	19.35	6.46
Upper Error	13.23	16.49	5.45
RPD	14.08	17.92	5.96
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
CO-60	0.00	1.61	0.00
CS-137	0.00	1.54	0.00
	0.00	0.00	0.00
UCL	3	3	3

No Matrix Spike

SECTION VII

LABORATORY TECHNICIAN'S NOTES
&
RUN LOGS

ISO-U NOTES

EBERLINE SERVICES **Work Order Analysis Notes**	**Oak Ridge Laboratory** **601 Scarboro Rd.** **Oak Ridge, TN 37830** **Voice: 865.481.0683** **www.eberlineservices.com**	Internal Work Order	17-07092
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	08/16/17 05:27	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS

8/16/17

EBERLINE SERVICES **Work Order Analysis Notes**	**Oak Ridge Laboratory** **601 Scarboro Rd.** **Oak Ridge, TN 37830** **Voice: 865.481.0683** **www.eberlineservices.com**	Internal Work Order	17-07092
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	08/16/17 05:27	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS
2	09/08/17 16:27	CHEM	JDEMELAS	Added concentrated HCl to sample beakers and heated to dryness; Added 20 ml 8N HCL to samples and transferred to new, labeled C-Tubes, rinsing with 8N HCl to bring volume to ~35 ml; Preconditioned resin columns with 35 ml 8N HCl; Centrifuged samples and loaded onto columns; Rinsed C-Tubes with 20 ml 8N HCl, centrifuged as needed and loaded onto columns; Rinsed columns with 35 ml 8N HCl – 0.1N NH4I, 35 ml of 6.5N HCl – 0.04N HF, and 10 ml of 6.5N HCl; Eluted Uranium with 50 ml of 0.5N HCl into clean, labeled 100-ml beakers; Dried-down samples on hotplate; Dissolved samples in ~10 ml of concentrated HCl; Transferred to new, labeled C-Tubes with DI H2O. Set samples aside for later precipitation and filtering.

9/8/17

EBERLINE SERVICES Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	17-07092
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	08/16/17 05:27	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS
2	09/08/17 16:27	CHEM	JDEMELAS	Added concentrated HCl to sample beakers and heated to dryness; Added 20 ml 8N HCL to samples and transferred to new, labeled C-Tubes, rinsing with 8N HCl to bring volume to ~35 ml; Preconditioned resin columns with 35 ml 8N HCl; Centrifuged samples and loaded onto columns; Rinsed C-Tubes with 20 ml 8N HCl, centrifuged as needed and loaded onto columns; Rinsed columns with 35 ml 8N HCl – 0.1N NH4I, 35 ml of 6.5N HCl – 0.04N HF, and 10 ml of 6.5N HCl; Eluted Uranium with 50 ml of 0.5N HCl into clean, labeled 100 ml beakers; Dried-down samples on hotplate; Dissolved samples in ~10 ml of concentrated HCl; Transferred to new, labeled C-Tubes with DI H2O. Set samples aside for later precipitation and filtering.
3	09/11/17 05:19	CHEM	TSMITH	Followed steps 12.1.7 to 12.4.5 in Ap-005 . (Precipitated and filtered samples for Uranium)

9-11-17

EBERLINE SERVICES

Reagents Used in an Analysis

Internal Work Order	
17-07092	
Analysis Code	Run
UUISO	1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
019093P	Hydrofluoric Acid	Reagent Grade	JHARVEY	8/16/2017
018971P	Nitric Acid	Reagent Grade	JHARVEY	8/16/2017
019133P	Perchloric Acid	Reagent Grade	JHARVEY	8/16/2017
018550P	Sulfuric Acid	Reagent Grade	JHARVEY	8/16/2017
018798P	Anion Exchange Resin	Reagent Grade	JDEMELAS	9/8/2017
019255S	HCl - HF	6.5N - 0.04N	JDEMELAS	9/8/2017
019265S	HCl - NH4I	8N - 0.1M	JDEMELAS	9/8/2017
019183D01	Hydrochloric Acid	0.5N	JDEMELAS	9/8/2017
019202S	Hydrochloric Acid	6.5N	JDEMELAS	9/8/2017
019261S	Hydrochloric Acid	8N	JDEMELAS	9/8/2017
019134P	Hydrochloric Acid	Reagent Grade	JDEMELAS	9/8/2017
019240S	Carbon substrate	Solution	TSMITH	9/11/2017
019063P	Ethyl Alcohol	1	TSMITH	9/11/2017
019227P	Hydrofluoric Acid	Reagent Grade	TSMITH	9/11/2017
018890S	Neodymium Carrier	1 mg/ml	TSMITH	9/11/2017
019038P	Titanous Chloride	Reagent Grade	TSMITH	9/11/2017

Alpha #3

Date	Sample #	Client	Location	C/Time	Inspector	Tech
9/7/17	1708072A(1-4)	Grace	1256	2hr 50 ~	Pu 242	KB
9/7/17	1708072A(1-5)	Grace	1257	2hr 50 ~	PU	KB
9/7/17	1707091A(7-19)	Weston	1409	2hr 50 ~	UU	KB
9/7/17	1707091A(20)	Weston	1431	2hr 50 ~	UU	KB
9/7/17	1709002A(2-5)	USA	1726	2hr 50 ~	UU	KB
9/7/17	1709001A(1-4)	USA	1727	2hr 50 ~	UU	KB
9/7/17	1708094A(1-4)	MDNR	1727	2hr 50 ~	UU	KB
9/7/17	1708080A(1-5)	MDNR	1729	2hr 50 ~	UU	KB
9/7/17	1708111A(1-7)	MPA	1730	2hr 50 ~	Rad	KB
9/8	Daily Pulse	LAB	0500	~	[illegible]	~
9/8	SECCAC (33-48)	LAB	0518	2hr ~	RA	~
9/8	SECCAC (49-60)	LAB	1030	2hr ~	RA	
9/8	1708109A(1-9)	MPA	0518	2hr ~	Rad	~
9/12	1708123A(1-5)	Zion	~~1017~~ 0955	5hr ~	Am241	~
9/12	1708123A(1-5)	Zion	0955	5hr ~	Am243	~
9/12	1708072A(1-4)	Grace	0955	2hr ~	Am241	~
9/8/17	System Blkgd	Lab	1534	16.40 hrs	~	KB
9/11	Daily Pulse	LAB	0515	~	[illegible]	~
9/11	1707092A(2-20)	Weston	0835	2hr ~	Th230	~
9/11	1708080A(1-5)	MDSS. Dept	0832	2hr ~	Th230	~
9/11/17	1708130A(2-5)	Advanced Tech	1133	2hr 50 ~	UU	KB
9/11/17	1708130A(4,5)	Advanced Tech	1134	2hr 50 ~	UUNT	KB
9/11/17	1707092A(1-17)	Weston	1136	2hr 50 ~	UU	KB
9/11/17	1707092A(19-20)	Weston	1437	2hr 50 ~	UU	KB
9/11/17	1708109A(1-4)	UUOR	1438	2hr 50 ~	Rad	KB
9/11/17	1708089A(1-4)	Accutest	1439	2hr 50 ~	Rad	KB

ISO-TH NOTES

EBERLINE SERVICES Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	17-07092
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	08/16/17 05:26	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS

JHarvey
8/16/17

EBERLINE SERVICES

Work Order Analysis Notes

Oak Ridge Laboratory
601 Scarboro Rd.
Oak Ridge, TN 37830
Voice: 865.481.0683
www.eberlineservices.com

Internal Work Order	17-07092
Analysis Code	ThISO
Run Number	1

#	Date	Dept	User	Notes
1	08/16/17 05:26	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS
2	09/08/17 10:22	CHEM	TSMITH	Followed steps 12.2.1 to 12.2.5 in AP-005 . (Column separation for Thorium by Eichrom Anion resin)
3	09/11/17 05:16	CHEM	TSMITH	Followed steps 12.2.5 to 12.4.5 in AP-005 . (Precipitated and filtered samples for Thorium)

9-11-17
JR

EBERLINE SERVICES

Reagents Used in an Analysis

Internal Work Order	
17-07092	
Analysis Code	Run
ThISO	1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
019093P	Hydrofluoric Acid	Reagent Grade	JHARVEY	8/16/2017
018971P	Nitric Acid	Reagent Grade	JHARVEY	8/16/2017
019133P	Perchloric Acid	Reagent Grade	JHARVEY	8/16/2017
018550P	Sulfuric Acid	Reagent Grade	JHARVEY	8/16/2017
018798P	Anion Exchange Resin	Reagent Grade	TSMITH	9/8/2017
019134P	Hydrochloric Acid	Reagent Grade	TSMITH	9/8/2017
019253S	Nitric Acid	8N	TSMITH	9/8/2017
019247S	Hydrochloric Acid	8N	TSMITH	9/8/2017
019106S	Cerrium Carrier	0.1mg/ml	TSMITH	9/11/2017
019063P	Ethyl Alcohol	1	TSMITH	9/11/2017
019227P	Hydrofluoric Acid	Reagent Grade	TSMITH	9/11/2017
019240S	Carbon substrate	Solution	TSMITH	9/11/2017

Alpha #3

Date	Sample #	Client	Location	Time	Analyst	Initials
9/7/17	1708072A(1-4)	Grace	1256	2hr 50 –	Pu 2hr	KB
9/7/17	1708072A(1-5)	Grace	1257	2hr 50 –	PU	KB
9/7/17	1707091A(7-19)	Weston	1409	2hr 50 –	UU	KB
9/7/17	1707091A(20)	Weston	1431	2hr 50 –	UU	KB
9/7/17	1709002A(1-5)	USA	1726	2hr 50 –	UU	KB
9/7/17	1709001A(1-4)	USA	1727	2hr 50 –	UU	KB
9/7/17	1708094A(1-4)	MDNR	1727	2hr 50 –	UU	KB
9/7/17	1708080A(1-5)	MDNR	1729	2hr 50 –	UU	KB
9/7/17	1708111A(1-7)	MPA	1730	2hr 50 –	Rob	KB
9/8	Daily Pulse	LAB	0500	/	[illegible]	[illegible]
9/8	SECCAC (33-48)	LAB	0518	2hr	NA	[illegible]
9/8	SECCAC (49-60)	LAB	1030	2hr	NA	
9/8	1708103A(1-9)	MPA	0518	2hr	Rob	
9/12	1708123A(1-5)	Zion	~~1017~~ 0955	5hr	Ann 41	–
9/12	1708123A(1-5)	Zion	0955	5hr	Ann 41	–
9/12	1708072A(1-4)	Grace	0955	2hr	Ann 41	–
9/8/17	System Bkgd	Lab	1534	1hr 40 has	–	KB
9/11	Daily Pulse	LAB	0515	/	NA	–
9/11	1707082A(2-20)	Weston	0835	2hr	Thyso	–
9/11	1708080A(1-5)	MDS. Dept	0837	2hr	Thyso	–

Alpha #1

Date	Sample #	Client	Location	Time	Analyst	Test
9/11	170500ZAC(1-5)	UA	0834	2hr	Th250	C
9/11	170705ZA(1)	Weston	0835	2hr	Th250	C

GAMMA NOTES

GE 3

DATE	SAmple #	Client	LoadTime	CTTime	Analysis	Tech
8/23/17	1707088-12	Weston	1727	1hr	✓	KB
8/22/17	1708095-05	Eden Foods	1828	2hr	✓	KB
8/23	~~CAS~~ 1602	LAB	0517	15	✓	[illegible]
8/23	[illegible]	LAB	0541	15	✓	[illegible]
8/23	1707088-13	Weston	0601	2hr	✓	—
8/23	1707089-05	Weston	0705	2hr	✓	—
8/23	1707085-08	Weston	0804	2hr	✓	—
8/23	1707089-12	Weston	0917	2hr	✓	—
8/23	1707089-16	Weston	1017	2hr	✓	—
8/23	1707085.01	Weston	1119	3hr	✓	—
8/23	1707090-01	Weston	1152	3hr	✓	—
8/23/17	1708086-04	Industr. Env.	1223	15min	Bu	KB
8/23/17	1707090-02	Weston	1232	1hr	✓	KB
8/23/17	1707090-10	Weston	1339	1hr	✓	KB
8/23/17	1707090-13	Weston	1440	1hr	✓	KB
8/23/17	1708095-07	Eden Foods	1542	2hr	✓	KB
8/23/17	1708095-09	Eden Foods	1751	2hr	✓	KB
8/24	~~CAS~~ 1602	LAB	0517	15	✓	[illegible]
8/24	[illegible]	LAB	0538	15	✓	[illegible]
8/24	1708003-03	Weston	0552	2hr	✓	[illegible]
8/24	1708002-04	Weston	0702	2hr	✓	[illegible]
8/24	1708002-01	Weston	0806	3hr	✓	—
8/24	1707091-07	Weston	0838	2hr	✓	—
8/24	1707091-08	Weston	0935	2hr	✓	—
8/24	1708107-01	LGA	1039	15	Bu	[illegible]
8/24	1708107-03	LGA	1055	15	Bu	[illegible]
8/24	1707091-14	Weston	1111	2hr	✓	—
8/24/17	1707091-15	Weston	1212	1hr	✓	KB
8/24/17	1707091-18	Weston	1313	1hr	✓	KB
8/24	1707092-06	Weston	1446	2hr	✓	[illegible]
8/24/17	1707092-09	Weston	1517	1hr	✓	KB
8/24/17	1707092-15	Weston	1619	1hr	✓	KB
8/24/17	1707092-19	Weston	1720	1hr	✓	KB

GE 2

DATE	Sample #	Client	Lab Time	CT. Time	Analysis	Tech
8/22/17	1708095-03	Eden Foods	1608	2hr	✓	KB
8/22/17	1708095-04	Eden Foods	1810	2hr	✓	KB
8/23	~~CA~~ 8/1601	KB	0517	15	✓	—
8/23	[illegible]	KB	0514	15	✓	—
8/23	1707088-17	Weston	[illegible]	[illegible]	✓	—
8/23	1707089-03	Weston	0705	[illegible]	✓	—
8/23	1707088-04	Weston	0811	[illegible]	✓	—
8/23	1707089-11	Weston	0917	[illegible]	✓	—
8/23	1707089-15	Weston	1017	[illegible]	✓	—
8/23	1707088-02	Weston	1115	[illegible]	✓	—
8/23/17	1708086-02	Industrial Env.	1220	15 min	Ba	KB
8/23/17	1707090-06	Weston	1237	1hr	✓	KB
8/23/17	1707090-08	Weston	1339	1hr	✓	KB
8/23/17	1707090-12	Weston	1440	1hr	✓	KB
8/23/17	1708095-04	Eden Foods	1542	2hr	✓	KB
8/23/17	1708095-01	Eden Foods	1744	30 min	✓	KB
8/23/17	1708095-08	Eden Foods	1815	2hr	✓	KB
8/24	~~CA~~ 8/1601	KB	0512	15	✓	—
8/24	[illegible]	KB	0528	15	✓	—
8/24	1707092-20	Weston	0555	[illegible]	✓	—
8/24	1708003-04	Weston	0702	[illegible]	✓	—
8/24	1708003-02	Weston	0806	[illegible]	✓	—
8/24	1708086-02	Industrial Env.	0807	15	Ba	[illegible]
8/24	1708086-04	Industrial Env.	0924	15	Ba	[illegible]
8/24	1707091-09	Weston	0940	[illegible]	✓	—
8/24	1707091-12	Weston	1041	[illegible]	✓	—
8/24	1708010-02	Access	1143	15	Ba	[illegible]
8/24	1708010-04	Access	1158	15	Ba	
8/24/17	1707091-17	Weston	1214	1hr	✓	KB
8/24/17	1707091-20	Weston	1315	1hr	✓	KB
8/24	1707092-05	Weston	1414	[illegible]	✓	—
8/24/17	1707092-08	Weston	1517	1hr	✓	KB
8/24/17	1707092-12	Weston	1619	1hr	✓	KB
8/24/17	1707092-18	Weston	1719	1hr	✓	KB

GE 1

DATE	Sample #	Client	Load Time	CT Time	Analysis	Tech
8/23/17	1707090-15	Weston	1541	1hr	Y	KB
8/23/17	1707090-17	Weston	1642	1hr	Y	KB
8/23/17	1707135-08	ERA	1745	8hr	Y	KB
8/24	GAF16	LAB	0516	15	Y	C
8/24	DailyR	LAB	0538	15	Y	
8/24	1707050-18	Weston	0555	1hr	Y	—
8/24	1708003-06	Weston	0602	1hr	Y	—
8/24	1708003-09	Weston	0605	1hr	Y	—
8/24	1708086-01	Inter-Mountain	0607	15	Ben	C
8/24	1708086-03	Inter-Mountain	0624	15	Ben	
8/24	1707091-~~08~~ 10	Weston	0940	1hr	Y	—
8/24	1707091-11	Weston	1041	1hr	Y	—
8/24	1708010-01	Acden	1142	15	Ben	C
8/24	1708010-03	Acden	1158	15	Ben	C
8/24/17	1707091-16	Weston	1214	1hr	Y	KB
8/24/17	1707091-19	Weston	1315	1hr	Y	KB
8/24	1707092-03	Weston	1414	1hr	Y	C
8/24/17	1707092-04	Weston	1517	1hr	Y	KB
8/24/17	1707092-11	Weston	1619	1hr	Y	KB
8/24/17	1707092-17	Weston	1719	1hr	Y	KB

GE 4

DATE	Sample #	Client	Load Time	CT Time	Analysis	Tech
8/24/17	1707091-01	Weston	1259	30mins	✓	KB
8/24/17	1707091-02	Weston	1229	1hr	✓	KB
8/24/17	1707092-02	Weston	1330	1hr	✓	KB
8/24/17	1707092-01	Weston	1431	30mins	✓	KB
8/24/17	1707092-07	Weston	1504	1hr	✓	KB
8/24/17	1707092-10	Weston	1607	1hr	✓	KB
8/24/17	1707092-16	Weston	1707	1hr	✓	KB
8/24/17	1707092-20	Weston	1808	1hr	✓	KB

SECTION VIII

ANALYTICAL DATA (ISOTOPIC URANIUM)

Eberline Analytical
Oak Ridge Laboratory
Analysis Sheet

17-07092
UUISO
Run 1

Work Order	17-07092
Analysis Code	UUISO
Run	1
Date Received	7/18/2017
Lab Deadline	8/10/2017
Client	Weston Solutions, Inc.
Project	94759
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	EPA 908.0 Modified
Instrument Type	Alpha Spectroscopy
Radiometric Tracer	U-232
Radiometric Sol#	U-10a
Tracer Act (dpm/g)	18.32
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		07/19/17 00:00	1.0000E+00
02	MBL	BLANK		07/19/17 00:00	1.0000E+00
03	DUP	HTC-A08-S001-0006-01	34	05/16/17 15:01	1.0150E+00
04	DO	HTC-A08-S001-0006-01	34	05/16/17 15:01	1.0148E+00
05	TRG	HTC-A08-S001-0612-02	39	05/16/17 14:58	1.0900E+00
06	TRG	HTC-A08-S001-1218-01	30	05/15/17 14:55	1.2000E+00
07	TRG	HTC-A08-S001-1824-01	44	05/15/17 14:52	1.3800E+00
08	TRG	HTC-A08-S001-2430-01	28	05/15/17 14:49	1.0100E+00
09	TRG	HTC-A08-S001-3036-01	34	05/15/17 14:46	1.1500E+00
10	TRG	HTC-A08-S001-3642-01	45	05/15/17 14:43	1.0500E+00
11	TRG	HTC-A08-S001-4248-01	33	05/15/17 14:40	1.0700E+00
12	TRG	HTC-A09-S001-0006-01	90	05/16/17 12:50	1.0600E+00
13	TRG	HTC-A09-S001-0006-01 MS	87	05/16/17 12:50	1.0570E+00
14	TRG	HTC-A09-S001-0006-01 MSD	87	05/16/17 12:50	1.0580E+00
15	TRG	HTC-A09-S001-0006-02	122	05/16/17 12:50	1.0000E+00
16	TRG	HTC-A09-S001-0612-01	44	05/16/17 12:48	1.2000E+00
17	TRG	HTC-A09-S001-1218-01	41	05/16/17 12:46	1.1200E+00
18	TRG	HTC-A09-S001-1824-01	47	05/16/17 12:44	1.2700E+00
19	TRG	HTC-A09-S001-2430-01	36	05/16/17 12:42	1.2100E+00
20	TRG	HTC-A09-S001-3036-01	60	05/16/17 12:39	1.1400E+00

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

17-07092
UUISO
Run 1

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.6717	12.3		0.00								
02	MBL	0.6832	12.5		0.00								
03	DUP	0.6720	12.3		0.00								
04	DO	0.6714	12.3		0.00								
05	TRG	0.6716	12.3		0.00								
06	TRG	0.6697	12.3		0.00								
07	TRG	0.6717	12.3		0.00								
08	TRG	0.6702	12.3		0.00								
09	TRG	0.6684	12.2		0.00								
10	TRG	0.6690	12.3		0.00								
11	TRG	0.6676	12.2		0.00								
12	TRG	0.6686	12.2		0.00								
13	TRG	0.6704	12.3		0.00								
14	TRG	0.6689	12.3		0.00								
15	TRG	0.6692	12.3		0.00								
16	TRG	0.6702	12.3		0.00								
17	TRG	0.6681	12.2		0.00								
18	TRG	0.6695	12.3		0.00								
19	TRG	0.6698	12.3		0.00								
20	TRG	0.6776	12.4		0.00								

0080

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** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

17-07092
UUISO
Run 1

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			08/15/17 08:01	JPACHELLA				
02	MBL			08/15/17 08:01	JPACHELLA				
03	DUP			08/15/17 08:01	JPACHELLA				
04	DO	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				
05	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				
06	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				
07	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				
08	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				
09	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				
10	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				
11	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				
12	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				
13	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				
14	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				
15	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				
16	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				
17	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				
18	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				
19	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				
20	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:01	JPACHELLA				

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Preliminary Data Report & Analytical Calculations
Work Order: 17-07092-UUISO-1

Run: 1
Analysis Code: UUISO
Eberline Analytical Work Order: 17-07092
Client: Weston Solutions, Inc.
0082

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-234	LCS	LCS	pCi/g	6.61E+00	8.93E-01	7.13E-02	8.14E+00	81.24	OK		OK	
02	U-234	MBL	BLANK	pCi/g	1.38E-01	8.40E-02	5.31E-02					OK	OK
03	U-234	DUP	HTC-A08-S001-0006-01	pCi/g	6.51E-01	1.94E-01	8.44E-02				INV	OK	
04	U-234	DO	HTC-A08-S001-0006-01	pCi/g	5.01E-01	1.60E-01	6.99E-02					OK	
05	U-234	TRG	HTC-A08-S001-0612-02	pCi/g	9.47E-01	2.28E-01	7.19E-02					OK	
06	U-234	TRG	HTC-A08-S001-1218-01	pCi/g	7.23E-01	1.91E-01	6.54E-02					OK	
07	U-234	TRG	HTC-A08-S001-1824-01	pCi/g	7.87E-01	1.85E-01	4.77E-02					OK	
08	U-234	TRG	HTC-A08-S001-2430-01	pCi/g	7.69E-01	2.08E-01	6.96E-02					OK	
09	U-234	TRG	HTC-A08-S001-3036-01	pCi/g	8.60E-01	2.28E-01	8.35E-02					OK	
10	U-234	TRG	HTC-A08-S001-3642-01	pCi/g	7.26E-01	2.27E-01	1.09E-01					OK	
11	U-234	TRG	HTC-A08-S001-4248-01	pCi/g	6.35E-01	1.83E-01	7.97E-02					OK	
12	U-234	MSO	HTC-A09-S001-0006-01	pCi/g	3.26E+01	3.61E+00	5.68E-02					OK	
13	U-234	MS	HTC-A09-S001-0006-01 MS	pCi/g	3.62E+01	4.05E+00	7.80E-02					OK	
14	U-234	MSD	HTC-A09-S001-0006-01 MSD	pCi/g	3.66E+01	4.07E+00	1.02E-01					OK	
15	U-234	TRG	HTC-A09-S001-0006-02	pCi/g	3.99E+01	4.92E+00	6.90E-02					OK	
16	U-234	TRG	HTC-A09-S001-0612-01	pCi/g	3.67E+00	5.35E-01	4.25E-02					OK	
17	U-234	TRG	HTC-A09-S001-1218-01	pCi/g	2.32E+00	3.87E-01	4.39E-02					OK	
18	U-234	TRG	HTC-A09-S001-1824-01	pCi/g	1.68E+00	3.21E-01	8.38E-02					OK	
19	U-234	TRG	HTC-A09-S001-2430-01	pCi/g	1.78E+00	3.18E-01	4.74E-02					OK	
20	U-234	TRG	HTC-A09-S001-3036-01	pCi/g	1.58E+00	3.30E-01	6.75E-02					OK	

Run: 1
Analysis Code: UUISO
Eberline Analytical Work Order: 17-07092
Client: Weston Solutions, Inc.
0083

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	U-234	LCS	07/19/17 00:00	1.00E+00	113.48	0.00	0.00			
02	U-234	MBL	07/19/17 00:00	1.00E+00	115.08	0.00	0.00			
03	U-234	DUP	05/16/17 15:01	1.02E+00	108.98	0.00	0.00			
04	U-234	DO	05/16/17 15:01	1.01E+00	125.18	0.00	0.00			
05	U-234	TRG	05/16/17 14:58	1.09E+00	126.42	0.00	0.00			
06	U-234	TRG	05/15/17 14:55	1.20E+00	118.22	0.00	0.00			
07	U-234	TRG	05/15/17 14:52	1.38E+00	130.29	0.00	0.00			
08	U-234	TRG	05/15/17 14:49	1.01E+00	130.38	0.00	0.00			
09	U-234	TRG	05/15/17 14:46	1.15E+00	122.31	0.00	0.00			
10	U-234	TRG	05/15/17 14:43	1.05E+00	115.37	0.00	0.00			
11	U-234	TRG	05/15/17 14:40	1.07E+00	122.91	0.00	0.00			
12	U-234	MSO	05/16/17 12:50	1.06E+00	139.25	0.00	0.00			
13	U-234	MS	05/16/17 15:01	1.06E+00	148.91	0.00	0.00			
14	U-234	MSD	05/16/17 12:50	1.06E+00	129.30	0.00	0.00			
15	U-234	TRG	05/16/17 12:50	1.00E+00	97.53	0.00	0.00			
16	U-234	TRG	05/16/17 12:48	1.20E+00	130.44	0.00	0.00			
17	U-234	TRG	05/16/17 12:46	1.12E+00	126.78	0.00	0.00			
18	U-234	TRG	05/16/17 12:44	1.27E+00	131.64	0.00	0.00			
19	U-234	TRG	05/16/17 12:42	1.21E+00	131.63	0.00	0.00			
20	U-234	TRG	05/16/17 12:39	1.14E+00	104.68	0.00	0.00			

Preliminary Data Report & Analytical Calculations
Work Order: 17-07092-UUISO-1

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07092
Analysis Code: UUISO
Run: 1
0084

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-234	LCS	09/11/17 11:34		A_Spec	Alpha_039	170	5.23 E+02	4.00 E-03	18.5
02	U-234	MBL	09/11/17 11:34		A_Spec	Alpha_040	170	1.08 E+01	1.00 E-03	18.1
03	U-234	DUP	09/11/17 11:34		A_Spec	Alpha_043	170	5.08 E+01	7.00 E-03	18.7
04	U-234	DO	09/11/17 11:34		A_Spec	Alpha_044	170	4.30 E+01	0.00 E+00	17.9
05	U-234	TRG	09/11/17 11:34		A_Spec	Alpha_045	170	8.30 E+01	6.00 E-03	16.9
06	U-234	TRG	09/11/17 11:34		A_Spec	Alpha_046	170	6.62 E+01	5.00 E-03	17.1
07	U-234	TRG	09/11/17 11:34		A_Spec	Alpha_047	170	8.65 E+01	3.00 E-03	16.2
08	U-234	TRG	09/11/17 11:34		A_Spec	Alpha_048	170	6.23 E+01	4.00 E-03	16.3
09	U-234	TRG	09/11/17 11:35		A_Spec	Alpha_049	170	6.78 E+01	7.00 E-03	14.9
10	U-234	TRG	09/11/17 11:35		A_Spec	Alpha_050	170	4.75 E+01	9.00 E-03	14.3
11	U-234	TRG	09/11/17 11:35		A_Spec	Alpha_052	170	5.46 E+01	8.00 E-03	17.4
12	U-234	MSO	09/11/17 11:35		A_Spec	Alpha_053	170	2.74 E+03	2.00 E-03	15.1
13	U-234	MS	09/11/17 11:35		A_Spec	Alpha_054	170	2.92 E+03	6.00 E-03	13.6
14	U-234	MSD	09/11/17 11:35		A_Spec	Alpha_056	170	3.01 E+03	1.50 E-02	15.9
15	U-234	TRG	09/11/17 11:35		A_Spec	Alpha_057	170	2.41 E+03	1.00 E-03	16.5
16	U-234	TRG	09/11/17 11:35		A_Spec	Alpha_058	170	3.60 E+02	1.00 E-03	16.6
17	U-234	TRG	09/11/17 11:35		A_Spec	Alpha_059	170	2.21 E+02	1.00 E-03	17.8
18	U-234	TRG	09/11/17 11:35		A_Spec	Alpha_060	170	1.56 E+02	1.20 E-02	14.8
19	U-234	TRG	09/11/17 14:37		A_Spec	Alpha_033	170	1.80 E+02	2.00 E-03	16.8
20	U-234	TRG	09/11/17 14:37		A_Spec	Alpha_034	170	1.22 E+02	3.00 E-03	17.3

Preliminary Data Report & Analytical Calculations
Work Order: 17-07092-UUISO-1

Run: 1
Analysis Code: UUISO
Eberline Analytical Work Order: 17-07092
Client: Weston Solutions, Inc.
0085

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-238	LCS	LCS	pCi/g	6.79E+00	9.11E-01	6.01E-02	7.88E+00	86.11	OK		OK	
02	U-238	MBL	BLANK	pCi/g	5.47E-02	5.64E-02	7.15E-02					OK	OK
03	U-238	DUP	HTC-A08-S001-0006-01	pCi/g	6.65E-01	1.95E-01	7.63E-02				OK	OK	
04	U-238	DO	HTC-A08-S001-0006-01	pCi/g	7.53E-01	1.99E-01	4.84E-02					OK	
05	U-238	TRG	HTC-A08-S001-0612-02	pCi/g	7.71E-01	2.00E-01	4.74E-02					OK	
06	U-238	TRG	HTC-A08-S001-1218-01	pCi/g	1.03E+00	2.36E-01	6.51E-02					OK	
07	U-238	TRG	HTC-A08-S001-1824-01	pCi/g	6.96E-01	1.72E-01	3.78E-02					OK	
08	U-238	TRG	HTC-A08-S001-2430-01	pCi/g	9.81E-01	2.38E-01	5.13E-02					OK	
09	U-238	TRG	HTC-A08-S001-3036-01	pCi/g	9.36E-01	2.38E-01	7.56E-02					OK	
10	U-238	TRG	HTC-A08-S001-3642-01	pCi/g	6.52E-01	2.12E-01	1.00E-01					OK	
11	U-238	TRG	HTC-A08-S001-4248-01	pCi/g	7.50E-01	1.99E-01	4.83E-02					OK	
12	U-238	MSO	HTC-A09-S001-0006-01	pCi/g	3.27E+01	3.62E+00	6.67E-02					OK	
13	U-238	MS	HTC-A09-S001-0006-01 MS	pCi/g	3.83E+01	4.27E+00	6.47E-02					OK	
14	U-238	MSD	HTC-A09-S001-0006-01 MSD	pCi/g	3.63E+01	4.04E+00	7.98E-02					OK	
15	U-238	TRG	HTC-A09-S001-0006-02	pCi/g	4.14E+01	5.09E+00	7.87E-02					OK	
16	U-238	TRG	HTC-A09-S001-0612-01	pCi/g	3.77E+00	5.45E-01	6.07E-02					OK	
17	U-238	TRG	HTC-A09-S001-1218-01	pCi/g	2.18E+00	3.70E-01	5.01E-02					OK	
18	U-238	TRG	HTC-A09-S001-1824-01	pCi/g	1.61E+00	3.11E-01	6.04E-02					OK	
19	U-238	TRG	HTC-A09-S001-2430-01	pCi/g	1.56E+00	2.92E-01	5.57E-02					OK	
20	U-238	TRG	HTC-A09-S001-3036-01	pCi/g	1.37E+00	3.02E-01	7.68E-02					OK	

Preliminary Data Report & Analytical Calculations
Work Order: 17-07092-UUISO-1

Client: 9800 Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07092
Analysis Code: UUISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	U-238	LCS	07/19/17 00:00	1.00E+00	113.48	0.00	0.00			
02	U-238	MBL	07/19/17 00:00	1.00E+00	115.08	0.00	0.00			
03	U-238	DUP	05/16/17 15:01	1.02E+00	108.98	0.00	0.00			
04	U-238	DO	05/16/17 15:01	1.01E+00	125.18	0.00	0.00			
05	U-238	TRG	05/16/17 14:58	1.09E+00	126.42	0.00	0.00			
06	U-238	TRG	05/15/17 14:55	1.20E+00	118.22	0.00	0.00			
07	U-238	TRG	05/15/17 14:52	1.38E+00	130.29	0.00	0.00			
08	U-238	TRG	05/15/17 14:49	1.01E+00	130.38	0.00	0.00			
09	U-238	TRG	05/15/17 14:46	1.15E+00	122.31	0.00	0.00			
10	U-238	TRG	05/15/17 14:43	1.05E+00	115.37	0.00	0.00			
11	U-238	TRG	05/15/17 14:40	1.07E+00	122.91	0.00	0.00			
12	U-238	MSO	05/16/17 12:50	1.06E+00	139.25	0.00	0.00			
13	U-238	MS	05/16/17 15:01	1.06E+00	148.91	0.00	0.00			
14	U-238	MSD	05/16/17 12:50	1.06E+00	129.30	0.00	0.00			
15	U-238	TRG	05/16/17 12:50	1.00E+00	97.53	0.00	0.00			
16	U-238	TRG	05/16/17 12:48	1.20E+00	130.44	0.00	0.00			
17	U-238	TRG	05/16/17 12:46	1.12E+00	126.78	0.00	0.00			
18	U-238	TRG	05/16/17 12:44	1.27E+00	131.64	0.00	0.00			
19	U-238	TRG	05/16/17 12:42	1.21E+00	131.63	0.00	0.00			
20	U-238	TRG	05/16/17 12:39	1.14E+00	104.68	0.00	0.00			

Preliminary Data Report & Analytical Calculations

Work Order: 17-07092-UUISO-1

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07092
Analysis Code: UUISO
Run: 1
0087

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-238	LCS	09/11/17 11:34		A_Spec	Alpha_039	170	5.40 E+02	2.00 E-03	18.5
02	U-238	MBL	09/11/17 11:34		A_Spec	Alpha_040	170	4.32 E+00	4.00 E-03	18.1
03	U-238	DUP	09/11/17 11:34		A_Spec	Alpha_043	170	5.22 E+01	5.00 E-03	18.7
04	U-238	DO	09/11/17 11:34		A_Spec	Alpha_044	170	6.48 E+01	1.00 E-03	17.9
05	U-238	TRG	09/11/17 11:34		A_Spec	Alpha_045	170	6.78 E+01	1.00 E-03	16.9
06	U-238	TRG	09/11/17 11:34		A_Spec	Alpha_046	170	9.52 E+01	5.00 E-03	17.1
07	U-238	TRG	09/11/17 11:34		A_Spec	Alpha_047	170	7.68 E+01	1.00 E-03	16.2
08	U-238	TRG	09/11/17 11:34		A_Spec	Alpha_048	170	7.98 E+01	1.00 E-03	16.3
09	U-238	TRG	09/11/17 11:35		A_Spec	Alpha_049	170	7.42 E+01	5.00 E-03	14.9
10	U-238	TRG	09/11/17 11:35		A_Spec	Alpha_050	170	4.28 E+01	7.00 E-03	14.3
11	U-238	TRG	09/11/17 11:35		A_Spec	Alpha_052	170	6.48 E+01	1.00 E-03	17.4
12	U-238	MSO	09/11/17 11:35		A_Spec	Alpha_053	170	2.76 E+03	4.00 E-03	15.1
13	U-238	MS	09/11/17 11:35		A_Spec	Alpha_054	170	3.11 E+03	3.00 E-03	13.6
14	U-238	MSD	09/11/17 11:35		A_Spec	Alpha_056	170	3.00 E+03	7.00 E-03	15.9
15	U-238	TRG	09/11/17 11:35		A_Spec	Alpha_057	170	2.51 E+03	2.00 E-03	16.5
16	U-238	TRG	09/11/17 11:35		A_Spec	Alpha_058	170	3.71 E+02	5.00 E-03	16.6
17	U-238	TRG	09/11/17 11:35		A_Spec	Alpha_059	170	2.08 E+02	2.00 E-03	17.8
18	U-238	TRG	09/11/17 11:35		A_Spec	Alpha_060	170	1.50 E+02	4.00 E-03	14.8
19	U-238	TRG	09/11/17 14:37		A_Spec	Alpha_033	170	1.58 E+02	4.00 E-03	16.8
20	U-238	TRG	09/11/17 14:37		A_Spec	Alpha_034	170	1.07 E+02	0.00 E+00	17.3

Eberline Analytical
Oak Ridge Laboratory

Preliminary Data Report & Analytical Calculations

Work Order: 17-07092-UUISO-1

Client: 8800 Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07092
Analysis Code: UUISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-235	LCS	LCS	pCi/g	3.40E-01	1.48E-01	6.50E-02					OK	
02	U-235	MBL	BLANK	pCi/g	1.15E-01	8.84E-02	8.85E-02					OK	OK
03	U-235	DUP	HTC-A08-S001-0006-01	pCi/g	1.84E-01	1.09E-01	7.55E-02				NA	OK	
04	U-235	DO	HTC-A08-S001-0006-01	pCi/g	1.82E-01	1.04E-01	6.88E-02					OK	
05	U-235	TRG	HTC-A08-S001-0612-02	pCi/g	1.67E-01	9.73E-02	5.88E-02					OK	
06	U-235	TRG	HTC-A08-S001-1218-01	pCi/g	9.40E-02	7.62E-02	8.49E-02					OK	
07	U-235	TRG	HTC-A08-S001-1824-01	pCi/g	5.97E-02	5.48E-02	6.33E-02					OK	
08	U-235	TRG	HTC-A08-S001-2430-01	pCi/g	5.06E-02	6.08E-02	8.59E-02					OK	
09	U-235	TRG	HTC-A08-S001-3036-01	pCi/g	4.16E-02	5.38E-02	7.48E-02					OK	
10	U-235	TRG	HTC-A08-S001-3642-01	pCi/g	7.19E-02	8.48E-02	1.24E-01					OK	
11	U-235	TRG	HTC-A08-S001-4248-01	pCi/g	9.55E-02	7.53E-02	6.85E-02					OK	
12	U-235	MSO	HTC-A09-S001-0006-01	pCi/g	2.53E+00	4.61E-01	6.11E-02					OK	
13	U-235	MS	HTC-A09-S001-0006-01 MS	pCi/g	4.62E+00	7.14E-01	8.01E-02					OK	
14	U-235	MSD	HTC-A09-S001-0006-01 MSD	pCi/g	2.69E+00	4.86E-01	7.88E-02					OK	
15	U-235	TRG	HTC-A09-S001-0006-02	pCi/g	3.41E+00	6.53E-01	1.22E-01					OK	
16	U-235	TRG	HTC-A09-S001-0612-01	pCi/g	3.23E-01	1.30E-01	6.01E-02					OK	
17	U-235	TRG	HTC-A09-S001-1218-01	pCi/g	2.08E-01	1.07E-01	7.79E-02					OK	
18	U-235	TRG	HTC-A09-S001-1824-01	pCi/g	1.04E-01	7.45E-02	5.54E-02					OK	
19	U-235	TRG	HTC-A09-S001-2430-01	pCi/g	2.18E-01	1.04E-01	5.10E-02					OK	
20	U-235	TRG	HTC-A09-S001-3036-01	pCi/g	1.22E-01	8.94E-02	7.59E-02					OK	

Preliminary Data Report & Analytical Calculations
Work Order: 17-07092-UUISO-1

Run: 1
Analysis Code: UUISO
Eberline Analytical Work Order: 17-07092
Client: 6800 Weston Solutions, Inc.

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	U-235	LCS	07/19/17 00:00	1.00E+00	113.48	0.00	0.00			
02	U-235	MBL	07/19/17 00:00	1.00E+00	115.08	0.00	0.00			
03	U-235	DUP	05/16/17 15:01	1.02E+00	108.98	0.00	0.00			
04	U-235	DO	05/16/17 15:01	1.01E+00	125.18	0.00	0.00			
05	U-235	TRG	05/16/17 14:58	1.09E+00	126.42	0.00	0.00			
06	U-235	TRG	05/15/17 14:55	1.20E+00	118.22	0.00	0.00			
07	U-235	TRG	05/15/17 14:52	1.38E+00	130.29	0.00	0.00			
08	U-235	TRG	05/15/17 14:49	1.01E+00	130.38	0.00	0.00			
09	U-235	TRG	05/15/17 14:46	1.15E+00	122.31	0.00	0.00			
10	U-235	TRG	05/15/17 14:43	1.05E+00	115.37	0.00	0.00			
11	U-235	TRG	05/15/17 14:40	1.07E+00	122.91	0.00	0.00			
12	U-235	MSO	05/16/17 12:50	1.06E+00	139.25	0.00	0.00			
13	U-235	MS	05/16/17 15:01	1.06E+00	148.91	0.00	0.00			
14	U-235	MSD	05/16/17 12:50	1.06E+00	129.30	0.00	0.00			
15	U-235	TRG	05/16/17 12:50	1.00E+00	97.53	0.00	0.00			
16	U-235	TRG	05/16/17 12:48	1.20E+00	130.44	0.00	0.00			
17	U-235	TRG	05/16/17 12:46	1.12E+00	126.78	0.00	0.00			
18	U-235	TRG	05/16/17 12:44	1.27E+00	131.64	0.00	0.00			
19	U-235	TRG	05/16/17 12:42	1.21E+00	131.63	0.00	0.00			
20	U-235	TRG	05/16/17 12:39	1.14E+00	104.68	0.00	0.00			

Preliminary Data Report & Analytical Calculations
Work Order: 17-07092-UUISO-1

Client	Eberline Analytical Work Order	Analysis Code	Run
0600 Weston Solutions, Inc.	17-07092	UUISO	1

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-235	LCS	09/11/17 11:34		A_Spec	Alpha_039	170	2.18 E+01	1.00 E-03	18.5
02	U-235	MBL	09/11/17 11:34		A_Spec	Alpha_040	170	7.32 E+00	4.00 E-03	18.1
03	U-235	DUP	09/11/17 11:34		A_Spec	Alpha_043	170	1.17 E+01	2.00 E-03	18.7
04	U-235	DO	09/11/17 11:34		A_Spec	Alpha_044	170	1.27 E+01	2.00 E-03	17.9
05	U-235	TRG	09/11/17 11:34		A_Spec	Alpha_045	170	1.18 E+01	1.00 E-03	16.9
06	U-235	TRG	09/11/17 11:34		A_Spec	Alpha_046	170	6.98 E+00	6.00 E-03	17.1
07	U-235	TRG	09/11/17 11:34		A_Spec	Alpha_047	170	5.32 E+00	4.00 E-03	16.2
08	U-235	TRG	09/11/17 11:34		A_Spec	Alpha_048	170	3.32 E+00	4.00 E-03	16.3
09	U-235	TRG	09/11/17 11:35		A_Spec	Alpha_049	170	2.66 E+00	2.00 E-03	14.9
10	U-235	TRG	09/11/17 11:35		A_Spec	Alpha_050	170	3.81 E+00	7.00 E-03	14.3
11	U-235	TRG	09/11/17 11:35		A_Spec	Alpha_052	170	6.66 E+00	2.00 E-03	17.4
12	U-235	MSO	09/11/17 11:35		A_Spec	Alpha_053	170	1.73 E+02	1.00 E-03	15.1
13	U-235	MS	09/11/17 11:35		A_Spec	Alpha_054	170	3.02 E+02	3.00 E-03	13.6
14	U-235	MSD	09/11/17 11:35		A_Spec	Alpha_056	170	1.79 E+02	3.00 E-03	15.9
15	U-235	TRG	09/11/17 11:35		A_Spec	Alpha_057	170	1.67 E+02	0.00 E+00	16.5
16	U-235	TRG	09/11/17 11:35		A_Spec	Alpha_058	170	2.57 E+01	2.00 E-03	16.6
17	U-235	TRG	09/11/17 11:35		A_Spec	Alpha_059	170	1.60 E+01	0.00 E+00	17.8
18	U-235	TRG	09/11/17 11:35		A_Spec	Alpha_060	170	7.83 E+00	1.00 E-03	14.8
19	U-235	TRG	09/11/17 14:37		A_Spec	Alpha_033	170	1.78 E+01	1.00 E-03	16.8
20	U-235	TRG	09/11/17 14:37		A_Spec	Alpha_034	170	7.66 E+00	2.00 E-03	17.3

Count Room Report
Client: Weston Solutions, Inc.

17-07092-UUISO-1 (pCi/g) in SO
Tracer ID: U-10a

#39-60

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	07/19/17 00:00	1.0000	0.6717	12.3055		0.00		
02	MBL	BLANK	07/19/17 00:00	1.0000	0.6832	12.5162		0.00		
03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	1.0150	0.6720	12.3110		0.00		
04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	1.0148	0.6714	12.3000		0.00		
05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	1.0900	0.6716	12.3037		0.00		
06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	1.2000	0.6697	12.2689		0.00		
07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	1.3800	0.6717	12.3055		0.00		
08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	1.0100	0.6702	12.2781		0.00		
09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	1.1500	0.6684	12.2451		0.00		
10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	1.0500	0.6690	12.2561		0.00		
11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	1.0700	0.6676	12.2304		0.00		
12	TRG	HTC-A09-S001-0006-01	05/16/17 12:50	1.0600	0.6686	12.2488		0.00		
13	TRG	HTC-A09-S001-0006-01 MS	05/16/17 12:50	1.0570	0.6704	12.2817		0.00		
14	TRG	HTC-A09-S001-0006-01 MSD	05/16/17 12:50	1.0580	0.6689	12.2542		0.00		
15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	1.0000	0.6692	12.2597		0.00		
16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	1.2000	0.6702	12.2781		0.00		
17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	1.1200	0.6681	12.2396		0.00		
18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	1.2700	0.6695	12.2652		0.00		
19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	1.2100	0.6698	12.2707		0.00		
20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	1.1400	0.6776	12.4136		0.00		

#33-60

Eberline Services
Oak Ridge Laboratory

Spike and Tracer Worksheet

Printed: 8/15/2017 8:01 AM

Internal Work Order	Run	Analysis Code	Date	Technician	Technician Initials	Witness Initials
17-07092	1	UUISO	8/15/2017 7:50	JPACHELLA		

LCS & Matrix Spikes					LCS	MS	LCSD	MSD	LCS		MS		LCSD		MSD	
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	Volume Used (g)	Volume Used (g)	Volume Used (g)	Volume Used (g)	Known pCi	Error Estimate	Added pCi	Error Estimate	Known pCi	Error Estimate	Added pCi	Error Estimate
U-234	U-8a	32.000	8/15/2017	0.550	0.5646	0.5644		0.5644	8.14	0.293	8.14	0.293	0.00	0.000	8.14	0.293
U-238	U-8a	31.000	8/15/2017	0.550	0.5646	0.5644		0.5644	7.88	0.284	7.88	0.284	0.00	0.000	7.88	0.284
Tc-99 MS	Tc-2a	22043.636	7/5/2014	0.1												

Tracers

fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition
01	U-232	U-10a	18.320	8/15/2017	0.6717	0.6600
02	U-232	U-10a	18.320	8/15/2017	0.6832	0.6600
03	U-232	U-10a	18.320	8/15/2017	0.6720	0.6600
04	U-232	U-10a	18.320	8/15/2017	0.6714	0.6600
05	U-232	U-10a	18.320	8/15/2017	0.6716	0.6600
06	U-232	U-10a	18.320	8/15/2017	0.6697	0.6600
07	U-232	U-10a	18.320	8/15/2017	0.6717	0.6600
08	U-232	U-10a	18.320	8/15/2017	0.6702	0.6600
09	U-232	U-10a	18.320	8/15/2017	0.6684	0.6600
10	U-232	U-10a	18.320	8/15/2017	0.6690	0.6600
11	U-232	U-10a	18.320	8/15/2017	0.6676	0.6600
12	U-232	U-10a	18.320	8/15/2017	0.6686	0.6600
13	U-232	U-10a	18.320	8/15/2017	0.6704	0.6600
14	U-232	U-10a	18.320	8/15/2017	0.6689	0.6600
15	U-232	U-10a	18.320	8/15/2017	0.6692	0.6600
16	U-232	U-10a	18.320	8/15/2017	0.6702	0.6600
17	U-232	U-10a	18.320	8/15/2017	0.6681	0.6600
18	U-232	U-10a	18.320	8/15/2017	0.6695	0.6600
19	U-232	U-10a	18.320	8/15/2017	0.6698	0.6600
20	U-232	U-10a	18.320	8/15/2017	0.6776	0.6600

Balance Printer Tapes

Tracer	LCS

Matrix Spike

0092

Eberline Analytical
Oak Ridge Laboratory

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
17-07092	1	UUISO	grams	8/10/2017	JPACHELLA

Lab Fraction	Weston Solutions, Inc. Client ID	Sample Type	Muffle Data Ratio Post/Pre	Dilution Data No of Dils	Dil Factor	Ratio	Aliquot Data Aliquot	Net Equiv	MS Aliquot Data Aliquot	Net Equiv	H-3 Solids Only Water Added (ml)	H3 Dist Aliq
01	LCS	LCS				1.00E+00	1.0000E+00	1.0000E+00				
02	BLANK	MBL				1.00E+00	1.0000E+00	1.0000E+00				
03	HTC-A08-S001-0006-01	DUP				1.00E+00	1.0150E+00	1.0150E+00				
04	HTC-A08-S001-0006-01	DO				1.00E+00	1.0148E+00	1.0148E+00				
05	HTC-A08-S001-0612-02	TRG				1.00E+00	1.0900E+00	1.0900E+00				
06	HTC-A08-S001-1218-01	TRG				1.00E+00	1.2000E+00	1.2000E+00				
07	HTC-A08-S001-1824-01	TRG				1.00E+00	1.3800E+00	1.3800E+00				
08	HTC-A08-S001-2430-01	TRG				1.00E+00	1.0100E+00	1.0100E+00				
09	HTC-A08-S001-3036-01	TRG				1.00E+00	1.1500E+00	1.1500E+00				
10	HTC-A08-S001-3642-01	TRG				1.00E+00	1.0500E+00	1.0500E+00				
11	HTC-A08-S001-4248-01	TRG				1.00E+00	1.0700E+00	1.0700E+00				
12	HTC-A09-S001-0006-01	TRG				1.00E+00	1.0600E+00	1.0600E+00				
13	HTC-A09-S001-0006-01 MS	TRG				1.00E+00	1.0570E+00	1.0570E+00				
14	HTC-A09-S001-0006-01 MSD	TRG				1.00E+00	1.0580E+00	1.0580E+00				
15	HTC-A09-S001-0006-02	TRG				1.00E+00	1.0000E+00	1.0000E+00				
16	HTC-A09-S001-0612-01	TRG				1.00E+00	1.2000E+00	1.2000E+00				
17	HTC-A09-S001-1218-01	TRG				1.00E+00	1.1200E+00	1.1200E+00				
18	HTC-A09-S001-1824-01	TRG				1.00E+00	1.2700E+00	1.2700E+00				
19	HTC-A09-S001-2430-01	TRG				1.00E+00	1.2100E+00	1.2100E+00				
20	HTC-A09-S001-3036-01	TRG				1.00E+00	1.1400E+00	1.1400E+00				

Comments	

0093

Technician: JPachella Date: 8/15/17

Eberline Services - Oak Ridge
Prep Logbook
Version 2.0 8/1999

Rough Sample Preparation Log Book

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
17-07092	8/10/2017	8/2/2017	8/3/2017	8/4/2017	KSALLINGS

Bico Pulverizer: 000302 [✓] Jaw Crusher 68275 [ ]

Eberline Fraction	Weston Solutions, Inc. Client ID	Tare (g) Pan Wt	Gross (g) Wet Wt.	Gross (g) Dry Wt.	Net (g) Wet Wt.	Net (g) Dry Wt.	Percent Liquid	Percent Solid	Gamma Dry Wt.	Gamma LEPS Wt.	Special Info
04	HTC-A08-S001-0006-01	14.6600	962.3400	751.5000	947.6800	736.8400	22.25%	77.75%	0.0000	0.0000	
05	HTC-A08-S001-0612-02	14.7000	887.1800	712.0200	872.4800	697.3200	20.08%	79.92%	0.0000	0.0000	
06	HTC-A08-S001-1218-01	14.7300	863.6400	695.0000	848.9100	680.2700	19.87%	80.13%	0.0000	0.0000	
07	HTC-A08-S001-1824-01	14.7200	875.8600	711.2400	861.1400	696.5200	19.12%	80.88%	0.0000	0.0000	
08	HTC-A08-S001-2430-01	14.6400	908.7600	740.4700	894.1200	725.8300	18.82%	81.18%	0.0000	0.0000	
09	HTC-A08-S001-3036-01	14.6300	891.6600	743.8200	877.0300	729.1900	16.86%	83.14%	0.0000	0.0000	
10	HTC-A08-S001-3642-01	14.6200	934.1200	767.9400	919.5000	753.3200	18.07%	81.93%	0.0000	0.0000	
11	HTC-A08-S001-4248-01	14.6300	848.9600	681.9100	834.3300	667.2800	20.02%	79.98%	0.0000	0.0000	
12	HTC-A09-S001-0006-01	14.6200	852.3600	811.4000	837.7400	796.7800	4.89%	95.11%	0.0000	0.0000	
13	HTC-A09-S001-0006-01 MS	14.6300	893.8600	857.1400	879.2300	842.5100	4.18%	95.82%	0.0000	0.0000	
14	HTC-A09-S001-0006-01 MSD	14.6300	893.8600	857.1400	879.2300	842.5100	4.18%	95.82%	0.0000	0.0000	
15	HTC-A09-S001-0006-02	14.6000	901.2800	889.2200	886.6800	874.6200	1.36%	98.64%	0.0000	0.0000	
16	HTC-A09-S001-0612-01	14.5800	1006.5200	788.4100	991.9400	773.8300	21.99%	78.01%	0.0000	0.0000	
17	HTC-A09-S001-1218-01	14.5400	941.7800	769.3100	927.2400	754.7700	18.60%	81.40%	0.0000	0.0000	
18	HTC-A09-S001-1824-01	14.4900	764.8700	625.0200	750.3800	610.5300	18.64%	81.36%	0.0000	0.0000	
19	HTC-A09-S001-2430-01	14.5500	934.6600	770.1100	920.1100	755.5600	17.88%	82.12%	0.0000	0.0000	
20	HTC-A09-S001-3036-01	14.3400	919.4800	764.9900	905.1400	750.6500	17.07%	82.93%	0.0000	0.0000	

OVENS Fisher Isotemp SN 00579 [✓] VWR SN 000588 [ ]

Comments	
Special Codes	H: Hot, O: Organic Hazard, P: PCB Hazard, R: Rush, T: Other (see comments)

0094

Technician: Kerry Sales

Date: Analysis: Rough Prep Logbook

Analysis: UUISO Page No. 10183

KB
9/11/17

Apex-Alpha™

Sample Description: SPIKE
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 01
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_039
Chamber Serial Number: 06027396A
Detector Serial Number: 83109
Env. Background: System Bkgd 196030
Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
Sample Date/Time: 9/11/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:34:29 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.672 mL
Effective Efficiency: 0.2101 +/- 0.0112
Counting Efficiency: 0.1852 +/- 0.0031 on 11/18/2016 10:08:50 AM
Chem. Recovery Factor: 1.1348 +/- 0.0634

Control Certificate Name: NatU_U-8A
Chem. Recov. of Control: U-238 0.757527 +/- 0.056641
Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.273	435.96	9.41	2.04	0.00E+000	63.2
U-234		4.727	523.32	8.57	0.68	0.00E+000	7.6
U-235		4.386	21.83	42.14	0.17	0.00E+000	3.0
U-238		4.145	539.66	8.44	0.34	0.00E+000	36.0

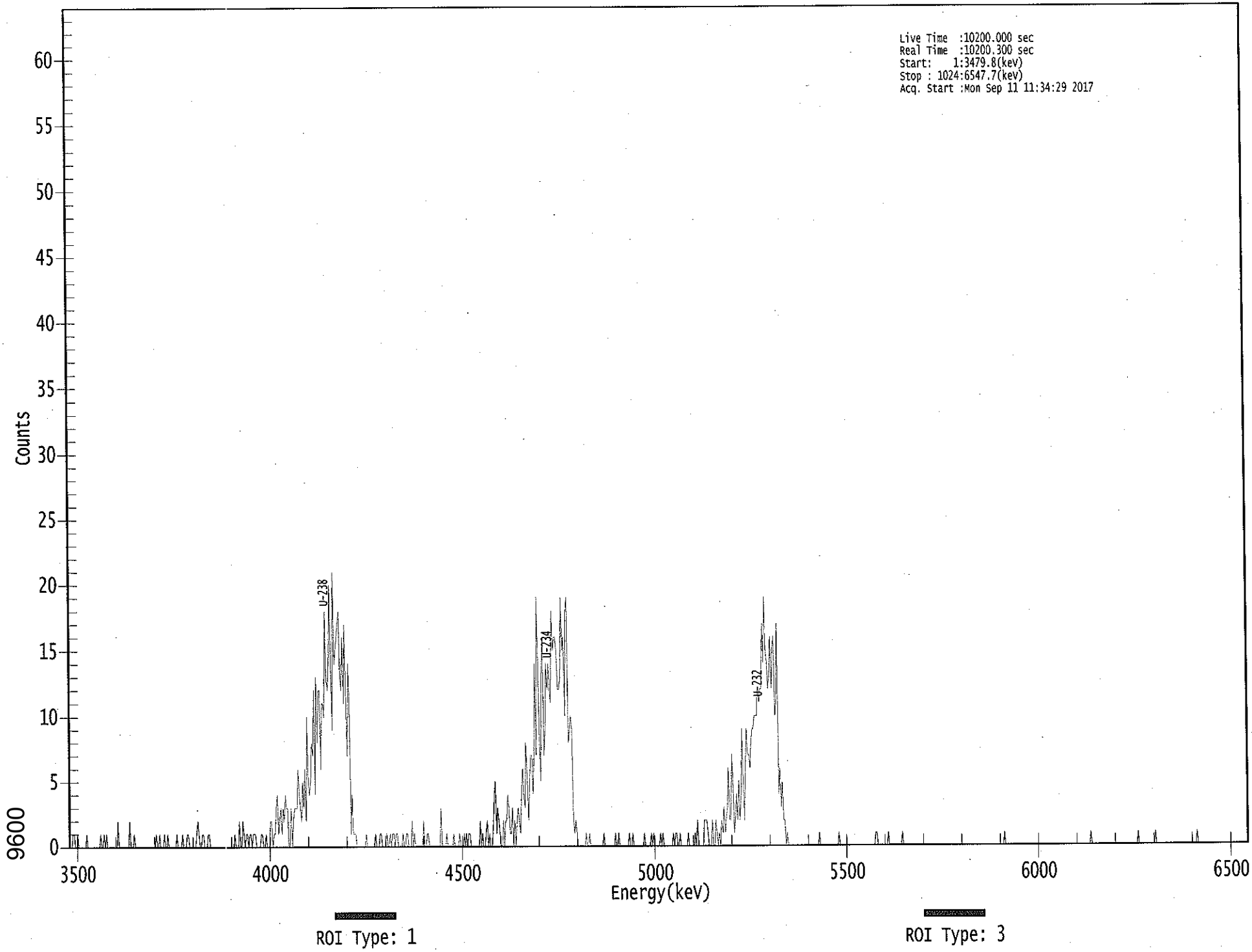
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.994	5302.50*	5.51E+000 +/- 5.75E-001	9.84E-002 +/- 1.03E-002
U-234	0.992	4761.50*	6.61E+000 +/- 8.93E-001	7.13E-002 +/- 7.44E-003
U-235	1.000	4385.50*	3.40E-001 +/- 1.48E-001	6.50E-002 +/- 6.79E-003
U-238	0.989	4184.40*	6.79E+000 +/- 9.11E-001	6.01E-002 +/- 6.28E-003

AG
9/12/17

0000194021.CNF



9600

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 01

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	0	1	1	0	0	1
9:	0	0	0	0	0	0	0	1
17:	0	0	0	0	0	0	0	0
25:	0	0	0	1	0	0	1	0
33:	1	0	0	0	0	0	0	0
41:	0	0	2	0	0	0	0	0
49:	0	0	0	0	2	0	0	0
57:	1	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	1	0	0	1	0
81:	0	0	1	0	0	1	0	0
89:	0	0	0	0	0	1	0	0
97:	0	0	1	0	0	0	1	1
105:	0	0	0	0	0	0	1	2
113:	1	0	0	1	1	0	0	0
121:	1	1	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	1
145:	0	0	0	2	0	0	2	1
153:	0	1	1	0	1	1	0	1
161:	1	1	0	0	0	0	1	1
169:	0	0	1	0	0	0	2	2
177:	0	1	1	3	4	1	2	3
185:	1	3	2	4	3	3	0	0
193:	3	0	2	3	3	3	6	4
201:	3	2	5	3	6	2	10	5
209:	4	5	8	7	12	4	13	8
217:	12	12	6	11	11	10	18	13
225:	12	14	20	14	9	21	14	15
233:	16	17	18	13	12	16	11	17
241:	11	7	14	11	1	4	1	1
249:	1	0	0	0	0	0	0	0
257:	0	1	0	0	0	0	0	0
265:	0	1	0	0	0	1	1	0
273:	0	0	0	1	0	0	1	0
281:	1	1	0	1	1	0	0	0
289:	0	1	0	0	1	1	0	0
297:	0	2	0	1	0	0	0	0
305:	0	0	0	2	0	0	1	1
313:	0	0	0	0	0	0	0	0
321:	0	0	3	0	0	0	0	1
329:	0	0	0	0	0	1	0	0
337:	0	0	1	0	0	0	1	0
345:	1	0	1	1	0	0	0	0
353:	0	0	0	0	2	0	1	0
361:	0	1	2	0	1	0	0	1

369:	4	5	1	3	2	1	0	0

Sample Title: 01

Channel								
377:	2	0	2	2	4	3	1	1
385:	3	0	2	0	2	3	2	1
393:	4	6	4	3	8	5	2	5
401:	7	7	4	7	14	7	19	14
409:	8	5	13	16	7	9	14	12
417:	14	12	11	18	15	16	16	15
425:	12	12	13	19	15	16	10	18
433:	19	8	9	10	9	2	1	2
441:	1	0	0	0	0	0	0	0
449:	1	0	0	1	0	0	0	0
457:	0	0	0	0	0	0	0	1
465:	0	0	0	0	0	0	0	0
473:	0	1	0	0	1	0	0	0
481:	0	0	0	0	0	1	0	0
489:	1	0	0	0	0	0	0	0
497:	0	0	1	0	0	0	0	0
505:	1	0	1	0	0	0	0	0
513:	1	0	1	0	0	0	0	0
521:	0	0	0	1	0	1	1	0
529:	0	1	0	0	0	0	0	0
537:	1	0	0	0	0	0	1	0
545:	2	0	0	0	0	0	2	2
553:	2	1	0	0	0	2	0	0
561:	2	1	0	1	0	2	1	3
569:	1	2	3	6	2	2	7	5
577:	1	2	4	2	5	2	4	9
585:	5	2	6	9	7	7	6	8
593:	9	9	10	10	10	12	11	12
601:	12	17	14	19	15	14	12	13
609:	16	12	15	16	10	11	17	4
617:	6	3	5	2	2	0	1	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	1	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	1	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	1	1	0	0	0
705:	0	0	0	0	0	0	1	0
713:	0	0	0	0	0	0	0	0
721:	0	0	1	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 01

Channel								
809:	0	0	0	1	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	1	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	1
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	1	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	1	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB 9/11/17

Sample Description: BLANK
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 02
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_040
Chamber Serial Number: 06027396B
Detector Serial Number: 91135
Env. Background: System Bkgd 196031
Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
Sample Date/Time: 9/11/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:34:31 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.683 mL
Effective Efficiency: 0.2087 +/- 0.0111
Counting Efficiency: 0.1813 +/- 0.0031 on 11/18/2016 10:08:48 AM
Chem. Recovery Factor: 1.1508 +/- 0.0640

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.277	440.32	9.35	0.68	0.00E+000	37.5
U-234		4.744	10.83	60.10	0.17	0.00E+000	3.0
U-235		4.366	7.32	76.28	0.68	0.00E+000	3.0
U-238		4.112	4.32	102.62	0.68	0.00E+000	3.0

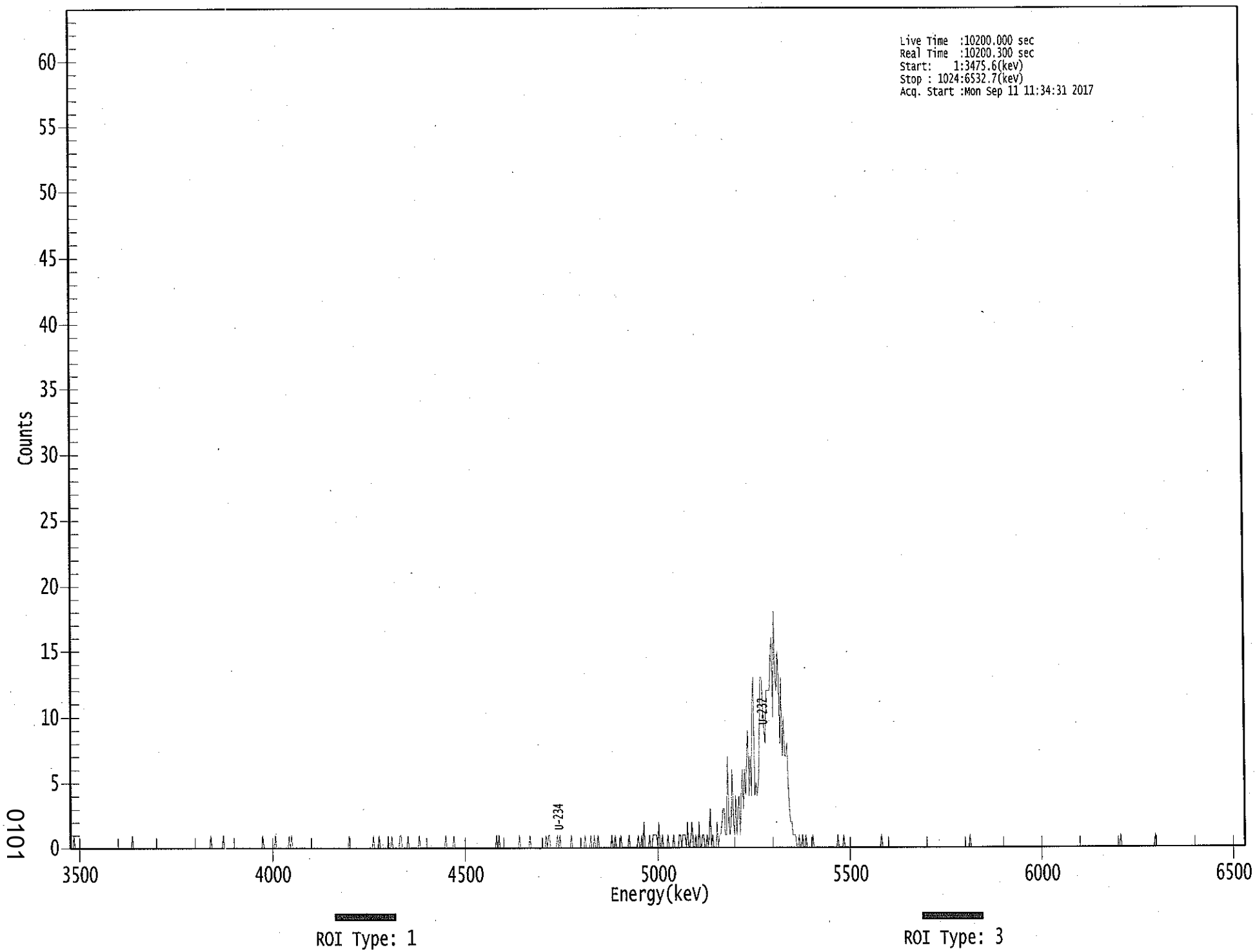
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	5.60E+000 +/- 5.82E-001	7.18E-002 +/- 7.45E-003
U-234	0.998	4761.50*	1.38E-001 +/- 8.40E-002	5.31E-002 +/- 5.51E-003
U-235	0.997	4385.50*	1.15E-001 +/- 8.84E-002	8.85E-002 +/- 9.19E-003
U-238	0.964	4184.40*	5.47E-002 +/- 5.64E-002	7.15E-002 +/- 7.42E-003

AG 9/12/17

0000194022.CNF



0101

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 02

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	0	1	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	1	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	1	0	0	0	0	0
129:	0	0	0	0	0	1	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	1
169:	0	0	0	0	0	0	0	0
177:	0	0	1	0	0	0	0	0
185:	0	0	0	0	0	0	1	0
193:	1	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	1	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	1
265:	0	0	0	0	1	0	0	0
273:	0	0	0	0	1	0	0	1
281:	0	0	0	0	0	0	1	1
289:	0	0	0	0	0	1	0	0
297:	0	0	0	0	0	0	0	1
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	1	0
329:	0	0	0	0	0	1	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

369:	0	0	1	0	1	0	0	0

Sample Title: 02

Channel								
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	1	0
393:	0	0	0	0	0	0	0	1
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	1	0	1
417:	1	0	0	0	0	0	0	1
425:	0	1	0	0	0	0	0	0
433:	0	0	0	1	0	0	0	0
441:	0	0	0	0	0	0	0	1
449:	0	0	0	0	1	0	0	1
457:	0	0	1	0	0	0	0	0
465:	0	0	0	0	0	0	1	0
473:	0	1	0	0	0	0	1	0
481:	0	0	0	0	0	1	0	0
489:	0	0	0	0	0	1	0	0
497:	1	0	2	0	0	0	0	1
505:	0	0	1	1	1	1	0	2
513:	0	0	1	0	0	0	0	1
521:	0	0	0	0	1	0	0	0
529:	0	1	1	0	1	1	1	0
537:	2	0	0	1	2	0	0	1
545:	0	0	2	0	0	1	1	0
553:	0	1	0	1	3	0	1	0
561:	0	0	2	0	1	1	2	3
569:	3	1	1	7	2	1	2	6
577:	2	1	4	1	3	4	1	4
585:	6	3	6	4	7	9	4	7
593:	4	11	13	4	5	4	5	7
601:	13	13	11	9	8	12	12	12
609:	12	15	16	10	18	13	12	15
617:	13	8	13	7	10	7	7	8
625:	5	3	2	2	1	1	1	0
633:	0	1	0	0	1	0	0	1
641:	0	0	0	0	0	1	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	1	0	0	0	0
673:	1	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	1	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	1	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 02

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	1	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	1	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB
9/11/17

Sample Description: HTC-A08-S001-0006-01-DUP
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 03
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_043
Chamber Serial Number: 04026481A
Detector Serial Number: 91088
Env. Background: System Bkgd 196032
Reagent Blank: <not performed>

Sample Size: 1.015E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:34:33 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.672 mL
Effective Efficiency: 0.2043 +/- 0.0110
Counting Efficiency: 0.1874 +/- 0.0032 on 11/18/2016 10:08:43 AM
Chem. Recovery Factor: 1.0898 +/- 0.0615

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.274	423.98	9.53	1.02	0.00E+000	40.8
U-234		4.713	50.81	27.87	1.19	0.00E+000	6.0
U-235		4.373	11.66	58.37	0.34	0.00E+000	3.0
U-238		4.144	52.15	27.40	0.85	0.00E+000	4.5

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.994	5302.50*	5.45E+000 +/- 5.74E-001	8.09E-002 +/- 8.54E-003
U-234	0.983	4761.50*	6.51E-001 +/- 1.94E-001	8.44E-002 +/- 8.90E-003
U-235	0.999	4385.50*	1.84E-001 +/- 1.09E-001	7.55E-002 +/- 7.96E-003
U-238	0.989	4184.40*	6.65E-001 +/- 1.95E-001	7.63E-002 +/- 8.05E-003

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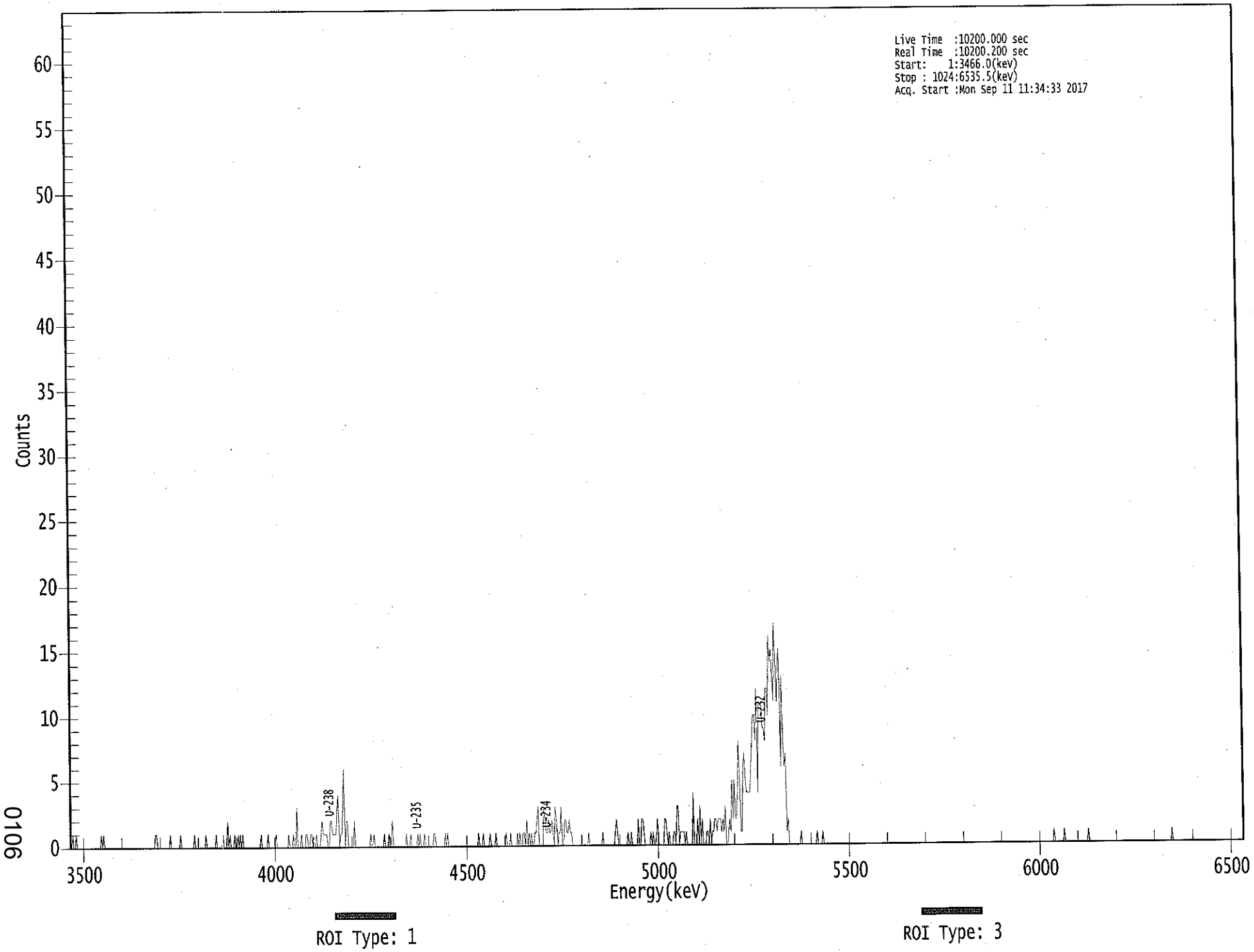


0106

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 03

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	1	0	0	1	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	1	0	1	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	1	1	0	0	0	0
81:	0	0	0	0	0	0	0	1
89:	0	0	0	0	0	0	0	0
97:	1	0	0	0	0	0	0	0
105:	0	0	0	0	1	0	0	0
113:	0	0	0	0	0	0	1	0
121:	0	0	0	0	0	0	0	1
129:	0	0	0	0	0	1	0	0
137:	0	2	0	1	0	0	0	1
145:	0	0	1	0	1	0	1	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	1	0
169:	0	0	0	0	1	0	0	0
177:	0	0	0	1	0	0	0	0
185:	0	0	0	0	0	0	1	0
193:	0	0	1	0	0	3	0	0
201:	0	1	0	0	0	1	1	0
209:	0	1	1	0	0	0	1	0
217:	0	0	1	2	1	1	1	1
225:	0	0	2	2	1	1	1	1
233:	3	4	0	1	1	3	6	0
241:	2	2	0	0	0	0	0	2
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	1	0	0
265:	1	0	0	0	0	0	0	0
273:	0	1	0	0	0	1	0	0
281:	2	0	0	0	0	0	0	0
289:	0	0	0	0	1	0	0	0
297:	1	0	0	0	0	0	1	0
305:	1	0	0	0	1	0	0	0
313:	0	0	0	0	1	1	0	0
321:	0	0	0	0	0	0	1	0
329:	1	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	1	0	0	0	1
361:	0	0	0	0	0	1	0	0

369:	0	0	1	0	0	0	0	0

Sample Title: 03

Channel								
377:	0	0	0	1	0	0	0	1
385:	0	0	0	0	0	1	0	1
393:	0	0	1	1	0	2	0	1
401:	0	1	0	0	1	1	2	3
409:	0	0	0	0	3	2	1	1
417:	2	1	1	2	1	0	3	2
425:	0	1	1	3	0	0	2	2
433:	1	1	2	1	1	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	1	0	0	0	0
457:	0	0	0	0	0	0	0	1
465:	0	0	0	0	0	0	0	0
473:	0	0	1	2	1	0	0	0
481:	0	0	0	0	0	1	0	0
489:	1	0	0	0	0	0	2	0
497:	0	2	2	1	0	0	0	0
505:	0	1	0	1	0	0	1	2
513:	0	0	0	0	0	2	2	1
521:	0	1	0	0	0	1	1	0
529:	3	3	0	1	1	1	1	0
537:	1	0	0	0	0	0	4	0
545:	0	0	2	0	3	0	2	0
553:	0	0	1	1	0	2	0	1
561:	1	2	2	1	2	2	2	1
569:	2	1	3	0	0	1	2	1
577:	5	2	5	2	2	4	8	5
585:	1	1	6	7	5	4	4	4
593:	4	6	8	10	10	8	12	4
601:	11	11	11	9	9	8	12	12
609:	10	16	14	15	13	11	17	14
617:	11	14	15	6	13	8	6	7
625:	1	2	0	0	0	0	0	0
633:	0	0	0	0	1	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	1	0	0	0	0	1
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 03

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	1	0	0	0	0	0	0
865:	0	0	1	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	1
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	1	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KR 9/11/17

Apex-Alpha™

Sample Description: HTC-A08-S001-0006-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 04
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_044
Chamber Serial Number: 04026481B
Detector Serial Number: 84168
Env. Background: System Bkgd 196033
Reagent Blank: <not performed>

Sample Size: 1.015E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:34:35 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.671 mL
Effective Efficiency: 0.2244 +/- 0.0116
Counting Efficiency: 0.1793 +/- 0.0030 on 11/18/2016 10:08:42 AM
Chem. Recovery Factor: 1.2518 +/- 0.0682

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.267	465.32	9.09	0.68	0.00E+000	39.6
U-234		4.725	43.00	30.24	0.00	0.00E+000	4.0
U-235		4.410	12.66	55.94	0.34	0.00E+000	3.0
U-238		4.140	64.83	24.38	0.17	0.00E+000	4.7

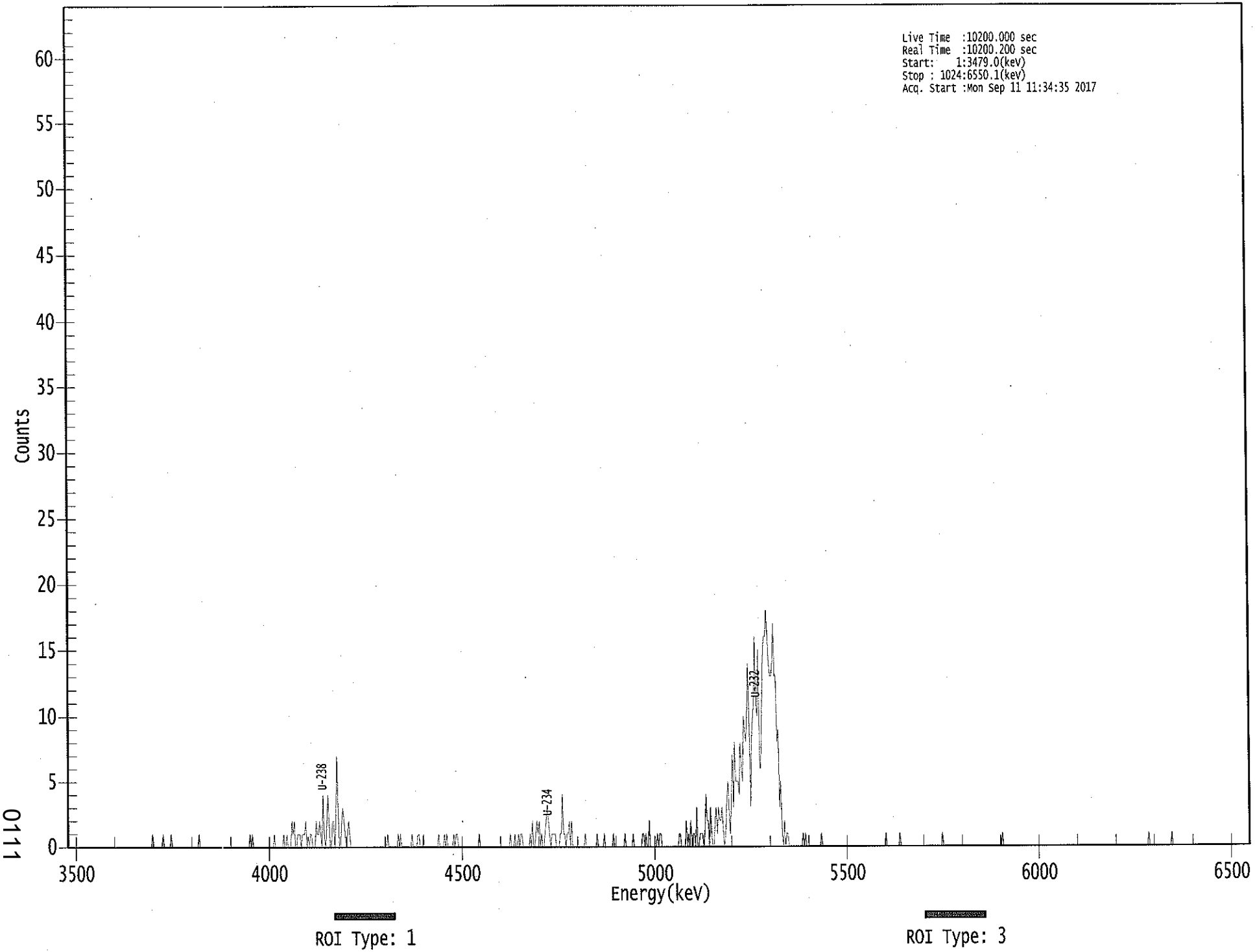
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.991	5302.50*	5.44E+000 +/- 5.53E-001	6.60E-002 +/- 6.70E-003
U-234	0.991	4761.50*	5.01E-001 +/- 1.60E-001	6.99E-002 +/- 7.10E-003
U-235	0.996	4385.50*	1.82E-001 +/- 1.04E-001	6.88E-002 +/- 6.98E-003
U-238	0.986	4184.40*	7.53E-001 +/- 1.99E-001	4.84E-002 +/- 4.92E-003

AG 9/12/17

0000194031.CNF



0111

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 04

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	1	0	0	0	0	0	0
81:	0	0	1	0	0	0	0	0
89:	0	1	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	1	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	1	0	1
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	1	0	0	0	0	0
185:	0	0	1	0	0	1	0	0
193:	0	2	1	2	0	0	1	1
201:	1	0	1	1	1	2	0	0
209:	0	1	1	0	0	0	2	1
217:	1	2	1	0	4	1	0	1
225:	4	2	0	0	2	2	0	2
233:	7	3	0	0	2	3	2	1
241:	0	1	2	1	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	1	0	0	0
281:	0	0	0	0	0	1	0	1
289:	0	0	0	0	0	0	0	0
297:	0	1	0	0	0	0	1	1
305:	0	0	0	1	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	1	0	0	0	0	1	0	1
329:	0	0	0	0	0	1	0	1
337:	1	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	1	0	0	0	0
361:	0	0	0	0	0	0	0	0

369:	0	0	0	0	0	0	0	0

Sample Title: 04

Channel								
377:	0	0	0	0	0	0	1	0
385:	0	0	1	0	0	1	0	1
393:	1	0	0	0	0	0	0	1
401:	0	2	0	0	1	2	1	2
409:	0	1	0	0	1	2	3	2
417:	1	0	1	1	1	1	0	0
425:	0	1	1	4	1	1	0	1
433:	1	2	0	2	0	0	0	0
441:	0	0	0	0	0	0	0	1
449:	0	0	0	0	0	0	0	0
457:	0	1	0	0	0	0	0	1
465:	0	0	0	0	0	0	0	1
473:	0	0	0	0	0	0	0	0
481:	0	1	0	0	0	0	0	0
489:	1	0	0	0	0	0	0	0
497:	1	1	0	1	0	0	2	0
505:	0	0	0	0	0	1	0	1
513:	1	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	1	1	0	0	0	0	2	0
537:	1	0	2	0	1	1	0	3
545:	0	0	1	1	1	0	1	4
553:	2	2	0	3	1	0	0	2
561:	3	1	3	2	2	3	1	0
569:	1	3	5	3	1	3	7	3
577:	8	5	5	5	4	8	6	5
585:	10	9	8	10	14	10	3	8
593:	10	11	16	11	10	15	6	6
601:	11	15	16	16	18	16	14	13
609:	13	14	17	13	13	8	9	3
617:	5	1	0	2	0	1	1	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	1	0	1	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	1	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	1	0	0	0	0
713:	0	0	0	0	0	0	0	1
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	1	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 04

Channel								
809:	1	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	1
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	1	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KR 9/11/17

Apex-Alpha™

Sample Description: HTC-A08-S001-0612-02
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 05
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_045
Chamber Serial Number: 04026482A
Detector Serial Number: 91131
Env. Background: System Bkgd 196034
Reagent Blank: <not performed>

Sample Size: 1.090E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:34:38 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.672 mL
Effective Efficiency: 0.2134 +/- 0.0113
Counting Efficiency: 0.1688 +/- 0.0029 on 11/18/2016 10:08:40 AM
Chem. Recovery Factor: 1.2642 +/- 0.0703

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.264	442.64	9.33	1.36	0.00E+000	31.0
U-234		4.727	82.98	21.67	1.02	0.00E+000	4.5
U-235		4.393	11.83	57.46	0.17	0.00E+000	4.5
U-238		4.143	67.83	23.83	0.17	0.00E+000	3.4

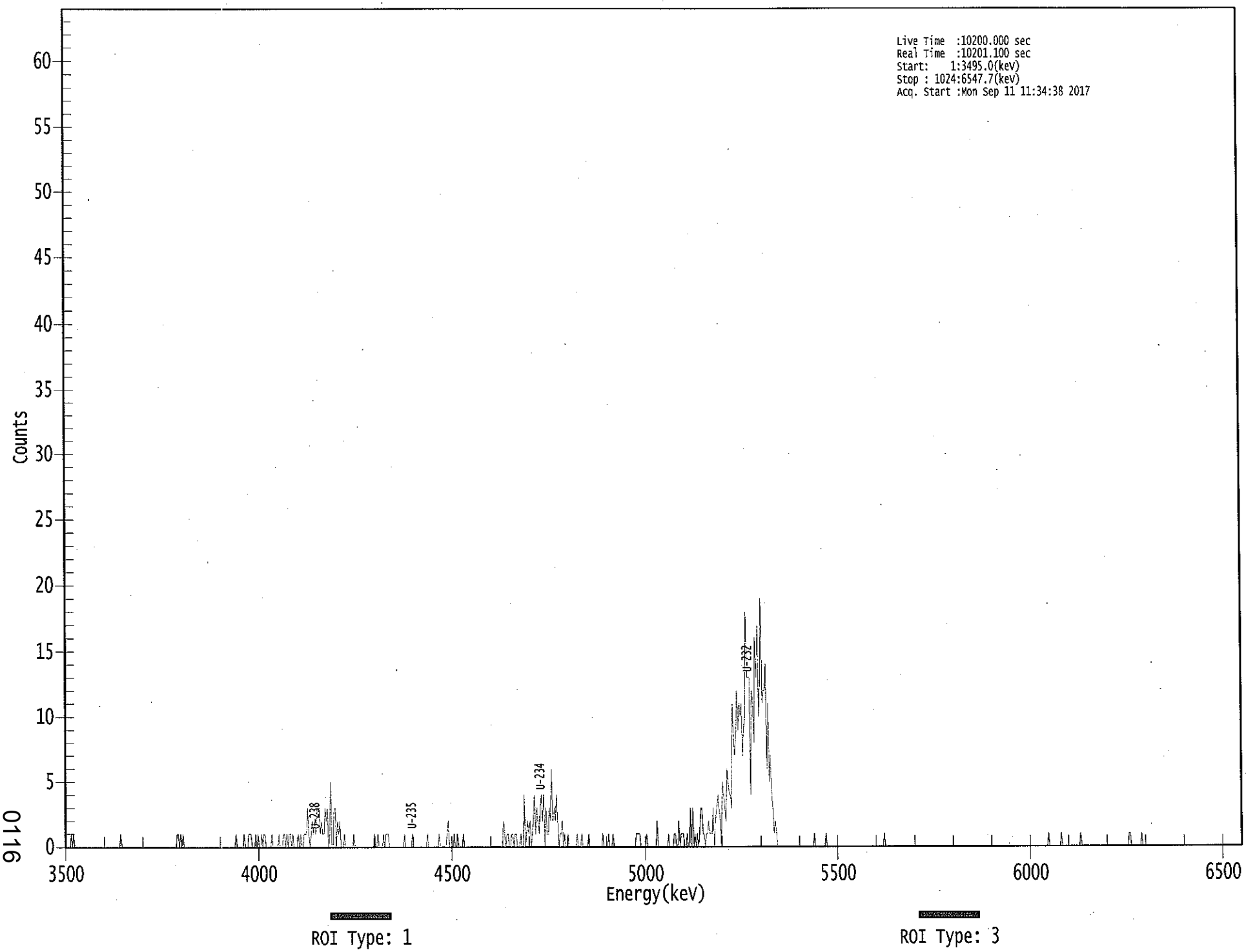
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.989	5302.50*	5.07E+000 +/- 5.25E-001	7.85E-002 +/- 8.14E-003
U-234	0.992	4761.50*	9.47E-001 +/- 2.28E-001	7.19E-002 +/- 7.45E-003
U-235	1.000	4385.50*	1.67E-001 +/- 9.73E-002	5.88E-002 +/- 6.09E-003
U-238	0.988	4184.40*	7.71E-001 +/- 2.00E-001	4.74E-002 +/- 4.92E-003

AG 9/12/17

0000194016.CNF



0116

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 05

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	0	0	0	0	0	1	0	1
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	1	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	1	1	0	1	0	1	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	1	0	0	0
153:	0	0	0	1	0	0	0	1
161:	1	1	0	0	0	1	0	1
169:	0	0	1	0	1	1	0	0
177:	0	0	0	1	0	0	0	0
185:	0	1	0	0	0	1	1	0
193:	1	0	1	1	0	1	0	0
201:	0	0	1	0	1	0	0	1
209:	1	1	3	1	0	1	2	1
217:	2	1	3	3	3	1	2	1
225:	1	3	2	3	0	1	5	0
233:	0	3	3	0	2	1	2	0
241:	0	0	1	0	0	0	0	0
249:	0	0	1	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	1	0	0	1
273:	0	0	0	0	1	0	1	1
281:	1	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	1	0
297:	0	0	0	0	0	1	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	1	0	0	0	0	0
321:	0	0	0	0	1	0	0	0
329:	0	0	0	1	2	0	0	0
337:	0	1	0	0	1	0	0	0
345:	0	1	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

369:	0	0	0	0	0	0	0	0

Sample Title: 05

Channel								
377:	0	0	0	0	2	1	0	1
385:	1	0	0	1	1	0	1	1
393:	0	0	0	1	0	0	4	0
401:	1	2	1	2	0	1	2	4
409:	1	3	2	1	3	4	2	4
417:	0	3	1	1	3	2	6	2
425:	3	2	4	2	0	1	1	2
433:	0	1	0	0	1	0	0	0
441:	0	0	0	0	1	0	0	0
449:	1	0	0	0	0	0	1	0
457:	0	0	0	0	0	0	0	0
465:	0	0	1	0	0	0	0	1
473:	0	0	0	1	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	1
497:	1	1	1	0	0	0	0	0
505:	1	0	0	0	0	0	0	0
513:	0	2	0	0	0	0	0	0
521:	0	0	0	1	0	0	0	0
529:	1	1	0	0	2	0	1	1
537:	1	0	0	1	0	0	3	0
545:	3	0	1	0	1	0	1	3
553:	3	1	1	0	1	1	2	1
561:	1	1	3	0	2	3	4	3
569:	2	0	5	4	3	2	6	5
577:	4	4	3	11	8	7	9	12
585:	9	11	10	11	7	9	10	18
593:	13	13	13	4	12	11	8	16
601:	13	17	10	13	19	11	12	12
609:	14	6	11	5	7	4	3	1
617:	2	1	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	1	0	0	0	0	0
657:	0	0	0	0	1	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	1
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 05

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	1	0
857:	0	0	0	0	0	0	0	0
865:	0	1	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	1	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	1	1	0	0
929:	0	0	0	0	0	0	0	1
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

ICB 9/11/17

Apex-Alpha™

Sample Description: HTC-A08-S001-1218-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 06
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_046
Chamber Serial Number: 04026482B
Detector Serial Number: 58762
Env. Background: System Bkgd 196035
Reagent Blank: <not performed>

Sample Size: 1.200E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:34:41 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.670 mL
Effective Efficiency: 0.2026 +/- 0.0110
Counting Efficiency: 0.1713 +/- 0.0029 on 11/18/2016 10:08:38 AM
Chem. Recovery Factor: 1.1822 +/- 0.0670

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.262	418.98	9.59	1.02	0.00E+000	16.5
U-234		4.723	66.15	24.28	0.85	0.00E+000	6.0
U-235		4.369	6.98	80.28	1.02	0.00E+000	6.0
U-238		4.140	95.15	20.20	0.85	0.00E+000	5.3

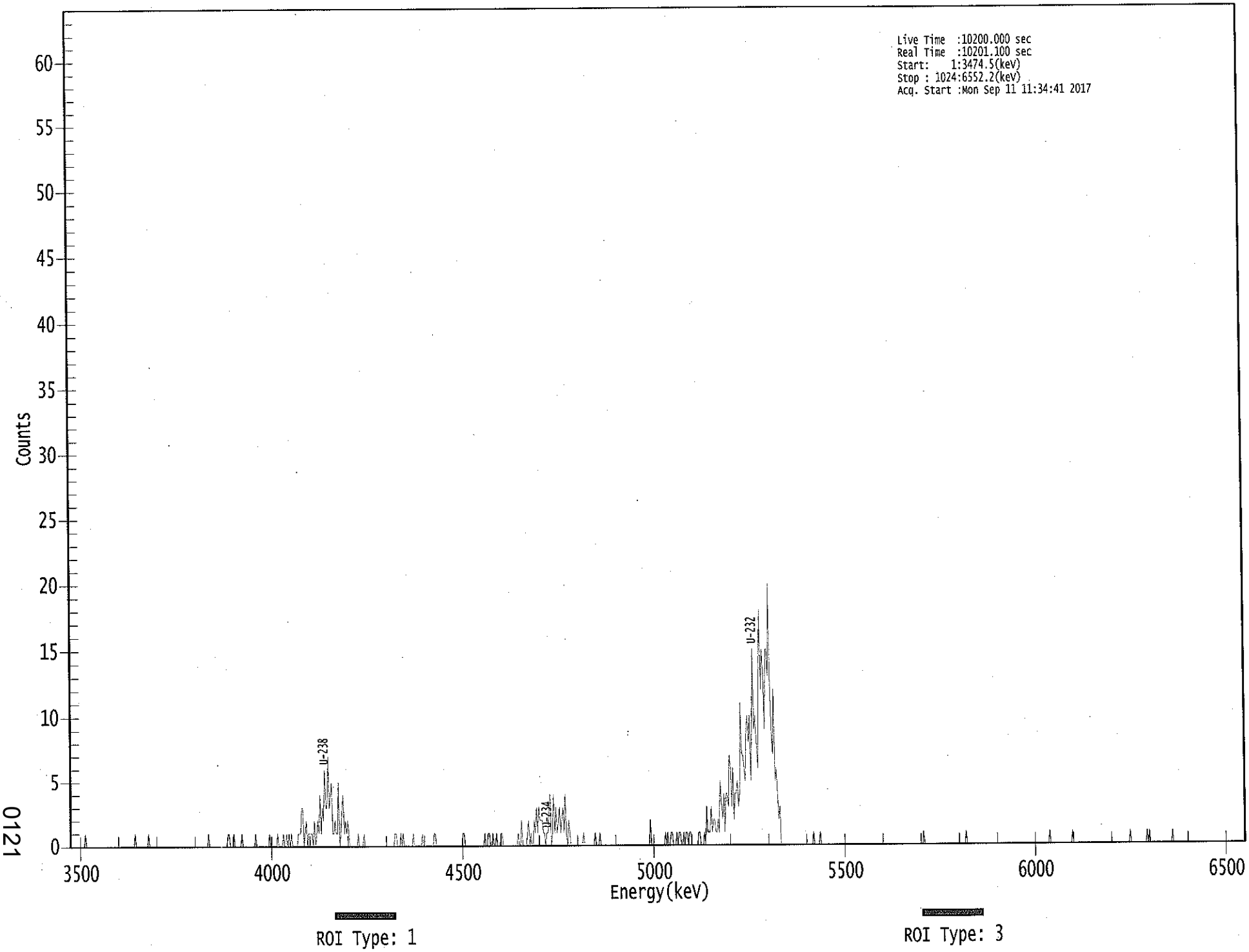
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.989	5302.50*	4.59E+000 +/- 4.87E-001	6.90E-002 +/- 7.32E-003
U-234	0.990	4761.50*	7.23E-001 +/- 1.91E-001	6.54E-002 +/- 6.93E-003
U-235	0.998	4385.50*	9.40E-002 +/- 7.62E-002	8.49E-002 +/- 9.00E-003
U-238	0.986	4184.40*	1.03E+000 +/- 2.36E-001	6.51E-002 +/- 6.90E-003

AG 9/12/17

0000194017.CNF



0121

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 06

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	1	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	1	0	0	0	0	0	0	0
65:	0	0	0	0	1	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	1	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	1	1	0	0	0	1	0
145:	0	0	0	0	0	1	0	0
153:	0	0	0	0	0	0	0	0
161:	0	1	0	0	0	0	0	0
169:	0	0	0	0	0	1	0	0
177:	0	0	0	0	1	0	0	0
185:	0	1	0	0	1	0	1	0
193:	1	0	0	0	0	0	1	1
201:	1	3	3	0	1	2	0	1
209:	1	1	1	0	2	0	1	2
217:	1	4	1	3	2	6	3	3
225:	7	3	4	5	1	1	2	1
233:	1	5	0	1	3	4	1	2
241:	1	2	1	0	0	0	0	0
249:	0	0	1	0	0	0	0	1
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	1	1	0	0	0	1
289:	0	1	0	0	0	0	0	0
297:	0	0	1	0	0	0	0	0
305:	0	0	1	0	0	0	0	0
313:	0	0	0	0	1	1	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	1	1	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	1	0	0	1	1	0	0	1

369:	0	0	1	0	0	0	1	1

Sample Title: 06

Channel								
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	1	0	0
393:	2	0	0	0	0	1	2	0
401:	1	0	0	2	1	3	1	3
409:	2	2	2	1	1	0	1	1
417:	3	4	0	1	4	1	3	1
425:	2	3	1	2	3	1	4	1
433:	0	2	1	0	0	0	0	0
441:	0	0	0	0	0	0	1	0
449:	0	0	0	0	0	0	0	0
457:	1	0	0	0	1	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	2	0	0	0	0	0	0	0
513:	0	0	0	0	0	1	0	1
521:	0	0	1	1	0	0	0	1
529:	0	1	1	0	0	1	0	1
537:	1	0	1	1	0	0	0	0
545:	0	0	1	1	0	0	0	1
553:	0	3	1	1	1	3	1	2
561:	2	1	1	2	1	5	3	2
569:	4	1	4	4	3	7	6	3
577:	6	2	4	4	5	3	4	11
585:	7	7	6	5	9	10	8	10
593:	5	9	15	9	10	8	6	11
601:	18	12	15	13	9	15	15	13
609:	20	12	9	7	12	5	6	4
617:	2	3	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	1	0
649:	0	0	0	0	1	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	1	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	1	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 06

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	1	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	1	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	1	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	1	0	1	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	1
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

DP 9/11/17

Sample Description: HTC-A08-S001-1824-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 07
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_047
Chamber Serial Number: 02030596A
Detector Serial Number: 91086
Env. Background: System Bkgd 196036
Reagent Blank: <not performed>

Sample Size: 1.380E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:34:43 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.672 mL
Effective Efficiency: 0.2114 +/- 0.0112
Counting Efficiency: 0.1623 +/- 0.0028 on 11/18/2016 10:08:37 AM
Chem. Recovery Factor: 1.3029 +/- 0.0727

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.267	438.64	9.38	1.36	0.00E+000	54.4
U-234		4.721	86.49	21.15	0.51	0.00E+000	6.4
U-235		4.406	5.32	91.11	0.68	0.00E+000	3.0
U-238		4.130	76.83	22.39	0.17	0.00E+000	3.7

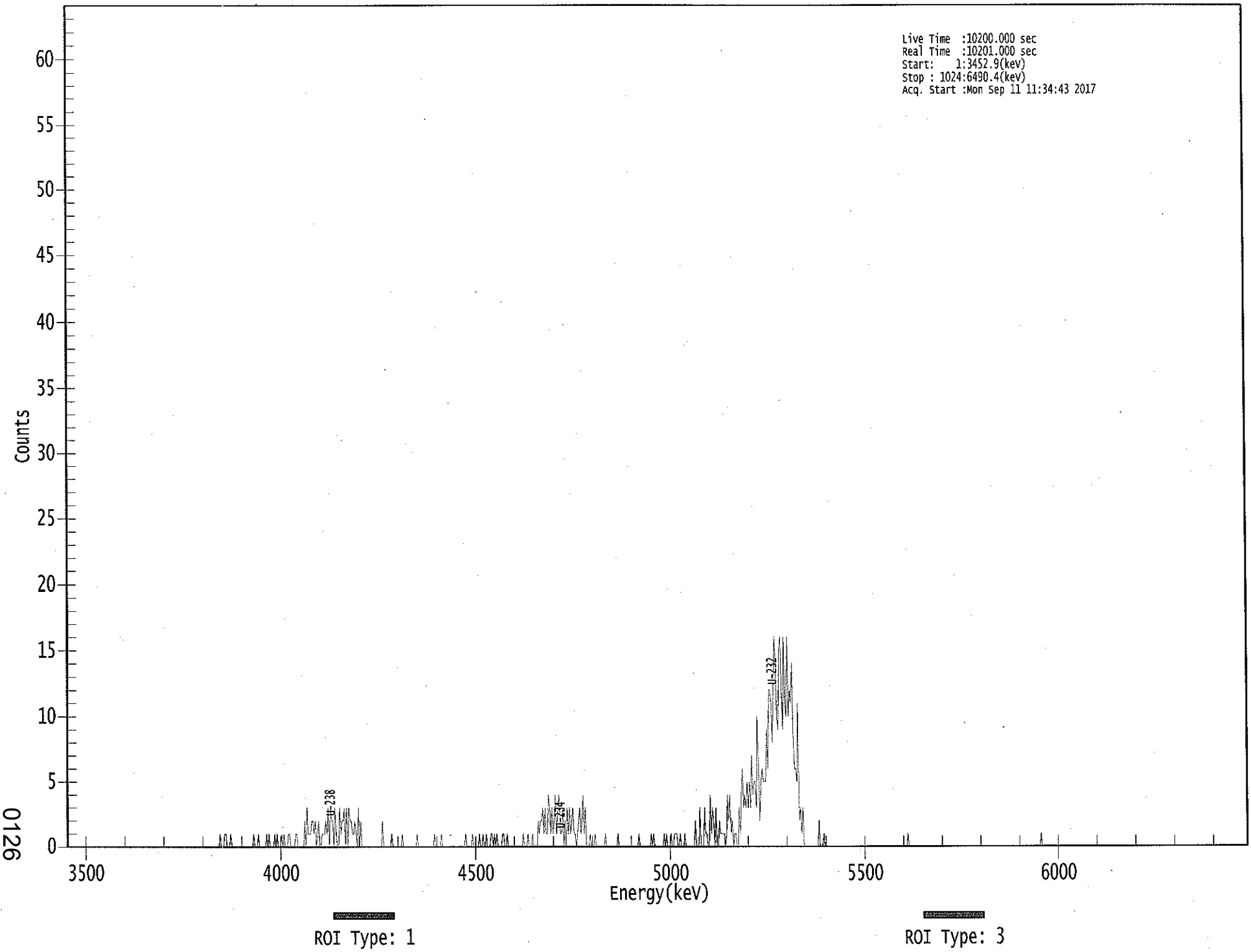
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.991	5302.50*	4.00E+000 +/- 4.17E-001	6.26E-002 +/- 6.51E-003
U-234	0.988	4761.50*	7.87E-001 +/- 1.85E-001	4.77E-002 +/- 4.97E-003
U-235	0.997	4385.50*	5.97E-002 +/- 5.48E-002	6.33E-002 +/- 6.59E-003
U-238	0.979	4184.40*	6.96E-001 +/- 1.72E-001	3.78E-002 +/- 3.93E-003

AG 9/12/17

0000194023.CNF



0126

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 07

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	1	0	0	0
137:	1	1	0	0	0	1	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	1	0	0	0	1	0	0
169:	0	0	0	0	1	0	1	0
177:	0	0	0	1	0	1	0	0
185:	0	1	0	1	0	0	0	1
193:	1	0	0	0	0	1	1	0
201:	0	0	0	0	0	2	0	3
209:	1	1	1	2	2	1	2	0
217:	1	2	0	0	1	1	1	2
225:	1	3	0	3	2	2	0	3
233:	1	0	0	3	1	2	2	3
241:	0	3	0	3	2	2	1	1
249:	2	1	0	3	0	2	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	2	0	0	0	0	0	0	0
281:	1	0	0	0	0	0	0	0
289:	0	1	0	0	0	0	0	0
297:	0	0	0	0	0	0	1	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	1	0	0
321:	0	0	0	1	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	1	0	0	0	0	0	1	0
353:	0	0	0	0	1	0	0	1
361:	0	0	1	0	0	0	1	1

369:	0	1	0	1	0	0	0	0

Sample Title: 07

Channel								
377:	1	1	0	0	1	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	1	0	0	0	1	0
401:	0	0	1	0	0	0	0	2
409:	1	2	2	3	1	3	1	1
417:	4	3	1	3	1	2	4	1
425:	3	4	1	1	3	0	2	0
433:	3	1	3	1	2	3	1	1
441:	0	1	2	3	1	2	4	1
449:	3	0	0	0	1	0	0	0
457:	1	0	0	0	0	0	0	0
465:	0	1	0	0	0	0	0	0
473:	0	0	0	0	1	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	1	0
497:	0	0	0	0	0	0	0	0
505:	0	1	0	1	0	0	0	0
513:	0	0	0	0	1	0	1	0
521:	0	0	1	0	0	1	1	1
529:	0	0	1	0	0	0	1	0
537:	0	0	0	0	0	0	0	2
545:	0	0	0	3	0	0	0	3
553:	1	1	0	0	4	1	3	2
561:	0	3	0	0	2	1	1	1
569:	1	0	1	4	2	4	1	2
577:	0	1	1	0	0	3	1	4
585:	6	3	4	3	5	3	5	3
593:	7	4	5	5	3	10	6	2
601:	5	6	5	5	5	9	6	12
609:	12	11	8	12	16	14	10	9
617:	15	16	12	9	16	11	10	16
625:	10	12	11	14	9	6	6	5
633:	11	2	3	1	3	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	2	0	0	0	1	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	1
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 07

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	1	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KR 9/11/17

Sample Description: HTC-A08-S001-2430-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 08
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_048
Chamber Serial Number: 02030596B
Detector Serial Number: 83111
Env. Background: System Bkgd 196037
Reagent Blank: <not performed>

Sample Size: 1.010E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:34:46 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.670 mL
Effective Efficiency: 0.2130 +/- 0.0113
Counting Efficiency: 0.1633 +/- 0.0028 on 11/18/2016 10:08:35 AM
Chem. Recovery Factor: 1.3038 +/- 0.0726

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.282	440.81	9.35	1.19	0.00E+000	32.7
U-234		4.734	62.32	24.99	0.68	0.00E+000	5.2
U-235		4.456	3.32	119.77	0.68	0.00E+000	5.9
U-238		4.150	79.83	21.96	0.17	0.00E+000	3.7

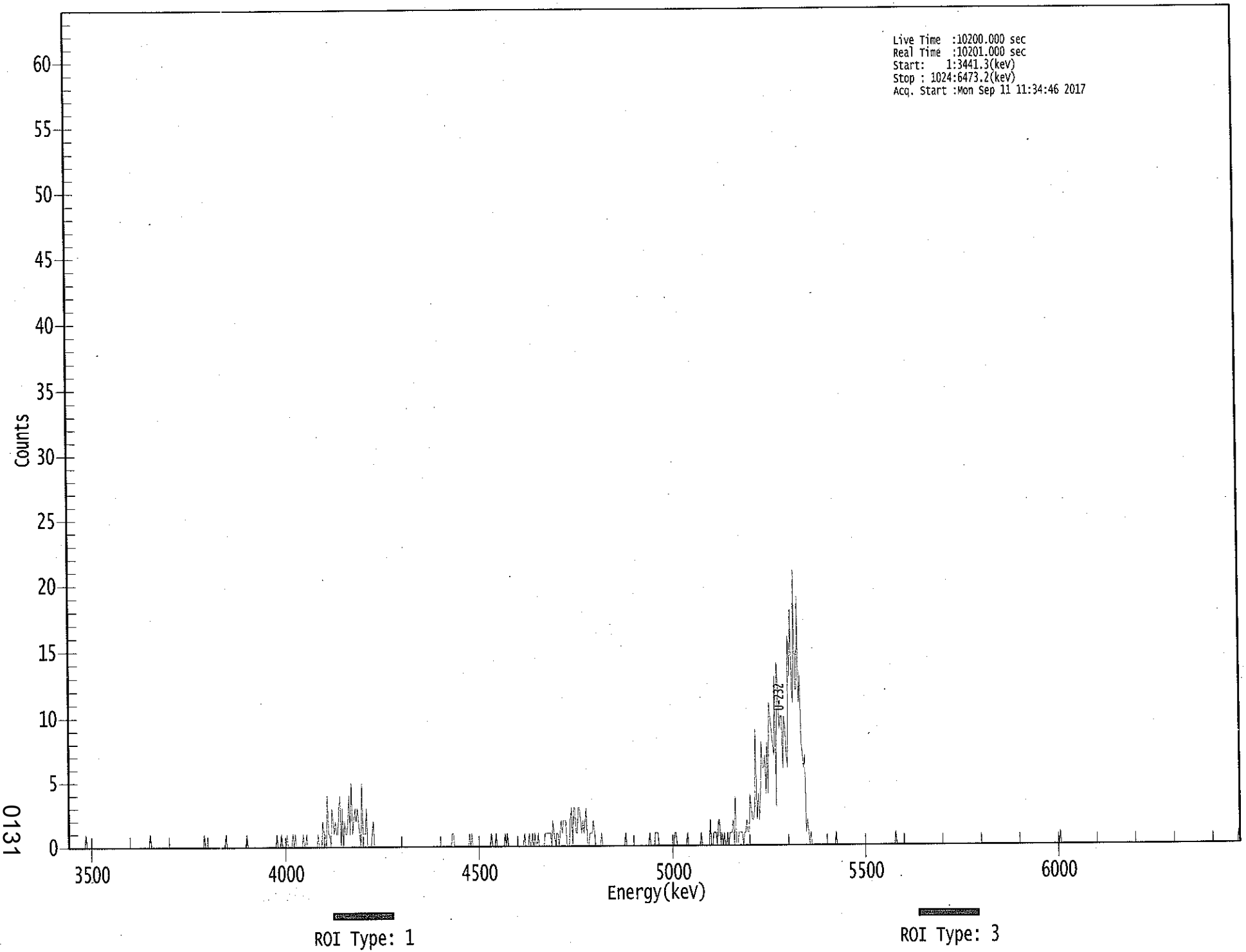
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	5.46E+000 +/- 5.67E-001	8.16E-002 +/- 8.47E-003
U-234	0.994	4761.50*	7.69E-001 +/- 2.08E-001	6.96E-002 +/- 7.23E-003
U-235	0.966	4385.50*	5.06E-002 +/- 6.08E-002	8.59E-002 +/- 8.92E-003
U-238	0.992	4184.40*	9.81E-001 +/- 2.38E-001	5.13E-002 +/- 5.33E-003

AG 9/12/17

0000194024.CNF



0131

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 08

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	1
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	1
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	1	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	1	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	1	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	1	0	0
185:	0	1	0	0	0	0	1	0
193:	0	0	0	1	0	1	0	0
201:	0	0	0	0	1	0	0	1
209:	0	0	0	0	0	0	0	0
217:	0	1	0	0	0	2	1	1
225:	0	4	1	1	0	3	2	1
233:	2	1	1	3	4	0	3	0
241:	2	1	1	2	4	1	5	1
249:	2	3	2	3	2	1	0	5
257:	1	1	1	3	0	0	0	0
265:	1	2	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	1	1
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	1	0	1
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

369:	1	0	0	0	1	0	0	0

Sample Title: 08

Channel								
377:	0	0	0	0	1	0	1	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	1	0	0
401:	0	1	0	0	1	0	1	0
409:	0	1	0	0	0	0	0	1
417:	1	1	1	1	1	0	2	1
425:	0	1	1	0	1	2	1	2
433:	2	2	0	0	0	2	3	0
441:	3	3	1	1	3	3	2	1
449:	2	1	2	3	0	0	1	1
457:	1	2	1	0	0	0	0	0
465:	1	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	1	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	1	0	0	0	0	1
513:	1	1	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	1	1	0	0	0	0	0	0
537:	0	0	0	1	0	0	0	0
545:	0	0	0	0	0	0	0	1
553:	0	0	0	0	0	0	0	2
561:	0	0	1	1	1	0	2	2
569:	0	1	0	1	0	0	1	0
577:	1	1	1	2	0	4	0	0
585:	1	1	1	1	0	1	1	2
593:	1	1	4	3	2	2	3	9
601:	2	4	2	4	8	6	6	7
609:	4	8	4	11	10	9	8	7
617:	13	3	14	12	9	10	10	6
625:	10	9	7	6	16	13	18	12
633:	11	21	12	12	19	11	13	8
641:	7	6	7	1	2	1	0	1
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	1	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	1	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 08

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	1	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	1	0	0

LG
9/11/17

Apex-Alpha™

Sample Description: HTC-A08-S001-3036-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 09
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_049
Chamber Serial Number: 10006121A
Detector Serial Number: 49
Env. Background: System Bkgd 196038
Reagent Blank: <not performed>

Sample Size: 1.150E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:35:18 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.668 mL
Effective Efficiency: 0.1821 +/- 0.0103
Counting Efficiency: 0.1488 +/- 0.0026 on 11/18/2016 3:34:20 PM
Chem. Recovery Factor: 1.2231 +/- 0.0723

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.265	375.83	10.11	0.17	0.00E+000	7.6
U-234		4.713	67.81	24.04	1.19	0.00E+000	8.9
U-235		4.357	2.66	128.85	0.34	0.00E+000	3.0
U-238		4.140	74.15	22.91	0.85	0.00E+000	4.4

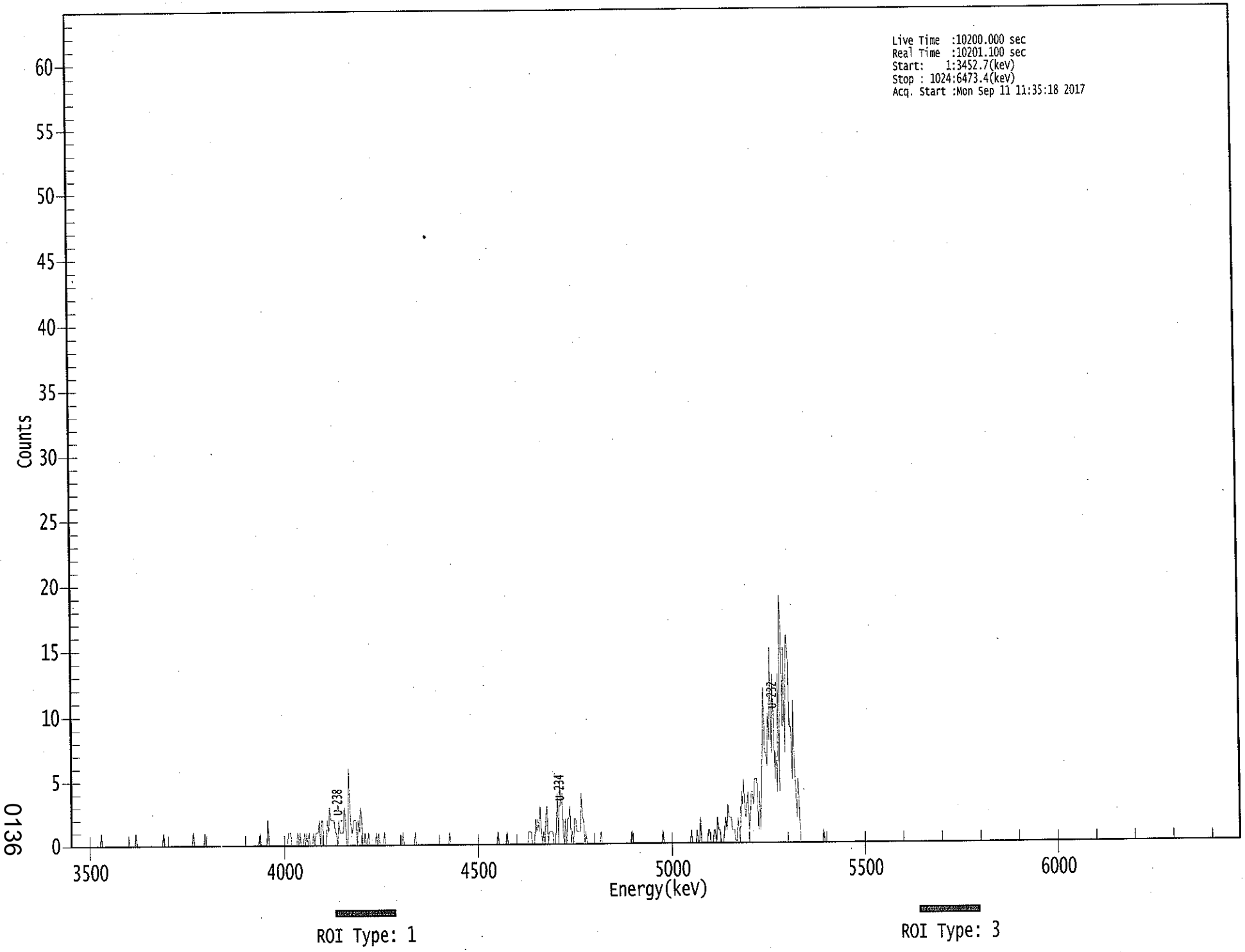
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.990	5302.50*	4.78E+000 +/- 5.30E-001	5.31E-002 +/- 5.88E-003
U-234	0.983	4761.50*	8.60E-001 +/- 2.28E-001	8.35E-002 +/- 9.25E-003
U-235	0.994	4385.50*	4.16E-002 +/- 5.38E-002	7.48E-002 +/- 8.28E-003
U-238	0.986	4184.40*	9.36E-001 +/- 2.38E-001	7.56E-002 +/- 8.37E-003

AG
9/12/17

0000194025.CNF



0136

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 09

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	1	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	1	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	1	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	1	0	0	0	0	0
113:	0	0	0	0	1	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	1	0	0	0
169:	0	0	0	2	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	1	1	1
193:	0	0	0	0	0	1	0	1
201:	0	0	0	1	0	1	0	1
209:	0	0	0	1	0	1	1	1
217:	2	0	2	2	0	0	0	2
225:	1	3	2	2	2	2	1	1
233:	0	2	1	1	1	1	3	2
241:	0	0	6	3	1	1	2	2
249:	2	0	2	1	3	2	0	0
257:	1	0	0	1	0	0	0	0
265:	0	0	1	0	1	0	0	0
273:	0	1	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	1	0	0	0	0	0	0
297:	0	0	0	0	1	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	1	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

369:	0	0	0	0	1	0	0	0

Sample Title: 09

Channel								
377:	0	0	0	0	1	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	1
401:	1	1	0	0	0	2	1	2
409:	1	3	1	0	1	0	2	3
417:	0	1	1	1	1	0	0	1
425:	4	0	5	3	4	1	0	2
433:	0	2	2	3	0	1	0	2
441:	2	1	1	1	1	4	2	2
449:	0	1	0	0	0	0	0	0
457:	0	0	0	0	0	0	1	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	1	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	1	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	1	0	0
545:	0	0	1	0	0	2	0	0
553:	0	0	0	0	1	1	0	0
561:	0	1	1	0	2	1	1	0
569:	0	0	1	2	1	3	2	2
577:	2	1	1	1	0	0	2	1
585:	0	4	3	5	3	2	3	4
593:	1	2	4	4	3	5	5	5
601:	1	4	1	5	8	12	7	7
609:	6	10	8	15	7	13	10	5
617:	7	4	13	4	19	17	9	15
625:	7	14	16	14	9	9	5	11
633:	6	4	2	5	2	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	1	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 09

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KD
9/11/17

Apex-Alpha™

Sample Description: HTC-A08-S001-3642-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 10
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_050
Chamber Serial Number: 10006121B
Detector Serial Number: 50
Env. Background: System Bkgd 196039
Reagent Blank: <not performed>

Sample Size: 1.050E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:35:20 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.669 mL
Effective Efficiency: 0.1653 +/- 0.0097
Counting Efficiency: 0.1433 +/- 0.0025 on 11/18/2016 3:34:18 PM
Chem. Recovery Factor: 1.1537 +/- 0.0709

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.272	341.47	10.63	1.53	0.00E+000	5.3
U-234		4.738	47.47	28.98	1.53	0.00E+000	4.7
U-235		4.386	3.81	117.34	1.19	0.00E+000	3.0
U-238		4.161	42.81	30.44	1.19	0.00E+000	3.0

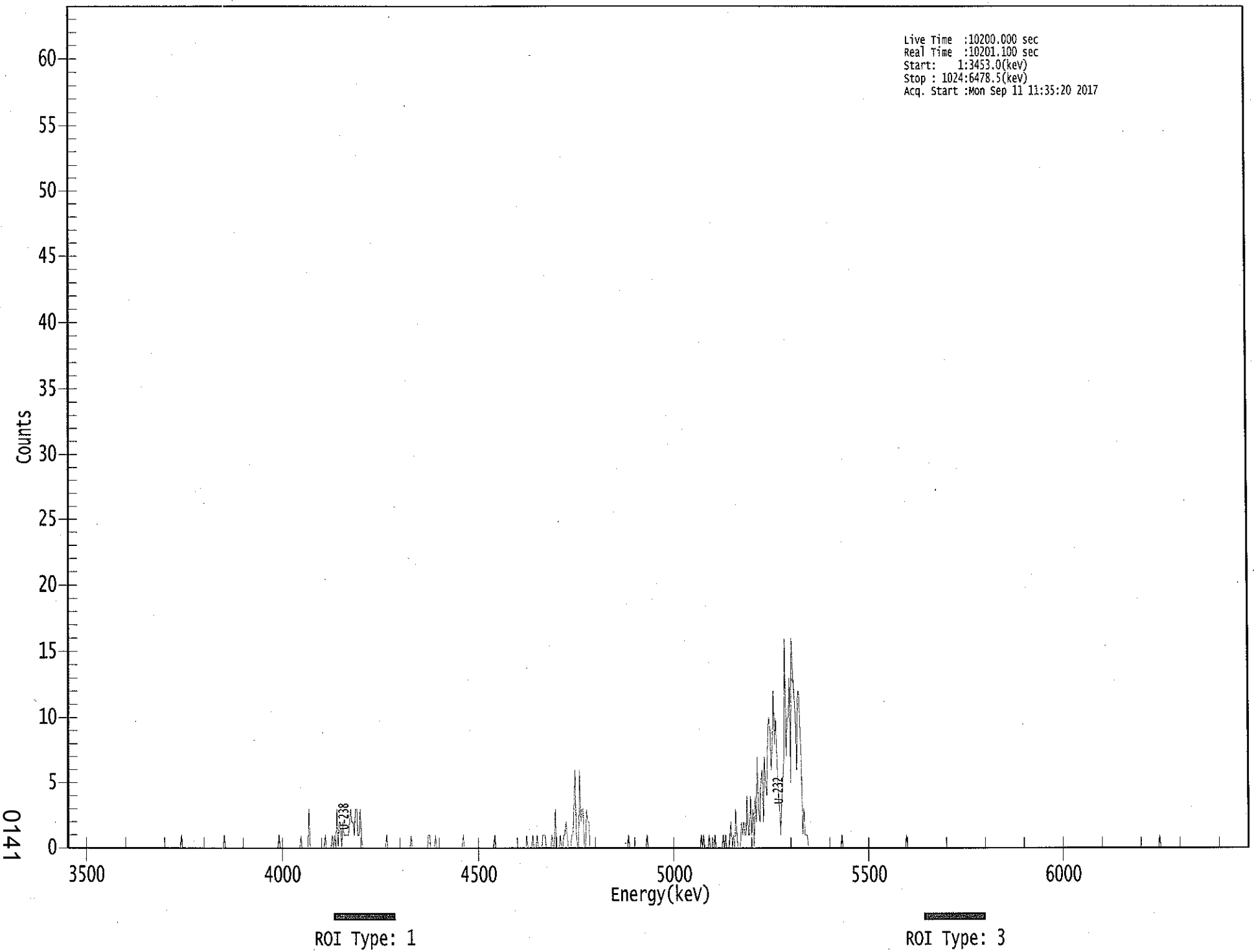
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.993	5302.50*	5.24E+000 +/- 6.06E-001	1.09E-001 +/- 1.26E-002
U-234	0.996	4761.50*	7.26E-001 +/- 2.27E-001	1.09E-001 +/- 1.26E-002
U-235	1.000	4385.50*	7.19E-002 +/- 8.48E-002	1.24E-001 +/- 1.44E-002
U-238	0.996	4184.40*	6.52E-001 +/- 2.12E-001	1.00E-001 +/- 1.16E-002

AG
9/12/17

0000194027.CNF



0141

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 10

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	1	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	1	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	1
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	1	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	1	0	0	0	0	0	0
209:	3	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	1	0
225:	0	0	0	0	1	0	1	0
233:	3	0	2	2	0	2	1	1
241:	1	1	1	2	3	2	2	1
249:	3	3	1	1	3	1	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	1	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	1	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	1
313:	1	0	0	0	0	1	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	1	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

369:	1	0	0	0	0	0	0	0

Sample Title: 10

Channel								
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	1	0	0	0
401:	0	1	0	0	0	1	0	0
409:	0	0	1	1	1	0	0	0
417:	0	0	1	0	0	3	0	0
425:	0	1	0	0	1	1	2	1
433:	0	0	0	1	1	3	6	1
441:	0	0	6	2	3	3	0	0
449:	3	2	2	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	1	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	1	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	1	0	1	0	0
553:	0	0	1	0	0	0	0	1
561:	0	0	0	0	0	0	1	0
569:	1	0	0	0	1	2	0	1
577:	0	3	1	0	0	0	2	1
585:	2	1	1	4	1	1	4	1
593:	3	0	4	2	7	3	2	5
601:	6	2	7	5	4	9	10	9
609:	6	8	12	8	10	7	4	3
617:	1	4	5	7	16	7	10	10
625:	13	5	16	13	12	10	6	12
633:	12	9	7	1	3	1	1	1
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	1	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	1	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 10

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	1	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

JLB 9/11/17

Apex-Alpha™

Sample Description: HTC-A08-S001-4248-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 11
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_052
Chamber Serial Number: 10006123B
Detector Serial Number: 52
Env. Background: System Bkgd 196040
Reagent Blank: <not performed>

Sample Size: 1.070E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:35:26 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.668 mL
Effective Efficiency: 0.2136 +/- 0.0113
Counting Efficiency: 0.1737 +/- 0.0030 on 11/18/2016 3:34:15 PM
Chem. Recovery Factor: 1.2291 +/- 0.0684

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.267	440.32	9.35	0.68	0.00E+000	14.0
U-234		4.718	54.64	26.90	1.36	0.00E+000	4.4
U-235		4.400	6.66	78.18	0.34	0.00E+000	3.0
U-238		4.150	64.83	24.38	0.17	0.00E+000	5.9

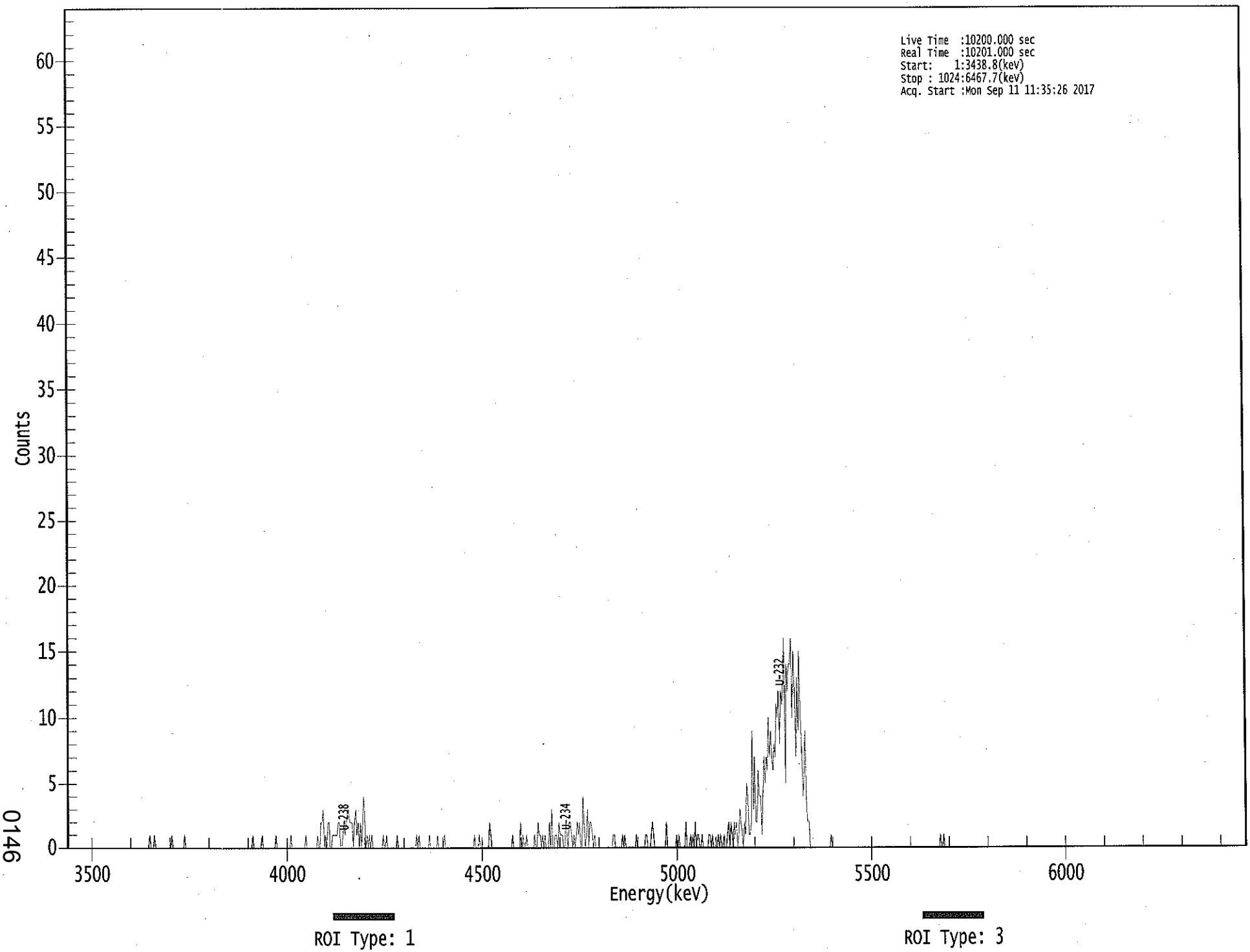
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.991	5302.50*	5.13E+000 +/- 5.33E-001	6.58E-002 +/- 6.83E-003
U-234	0.987	4761.50*	6.35E-001 +/- 1.83E-001	7.97E-002 +/- 8.27E-003
U-235	0.998	4385.50*	9.55E-002 +/- 7.53E-002	6.85E-002 +/- 7.11E-003
U-238	0.992	4184.40*	7.50E-001 +/- 1.99E-001	4.83E-002 +/- 5.01E-003

AG
9/12/17

0000194026.CNF



0146

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 11

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	1
73:	0	0	0	1	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	1	0	0	0	0	0
97:	0	0	0	0	0	1	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	1	0	0	0	0	0	0	0
169:	1	0	0	0	0	0	0	0
177:	0	0	0	0	1	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	1	0	0	0	0	0	0
201:	0	0	0	0	0	0	1	0
209:	0	0	0	0	0	0	0	0
217:	1	0	0	2	2	3	0	1
225:	0	2	2	0	0	1	1	1
233:	1	1	2	2	0	0	1	2
241:	1	2	3	3	2	2	2	0
249:	2	3	1	2	0	2	0	2
257:	4	2	0	1	0	1	0	1
265:	0	0	0	0	0	0	0	0
273:	0	1	0	0	1	0	0	0
281:	0	0	0	0	0	1	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	1	0
305:	1	0	0	0	0	0	0	0
313:	0	1	0	0	0	0	0	0
321:	1	0	0	0	0	0	1	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	1	0	0	0	1	0	0	0
361:	0	0	0	0	0	2	1	0

369:	0	0	0	0	0	0	0	0

Sample Title: 11

Channel								
377:	0	0	0	0	0	0	0	0
385:	0	1	0	0	0	0	0	0
393:	2	0	1	0	0	1	0	0
401:	0	0	0	0	1	0	0	2
409:	1	1	0	1	0	1	0	0
417:	0	2	0	3	0	0	1	1
425:	0	2	1	1	1	0	0	2
433:	1	0	2	2	1	0	1	0
441:	1	2	1	2	0	0	4	2
449:	0	1	3	0	2	2	1	0
457:	1	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	1	1	0	0	0	0	0	0
481:	1	0	1	0	0	0	0	0
489:	0	0	0	0	1	0	0	0
497:	0	0	0	0	1	1	0	0
505:	0	1	2	1	0	0	0	0
513:	0	0	0	0	0	0	2	0
521:	0	0	0	0	0	0	0	1
529:	0	1	0	0	0	0	0	2
537:	0	0	0	1	0	1	0	2
545:	0	1	1	0	0	1	0	0
553:	0	0	0	1	1	0	1	0
561:	0	0	0	1	0	1	0	0
569:	1	0	0	1	2	0	2	1
577:	0	2	1	2	0	1	3	2
585:	1	0	2	1	5	4	1	1
593:	2	9	3	7	2	2	6	4
601:	4	1	4	7	5	7	6	10
609:	7	9	7	6	8	7	11	10
617:	12	8	12	11	13	16	5	14
625:	12	14	14	16	10	15	12	7
633:	13	9	15	10	7	4	6	9
641:	3	2	2	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	1	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	1	0	0	1
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 11

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

VD 9/11/17

Sample Description: HTC-A09-S001-0006-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 12
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_053
Chamber Serial Number: 10006122A
Detector Serial Number: 53
Env. Background: System Bkgd 196041
Reagent Blank: <not performed>

Sample Size: 1.060E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:35:22 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.669 mL
Effective Efficiency: 0.2109 +/- 0.0112
Counting Efficiency: 0.1515 +/- 0.0026 on 11/18/2016 3:34:14 PM
Chem. Recovery Factor: 1.3925 +/- 0.0779

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.290	435.49	9.40	0.51	0.00E+000	11.7
U-234		4.749	2741.66	3.74	0.34	0.00E+000	90.9
U-235		4.394	172.83	14.92	0.17	0.00E+000	5.9
U-238		4.167	2763.32	3.73	0.68	0.00E+000	69.5

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	5.19E+000 +/- 5.41E-001	6.25E-002 +/- 6.52E-003
U-234	0.999	4761.50*	3.26E+001 +/- 3.61E+000	5.68E-002 +/- 5.92E-003
U-235	0.999	4385.50*	2.53E+000 +/- 4.61E-001	6.11E-002 +/- 6.37E-003
U-238	0.998	4184.40*	3.27E+001 +/- 3.62E+000	6.67E-002 +/- 6.95E-003

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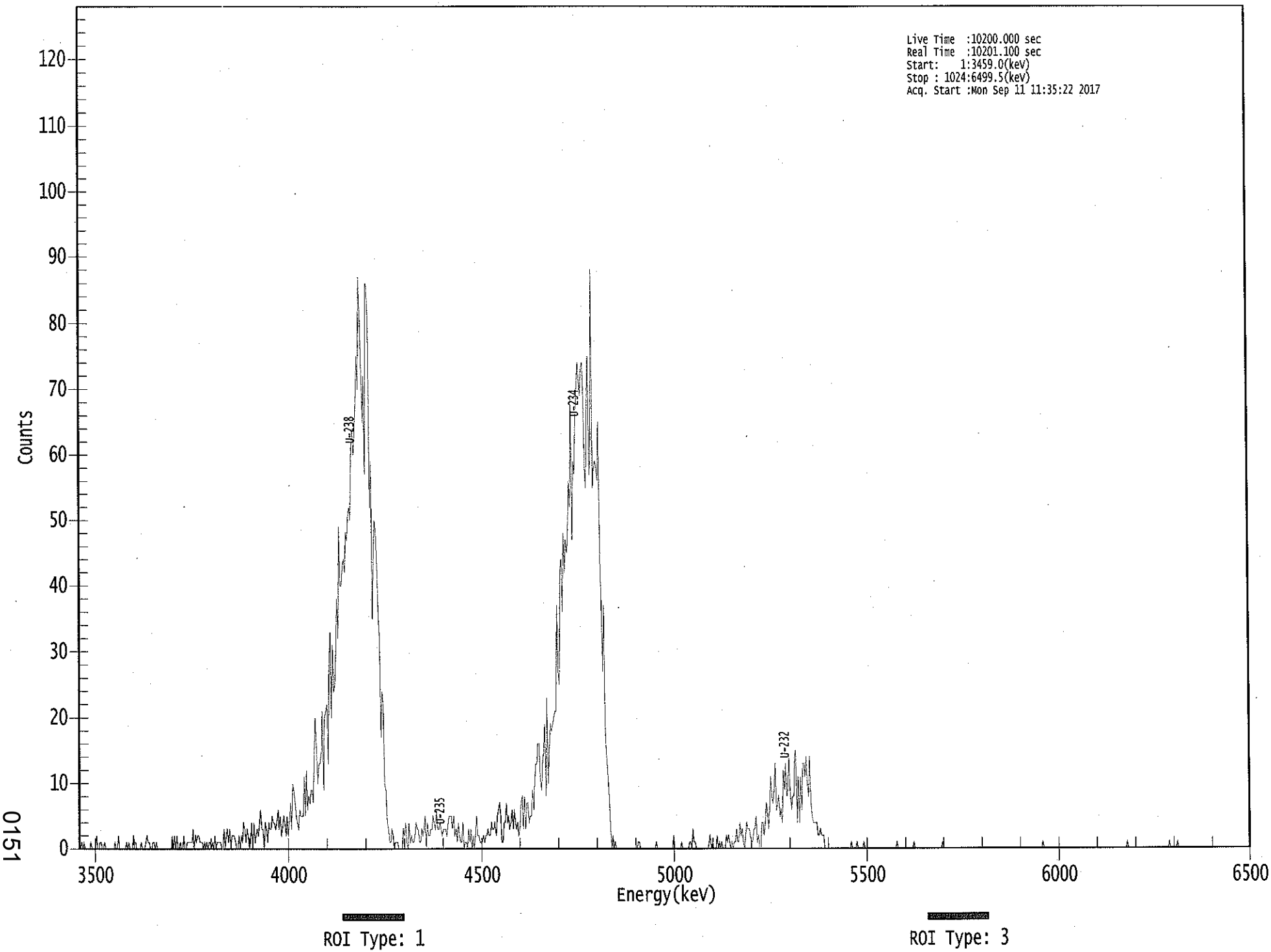
9/12/17

0000194037.CNF



0151

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 12

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	1	0	1	0	1	0	0	0
9:	0	0	1	0	0	0	0	2
17:	0	0	1	1	0	0	1	0
25:	0	0	0	0	0	0	0	1
33:	0	0	2	0	0	0	0	0
41:	0	1	0	1	0	0	0	2
49:	1	1	0	0	0	0	1	0
57:	0	0	1	2	1	1	0	0
65:	1	1	0	1	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	2	0	2	0	2	0	0
89:	1	0	0	2	0	0	1	1
97:	1	1	1	3	0	2	1	2
105:	2	1	1	1	0	1	0	1
113:	0	1	1	0	1	0	2	0
121:	1	1	1	1	0	0	3	0
129:	2	3	1	3	0	2	2	2
137:	1	0	0	2	0	2	1	4
145:	3	1	3	2	0	1	4	0
153:	4	1	2	3	2	4	6	3
161:	3	0	4	3	1	4	3	3
169:	5	4	4	3	4	6	3	5
177:	2	3	5	4	2	5	2	4
185:	7	3	10	9	7	5	4	3
193:	6	5	5	5	11	5	12	6
201:	8	7	9	9	7	15	20	15
209:	10	13	13	15	21	9	20	21
217:	22	13	28	33	20	31	24	25
225:	30	38	32	49	40	40	43	44
233:	42	48	47	51	52	50	61	64
241:	60	63	68	75	70	87	80	74
249:	65	72	57	86	86	80	52	59
257:	35	45	50	48	43	35	32	17
265:	24	22	10	9	4	3	1	1
273:	3	2	0	1	1	1	0	0
281:	0	0	3	2	4	1	0	4
289:	1	2	1	1	2	4	3	3
297:	1	1	3	2	3	5	0	4
305:	2	2	3	3	5	4	3	6
313:	3	3	4	3	2	3	3	3
321:	2	4	5	5	5	3	5	2
329:	3	1	4	2	1	1	4	0
337:	1	1	0	3	1	3	0	2
345:	0	2	5	2	2	1	1	1
353:	2	1	2	2	3	2	2	4
361:	3	3	4	2	5	6	7	5

369:	1	1	4	4	7	4	5	3

Sample Title: 12

Channel								
377:	4	6	3	6	4	3	4	2
385:	3	7	8	3	8	3	7	7
393:	4	5	5	9	6	10	13	13
401:	16	16	11	9	13	15	19	8
409:	23	10	15	19	18	19	20	21
417:	21	37	27	25	42	44	36	48
425:	42	47	45	47	56	52	69	47
433:	59	57	65	69	74	72	69	73
441:	74	70	58	55	68	75	57	60
449:	88	55	58	59	58	56	65	44
457:	37	27	37	17	14	11	8	3
465:	0	2	0	1	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	1
489:	1	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	1
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	2	0
521:	0	0	0	0	0	1	0	0
529:	0	0	0	0	1	1	0	3
537:	1	1	0	0	0	0	0	0
545:	0	0	0	0	0	1	2	0
553:	1	0	0	0	2	0	1	0
561:	1	0	0	0	2	1	2	1
569:	0	1	0	1	1	3	1	1
577:	4	2	3	1	0	2	4	3
585:	3	2	1	1	3	3	5	1
593:	2	0	0	4	4	2	4	7
601:	6	3	6	11	8	7	9	13
609:	6	7	8	5	6	4	12	9
617:	13	8	9	14	9	6	8	8
625:	14	15	4	11	4	11	6	13
633:	13	11	14	10	8	14	7	5
641:	4	4	4	4	2	2	3	2
649:	2	2	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	1	0	0	0	0	1	0
681:	0	0	0	0	1	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	1	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	1	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	1	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 12

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	1	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	1	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	1	0	0	0	0	0	0	1
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

XB 9/11/17

Apex-Alpha™

Sample Description: HTC-A09-S001-0006-01 MS
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 13
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_054
Chamber Serial Number: 10006122B
Detector Serial Number: 54
Env. Background: System Bkgd 196042
Reagent Blank: <not performed>

Sample Size: 1.057E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:35:24 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.670 mL
Effective Efficiency: 0.2030 +/- 0.0110
Counting Efficiency: 0.1363 +/- 0.0024 on 11/18/2016 3:34:12 PM
Chem. Recovery Factor: 1.4891 +/- 0.0845

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.251	420.32	9.57	0.68	0.00E+000	10.8
U-234		4.702	2924.98	3.62	1.02	0.00E+000	103.5
U-235		4.405	302.49	11.28	0.51	0.00E+000	5.3
U-238		4.124	3108.49	3.52	0.51	0.00E+000	106.2

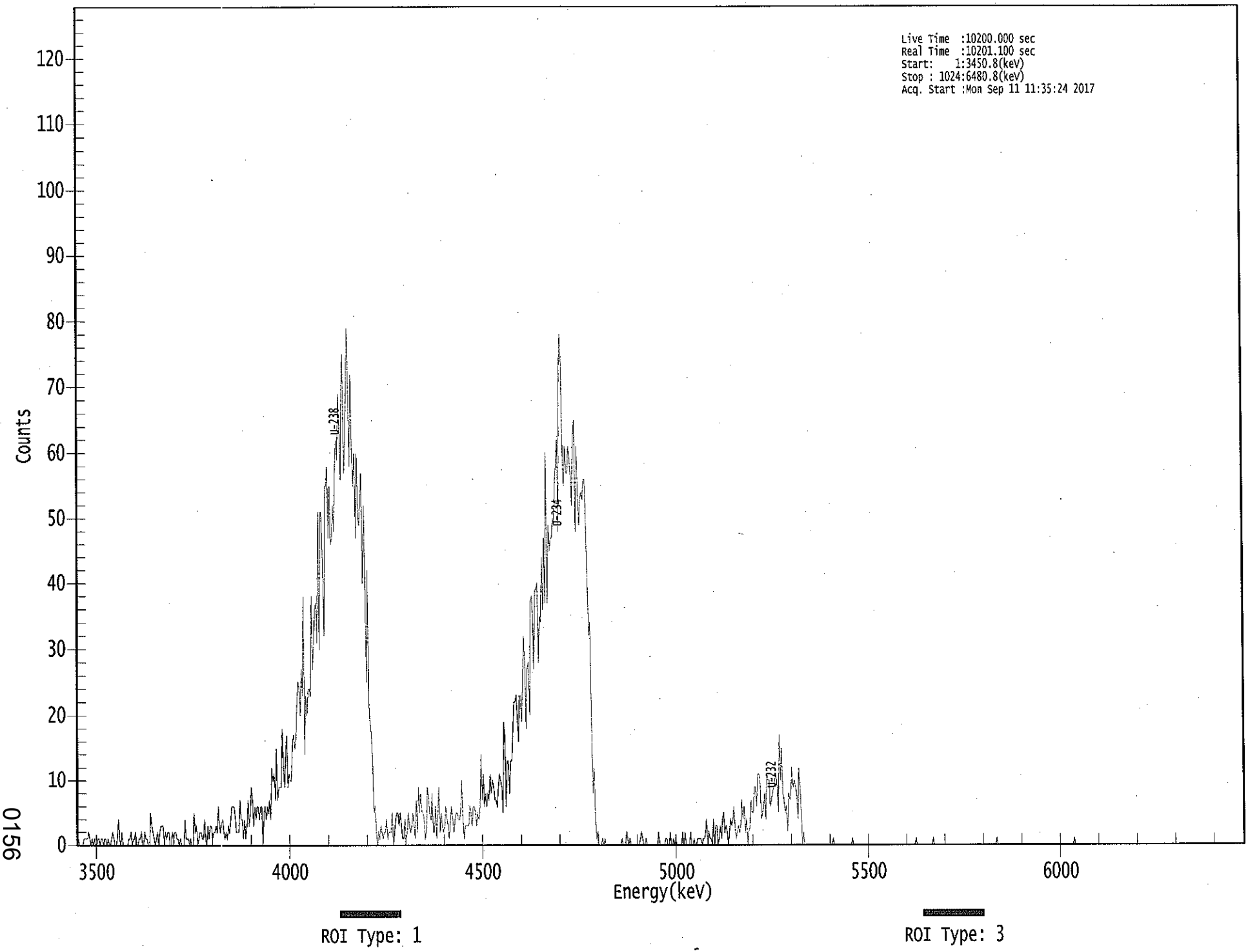
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.981	5302.50*	5.22E+000 +/- 5.52E-001	7.00E-002 +/- 7.41E-003
U-234	0.975	4761.50*	3.62E+001 +/- 4.05E+000	7.80E-002 +/- 8.25E-003
U-235	0.997	4385.50*	4.62E+000 +/- 7.14E-001	8.01E-002 +/- 8.47E-003
U-238	0.974	4184.40*	3.83E+001 +/- 4.27E+000	6.47E-002 +/- 6.84E-003

AG
9/12/17

0000194028.CNF



0156

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 13

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	1	1	0	0	0	0	1	1
9:	1	1	2	1	0	1	0	1
17:	0	0	1	1	0	1	1	0
25:	1	1	0	1	0	0	1	2
33:	1	0	0	1	4	1	0	2
41:	0	0	0	0	0	1	1	2
49:	0	1	1	2	0	0	1	1
57:	2	0	0	2	1	1	0	0
65:	5	3	2	1	0	1	2	0
73:	2	3	3	3	0	2	1	2
81:	2	0	0	2	1	2	2	1
89:	1	0	1	0	0	0	4	1
97:	1	1	0	1	0	0	5	2
105:	3	0	1	2	2	1	1	4
113:	1	0	3	1	3	3	1	2
121:	2	3	2	6	3	2	4	4
129:	2	1	2	1	3	2	4	6
137:	6	6	4	2	2	2	7	4
145:	4	1	4	1	3	7	3	5
153:	9	7	3	6	4	6	6	4
161:	6	6	0	5	6	4	6	5
169:	7	4	12	10	11	7	15	7
177:	9	9	9	18	12	9	14	17
185:	9	11	10	10	16	17	15	16
193:	22	25	24	20	27	23	38	14
201:	23	20	24	24	23	38	27	31
209:	36	37	31	51	30	51	51	42
217:	32	55	55	58	47	55	46	47
225:	52	48	58	62	59	69	64	56
233:	71	75	57	61	70	79	68	58
241:	72	61	55	60	47	60	50	49
249:	54	57	40	52	43	25	42	22
257:	19	17	13	5	6	2	0	2
265:	1	3	2	1	2	2	4	1
273:	2	2	2	5	0	2	4	5
281:	5	3	5	3	1	1	4	1
289:	2	5	3	2	3	5	3	1
297:	7	2	9	5	8	5	5	4
305:	1	2	9	7	5	4	8	2
313:	2	6	1	5	9	2	5	3
321:	2	3	6	4	3	1	4	6
329:	4	2	4	5	5	4	4	5
337:	10	4	1	3	3	3	3	6
345:	5	3	6	6	5	3	5	4
353:	5	14	7	11	6	8	6	8
361:	7	11	8	10	9	7	7	6

369:	9	11	10	9	5	19	17	6

Sample Title: 13

Channel								
377:	13	13	8	13	13	17	22	22
385:	23	20	16	23	23	19	25	32
393:	28	18	27	28	20	37	38	35
401:	27	39	39	40	28	35	34	44
409:	36	47	37	60	37	49	45	47
417:	47	50	49	56	58	62	48	73
425:	78	75	60	55	61	57	57	61
433:	59	57	52	62	65	48	61	54
441:	49	53	54	53	56	56	47	40
449:	32	34	21	8	12	4	1	2
457:	0	0	0	1	0	1	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	1	0	0	0
481:	2	1	0	1	0	0	0	0
489:	0	0	0	0	1	2	1	0
497:	0	1	0	0	0	0	0	0
505:	0	0	0	0	2	0	0	0
513:	0	0	1	1	0	0	2	0
521:	0	1	0	1	0	0	0	0
529:	0	2	0	2	0	0	0	0
537:	2	0	0	1	0	0	1	1
545:	1	1	0	1	1	2	4	0
553:	2	1	1	0	4	0	3	3
561:	0	1	3	1	4	5	2	3
569:	2	0	2	4	3	4	6	3
577:	1	2	3	2	3	7	4	6
585:	2	4	0	2	3	7	5	5
593:	9	9	6	11	11	10	4	5
601:	6	8	4	11	10	10	6	7
609:	8	9	10	11	9	5	17	10
617:	15	8	7	5	6	2	8	7
625:	8	12	9	10	9	8	4	12
633:	9	5	0	2	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	1	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	1	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	1	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	1	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	1	0	0

Sample Title: 13

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	1	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

Sample Description: HTC-A09-S001-0006-01 MSD
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001941
Batch Identification: 1707092A-UU
Sample Identification: 14
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_056
Chamber Serial Number: 10006124B
Detector Serial Number: 56
Env. Background: System Bkgd 196043
Reagent Blank: <not performed>

Sample Size: 1.058E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:35:28 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.669 mL
Effective Efficiency: 0.2062 +/- 0.0111
Counting Efficiency: 0.1595 +/- 0.0027 on 11/18/2016 3:34:09 PM
Chem. Recovery Factor: 1.2930 +/- 0.0729

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.262	425.98	9.51	1.02	0.00E+000	9.7
U-234		4.705	3006.45	3.58	2.55	0.00E+000	101.0
U-235		4.405	179.49	14.65	0.51	0.00E+000	4.4
U-238		4.124	2998.81	3.58	1.19	0.00E+000	89.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.988	5302.50*	5.20E+000 +/- 5.47E-001	7.69E-002 +/- 8.10E-003
U-234	0.977	4761.50*	3.66E+001 +/- 4.07E+000	1.02E-001 +/- 1.07E-002
U-235	0.997	4385.50*	2.69E+000 +/- 4.86E-001	7.88E-002 +/- 8.29E-003
U-238	0.974	4184.40*	3.63E+001 +/- 4.04E+000	7.98E-002 +/- 8.40E-003

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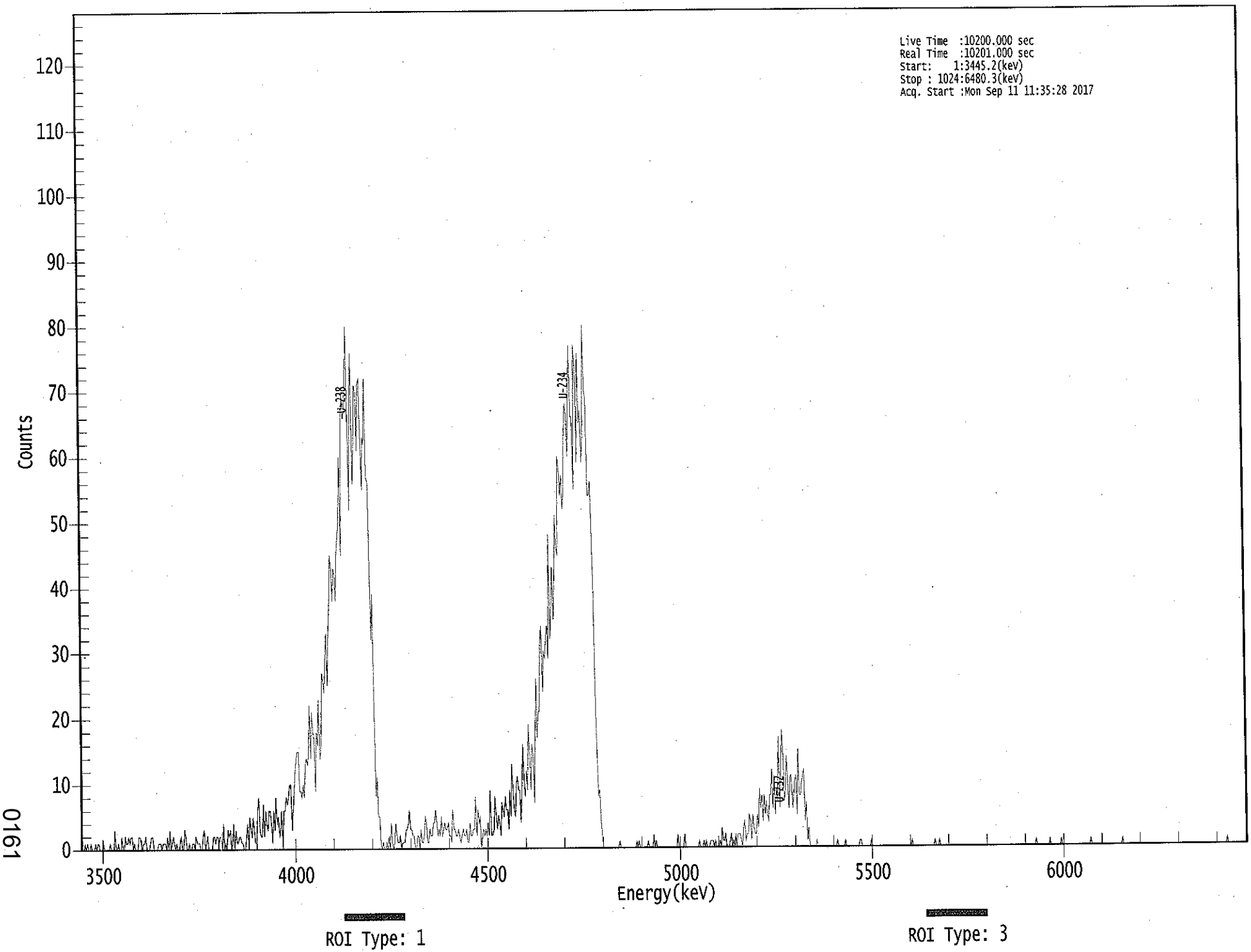
9/12/17

0000194030.CNF



0161

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 14

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	0	0	0	1	0	1	0	0
9:	1	0	0	0	1	0	1	1
17:	0	0	0	1	0	0	0	0
25:	0	1	0	0	0	3	0	0
33:	1	0	0	2	0	0	2	1
41:	1	2	1	2	2	0	1	0
49:	0	0	2	2	1	0	1	1
57:	2	0	0	0	1	2	2	0
65:	0	0	0	1	1	1	0	1
73:	1	1	0	2	0	3	0	1
81:	2	1	0	1	0	0	1	2
89:	0	0	3	2	0	0	1	0
97:	0	1	1	0	2	1	1	1
105:	0	0	2	3	0	1	2	0
113:	0	0	0	2	2	1	2	2
121:	1	2	2	0	4	0	1	0
129:	3	2	3	0	1	4	0	3
137:	1	1	2	2	1	1	0	0
145:	2	4	0	5	3	2	5	3
153:	1	1	6	8	3	2	2	7
161:	2	6	4	3	6	6	4	1
169:	6	3	8	4	5	2	3	6
177:	0	6	6	8	7	8	10	10
185:	3	6	9	12	14	15	15	9
193:	9	8	10	8	13	14	13	15
201:	22	14	21	18	17	9	18	16
209:	23	14	15	27	26	24	28	33
217:	25	33	37	45	43	38	43	42
225:	38	45	48	50	60	45	66	70
233:	66	67	73	80	64	52	69	76
241:	56	61	71	70	61	71	72	65
249:	55	63	62	72	57	56	43	32
257:	39	21	8	11	5	5	1	0
265:	1	0	0	1	0	2	0	4
273:	1	0	1	4	2	1	1	2
281:	0	1	1	1	3	3	4	6
289:	3	3	2	2	0	0	2	2
297:	0	3	1	1	2	5	4	1
305:	1	3	2	2	4	4	6	4
313:	2	3	2	5	2	3	4	3
321:	3	4	2	2	1	6	3	3
329:	2	2	3	2	1	2	3	2
337:	2	3	1	1	4	2	2	3
345:	3	8	2	6	4	5	0	2
353:	3	2	3	2	4	2	9	2
361:	2	3	8	5	3	5	4	2

369:	7	6	5	8	6	6	3	9

Sample Title: 14

Channel								
377:	5	13	9	6	5	10	11	9
385:	9	4	10	16	10	8	12	9
393:	19	15	9	16	14	7	19	26
401:	17	21	21	32	34	24	30	29
409:	32	34	29	48	32	37	43	35
417:	40	51	46	45	60	58	54	57
425:	52	54	64	68	66	60	70	77
433:	66	66	55	77	73	59	76	65
441:	67	59	63	80	70	69	54	54
449:	56	49	41	24	16	8	9	4
457:	2	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	1
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	1	0
489:	1	0	0	0	0	0	0	0
497:	1	0	0	0	0	2	0	1
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	2	0	0	0	0	0
529:	2	0	0	0	0	0	0	0
537:	0	0	0	0	0	1	0	0
545:	0	1	0	1	0	0	0	1
553:	1	1	0	1	0	0	0	1
561:	0	3	1	1	2	0	0	0
569:	1	2	0	1	0	2	0	2
577:	2	2	1	0	3	4	1	2
585:	2	5	4	1	5	3	2	2
593:	5	3	9	6	8	4	8	5
601:	7	5	4	8	8	12	6	11
609:	5	9	7	17	6	13	18	14
617:	7	9	14	10	6	11	11	6
625:	8	10	11	5	15	8	8	10
633:	11	12	4	7	1	3	0	0
641:	0	0	0	0	1	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	1	0
665:	0	0	0	0	0	1	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	1	1	0	0	0	0
689:	0	0	0	0	1	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	1	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	1	0	0	0
753:	1	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 14

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	1	0	0
841:	0	0	0	0	0	0	0	0
849:	0	1	0	0	0	0	0	0
857:	0	0	0	1	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	1	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	1	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	1	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB 9/11/17

Sample Description: HTC-A09-S001-0006-02
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 15
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_057
Chamber Serial Number: 01017326A
Detector Serial Number: 57
Env. Background: System Bkgd 196044
Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:35:14 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.669 mL
Effective Efficiency: 0.1606 +/- 0.0096
Counting Efficiency: 0.1646 +/- 0.0028 on 11/18/2016 3:34:08 PM
Chem. Recovery Factor: 0.9753 +/- 0.0604

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.267	331.83	10.76	0.17	0.00E+000	8.4
U-234		4.718	2409.83	3.99	0.17	0.00E+000	87.0
U-235		4.400	167.00	15.21	0.00	0.00E+000	4.4
U-238		4.137	2511.66	3.91	0.34	0.00E+000	71.5

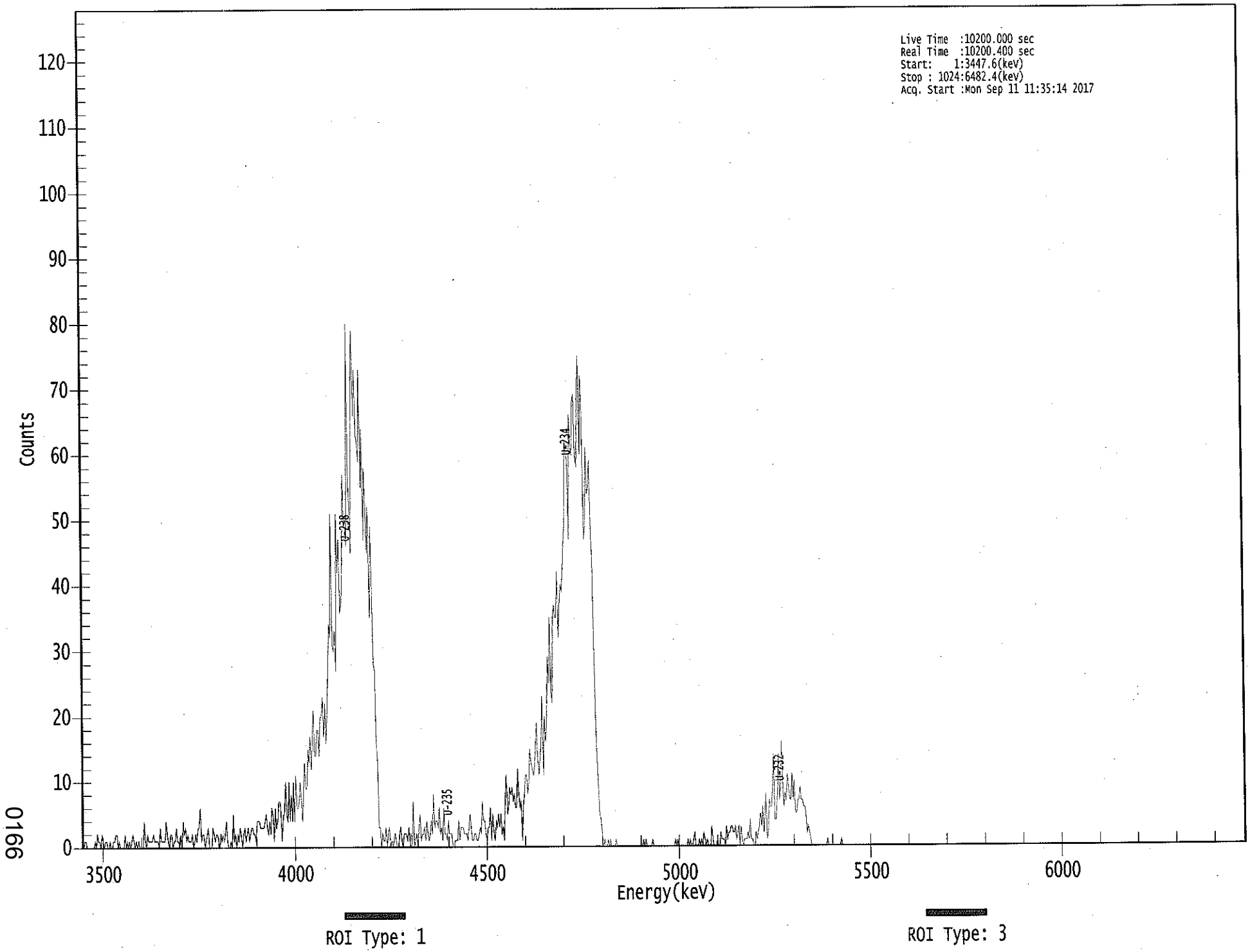
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.991	5302.50*	5.51E+000 +/- 6.43E-001	6.92E-002 +/- 8.08E-003
U-234	0.987	4761.50*	3.99E+001 +/- 4.92E+000	6.90E-002 +/- 8.05E-003
U-235	0.999	4385.50*	3.41E+000 +/- 6.53E-001	1.22E-001 +/- 1.43E-002
U-238	0.984	4184.40*	4.14E+001 +/- 5.09E+000	7.87E-002 +/- 9.19E-003

AG 9/12/17

0000194020.CNF



0166

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 15

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	1	1	0	0	0	0
9:	0	0	0	1	0	2	1	1
17:	0	2	1	0	1	1	0	0
25:	1	0	0	1	1	2	2	0
33:	1	0	0	0	0	2	0	1
41:	0	1	0	1	2	1	0	1
49:	0	1	0	0	0	0	4	1
57:	0	2	1	1	1	1	2	1
65:	1	1	1	0	3	1	1	1
73:	1	4	2	1	0	2	2	0
81:	1	1	3	1	1	0	2	0
89:	4	2	3	1	2	1	1	1
97:	2	0	1	2	1	3	3	6
105:	1	2	2	0	1	2	3	0
113:	0	0	3	2	1	2	2	1
121:	0	2	1	2	1	2	4	1
129:	0	0	1	0	5	1	2	0
137:	2	1	3	2	0	2	3	1
145:	2	3	1	2	3	3	2	2
153:	1	4	4	4	3	3	3	3
161:	4	5	3	2	4	2	6	5
169:	1	6	3	4	7	7	5	1
177:	5	5	10	5	4	10	4	8
185:	4	10	4	11	6	6	7	10
193:	7	4	9	13	9	9	15	13
201:	17	12	16	21	14	14	18	18
209:	14	20	20	23	17	22	16	21
217:	28	34	32	51	31	30	33	27
225:	51	42	47	36	37	42	57	49
233:	50	46	80	56	52	45	72	79
241:	66	73	63	62	59	73	55	64
249:	47	58	52	45	52	35	49	39
257:	28	27	16	13	3	3	0	2
265:	1	1	3	0	2	3	0	1
273:	0	1	2	1	0	0	2	3
281:	1	0	2	2	2	1	3	1
289:	2	0	7	0	1	2	0	3
297:	5	1	2	2	3	1	4	2
305:	1	2	4	2	8	3	4	4
313:	3	6	2	3	1	6	2	2
321:	1	4	2	2	2	0	0	1
329:	1	1	4	1	3	3	3	2
337:	2	2	1	3	5	3	1	1
345:	2	2	1	1	2	3	2	7
353:	4	4	2	1	3	3	6	1
361:	5	2	1	4	3	5	3	5

369:	2	3	1	8	11	5	6	9

Sample Title: 15

Channel								
377:	8	9	7	8	6	6	12	8
385:	6	7	1	6	8	11	11	8
393:	10	15	13	12	11	12	16	19
401:	14	11	13	16	23	11	20	16
409:	19	29	25	35	24	22	35	37
417:	35	35	42	32	37	40	39	42
425:	46	49	62	60	59	47	66	61
433:	60	68	69	60	58	68	75	60
441:	72	66	47	49	61	54	55	59
449:	48	44	31	20	14	9	5	4
457:	2	0	1	0	0	1	0	1
465:	0	0	0	0	1	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	1	0	1	0
497:	0	0	0	0	1	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	1	0	1	0	0	0	0	0
529:	0	0	0	1	0	1	0	0
537:	1	2	0	0	0	1	0	1
545:	0	2	1	0	1	0	0	0
553:	3	1	0	0	0	1	0	0
561:	2	1	1	1	0	3	1	2
569:	2	3	3	2	2	3	1	2
577:	3	0	3	1	0	1	1	1
585:	2	1	4	1	1	0	0	2
593:	1	2	3	5	3	6	2	5
601:	8	1	2	7	6	6	9	14
609:	4	4	7	14	7	9	16	9
617:	6	8	7	11	9	7	7	11
625:	7	10	5	5	7	7	9	7
633:	7	6	6	5	2	3	2	1
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	1	0
657:	0	0	0	0	0	0	0	0
665:	0	0	1	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 15

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

VCB 9/11/17

Apex-Alpha™

Sample Description: HTC-A09-S001-0612-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 16
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_058
Chamber Serial Number: 01017326B
Detector Serial Number: 58
Env. Background: System Bkgd 196045
Reagent Blank: <not performed>

Sample Size: 1.200E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:35:16 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.670 mL
Effective Efficiency: 0.2172 +/- 0.0114
Counting Efficiency: 0.1665 +/- 0.0028 on 11/18/2016 3:34:06 PM
Chem. Recovery Factor: 1.3044 +/- 0.0720

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.263	449.49	9.25	0.51	0.00E+000	21.7
U-234		4.716	359.83	10.34	0.17	0.00E+000	12.5
U-235		4.402	25.66	38.99	0.34	0.00E+000	3.0
U-238		4.139	371.15	10.19	0.85	0.00E+000	19.4

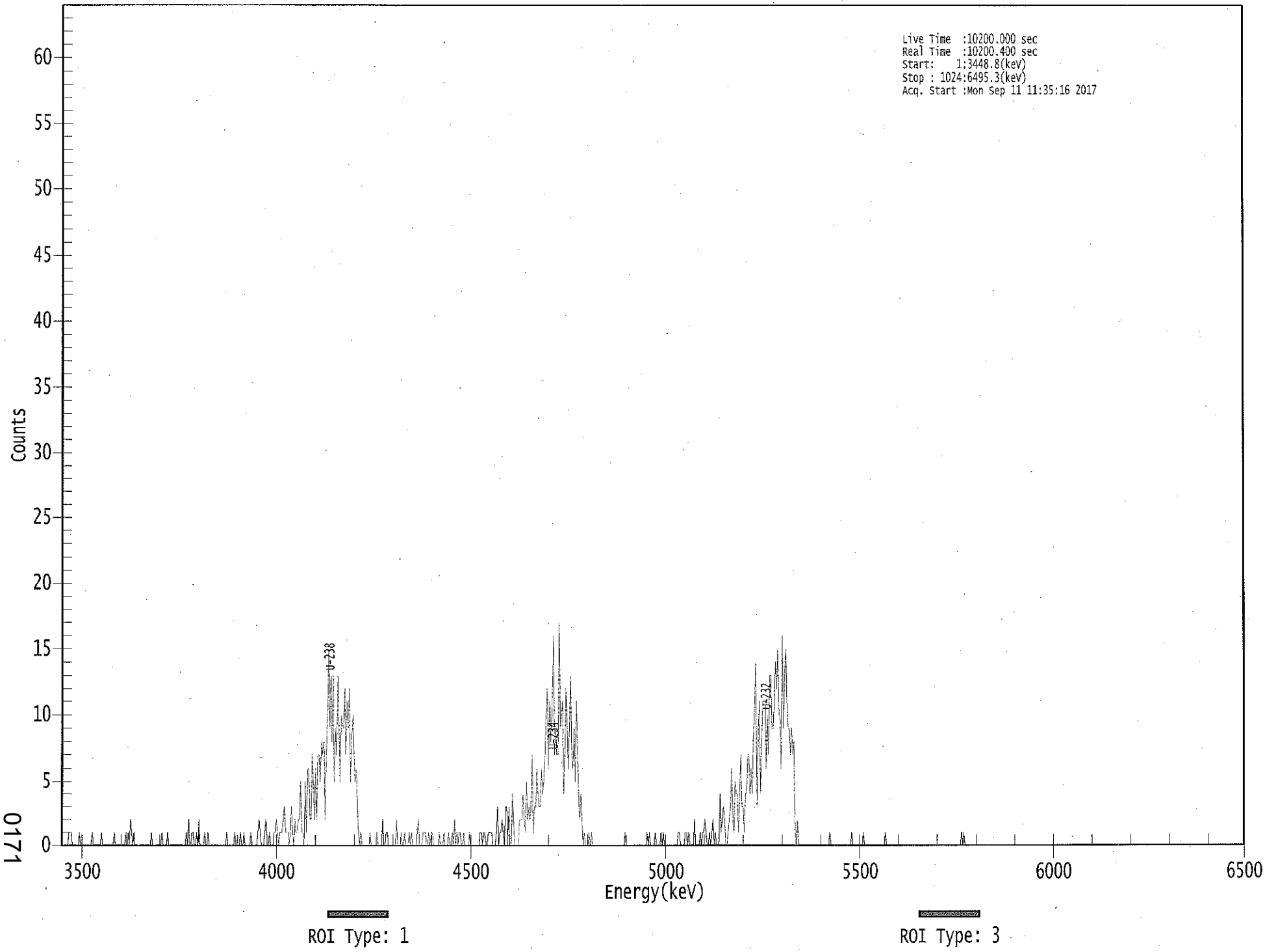
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.989	5302.50*	4.59E+000 +/- 4.73E-001	5.36E-002 +/- 5.52E-003
U-234	0.985	4761.50*	3.67E+000 +/- 5.35E-001	4.25E-002 +/- 4.38E-003
U-235	0.998	4385.50*	3.23E-001 +/- 1.30E-001	6.01E-002 +/- 6.19E-003
U-238	0.985	4184.40*	3.77E+000 +/- 5.45E-001	6.07E-002 +/- 6.25E-003

AG 9/12/17

0000194032.CNF



0171

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 16

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel							
1:	0	0	0	0	0	0	1	1
9:	1	0	0	0	0	0	0	1
17:	0	0	0	0	0	0	0	0
25:	0	0	1	0	0	0	0	0
33:	0	0	1	0	0	0	0	0
41:	0	0	0	0	0	1	0	0
49:	0	0	0	0	0	0	0	1
57:	0	1	0	2	1	0	1	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	1	0	0
81:	0	0	0	0	0	0	1	0
89:	0	0	0	1	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	1	0	2	0	0
113:	1	1	0	0	1	0	2	0
121:	0	0	0	1	0	0	1	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	1	0
145:	0	0	0	0	0	1	0	0
153:	0	0	1	0	0	1	0	0
161:	0	0	0	1	0	0	0	0
169:	0	1	2	1	0	0	0	1
177:	2	0	0	1	0	0	0	1
185:	1	2	1	0	1	1	1	2
193:	3	1	1	1	0	1	3	1
201:	0	2	1	1	2	2	5	1
209:	1	0	5	1	6	6	2	2
217:	7	5	2	6	2	7	7	5
225:	8	7	8	2	7	10	15	9
233:	13	8	13	5	9	7	13	9
241:	5	10	9	9	12	7	11	9
249:	12	5	8	10	7	5	6	3
257:	1	0	1	0	0	0	0	0
265:	0	0	1	0	0	0	0	0
273:	1	0	0	0	0	2	0	0
281:	1	1	0	0	0	0	0	0
289:	0	2	0	0	0	1	0	0
297:	1	0	0	0	1	0	1	0
305:	0	0	0	1	2	0	0	0
313:	1	1	1	0	0	1	0	1
321:	1	0	0	0	0	0	1	0
329:	0	0	1	0	0	0	1	0
337:	0	1	0	2	0	1	0	1
345:	1	0	0	1	0	0	0	0
353:	1	0	0	0	0	0	0	0
361:	0	1	1	0	1	1	0	0

369:	1	1	1	1	0	0	0	1

Sample Title: 16

Channel								
377:	3	0	1	1	2	1	0	3
385:	3	0	3	0	0	4	2	0
393:	0	0	0	2	2	2	4	2
401:	1	5	2	3	2	3	7	1
409:	3	3	6	4	3	3	6	4
417:	5	7	10	12	6	11	8	10
425:	16	7	9	7	7	17	9	10
433:	11	4	7	12	9	6	9	13
441:	7	6	9	5	11	8	4	2
449:	4	2	0	1	0	0	0	1
457:	0	1	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	1	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	1	0	1	0	0	0	0
513:	1	0	0	0	0	1	0	1
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	1	1	0	0
537:	0	0	1	1	0	1	0	0
545:	0	0	2	0	0	0	0	1
553:	0	1	1	2	1	0	0	1
561:	0	1	2	0	1	0	0	0
569:	4	1	2	3	2	0	0	1
577:	2	3	6	2	1	5	4	4
585:	1	4	7	3	3	1	4	4
593:	7	7	4	6	4	8	11	14
601:	3	9	11	4	8	11	11	11
609:	6	10	7	13	13	9	9	11
617:	14	12	15	10	10	6	16	9
625:	13	15	11	9	9	7	9	7
633:	8	1	0	2	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	1
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	1	0	0	0	0	0
689:	0	0	0	0	1	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	1
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	1	0	1	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 16

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

VCB 9/11/17

Apex-Alpha™

Sample Description: HTC-A09-S001-1218-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 17
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_059
Chamber Serial Number: 10006125A
Detector Serial Number: 59
Env. Background: System Bkgd 196046
Reagent Blank: <not performed>

Sample Size: 1.120E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:35:30 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.668 mL
Effective Efficiency: 0.2252 +/- 0.0117
Counting Efficiency: 0.1776 +/- 0.0030 on 11/18/2016 3:40:57 PM
Chem. Recovery Factor: 1.2678 +/- 0.0691

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.274	464.66	9.10	0.34	0.00E+000	51.7
U-234		4.734	220.83	13.20	0.17	0.00E+000	4.5
U-235		4.382	16.00	50.51	0.00	0.00E+000	3.7
U-238		4.152	207.66	13.61	0.34	0.00E+000	9.0

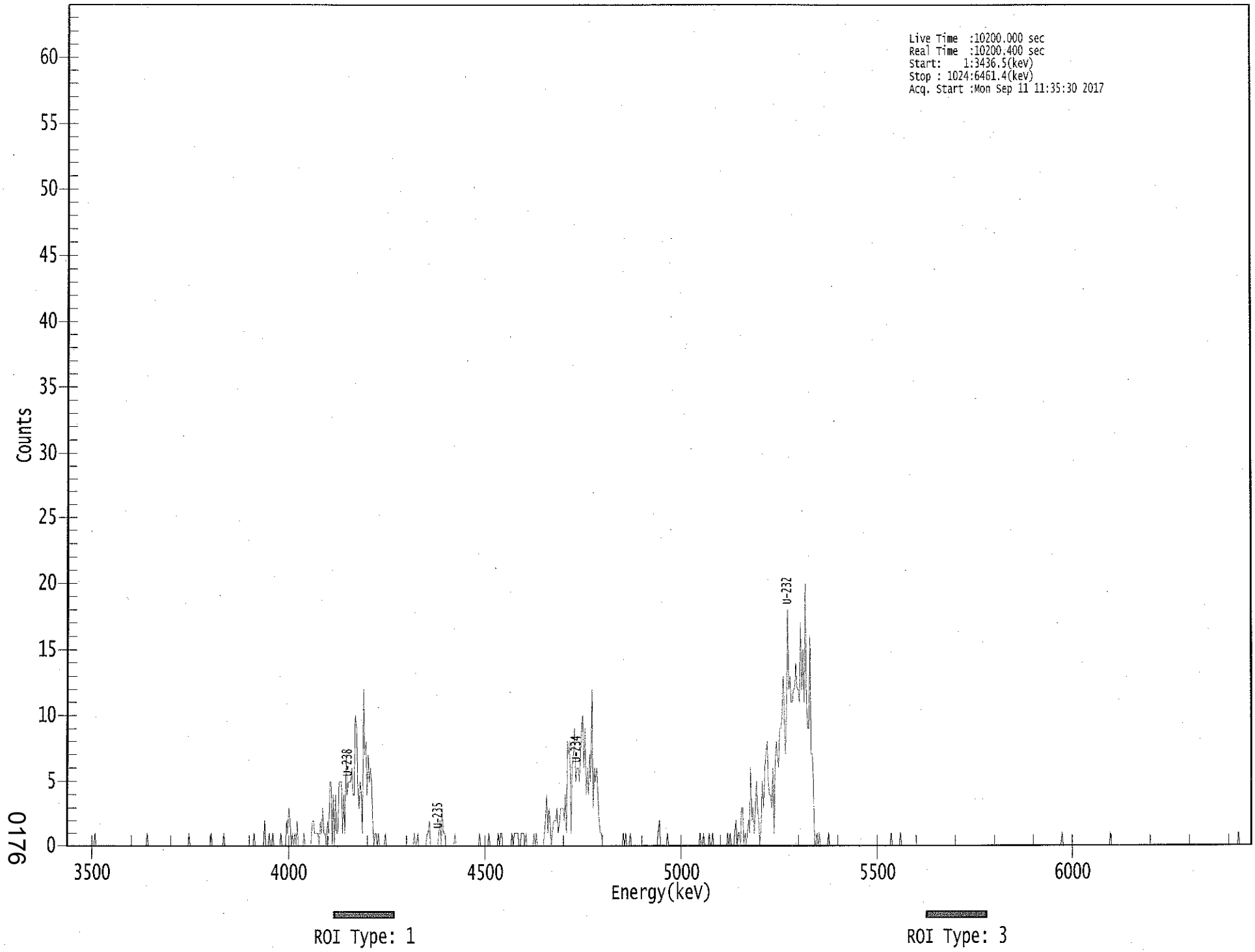
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.994	5302.50*	4.91E+000 +/- 4.98E-001	5.05E-002 +/- 5.13E-003
U-234	0.995	4761.50*	2.32E+000 +/- 3.87E-001	4.39E-002 +/- 4.46E-003
U-235	1.000	4385.50*	2.08E-001 +/- 1.07E-001	7.79E-002 +/- 7.91E-003
U-238	0.992	4184.40*	2.18E+000 +/- 3.70E-001	5.01E-002 +/- 5.09E-003

AG 9/12/17

0000194035.CNF



0176

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 17

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel							
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	1	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	1	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	1	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	1	0	0	0
129:	0	0	0	0	0	0	0	1
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	1	0	0	0	0	0	0
169:	0	0	2	0	0	0	1	0
177:	0	1	0	0	0	0	0	0
185:	1	0	0	0	0	2	1	3
193:	2	0	1	0	1	0	2	0
201:	0	0	0	0	1	0	0	0
209:	0	0	0	2	2	1	1	1
217:	1	0	2	1	3	1	1	0
225:	2	1	5	5	0	4	0	4
233:	1	1	5	5	5	1	4	1
241:	7	4	5	5	5	6	4	4
249:	10	9	5	3	5	4	1	12
257:	7	8	4	7	5	6	5	2
265:	0	1	1	0	1	0	0	0
273:	0	0	1	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	1	0	0	1	0
305:	0	0	0	0	0	0	1	1
313:	2	0	0	0	0	0	0	0
321:	1	2	0	3	1	1	0	0
329:	0	0	0	0	0	0	1	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	1	0	0	0	0
361:	0	0	0	1	0	0	0	0

369:	0	0	0	1	0	1	1	0

Sample Title: 17

Channel								
377:	0	0	0	0	0	0	0	1
385:	0	1	1	1	1	0	0	1
393:	1	1	0	1	0	0	0	0
401:	0	0	1	0	1	0	0	0
409:	0	0	0	1	2	4	1	3
417:	2	0	1	2	2	2	3	1
425:	2	3	3	3	2	4	1	8
433:	7	8	1	6	7	9	5	6
441:	6	5	7	9	10	6	9	4
449:	6	4	7	5	12	3	6	5
457:	6	4	2	1	1	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	1
481:	0	1	0	0	0	1	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	1	2	0
513:	0	0	0	0	0	1	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	1	0	0	1	0	0	0
553:	0	1	0	0	1	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	1	0	1	0	0	0	1
577:	2	0	1	1	0	3	3	0
585:	1	0	1	2	1	6	2	3
593:	1	3	5	3	2	0	2	5
601:	3	6	7	8	5	4	4	3
609:	6	1	6	8	7	6	9	9
617:	10	13	10	7	10	18	12	13
625:	11	11	12	12	14	12	12	11
633:	17	12	15	11	20	11	9	9
641:	16	7	7	5	0	0	1	0
649:	1	0	0	0	0	0	0	0
657:	1	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	1	0
713:	0	0	0	0	0	0	1	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 17

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	1	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	1	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	1	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB 9/11/17

Sample Description: HTC-A09-S001-1824-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 18
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_060
Chamber Serial Number: 10006125B
Detector Serial Number: 60
Env. Background: System Bkgd 196047
Reagent Blank: <not performed>

Sample Size: 1.270E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 11:35:32 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.669 mL
Effective Efficiency: 0.1944 +/- 0.0107
Counting Efficiency: 0.1477 +/- 0.0026 on 11/18/2016 3:34:04 PM
Chem. Recovery Factor: 1.3164 +/- 0.0759

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.278	401.98	9.79	1.02	0.00E+000	8.9
U-234		4.723	155.96	15.81	2.04	0.00E+000	5.9
U-235		4.400	7.83	70.93	0.17	0.00E+000	3.0
U-238		4.147	150.32	16.03	0.68	0.00E+000	4.7

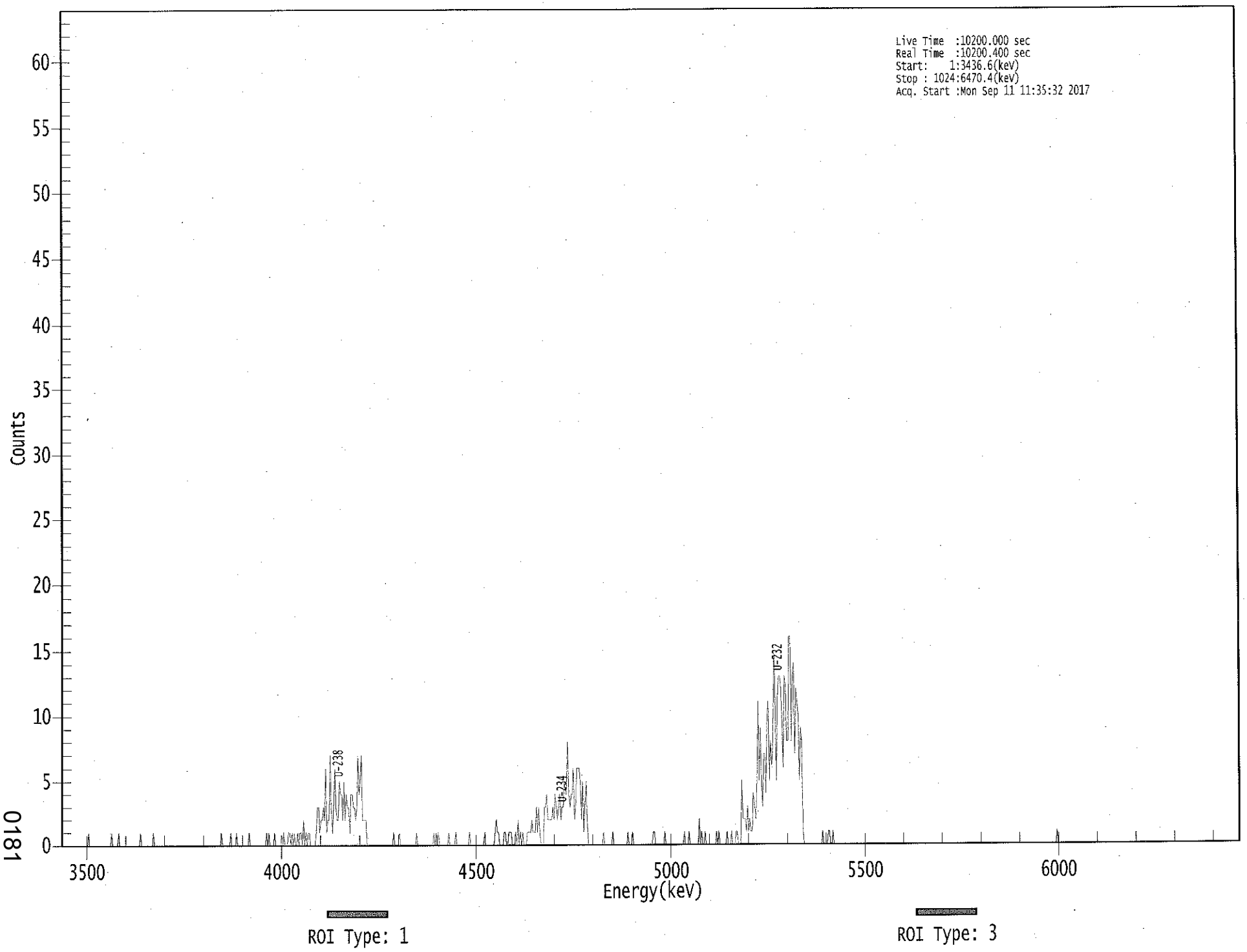
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	4.34E+000 +/- 4.68E-001	6.80E-002 +/- 7.33E-003
U-234	0.989	4761.50*	1.68E+000 +/- 3.21E-001	8.38E-002 +/- 9.03E-003
U-235	0.998	4385.50*	1.04E-001 +/- 7.45E-002	5.54E-002 +/- 5.97E-003
U-238	0.990	4184.40*	1.61E+000 +/- 3.11E-001	6.04E-002 +/- 6.51E-003

AG 9/12/17

0000194036.CNF



```
*****************************************************
*****   S P E C T R A L   D A T A   R E P O R T   *****
*****************************************************
```

Sample Title: 18

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	1
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	1	0	0	0	0
49:	0	1	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	1	0	0	0
73:	0	0	0	0	0	0	0	1
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	1	0	0	0	0	0
145:	0	0	1	0	0	0	0	1
153:	0	0	0	0	0	0	0	0
161:	0	0	1	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	1	0	1	0	0	0	0
185:	1	0	0	0	0	0	0	0
193:	1	0	0	0	1	1	0	1
201:	0	1	0	0	1	0	1	1
209:	0	2	0	1	0	1	1	0
217:	0	0	0	0	1	3	3	1
225:	2	2	3	2	6	1	2	2
233:	7	3	1	3	6	3	2	2
241:	5	4	4	2	5	2	4	3
249:	3	1	4	4	3	3	2	3
257:	7	4	5	7	2	2	2	2
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	1
289:	0	0	0	0	1	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	1	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	1	0	1	0	1	0
329:	0	0	0	0	0	0	0	1
337:	0	0	0	0	0	1	0	0
345:	0	0	0	0	0	0	0	0
353:	0	1	0	0	0	0	0	0
361:	0	0	0	0	0	0	1	0

369:	0	0	0	0	0	0	0	1

Sample Title: 18

Channel								
377:	2	1	1	0	0	0	0	1
385:	1	0	0	1	1	1	0	0
393:	0	1	0	2	0	1	0	1
401:	0	0	0	1	1	1	1	2
409:	1	1	1	3	1	3	1	0
417:	0	0	3	3	4	2	2	2
425:	2	3	2	4	3	2	3	4
433:	2	3	3	5	4	4	8	4
441:	3	4	4	6	2	3	6	6
449:	6	5	2	5	1	3	5	2
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	1	0	0
473:	0	0	0	0	0	1	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	1	0	0	0	1	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	1	1	0	0	0	0	0	0
521:	0	0	1	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	1	0	0	0	1
545:	0	0	0	0	0	0	0	0
553:	2	0	1	0	0	1	0	0
561:	0	0	0	0	0	0	0	1
569:	0	1	0	0	0	0	0	0
577:	1	0	0	0	1	0	0	0
585:	1	1	0	0	0	5	2	2
593:	2	1	3	1	2	1	1	4
601:	3	2	5	11	5	9	5	3
609:	7	7	4	10	11	5	8	6
617:	8	15	11	5	11	13	13	12
625:	10	6	13	12	8	8	16	16
633:	8	13	14	7	12	11	10	5
641:	9	8	1	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	1	0	0	0	0
665:	1	1	0	0	1	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 18

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	1
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

LB 9/11/17

Apex-Alpha™

Sample Description: HTC-A09-S001-2430-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 19
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_033
Chamber Serial Number: 04026479A
Detector Serial Number: 91132
Env. Background: System Bkgd 196024
Reagent Blank: <not performed>

Sample Size: 1.210E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 2:37:02 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.670 mL
Effective Efficiency: 0.2213 +/- 0.0115
Counting Efficiency: 0.1681 +/- 0.0029 on 11/18/2016 10:08:33 AM
Chem. Recovery Factor: 1.3163 +/- 0.0723

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.269	457.81	9.17	1.19	0.00E+000	8.3
U-234		4.724	179.66	14.64	0.34	0.00E+000	4.2
U-235		4.398	17.83	46.68	0.17	0.00E+000	4.5
U-238		4.139	158.32	15.62	0.68	0.00E+000	8.7

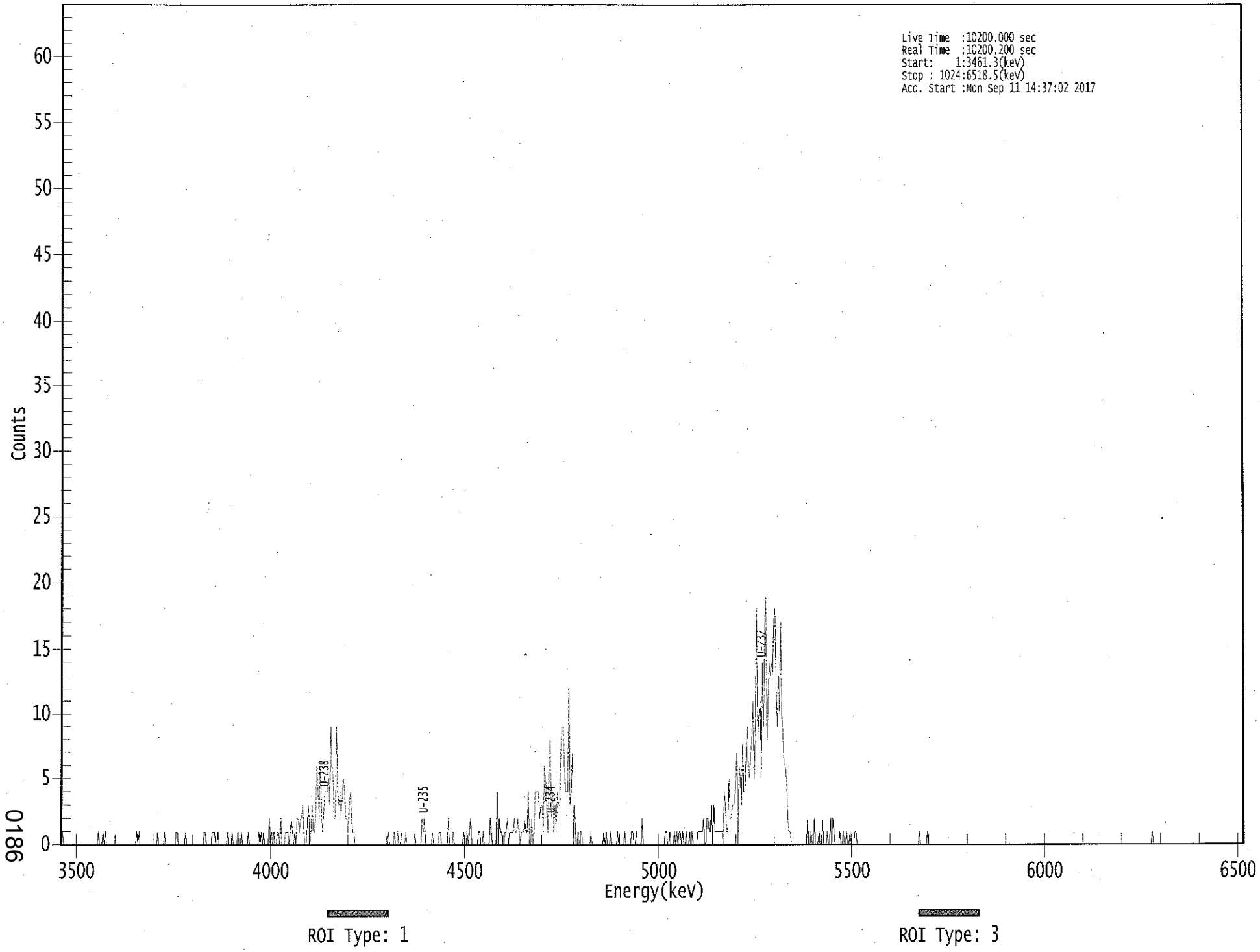
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.992	5302.50*	4.55E+000 +/- 4.66E-001	6.55E-002 +/- 6.70E-003
U-234	0.990	4761.50*	1.78E+000 +/- 3.18E-001	4.74E-002 +/- 4.85E-003
U-235	0.999	4385.50*	2.18E-001 +/- 1.04E-001	5.10E-002 +/- 5.22E-003
U-238	0.985	4184.40*	1.56E+000 +/- 2.92E-001	5.57E-002 +/- 5.69E-003

AG 9/12/17

0000194042.CNF



0186

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 19

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel							
1:	0	1	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	1	0	0	0	1	0	1	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	1	0	1	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	1	0	0	0	0
89:	0	1	0	0	0	0	0	0
97:	0	0	0	1	1	0	0	0
105:	0	0	0	1	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	1	1	0	0	0
129:	0	0	1	1	1	0	0	1
137:	0	0	0	0	0	0	0	1
145:	0	0	0	1	0	0	0	0
153:	1	0	0	1	0	0	0	0
161:	0	1	0	0	0	0	0	0
169:	0	0	1	0	1	0	1	0
177:	0	0	0	2	0	1	0	1
185:	0	0	1	1	0	2	0	0
193:	0	1	1	1	0	1	2	1
201:	0	1	0	2	2	1	2	2
209:	3	1	0	0	2	3	0	1
217:	3	1	1	2	6	4	2	6
225:	2	1	3	4	4	4	5	3
233:	9	6	5	2	2	9	4	3
241:	4	2	4	5	4	2	2	1
249:	3	4	2	1	1	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	1	0	0	0	0	1
289:	0	0	1	0	0	1	0	0
297:	0	1	0	0	0	0	0	0
305:	0	1	0	0	0	0	0	2
313:	1	2	0	0	0	0	0	0
321:	1	0	0	0	0	0	1	1
329:	0	0	0	0	0	0	2	0
337:	0	0	1	0	0	0	0	0
345:	0	0	0	1	0	0	1	0
353:	1	2	0	0	0	0	0	0
361:	1	1	0	0	1	0	0	0

369:	0	0	2	1	0	0	0	0

Sample Title: 19

Channel								
377:	4	0	2	1	1	0	0	1
385:	1	2	0	1	1	1	1	2
393:	1	1	2	1	0	1	1	1
401:	2	1	1	4	0	0	2	0
409:	1	4	4	4	4	2	3	3
417:	1	6	5	3	1	6	8	2
425:	4	1	3	1	4	3	3	7
433:	9	9	6	4	4	4	12	3
441:	4	7	0	3	0	0	1	0
449:	1	1	0	0	0	0	0	0
457:	0	1	0	0	0	0	0	0
465:	0	0	0	0	1	0	1	0
473:	0	0	1	0	0	0	0	0
481:	1	0	0	0	0	0	1	0
489:	0	0	0	0	1	1	0	0
497:	1	0	0	0	0	2	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	1	1	0	0	1	0	0
529:	0	1	0	1	0	1	1	0
537:	1	0	0	1	0	0	1	0
545:	1	0	0	0	0	1	1	1
553:	1	1	2	0	0	2	2	1
561:	1	3	0	3	1	1	1	1
569:	1	1	1	0	4	3	1	1
577:	5	2	2	3	3	3	5	7
585:	0	6	5	3	8	4	4	7
593:	9	6	5	7	8	11	5	8
601:	18	8	10	11	5	14	9	16
609:	19	8	11	14	13	14	13	17
617:	18	12	9	13	10	17	10	8
625:	6	6	5	2	1	1	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	2	0	0	1
649:	0	0	2	0	0	0	1	0
657:	0	2	0	0	0	1	0	0
665:	2	0	2	1	0	0	0	0
673:	1	0	0	1	0	0	1	0
681:	0	1	0	0	0	1	1	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	1	0	0
745:	0	0	0	0	1	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 19

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	1
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

NB 9/11/17

Sample Description: HTC-A09-S001-3036-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-UU
Sample Identification: 20
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_034
Chamber Serial Number: 04026479B
Detector Serial Number: 91136
Env. Background: System Bkgd 196025
Reagent Blank: <not performed>

Sample Size: 1.140E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:05:32 AM
Acquisition Date/Time: 9/11/2017 2:37:04 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.678 mL
Effective Efficiency: 0.1809 +/- 0.0102
Counting Efficiency: 0.1728 +/- 0.0029 on 11/18/2016 10:08:58 AM
Chem. Recovery Factor: 1.0468 +/- 0.0616

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.273	378.66	10.08	0.34	0.00E+000	8.5
U-234		4.732	122.49	17.75	0.51	0.00E+000	4.2
U-235		4.368	7.66	72.63	0.34	0.00E+000	3.0
U-238		4.155	107.00	19.04	0.00	0.00E+000	7.2

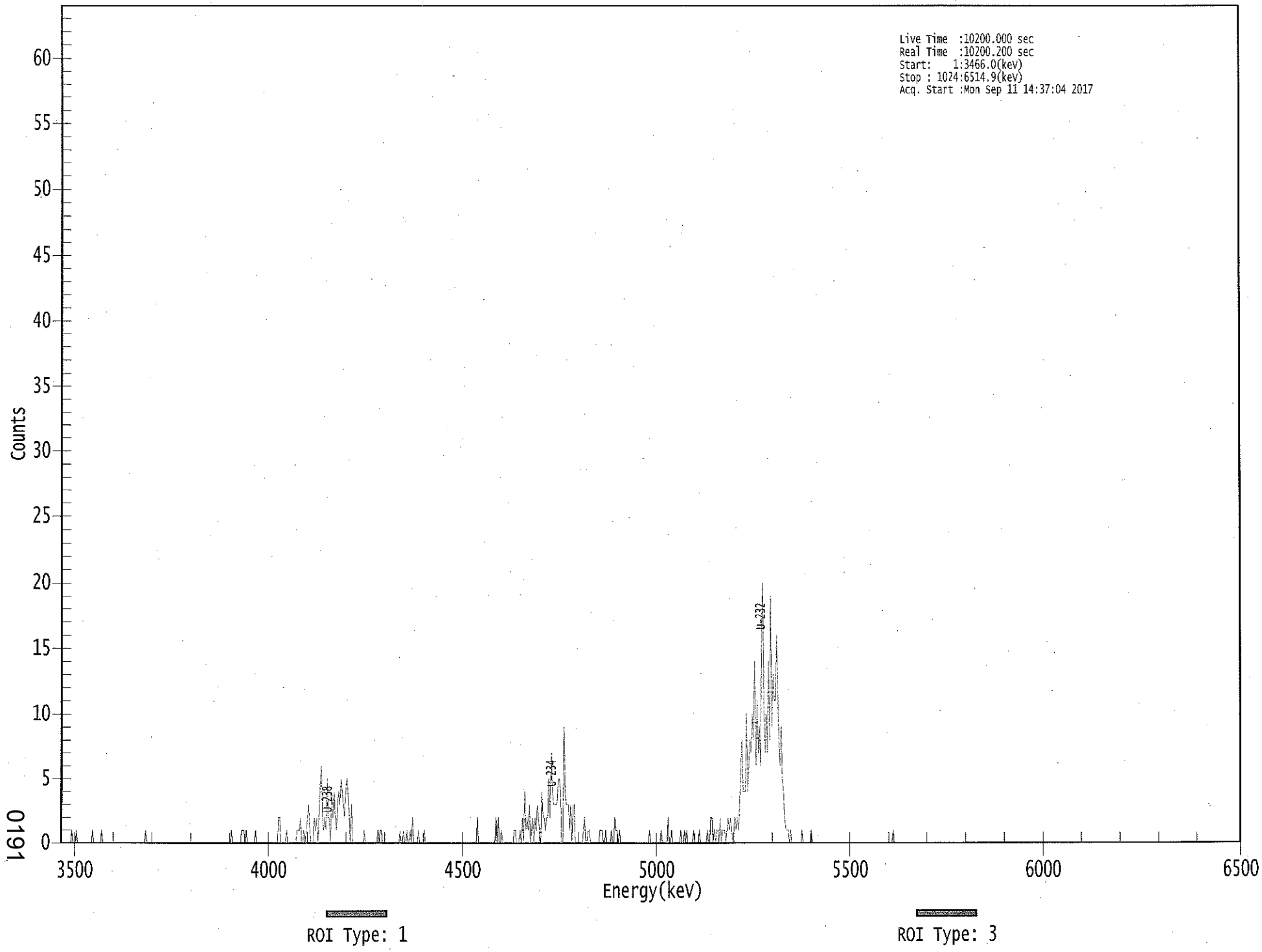
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.994	5302.50*	4.89E+000 +/- 5.40E-001	6.17E-002 +/- 6.82E-003
U-234	0.994	4761.50*	1.58E+000 +/- 3.30E-001	6.75E-002 +/- 7.46E-003
U-235	0.998	4385.50*	1.22E-001 +/- 8.94E-002	7.59E-002 +/- 8.38E-003
U-238	0.994	4184.40*	1.37E+000 +/- 3.02E-001	7.68E-002 +/- 8.49E-003

AG 9/12/17

0000194043.CNF



0191

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 20

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	1	0	0	0	1	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	1	0	0	0	0
33:	0	0	0	1	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	1	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	1	0	0	0	0
153:	0	0	0	0	1	1	1	0
161:	1	0	0	0	0	0	0	0
169:	1	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	2	2	0	0
193:	0	0	0	1	0	0	0	0
201:	0	0	0	0	1	1	1	2
209:	0	0	1	0	1	2	3	1
217:	0	0	0	2	1	2	0	2
225:	5	6	2	1	2	1	5	2
233:	2	0	4	2	4	2	1	3
241:	4	3	5	4	3	2	4	5
249:	4	2	0	3	0	0	0	0
257:	0	0	0	0	0	0	1	0
265:	0	0	0	0	0	0	0	0
273:	0	0	1	0	1	1	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	1	0	0
297:	1	0	0	1	0	0	1	0
305:	2	0	0	0	0	1	0	0
313:	0	0	1	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	2	0	0	0	0	0	0	0

369:	0	0	0	0	0	0	0	0

Sample Title: 20

Channel								
377:	2	0	2	0	0	1	0	0
385:	0	0	0	0	0	0	0	0
393:	1	1	0	0	0	1	0	2
401:	0	4	1	2	1	3	0	1
409:	2	0	2	1	3	2	1	0
417:	4	2	2	1	2	2	5	2
425:	7	4	3	3	3	3	5	5
433:	4	0	0	9	4	3	3	3
441:	1	3	0	3	3	0	0	0
449:	0	0	0	0	1	2	0	0
457:	1	1	0	0	0	0	0	0
465:	0	0	1	1	1	0	0	1
473:	0	0	0	0	1	0	0	2
481:	1	1	0	1	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	1	0	0
513:	0	0	0	0	0	0	0	1
521:	0	0	0	0	0	2	0	0
529:	1	0	0	0	0	0	0	0
537:	1	0	0	1	0	1	0	0
545:	0	0	0	1	0	0	0	0
553:	1	0	0	0	0	0	0	1
561:	0	0	2	2	0	1	0	1
569:	1	0	2	0	1	1	1	0
577:	1	2	1	2	1	0	1	2
585:	1	2	1	3	6	8	4	4
593:	4	10	4	6	8	7	10	8
601:	14	6	11	7	9	6	16	20
609:	11	7	10	7	14	8	19	9
617:	13	11	11	16	12	8	6	9
625:	5	4	2	1	1	1	0	1
633:	0	0	0	0	0	0	0	0
641:	0	1	0	0	0	0	0	0
649:	0	1	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	1	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 20

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

9/11/2017 5:31:40 AM

Apex-Alpha™

QA SUMMARY REPORT
Review Of QA Results - Pulser Check

Date : 9/11/2017
Time : 5:31:40 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_001	21f	ALL	Not Done	
Alpha_002	21f	ALL	Not Done	
Alpha_003	21f	ALL	Passed	9/11/2017 5:16:35 AM
Alpha_004	21f	ALL	Passed	9/11/2017 5:16:36 AM
Alpha_005	21f	ALL	Not Done	
Alpha_006	21f	ALL	Not Done	
Alpha_007	21f	ALL	Not Done	
Alpha_008	21f	ALL	Not Done	
Alpha_009	21f	ALL	Not Done	
Alpha_010	21f	ALL	Passed	9/11/2017 5:16:37 AM
Alpha_011	21f	ALL	Passed	9/11/2017 5:16:38 AM
Alpha_012	21f	ALL	Passed	9/11/2017 5:16:39 AM
Alpha_013	21f	ALL	Not Done	
Alpha_014	21f	ALL	Passed	9/11/2017 5:16:40 AM
Alpha_015	21f	ALL	Not Done	
Alpha_016	21f	ALL	Not Done	
Alpha_033	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:16:41 AM
Alpha_034	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:16:42 AM
Alpha_035	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:16:44 AM
Alpha_036	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:16:46 AM
Alpha_037	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:16:47 AM
Alpha_038	Alpha Analyst100DC	Peak Energy	Action	9/11/2017 5:16:49 AM
Alpha_039	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:16:52 AM
Alpha_040	Alpha Analyst100DC	Peak FWHM	Action	9/11/2017 5:16:54 AM
Alpha_041	Alpha Analyst100DC	ALL	Not Done	
Alpha_042	Alpha Analyst100DC	ALL	Not Done	
Alpha_043	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:16:56 AM
Alpha_044	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:16:58 AM
Alpha_045	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:01 AM
Alpha_046	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:03 AM
Alpha_047	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:06 AM
Alpha_048	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:08 AM
Alpha_049	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:11 AM
Alpha_050	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:14 AM
Alpha_051	Alpha Analyst100DC	ALL	Not Done	
Alpha_052	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:17 AM
Alpha_053	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:19 AM
Alpha_054	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:22 AM
Alpha_055	Alpha Analyst100DC	ALL	Not Done	
Alpha_056	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:25 AM
Alpha_057	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:28 AM
Alpha_058	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:31 AM

Review of QA Results - Pulser Check

9/11/2017 5:31:40 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_059	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:34 AM
Alpha_060	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:37 AM

APPROVED BY: _____

APPROVAL DATE: 9/11/17

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*********************************************************************
*****          L I B R A R Y   L I S T I N G   R E P O R T       *****
*********************************************************************
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Nuclide Library Title: Uranium

Nuclide Library Description: U-232,-234,-235,-238

Nuclide Name	Half-Life (Seconds)	Energy (keV)	Energy Uncert. (keV)	Yield (%)	Yield Uncert.(Abs.+-)
U-232	2.174E+009	5302.500*	0.000	99.8000	0.0000
U-234	7.731E+012	4761.500*	0.000	99.8000	0.0000
U-235	2.221E+016	4385.500*	0.000	80.9000	0.0000
U-238	1.410E+017	4184.400*	0.000	100.2300	0.0000

* = key line

TOTALS: 4 Nuclides 4 Energy Lines

SECTION IX

ANALYTICAL DATA (ISOTOPIC THORIUM)

Eberline Analytical
Oak Ridge Laboratory
Analysis Sheet

17-07092
ThISO
Run 1

Work Order	17-07092
Analysis Code	ThISO
Run	1
Date Received	7/18/2017
Lab Deadline	8/10/2017
Client	Weston Solutions, Inc.
Project	94759
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	EPA 907.0 Modified
Instrument Type	Alpha Spectroscopy
Radiometric Tracer	Th-229
Radiometric Sol#	Th-18a
Tracer Act (dpm/g)	22.46
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		07/19/17 00:00	1.0000E+00
02	MBL	BLANK		07/19/17 00:00	1.0000E+00
03	DUP	HTC-A08-S001-0006-01	34	05/16/17 15:01	1.0700E+00
04	DO	HTC-A08-S001-0006-01	34	05/16/17 15:01	1.0683E+00
05	TRG	HTC-A08-S001-0612-02	39	05/16/17 14:58	1.1600E+00
06	TRG	HTC-A08-S001-1218-01	30	05/15/17 14:55	1.2200E+00
07	TRG	HTC-A08-S001-1824-01	44	05/15/17 14:52	1.1600E+00
08	TRG	HTC-A08-S001-2430-01	28	05/15/17 14:49	1.3700E+00
09	TRG	HTC-A08-S001-3036-01	34	05/15/17 14:46	1.3500E+00
10	TRG	HTC-A08-S001-3642-01	45	05/15/17 14:43	1.1800E+00
11	TRG	HTC-A08-S001-4248-01	33	05/15/17 14:40	1.1600E+00
12	TRG	HTC-A09-S001-0006-01	90	05/16/17 12:50	1.0730E+00
13	TRG	HTC-A09-S001-0006-01 MS	87	05/16/17 12:50	1.0680E+00
14	TRG	HTC-A09-S001-0006-01 MSD	87	05/16/17 12:50	1.0732E+00
15	TRG	HTC-A09-S001-0006-02	122	05/16/17 12:50	1.2500E+00
16	TRG	HTC-A09-S001-0612-01	44	05/16/17 12:48	1.5100E+00
17	TRG	HTC-A09-S001-1218-01	41	05/16/17 12:46	1.2000E+00
18	TRG	HTC-A09-S001-1824-01	47	05/16/17 12:44	1.0100E+00
19	TRG	HTC-A09-S001-2430-01	36	05/16/17 12:42	1.2200E+00
20	TRG	HTC-A09-S001-3036-01	60	05/16/17 12:39	1.0400E+00

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

17-07092
ThISO
Run 1

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.4564	10.3		0.00								
02	MBL	0.2273	5.1		0.00								
03	DUP	0.2263	5.1		0.00								
04	DO	0.2259	5.1		0.00								
05	TRG	0.2255	5.1		0.00								
06	TRG	0.2262	5.1		0.00								
07	TRG	0.2266	5.1		0.00								
08	TRG	0.2262	5.1		0.00								
09	TRG	0.2230	5.0		0.00								
10	TRG	0.2259	5.1		0.00								
11	TRG	0.2264	5.1		0.00								
12	TRG	0.2260	5.1		0.00								
13	TRG	0.2265	5.1		0.00								
14	TRG	0.2259	5.1		0.00								
15	TRG	0.2260	5.1		0.00								
16	TRG	0.2260	5.1		0.00								
17	TRG	0.2260	5.1		0.00								
18	TRG	0.2262	5.1		0.00								
19	TRG	0.2268	5.1		0.00								
20	TRG	0.2259	5.1		0.00								

0200

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

17-07092
ThISO
Run 1

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			08/15/17 08:40	JPACHELLA				
02	MBL			08/15/17 08:40	JPACHELLA				
03	DUP			08/15/17 08:40	JPACHELLA				
04	DO	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				
05	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				
06	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				
07	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				
08	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				
09	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				
10	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				
11	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				
12	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				
13	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				
14	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				
15	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				
16	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				
17	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				
18	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				
19	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				
20	TRG	08/03/17 08:50	KSALLINGS	08/15/17 08:40	JPACHELLA				

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Eberline Analytical
Oak Ridge Laboratory

Preliminary Data Report & Analytical Calculations

Work Order: 17-07092-ThISO-1

Client: Weston Solutions, Inc. 0202
Eberline Analytical Work Order: 17-07092
Analysis Code: ThISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	TH-228	LCS	LCS	pCi/g	5.98E+00	9.70E-01	1.08E-01	4.98E+00	120.07	OK		OK	
02	TH-228	MBL	BLANK	pCi/g	-5.87E-04	4.41E-02	1.14E-01					OK	OK
03	TH-228	DUP	HTC-A08-S001-0006-01	pCi/g	8.09E-01	2.35E-01	7.10E-02				INV	OK	
04	TH-228	DO	HTC-A08-S001-0006-01	pCi/g	6.04E-01	1.86E-01	7.40E-02					OK	
05	TH-228	TRG	HTC-A08-S001-0612-02	pCi/g	1.40E+00	3.59E-01	9.65E-02					OK	
06	TH-228	TRG	HTC-A08-S001-1218-01	pCi/g	1.45E+00	3.57E-01	6.68E-02					OK	
07	TH-228	TRG	HTC-A08-S001-1824-01	pCi/g	1.63E+00	4.07E-01	1.04E-01					OK	
08	TH-228	TRG	HTC-A08-S001-2430-01	pCi/g	1.64E+00	4.09E-01	1.05E-01					OK	
09	TH-228	TRG	HTC-A08-S001-3036-01	pCi/g	1.52E+00	3.65E-01	7.76E-02					OK	
10	TH-228	TRG	HTC-A08-S001-3642-01	pCi/g	1.44E+00	3.82E-01	1.01E-01					OK	
11	TH-228	TRG	HTC-A08-S001-4248-01	pCi/g	1.19E+00	3.06E-01	8.20E-02					OK	
12	TH-228	MSO	HTC-A09-S001-0006-01	pCi/g	2.28E-01	1.29E-01	1.14E-01					OK	
13	TH-228	MS	HTC-A09-S001-0006-01	pCi/g	7.97E+00	1.44E+00	9.48E-02					OK	
14	TH-228	DMSO	HTC-A09-S001-0006-01 MSD	pCi/g	6.87E+00	1.22E+00	8.70E-02					OK	
15	TH-228	TRG	HTC-A09-S001-0006-02	pCi/g	5.52E-01	3.26E-01	2.54E-01					OK	
16	TH-228	TRG	HTC-A09-S001-0612-01	pCi/g	1.50E+00	3.93E-01	7.58E-02					OK	
17	TH-228	TRG	HTC-A09-S001-1218-01	pCi/g	1.41E+00	4.11E-01	1.55E-01					OK	
18	TH-228	TRG	HTC-A09-S001-1824-01	pCi/g	1.35E+00	4.31E-01	1.26E-01					OK	
19	TH-228	TRG	HTC-A09-S001-2430-01	pCi/g	1.04E+00	2.97E-01	8.40E-02					OK	
20	TH-228	TRG	HTC-A09-S001-3036-01	pCi/g	1.17E+00	3.45E-01	1.16E-01					OK	

Preliminary Data Report & Analytical Calculations
Work Order: 17-07092-ThISO-1

Client: Weston Solutions, Inc. 0203
Eberline Analytical Work Order: 17-07092
Analysis Code: ThISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	TH-228	LCS	07/19/17 00:00	1.00E+00	94.18	0.00	0.00			
02	TH-228	MBL	07/19/17 00:00	1.00E+00	107.49	0.00	0.00			
03	TH-228	DUP	05/16/17 15:01	1.07E+00	128.12	0.00	0.00			
04	TH-228	DO	05/16/17 15:01	1.07E+00	157.30	0.00	0.00			
05	TH-228	TRG	05/16/17 14:58	1.16E+00	103.81	0.00	0.00			
06	TH-228	TRG	05/15/17 14:55	1.22E+00	120.97	0.00	0.00			
07	TH-228	TRG	05/15/17 14:52	1.16E+00	117.83	0.00	0.00			
08	TH-228	TRG	05/15/17 14:49	1.37E+00	89.61	0.00	0.00			
09	TH-228	TRG	05/15/17 14:46	1.35E+00	103.53	0.00	0.00			
10	TH-228	TRG	05/15/17 14:43	1.18E+00	91.33	0.00	0.00			
11	TH-228	TRG	05/15/17 14:40	1.16E+00	115.31	0.00	0.00			
12	TH-228	MSO	05/16/17 12:50	1.07E+00	109.28	0.00	0.00			
13	TH-228	MS	05/16/17 15:01	1.07E+00	117.87	0.00	0.00			
14	TH-228	DMSO	05/16/17 12:50	1.07E+00	134.91	0.00	0.00			
15	TH-228	TRG	05/16/17 12:50	1.25E+00	40.91	0.00	0.00			
16	TH-228	TRG	05/16/17 12:48	1.51E+00	98.74	0.00	0.00			
17	TH-228	TRG	05/16/17 12:46	1.20E+00	99.62	0.00	0.00			
18	TH-228	TRG	05/16/17 12:44	1.01E+00	75.97	0.00	0.00			
19	TH-228	TRG	05/16/17 12:42	1.22E+00	115.02	0.00	0.00			
20	TH-228	TRG	05/16/17 12:39	1.04E+00	123.75	0.00	0.00			

Preliminary Data Report & Analytical Calculations

Work Order: 17-07092-ThISO-1

Client	Eberline Analytical Work Order	Analysis Code	Run
Weston Solutions, Inc. 0204	17-07092	ThISO	1

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-228	LCS	09/11/17 08:35		A_Spec	Alpha_014	170.02	3.92 E+02	9.00 E-03	18.5
02	TH-228	MBL	09/11/17 08:35		A_Spec	Alpha_033	170	-4.00 E-02	1.20 E-02	16.8
03	TH-228	DUP	09/11/17 08:35		A_Spec	Alpha_034	170	6.43 E+01	4.00 E-03	17.3
04	TH-228	DO	09/11/17 08:35		A_Spec	Alpha_035	170	5.38 E+01	7.00 E-03	15.8
05	TH-228	TRG	09/11/17 08:35		A_Spec	Alpha_036	170	1.03 E+02	9.00 E-03	18.2
06	TH-228	TRG	09/11/17 08:35		A_Spec	Alpha_037	170	1.13 E+02	3.00 E-03	15.9
07	TH-228	TRG	09/11/17 08:35		A_Spec	Alpha_038	170	1.15 E+02	1.00 E-02	15.4
08	TH-228	TRG	09/11/17 08:35		A_Spec	Alpha_039	170	1.25 E+02	1.30 E-02	18.5
09	TH-228	TRG	09/11/17 08:35		A_Spec	Alpha_040	170	1.29 E+02	7.00 E-03	18.1
10	TH-228	TRG	09/11/17 08:35		A_Spec	Alpha_043	170	9.76 E+01	8.00 E-03	18.7
11	TH-228	TRG	09/11/17 08:35		A_Spec	Alpha_044	170	9.58 E+01	7.00 E-03	17.9
12	TH-228	MSO	09/11/17 08:35		A_Spec	Alpha_045	170	1.51 E+01	1.10 E-02	16.9
13	TH-228	MS	09/11/17 08:35		A_Spec	Alpha_046	170	5.77 E+02	8.00 E-03	17.1
14	TH-228	DMSO	09/11/17 08:35		A_Spec	Alpha_047	170	5.42 E+02	8.00 E-03	16.2
15	TH-228	TRG	09/11/17 08:35		A_Spec	Alpha_048	170	1.55 E+01	9.00 E-03	16.3
16	TH-228	TRG	09/11/17 08:35		A_Spec	Alpha_049	170	1.11 E+02	4.00 E-03	14.9
17	TH-228	TRG	09/11/17 08:35		A_Spec	Alpha_050	170	8.09 E+01	1.80 E-02	14.3
18	TH-228	TRG	09/11/17 08:36		A_Spec	Alpha_052	170	6.03 E+01	4.00 E-03	17.4
19	TH-228	TRG	09/11/17 08:36		A_Spec	Alpha_053	170	7.42 E+01	5.00 E-03	15.1
20	TH-228	TRG	09/11/17 08:36		A_Spec	Alpha_054	170	6.86 E+01	8.00 E-03	13.6

Preliminary Data Report & Analytical Calculations

Work Order: 17-07092-ThISO-1

Client: Weston Solutions, Inc. 0205
Eberline Analytical Work Order: 17-07092
Analysis Code: ThISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	TH-230	LCS	LCS	pCi/g	6.43E+00	1.03E+00	8.01E-02	5.41E+00	118.86	OK		OK	
02	TH-230	MBL	BLANK	pCi/g	5.38E-02	5.87E-02	7.02E-02					OK	OK
03	TH-230	DUP	HTC-A08-S001-0006-01	pCi/g	5.95E-01	1.86E-01	6.71E-02				OK	OK	
04	TH-230	DO	HTC-A08-S001-0006-01	pCi/g	6.87E-01	1.92E-01	4.78E-02					OK	
05	TH-230	TRG	HTC-A08-S001-0612-02	pCi/g	1.25E+00	3.18E-01	7.24E-02					OK	
06	TH-230	TRG	HTC-A08-S001-1218-01	pCi/g	1.33E+00	3.25E-01	6.39E-02					OK	
07	TH-230	TRG	HTC-A08-S001-1824-01	pCi/g	1.58E+00	3.83E-01	7.10E-02					OK	
08	TH-230	TRG	HTC-A08-S001-2430-01	pCi/g	1.46E+00	3.63E-01	8.01E-02					OK	
09	TH-230	TRG	HTC-A08-S001-3036-01	pCi/g	1.00E+00	2.61E-01	5.50E-02					OK	
10	TH-230	TRG	HTC-A08-S001-3642-01	pCi/g	1.23E+00	3.30E-01	8.66E-02					OK	
11	TH-230	TRG	HTC-A08-S001-4248-01	pCi/g	1.08E+00	2.75E-01	4.62E-02					OK	
12	TH-230	MSO	HTC-A09-S001-0006-01	pCi/g	1.54E+01	2.73E+00	8.45E-02					OK	
13	TH-230	MS	HTC-A09-S001-0006-01	pCi/g	2.01E+01	3.38E+00	8.11E-02					OK	
14	TH-230	DMSO	HTC-A09-S001-0006-01 MSD	pCi/g	1.80E+01	2.94E+00	5.93E-02					OK	
15	TH-230	TRG	HTC-A09-S001-0006-02	pCi/g	4.19E+01	1.14E+01	1.67E-01					OK	
16	TH-230	TRG	HTC-A09-S001-0612-01	pCi/g	2.90E+00	6.50E-01	6.28E-02					OK	
17	TH-230	TRG	HTC-A09-S001-1218-01	pCi/g	2.46E+00	6.03E-01	1.21E-01					OK	
18	TH-230	TRG	HTC-A09-S001-1824-01	pCi/g	2.16E+00	5.87E-01	1.37E-01					OK	
19	TH-230	TRG	HTC-A09-S001-2430-01	pCi/g	1.55E+00	3.81E-01	7.05E-02					OK	
20	TH-230	TRG	HTC-A09-S001-3036-01	pCi/g	1.29E+00	3.55E-01	9.06E-02					OK	

Preliminary Data Report & Analytical Calculations
Work Order: 17-07092-ThISO-1

Run: 1
Analysis Code: ThISO
Eberline Analytical Work Order: 17-07092
Client: Weston Solutions, Inc.
0206

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	TH-230	LCS	07/19/17 00:00	1.00E+00	94.18	0.00	0.00			
02	TH-230	MBL	07/19/17 00:00	1.00E+00	107.49	0.00	0.00			
03	TH-230	DUP	05/16/17 15:01	1.07E+00	128.12	0.00	0.00			
04	TH-230	DO	05/16/17 15:01	1.07E+00	157.30	0.00	0.00			
05	TH-230	TRG	05/16/17 14:58	1.16E+00	103.81	0.00	0.00			
06	TH-230	TRG	05/15/17 14:55	1.22E+00	120.97	0.00	0.00			
07	TH-230	TRG	05/15/17 14:52	1.16E+00	117.83	0.00	0.00			
08	TH-230	TRG	05/15/17 14:49	1.37E+00	89.61	0.00	0.00			
09	TH-230	TRG	05/15/17 14:46	1.35E+00	103.53	0.00	0.00			
10	TH-230	TRG	05/15/17 14:43	1.18E+00	91.33	0.00	0.00			
11	TH-230	TRG	05/15/17 14:40	1.16E+00	115.31	0.00	0.00			
12	TH-230	MSO	05/16/17 12:50	1.07E+00	109.28	0.00	0.00			
13	TH-230	MS	05/16/17 15:01	1.07E+00	117.87	0.00	0.00			
14	TH-230	DMSO	05/16/17 12:50	1.07E+00	134.91	0.00	0.00			
15	TH-230	TRG	05/16/17 12:50	1.25E+00	40.91	0.00	0.00			
16	TH-230	TRG	05/16/17 12:48	1.51E+00	98.74	0.00	0.00			
17	TH-230	TRG	05/16/17 12:46	1.20E+00	99.62	0.00	0.00			
18	TH-230	TRG	05/16/17 12:44	1.01E+00	75.97	0.00	0.00			
19	TH-230	TRG	05/16/17 12:42	1.22E+00	115.02	0.00	0.00			
20	TH-230	TRG	05/16/17 12:39	1.04E+00	123.75	0.00	0.00			

Preliminary Data Report & Analytical Calculations

Work Order: 17-07092-ThISO-1

Client: Weston Solutions, Inc. 0207
Eberline Analytical Work Order: 17-07092
Analysis Code: ThISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-230	LCS	09/11/17 08:35		A_Spec	Alpha_014	170.02	4.21 E+02	3.00 E-03	18.5
02	TH-230	MBL	09/11/17 08:35		A_Spec	Alpha_033	170	3.66 E+00	2.00 E-03	16.8
03	TH-230	DUP	09/11/17 08:35		A_Spec	Alpha_034	170	5.32 E+01	5.00 E-03	17.3
04	TH-230	DO	09/11/17 08:35		A_Spec	Alpha_035	170	6.87 E+01	2.00 E-03	15.8
05	TH-230	TRG	09/11/17 08:35		A_Spec	Alpha_036	170	1.03 E+02	5.00 E-03	18.2
06	TH-230	TRG	09/11/17 08:35		A_Spec	Alpha_037	170	1.17 E+02	4.00 E-03	15.9
07	TH-230	TRG	09/11/17 08:35		A_Spec	Alpha_038	170	1.25 E+02	4.00 E-03	15.4
08	TH-230	TRG	09/11/17 08:35		A_Spec	Alpha_039	170	1.25 E+02	8.00 E-03	18.5
09	TH-230	TRG	09/11/17 08:35		A_Spec	Alpha_040	170	9.55 E+01	3.00 E-03	18.1
10	TH-230	TRG	09/11/17 08:35		A_Spec	Alpha_043	170	9.38 E+01	7.00 E-03	18.7
11	TH-230	TRG	09/11/17 08:35		A_Spec	Alpha_044	170	9.78 E+01	1.00 E-03	17.9
12	TH-230	MSO	09/11/17 08:35		A_Spec	Alpha_045	170	1.15 E+03	6.00 E-03	16.9
13	TH-230	MS	09/11/17 08:35		A_Spec	Alpha_046	170	1.63 E+03	7.00 E-03	17.1
14	TH-230	DMSO	09/11/17 08:35		A_Spec	Alpha_047	170	1.60 E+03	3.00 E-03	16.2
15	TH-230	TRG	09/11/17 08:35		A_Spec	Alpha_048	170	1.32 E+03	3.00 E-03	16.3
16	TH-230	TRG	09/11/17 08:35		A_Spec	Alpha_049	170	2.42 E+02	3.00 E-03	14.9
17	TH-230	TRG	09/11/17 08:35		A_Spec	Alpha_050	170	1.59 E+02	1.20 E-02	14.3
18	TH-230	TRG	09/11/17 08:36		A_Spec	Alpha_052	170	1.09 E+02	8.00 E-03	17.4
19	TH-230	TRG	09/11/17 08:36		A_Spec	Alpha_053	170	1.24 E+02	4.00 E-03	15.1
20	TH-230	TRG	09/11/17 08:36		A_Spec	Alpha_054	170	8.52 E+01	5.00 E-03	13.6

Preliminary Data Report & Analytical Calculations

Work Order: 17-07092-ThISO-1

Run: 1
Analysis Code: ThISO
Eberline Analytical Work Order: 17-07092
Client: Weston Solutions, Inc.
0208

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	TH-232	LCS	LCS	pCi/g	5.98E+00	9.70E-01	1.00E-01	4.98E+00	120.09	OK		OK	
02	TH-232	MBL	BLANK	pCi/g	-7.48E-03	3.00E-02	7.69E-02					OK	OK
03	TH-232	DUP	HTC-A08-S001-0006-01	pCi/g	4.64E-01	1.59E-01	5.87E-02				OK	OK	
04	TH-232	DO	HTC-A08-S001-0006-01	pCi/g	5.69E-01	1.71E-01	5.98E-02					OK	
05	TH-232	TRG	HTC-A08-S001-0612-02	pCi/g	1.07E+00	2.85E-01	6.81E-02					OK	
06	TH-232	TRG	HTC-A08-S001-1218-01	pCi/g	1.26E+00	3.13E-01	4.72E-02					OK	
07	TH-232	TRG	HTC-A08-S001-1824-01	pCi/g	1.52E+00	3.72E-01	6.01E-02					OK	
08	TH-232	TRG	HTC-A08-S001-2430-01	pCi/g	1.37E+00	3.45E-01	6.57E-02					OK	
09	TH-232	TRG	HTC-A08-S001-3036-01	pCi/g	1.25E+00	3.07E-01	4.36E-02					OK	
10	TH-232	TRG	HTC-A08-S001-3642-01	pCi/g	1.33E+00	3.47E-01	7.85E-02					OK	
11	TH-232	TRG	HTC-A08-S001-4248-01	pCi/g	1.13E+00	2.83E-01	7.28E-02					OK	
12	TH-232	MSO	HTC-A09-S001-0006-01	pCi/g	2.09E-01	1.18E-01	1.10E-01					OK	
13	TH-232	MS	HTC-A09-S001-0006-01	pCi/g	6.83E+00	1.24E+00	9.02E-02					OK	
14	TH-232	DMSO	HTC-A09-S001-0006-01 MSD	pCi/g	6.14E+00	1.09E+00	5.92E-02					OK	
15	TH-232	TRG	HTC-A09-S001-0006-02	pCi/g	5.60E-01	3.03E-01	1.52E-01					OK	
16	TH-232	TRG	HTC-A09-S001-0612-01	pCi/g	1.37E+00	3.58E-01	7.52E-02					OK	
17	TH-232	TRG	HTC-A09-S001-1218-01	pCi/g	1.53E+00	4.19E-01	9.26E-02					OK	
18	TH-232	TRG	HTC-A09-S001-1824-01	pCi/g	1.40E+00	4.26E-01	1.12E-01					OK	
19	TH-232	TRG	HTC-A09-S001-2430-01	pCi/g	1.38E+00	3.49E-01	5.20E-02					OK	
20	TH-232	TRG	HTC-A09-S001-3036-01	pCi/g	1.13E+00	3.23E-01	6.30E-02					OK	

Preliminary Data Report & Analytical Calculations

Work Order: 17-07092-ThISO-1

Client: Weston Solutions, Inc. 0209
Eberline Analytical Work Order: 17-07092
Analysis Code: ThISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	TH-232	LCS	07/19/17 00:00	1.00E+00	94.18	0.00	0.00			
02	TH-232	MBL	07/19/17 00:00	1.00E+00	107.49	0.00	0.00			
03	TH-232	DUP	05/16/17 15:01	1.07E+00	128.12	0.00	0.00			
04	TH-232	DO	05/16/17 15:01	1.07E+00	157.30	0.00	0.00			
05	TH-232	TRG	05/16/17 14:58	1.16E+00	103.81	0.00	0.00			
06	TH-232	TRG	05/15/17 14:55	1.22E+00	120.97	0.00	0.00			
07	TH-232	TRG	05/15/17 14:52	1.16E+00	117.83	0.00	0.00			
08	TH-232	TRG	05/15/17 14:49	1.37E+00	89.61	0.00	0.00			
09	TH-232	TRG	05/15/17 14:46	1.35E+00	103.53	0.00	0.00			
10	TH-232	TRG	05/15/17 14:43	1.18E+00	91.33	0.00	0.00			
11	TH-232	TRG	05/15/17 14:40	1.16E+00	115.31	0.00	0.00			
12	TH-232	MSO	05/16/17 12:50	1.07E+00	109.28	0.00	0.00			
13	TH-232	MS	05/16/17 15:01	1.07E+00	117.87	0.00	0.00			
14	TH-232	DMSO	05/16/17 12:50	1.07E+00	134.91	0.00	0.00			
15	TH-232	TRG	05/16/17 12:50	1.25E+00	40.91	0.00	0.00			
16	TH-232	TRG	05/16/17 12:48	1.51E+00	98.74	0.00	0.00			
17	TH-232	TRG	05/16/17 12:46	1.20E+00	99.62	0.00	0.00			
18	TH-232	TRG	05/16/17 12:44	1.01E+00	75.97	0.00	0.00			
19	TH-232	TRG	05/16/17 12:42	1.22E+00	115.02	0.00	0.00			
20	TH-232	TRG	05/16/17 12:39	1.04E+00	123.75	0.00	0.00			

Preliminary Data Report & Analytical Calculations
Work Order: 17-07092-ThISO-1

Client	Eberline Analytical Work Order	Analysis Code	Run
Weston Solutions, Inc. 0210	17-07092	ThISO	1

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-232	LCS	09/11/17 08:35		A_Spec	Alpha_014	170.02	3.93 E+02	7.00 E-03	18.5
02	TH-232	MBL	09/11/17 08:35		A_Spec	Alpha_033	170	-5.10 E-01	3.00 E-03	16.8
03	TH-232	DUP	09/11/17 08:35		A_Spec	Alpha_034	170	4.15 E+01	3.00 E-03	17.3
04	TH-232	DO	09/11/17 08:35		A_Spec	Alpha_035	170	5.70 E+01	0.00 E+00	15.8
05	TH-232	TRG	09/11/17 08:35		A_Spec	Alpha_036	170	8.83 E+01	4.00 E-03	18.2
06	TH-232	TRG	09/11/17 08:35		A_Spec	Alpha_037	170	1.12 E+02	1.00 E-03	15.9
07	TH-232	TRG	09/11/17 08:35		A_Spec	Alpha_038	170	1.21 E+02	2.00 E-03	15.4
08	TH-232	TRG	09/11/17 08:35		A_Spec	Alpha_039	170	1.17 E+02	4.00 E-03	18.5
09	TH-232	TRG	09/11/17 08:35		A_Spec	Alpha_040	170	1.20 E+02	1.00 E-03	18.1
10	TH-232	TRG	09/11/17 08:35		A_Spec	Alpha_043	170	1.01 E+02	5.00 E-03	18.7
11	TH-232	TRG	09/11/17 08:35		A_Spec	Alpha_044	170	1.02 E+02	7.00 E-03	17.9
12	TH-232	MSO	09/11/17 08:35		A_Spec	Alpha_045	170	1.56 E+01	1.40 E-02	16.9
13	TH-232	MS	09/11/17 08:35		A_Spec	Alpha_046	170	5.56 E+02	1.00 E-02	17.1
14	TH-232	DMSO	09/11/17 08:35		A_Spec	Alpha_047	170	5.44 E+02	3.00 E-03	16.2
15	TH-232	TRG	09/11/17 08:35		A_Spec	Alpha_048	170	1.77 E+01	2.00 E-03	16.3
16	TH-232	TRG	09/11/17 08:35		A_Spec	Alpha_049	170	1.15 E+02	6.00 E-03	14.9
17	TH-232	TRG	09/11/17 08:35		A_Spec	Alpha_050	170	9.92 E+01	5.00 E-03	14.3
18	TH-232	TRG	09/11/17 08:36		A_Spec	Alpha_052	170	7.03 E+01	4.00 E-03	17.4
19	TH-232	TRG	09/11/17 08:36		A_Spec	Alpha_053	170	1.11 E+02	1.00 E-03	15.1
20	TH-232	TRG	09/11/17 08:36		A_Spec	Alpha_054	170	7.48 E+01	1.00 E-03	13.6

Count Room Report
Client: Weston Solutions, Inc.

17-07092-ThISO-1 (pCi/g) in SO
Tracer ID: Th-18a

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	07/19/17 00:00	1.0000	0.4564	10.2507		0.00		
02	MBL	BLANK	07/19/17 00:00	1.0000	0.2273	5.1052		0.00		
03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	1.0700	0.2263	5.0827		0.00		
04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	1.0683	0.2259	5.0737		0.00		
05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	1.1600	0.2255	5.0647		0.00		
06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	1.2200	0.2262	5.0805		0.00		
07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	1.1600	0.2266	5.0894		0.00		
08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	1.3700	0.2262	5.0805		0.00		
09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	1.3500	0.2230	5.0086		0.00		
10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	1.1800	0.2259	5.0737		0.00		
11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	1.1600	0.2264	5.0849		0.00		
12	TRG	HTC-A09-S001-0006-01	05/16/17 12:50	1.0730	0.2260	5.0760		0.00		
13	TRG	HTC-A09-S001-0006-01 MS	05/16/17 12:50	1.0680	0.2265	5.0872		0.00		
14	TRG	HTC-A09-S001-0006-01 MSD	05/16/17 12:50	1.0732	0.2259	5.0737		0.00		
15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	1.2500	0.2260	5.0760		0.00		
16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	1.5100	0.2260	5.0760		0.00		
17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	1.2000	0.2260	5.0760		0.00		
18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	1.0100	0.2262	5.0805		0.00		
19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	1.2200	0.2268	5.0939		0.00		
20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	1.0400	0.2259	5.0737		0.00		

Eberline Analytical
Oak Ridge Laboratory

Spike and Tracer Worksheet

Printed: 8/15/2017 3:18 PM

Internal Work Order	Run	Analysis Code	Date	Technician	Technician Initials	Witness Initials
17-07092	1	ThISO	8/15/2017 15:17	MMCDOUGALL		

LCS & Matrix Spikes					LCS	MS	LCSD	MSD	LCS		MS		LCSD		MSD	
Isotope	*Sol #*	*Activity dpm/g*	*Solution Date*	*Approx Addition*	*Volume Used (g)*	*Volume Used (g)*	*Volume Used (g)*	*Volume Used (g)*	*Known pCi*	*Error Estimate*	*Added pCi*	*Error Estimate*	*Known pCi*	*Error Estimate*	*Added pCi*	*Error Estimate*
Th-228	Th-8b	103.560	8/15/2017	0.100	0.1068	0.1709		0.1658	4.98	0.179	7.97	0.287	0.00	0.000	7.73	0.278
Th-230	Th-1b	23.520	8/15/2017	0.500	0.5107	0.5043		0.4015	5.41	0.146	5.34	0.144	0.00	0.000	4.25	0.115
Th-232	Th-8b	103.560	8/15/2017	0.100	0.1068	0.1709		0.1658	4.98	0.179	7.97	0.287	0.00	0.000	7.73	0.278

Tracers						
fraction	*Isotope*	*Sol #*	*Activity dpm/g*	*Solution Date*	*Volume Used (g)*	*Approx Addition*
01	Th-229	Th-18a	22.460	8/15/2017	0.4564	0.2200
02	Th-229	Th-18a	22.460	8/15/2017	0.2273	0.2200
03	Th-229	Th-18a	22.460	8/15/2017	0.2263	0.2200
04	Th-229	Th-18a	22.460	8/15/2017	0.2259	0.2200
05	Th-229	Th-18a	22.460	8/15/2017	0.2255	0.2200
06	Th-229	Th-18a	22.460	8/15/2017	0.2262	0.2200
07	Th-229	Th-18a	22.460	8/15/2017	0.2266	0.2200
08	Th-229	Th-18a	22.460	8/15/2017	0.2262	0.2200
09	Th-229	Th-18a	22.460	8/15/2017	0.2230	0.2200
10	Th-229	Th-18a	22.460	8/15/2017	0.2259	0.2200
11	Th-229	Th-18a	22.460	8/15/2017	0.2264	0.2200
12	Th-229	Th-18a	22.460	8/15/2017	0.2260	0.2200
13	Th-229	Th-18a	22.460	8/15/2017	0.2265	0.2200
14	Th-229	Th-18a	22.460	8/15/2017	0.2259	0.2200
15	Th-229	Th-18a	22.460	8/15/2017	0.2260	0.2200
16	Th-229	Th-18a	22.460	8/15/2017	0.2260	0.2200
17	Th-229	Th-18a	22.460	8/15/2017	0.2260	0.2200
18	Th-229	Th-18a	22.460	8/15/2017	0.2262	0.2200
19	Th-229	Th-18a	22.460	8/15/2017	0.2268	0.2200
20	Th-229	Th-18a	22.460	8/15/2017	0.2259	0.2200

Balance Printer Tapes	
Tracer	LCS
	Matrix Spike

0212

Eberline Analytical
Oak Ridge Laboratory

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
17-07092	1	ThISO	grams	8/10/2017	JPACHELLA

Lab Fraction	Weston Solutions, Inc. Client ID	Sample Type	Muffle Data	Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq
01	LCS	LCS				1.00E+00	1.0000E+00	1.0000E+00				
02	BLANK	MBL				1.00E+00	1.0000E+00	1.0000E+00				
03	HTC-A08-S001-0006-01	DUP				1.00E+00	1.0700E+00	1.0700E+00				
04	HTC-A08-S001-0006-01	DO				1.00E+00	1.0683E+00	1.0683E+00				
05	HTC-A08-S001-0612-02	TRG				1.00E+00	1.1600E+00	1.1600E+00				
06	HTC-A08-S001-1218-01	TRG				1.00E+00	1.2200E+00	1.2200E+00				
07	HTC-A08-S001-1824-01	TRG				1.00E+00	1.1600E+00	1.1600E+00				
08	HTC-A08-S001-2430-01	TRG				1.00E+00	1.3700E+00	1.3700E+00				
09	HTC-A08-S001-3036-01	TRG				1.00E+00	1.3500E+00	1.3500E+00				
10	HTC-A08-S001-3642-01	TRG				1.00E+00	1.1800E+00	1.1800E+00				
11	HTC-A08-S001-4248-01	TRG				1.00E+00	1.1600E+00	1.1600E+00				
12	HTC-A09-S001-0006-01	TRG				1.00E+00	1.0730E+00	1.0730E+00				
13	HTC-A09-S001-0006-01 MS	TRG				1.00E+00	1.0680E+00	1.0680E+00				
14	HTC-A09-S001-0006-01 MSD	TRG				1.00E+00	1.0732E+00	1.0732E+00				
15	HTC-A09-S001-0006-02	TRG				1.00E+00	1.2500E+00	1.2500E+00				
16	HTC-A09-S001-0612-01	TRG				1.00E+00	1.5100E+00	1.5100E+00				
17	HTC-A09-S001-1218-01	TRG				1.00E+00	1.2000E+00	1.2000E+00				
18	HTC-A09-S001-1824-01	TRG				1.00E+00	1.0100E+00	1.0100E+00				
19	HTC-A09-S001-2430-01	TRG				1.00E+00	1.2200E+00	1.2200E+00				
20	HTC-A09-S001-3036-01	TRG				1.00E+00	1.0400E+00	1.0400E+00				

Comments	

0213

Technician: JPachella Date: 8/15/17

Eberline Services - Oak Ridge
Prep Logbook
Version 2.0 8/1999

Rough Sample Preparation Log Book

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
17-07092	8/10/2017	8/2/2017	8/3/2017	8/4/2017	KSALLINGS

Bico Pulverizer: 000302 [✓] Jaw Crusher 68275 [ ]

Eberline Fraction	Weston Solutions, Inc. Client ID	Tare (g) Pan Wt	Gross (g) Wet Wt.	Gross (g) Dry Wt.	Net (g) Wet Wt.	Net (g) Dry Wt.	Percent Liquid	Percent Solid	Gamma Dry Wt.	Gamma LEPS Wt.	Special Info
04	HTC-A08-S001-0006-01	14.6600	962.3400	751.5000	947.6800	736.8400	22.25%	77.75%	0.0000	0.0000	
05	HTC-A08-S001-0612-02	14.7000	887.1800	712.0200	872.4800	697.3200	20.08%	79.92%	0.0000	0.0000	
06	HTC-A08-S001-1218-01	14.7300	863.6400	695.0000	848.9100	680.2700	19.87%	80.13%	0.0000	0.0000	
07	HTC-A08-S001-1824-01	14.7200	875.8600	711.2400	861.1400	696.5200	19.12%	80.88%	0.0000	0.0000	
08	HTC-A08-S001-2430-01	14.6400	908.7600	740.4700	894.1200	725.8300	18.82%	81.18%	0.0000	0.0000	
09	HTC-A08-S001-3036-01	14.6300	891.6600	743.8200	877.0300	729.1900	16.86%	83.14%	0.0000	0.0000	
10	HTC-A08-S001-3642-01	14.6200	934.1200	767.9400	919.5000	753.3200	18.07%	81.93%	0.0000	0.0000	
11	HTC-A08-S001-4248-01	14.6300	848.9600	681.9100	834.3300	667.2800	20.02%	79.98%	0.0000	0.0000	
12	HTC-A09-S001-0006-01	14.6200	852.3600	811.4000	837.7400	796.7800	4.89%	95.11%	0.0000	0.0000	
13	HTC-A09-S001-0006-01 MS	14.6300	893.8600	857.1400	879.2300	842.5100	4.18%	95.82%	0.0000	0.0000	
14	HTC-A09-S001-0006-01 MSD	14.6300	893.8600	857.1400	879.2300	842.5100	4.18%	95.82%	0.0000	0.0000	
15	HTC-A09-S001-0006-02	14.6000	901.2800	889.2200	886.6800	874.6200	1.36%	98.64%	0.0000	0.0000	
16	HTC-A09-S001-0612-01	14.5800	1006.5200	788.4100	991.9400	773.8300	21.99%	78.01%	0.0000	0.0000	
17	HTC-A09-S001-1218-01	14.5400	941.7800	769.3100	927.2400	754.7700	18.60%	81.40%	0.0000	0.0000	
18	HTC-A09-S001-1824-01	14.4900	764.8700	625.0200	750.3800	610.5300	18.64%	81.36%	0.0000	0.0000	
19	HTC-A09-S001-2430-01	14.5500	934.6600	770.1100	920.1100	755.5600	17.88%	82.12%	0.0000	0.0000	
20	HTC-A09-S001-3036-01	14.3400	919.4800	764.9900	905.1400	750.6500	17.07%	82.93%	0.0000	0.0000	

OVENS Fisher Isotemp SN 00579 [✓] VWR SN 000588 [ ]

Comments	
Special Codes	**H: Hot, O: Organic Hazard, P: PCB Hazard, R: Rush, T: Other (see comments)**

0214

Technician: Vang Saj Date: **Analysis: Rough Prep Logbook**

Apex-Alpha™

WB 9/11/17

Sample Description: SPIKE
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001940
Batch Identification: 1707092A-TH
Sample Identification: 01
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_014
Chamber Serial Number:
Detector Serial Number: 14
Env. Background: System Bkgd 196023
Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
Sample Date/Time: 9/11/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:21 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.456 mL
Effective Efficiency: 0.1740 +/- 0.0114
Counting Efficiency: 0.1847 +/- 0.0032 on 11/19/2016 1:08:18 PM
Chem. Recovery Factor: 0.9418 +/- 0.0637

Control Certificate Name: NatTh_Th-8
Chem. Recov. of Control: TH-232 1.200850 +/- 0.105637
Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.799	15.96	52.60	2.04	0.00E+000	7.3
TH-228		5.395	392.47	9.92	1.53	0.00E+000	7.9
TH-229	T	4.869	303.13	11.30	1.87	0.00E+000	7.0
TH-230		4.640	421.49	9.55	0.51	0.00E+000	6.2
TH-232		3.982	392.81	9.91	1.19	0.00E+000	8.6

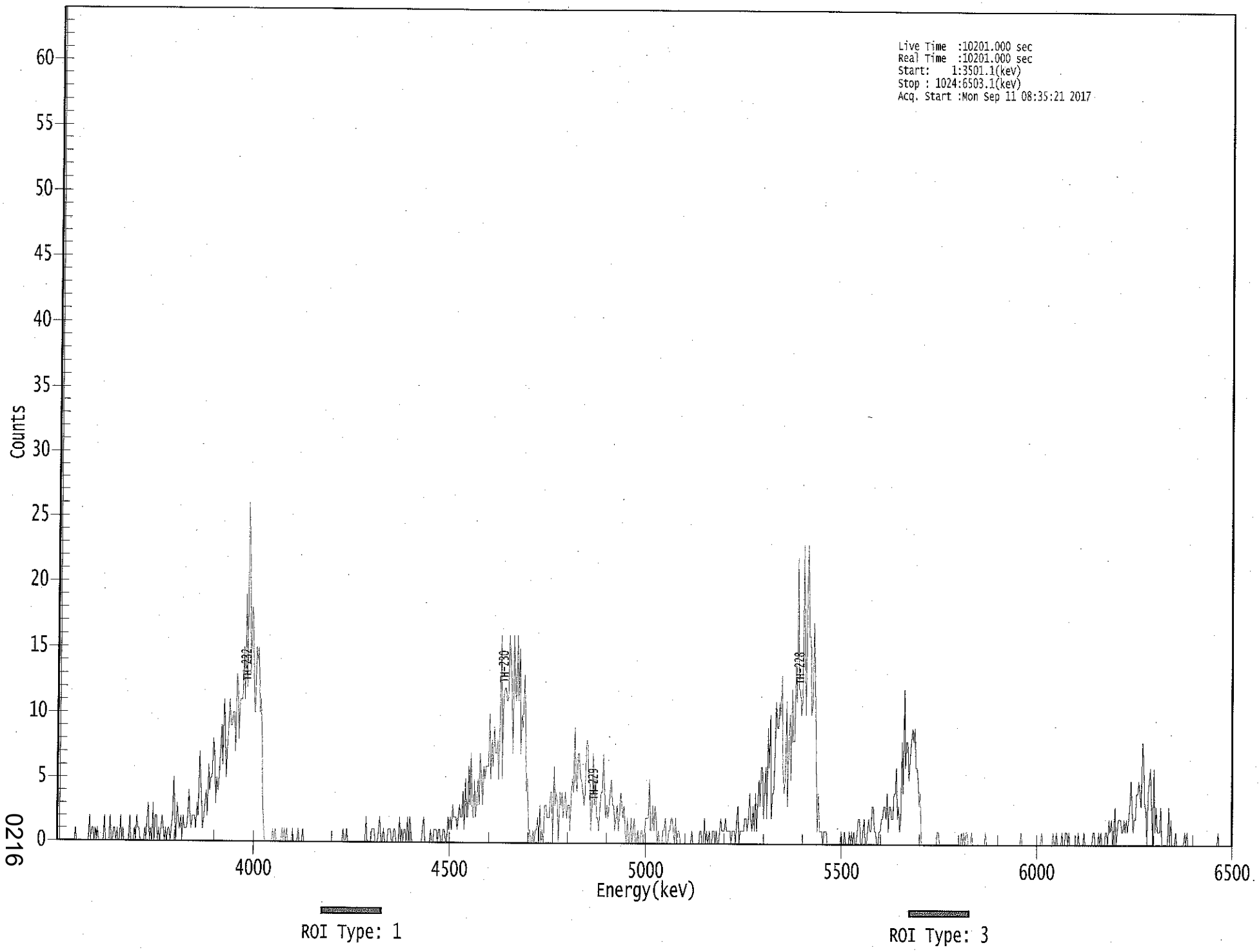
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.987	5850.00*	2.49E-001 +/- 1.35E-001	1.22E-001 +/- 1.56E-002
TH-228	1.000	5400.00*	5.98E+000 +/- 9.70E-001	1.08E-001 +/- 1.39E-002
TH-229	1.000	4872.00*	4.64E+000 +/- 5.95E-001	1.16E-001 +/- 1.49E-002
TH-230	0.995	4672.00*	6.43E+000 +/- 1.03E+000	8.01E-002 +/- 1.03E-002
TH-232	0.999	3997.00*	5.98E+000 +/- 9.70E-001	1.00E-001 +/- 1.29E-002

AG 9/11/17

0000194007.CNF



0216

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 01

Elapsed Live time: 10201
Elapsed Real Time: 10201

Channel								
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	1	0	0	0	0	0	0	0
25:	0	0	0	0	2	0	1	1
33:	0	1	0	1	0	0	0	0
41:	0	2	0	0	0	0	2	0
49:	0	1	1	0	1	0	0	2
57:	0	1	0	0	0	0	0	2
65:	0	0	0	1	0	2	1	1
73:	0	0	0	0	1	0	2	3
81:	0	1	0	3	0	2	2	0
89:	1	0	1	2	1	0	1	0
97:	1	1	0	1	2	5	2	0
105:	3	2	1	2	0	2	1	1
113:	1	2	4	2	1	2	2	2
121:	1	3	2	7	5	3	1	2
129:	3	4	2	6	4	5	5	8
137:	7	3	5	4	5	7	9	6
145:	11	9	5	7	9	11	9	9
153:	10	10	7	13	12	8	11	11
161:	11	15	11	19	12	26	21	13
169:	18	17	11	10	15	14	15	10
177:	11	8	3	1	0	0	0	0
185:	0	0	0	1	0	1	0	0
193:	0	0	0	1	0	1	0	1
201:	0	0	0	0	1	0	0	0
209:	0	1	0	0	0	1	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	1	0	0	1	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	2	0	0	0
273:	0	1	1	1	0	0	0	1
281:	2	0	0	1	0	0	0	1
289:	1	1	0	0	1	1	0	0
297:	0	2	0	1	0	1	1	0
305:	2	0	2	1	0	0	0	0
313:	0	0	0	0	0	1	2	0
321:	0	0	0	0	1	0	0	1
329:	1	1	0	1	1	0	0	1
337:	1	0	0	2	1	2	1	3
345:	2	2	2	1	2	3	2	2
353:	4	1	5	2	2	6	3	7
361:	3	2	5	2	3	5	3	7

369:	5	3	6	5	6	6	6	10

Sample Title: 01

Channel								
377:	5	8	6	9	7	7	8	5
385:	10	16	5	11	12	12	11	11
393:	16	14	12	7	16	12	11	16
401:	11	15	7	10	9	13	10	4
409:	5	1	1	0	0	1	0	1
417:	1	2	0	3	0	1	0	3
425:	3	2	2	2	4	4	0	6
433:	3	4	3	0	4	3	4	2
441:	3	4	2	3	3	1	4	5
449:	4	9	5	4	7	7	5	5
457:	4	3	4	8	8	5	5	1
465:	3	7	3	5	2	2	1	3
473:	4	4	7	4	2	3	2	3
481:	4	5	3	3	1	2	3	1
489:	2	4	3	2	3	1	0	2
497:	0	0	2	0	1	2	0	0
505:	1	0	0	1	1	0	1	2
513:	2	2	5	1	1	3	1	3
521:	2	0	1	0	0	0	1	1
529:	2	0	0	1	1	2	2	1
537:	0	2	0	1	1	0	0	0
545:	0	0	0	0	0	0	0	1
553:	0	0	0	0	0	0	1	1
561:	0	0	2	0	1	0	1	0
569:	0	1	1	0	1	0	0	1
577:	2	1	1	1	2	1	1	1
585:	1	0	1	1	1	0	2	3
593:	0	1	1	1	1	2	2	1
601:	2	4	2	1	3	1	4	1
609:	3	5	3	6	6	2	4	6
617:	2	9	6	10	2	4	4	7
625:	11	9	9	11	10	13	6	4
633:	5	11	3	8	10	5	12	8
641:	8	14	11	22	12	12	10	11
649:	23	16	10	19	23	16	16	10
657:	11	17	12	7	1	4	1	1
665:	1	0	1	1	1	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	1	0	0	1	0	0	0
689:	1	0	1	0	1	0	0	1
697:	2	2	0	0	1	2	0	0
705:	1	2	1	1	3	3	1	1
713:	0	0	1	1	2	2	3	3
721:	2	4	1	3	3	2	2	4
729:	4	6	2	3	1	2	8	4
737:	12	6	8	8	5	7	8	9
745:	8	9	6	6	5	3	4	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	1	1	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	1	0	1	0	1	1
793:	0	0	0	1	0	0	0	0

801:	0	0	0	0	0	0	0	1

Sample Title: 01

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	1	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	1	0	0	0	0	0	0	0
865:	0	0	1	0	0	1	0	0
873:	0	0	1	0	0	1	1	0
881:	1	0	0	0	0	0	0	0
889:	1	0	0	0	0	1	0	0
897:	0	0	0	0	0	1	1	0
905:	0	0	1	0	1	0	0	0
913:	1	1	0	2	1	2	0	1
921:	3	0	1	2	2	2	1	1
929:	2	1	2	1	2	3	5	3
937:	1	2	2	4	4	5	4	3
945:	8	7	3	3	0	4	5	6
953:	3	0	6	1	3	1	1	1
961:	3	0	0	0	0	0	0	3
969:	0	2	0	0	0	1	0	0
977:	0	0	0	0	0	1	0	1
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	1	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KD 9/11/17

Apex-Alpha™

Sample Description: BLANK
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 02
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_033
Chamber Serial Number: 04026479A
Detector Serial Number: 91132
Env. Background: System Bkgd 196024
Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
Sample Date/Time: 9/11/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:23 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.227 mL
Effective Efficiency: 0.1807 +/- 0.0155
Counting Efficiency: 0.1681 +/- 0.0029 on 11/18/2016 10:08:33 AM
Chem. Recovery Factor: 1.0749 +/- 0.0940

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.875	5.83	82.55	0.17	0.00E+000	3.0
TH-228		5.311	-0.04	7506.4	2.04	0.00E+000	3.0
TH-229	T	4.857	156.83	15.66	0.17	0.00E+000	3.5
TH-230		4.600	3.66	107.87	0.34	0.00E+000	3.0
TH-232		3.948	-0.51	400.63	0.51	0.00E+000	0.0

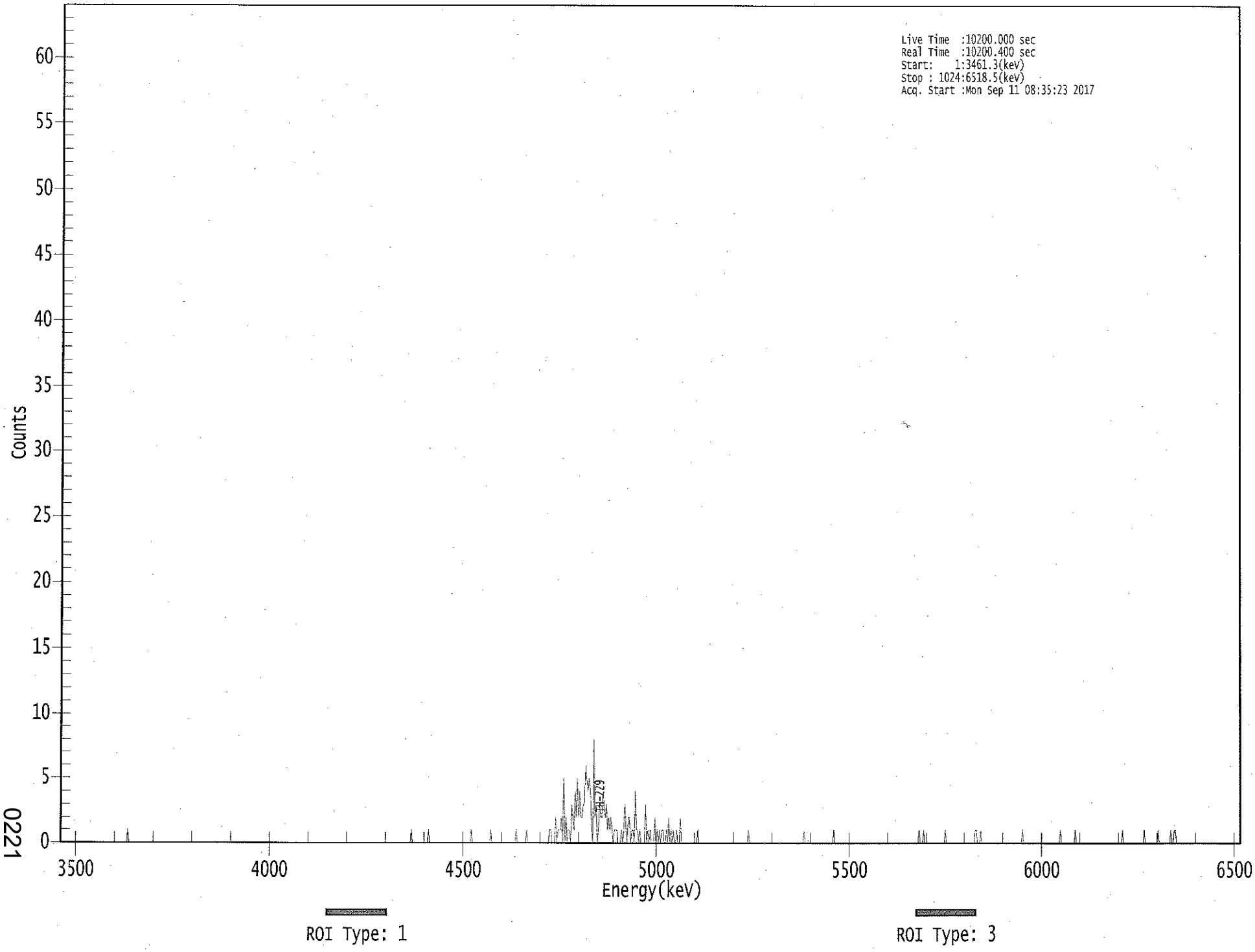
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.997	5850.00*	8.77E-002 +/- 7.39E-002	6.28E-002 +/- 1.05E-002
TH-228	0.960	5400.00*	-5.87E-004 +/- 4.41E-002	1.14E-001 +/- 1.92E-002
TH-229	0.999	4872.00*	2.31E+000 +/- 3.88E-001	6.15E-002 +/- 1.03E-002
TH-230	0.973	4672.00*	5.38E-002 +/- 5.87E-002	7.02E-002 +/- 1.18E-002
TH-232	0.988	3997.00*	-7.48E-003 +/- 3.00E-002	7.69E-002 +/- 1.29E-002

AG 9/11/17

0000193990.CNF



0221

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 02

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	1	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	1
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	1	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	1	0	0	0	0
361:	0	0	0	0	0	0	0	0

369:	0	0	0	0	1	0	0	0

Sample Title: 02

Channel								
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	1	0	0	0	0	0
401:	0	0	0	1	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	1
425:	1	0	0	0	2	0	1	1
433:	1	2	0	5	0	2	0	1
441:	1	0	3	2	1	4	2	5
449:	2	4	2	2	3	3	6	5
457:	4	5	4	1	0	8	2	3
465:	0	1	3	2	2	4	3	2
473:	3	1	2	1	2	1	0	1
481:	1	1	0	0	0	1	0	1
489:	3	1	0	2	2	0	1	1
497:	0	4	1	1	0	1	0	0
505:	0	0	3	0	1	0	1	0
513:	0	0	2	0	1	0	1	0
521:	1	1	0	0	1	0	2	0
529:	1	0	1	0	0	1	0	0
537:	2	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	1
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	1	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	1	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	1	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	1
745:	0	0	0	1	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	1	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	1	1	0	0	0	1	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 02

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	1	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	1	0	0	0	0	0
873:	0	0	0	0	0	0	0	1
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	1	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	1	0	0	0	0
945:	0	0	0	0	0	0	0	1
953:	0	0	0	0	0	0	0	0
961:	0	0	1	0	0	1	1	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

JCB
9/11/17

Apex-Alpha™

Sample Description: HTC-A08-S001-0006-01-DUP
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 03
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_034
Chamber Serial Number: 04026479B
Detector Serial Number: 91136
Env. Background: System Bkgd 196025
Reagent Blank: <not performed>

Sample Size: 1.070E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:25 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.2214 +/- 0.0175
Counting Efficiency: 0.1728 +/- 0.0029 on 11/18/2016 10:08:58 AM
Chem. Recovery Factor: 1.2812 +/- 0.1033

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.792	4.32	102.62	0.68	0.00E+000	3.0
TH-228		5.356	64.32	24.59	0.68	0.00E+000	4.3
TH-229	T	4.859	191.32	14.20	0.68	0.00E+000	3.6
TH-230		4.628	53.15	27.14	0.85	0.00E+000	3.7
TH-232		3.947	41.49	30.65	0.51	0.00E+000	5.2

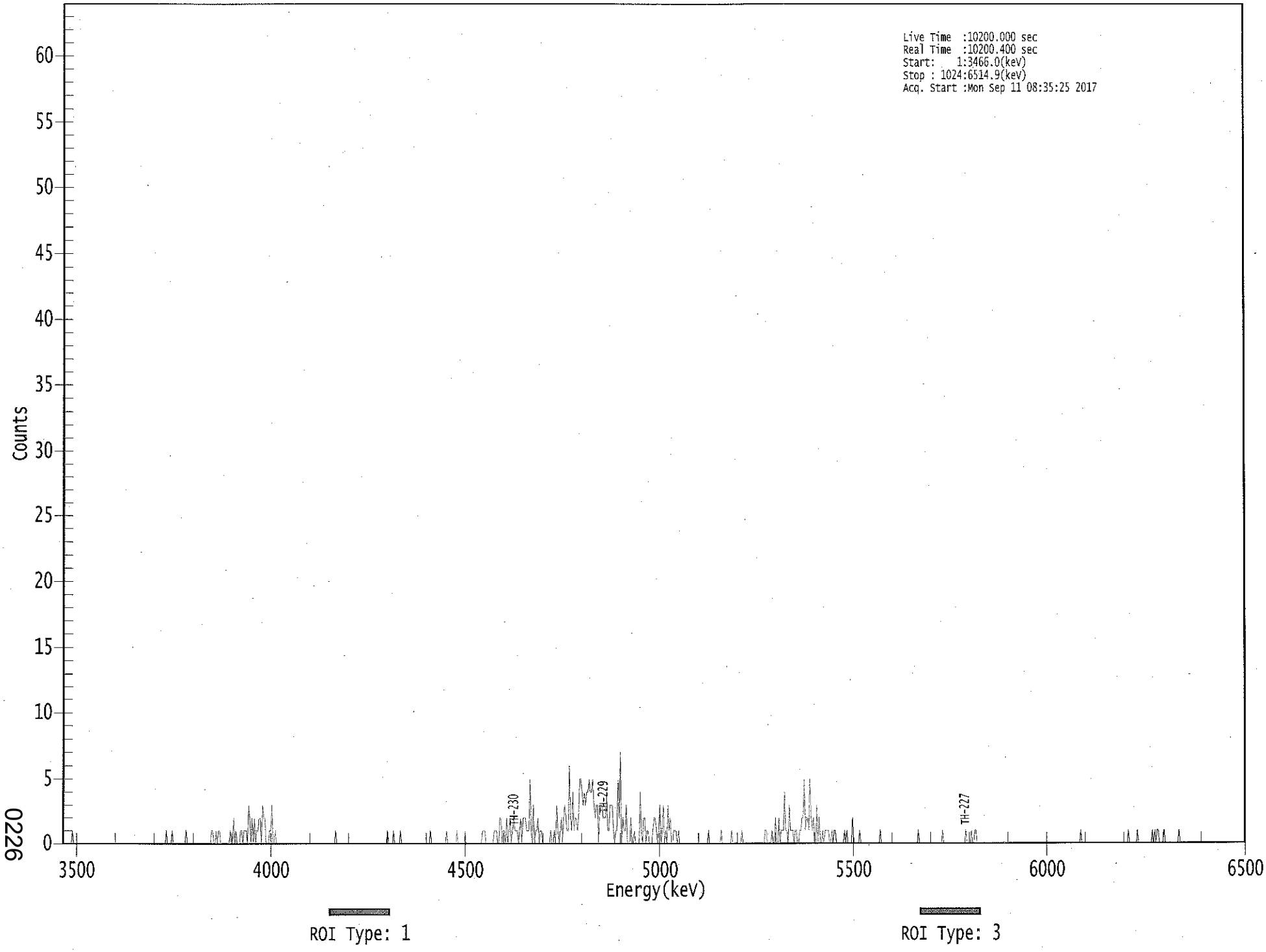
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.983	5850.00*	5.01E-002 +/- 5.19E-002	6.54E-002 +/- 1.01E-002
TH-228	0.990	5400.00*	8.09E-001 +/- 2.35E-001	7.10E-002 +/- 1.10E-002
TH-229	0.999	4872.00*	2.15E+000 +/- 3.32E-001	6.34E-002 +/- 9.79E-003
TH-230	0.990	4672.00*	5.95E-001 +/- 1.86E-001	6.71E-002 +/- 1.04E-002
TH-232	0.987	3997.00*	4.64E-001 +/- 1.59E-001	5.87E-002 +/- 9.06E-003

AG
9/11/17

0000193988.CNF



0226

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 03

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	0	0	0	0	0	0
9:	1	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	1	0	0	0	0	1	0
97:	0	0	0	0	0	0	0	0
105:	0	0	1	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	1	1	0	0	1	0	1	1
137:	0	0	0	0	0	0	0	0
145:	1	0	0	2	0	1	0	0
153:	0	1	1	0	1	1	1	0
161:	3	2	0	2	0	2	0	1
169:	1	2	2	0	3	2	2	0
177:	0	0	1	1	3	0	0	1
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	1	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	1	0	0	0	0	1	0	0
289:	0	0	0	1	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	1	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	1	0	0	0	0
337:	0	0	0	0	1	0	0	0
345:	0	0	0	1	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	1	1	1	0	0	0

369:	0	0	0	0	1	1	1	0

Sample Title: 03

Channel								
377:	0	2	2	0	1	1	0	2
385:	0	1	2	0	1	2	1	1
393:	1	0	1	2	0	2	2	2
401:	1	1	1	5	1	0	3	0
409:	1	1	2	0	1	1	0	0
417:	0	0	0	0	0	1	0	0
425:	1	0	3	1	0	1	2	0
433:	2	3	2	1	1	6	2	1
441:	4	1	2	2	1	2	5	5
449:	4	3	4	3	4	4	5	4
457:	4	5	3	2	3	3	0	3
465:	3	3	2	2	2	4	1	1
473:	3	3	3	1	0	1	1	5
481:	2	7	0	2	1	1	3	0
489:	0	0	2	0	0	1	0	0
497:	0	0	4	1	0	2	2	0
505:	1	1	0	0	0	1	2	2
513:	1	0	1	3	0	1	3	0
521:	1	0	3	1	2	0	0	1
529:	1	1	0	1	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	1	0	0
561:	0	0	0	0	0	0	0	0
569:	1	0	0	0	0	0	0	0
577:	0	1	0	0	0	0	0	0
585:	0	0	1	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	1	1
609:	0	0	0	0	1	0	0	2
617:	0	0	2	0	1	1	1	4
625:	1	1	0	3	1	1	1	0
633:	1	1	0	0	1	1	2	2
641:	5	1	2	2	1	5	2	1
649:	2	0	0	3	0	2	0	0
657:	1	0	1	1	1	1	0	0
665:	1	0	1	1	0	0	0	0
673:	0	0	0	1	0	1	0	0
681:	0	0	2	0	0	0	0	0
689:	1	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	1	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	1	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	1	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	1	0	0	0
785:	0	1	0	0	1	1	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 03

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	1	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	1	0	0	0	0	0	0
929:	0	1	0	0	0	0	0	0
937:	0	0	0	0	0	0	1	0
945:	1	0	1	1	0	0	0	0
953:	1	0	0	0	0	0	0	0
961:	0	0	0	0	0	1	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

WD 9/21/17

Sample Description: HTC-A08-S001-0006-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 04
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_035
Chamber Serial Number: 04026477A
Detector Serial Number: 58771
Env. Background: System Bkgd 196026
Reagent Blank: <not performed>

Sample Size: 1.068E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:27 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.2485 +/- 0.0187
Counting Efficiency: 0.1580 +/- 0.0027 on 11/18/2016 10:08:56 AM
Chem. Recovery Factor: 1.5730 +/- 0.1213

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.802	10.49	62.21	0.51	0.00E+000	4.5
TH-228		5.360	53.81	27.06	1.19	0.00E+000	8.2
TH-229	T	4.876	214.32	13.41	0.68	0.00E+000	5.2
TH-230		4.626	68.66	23.72	0.34	0.00E+000	4.4
TH-232		3.949	57.00	26.19	0.00	0.00E+000	4.5

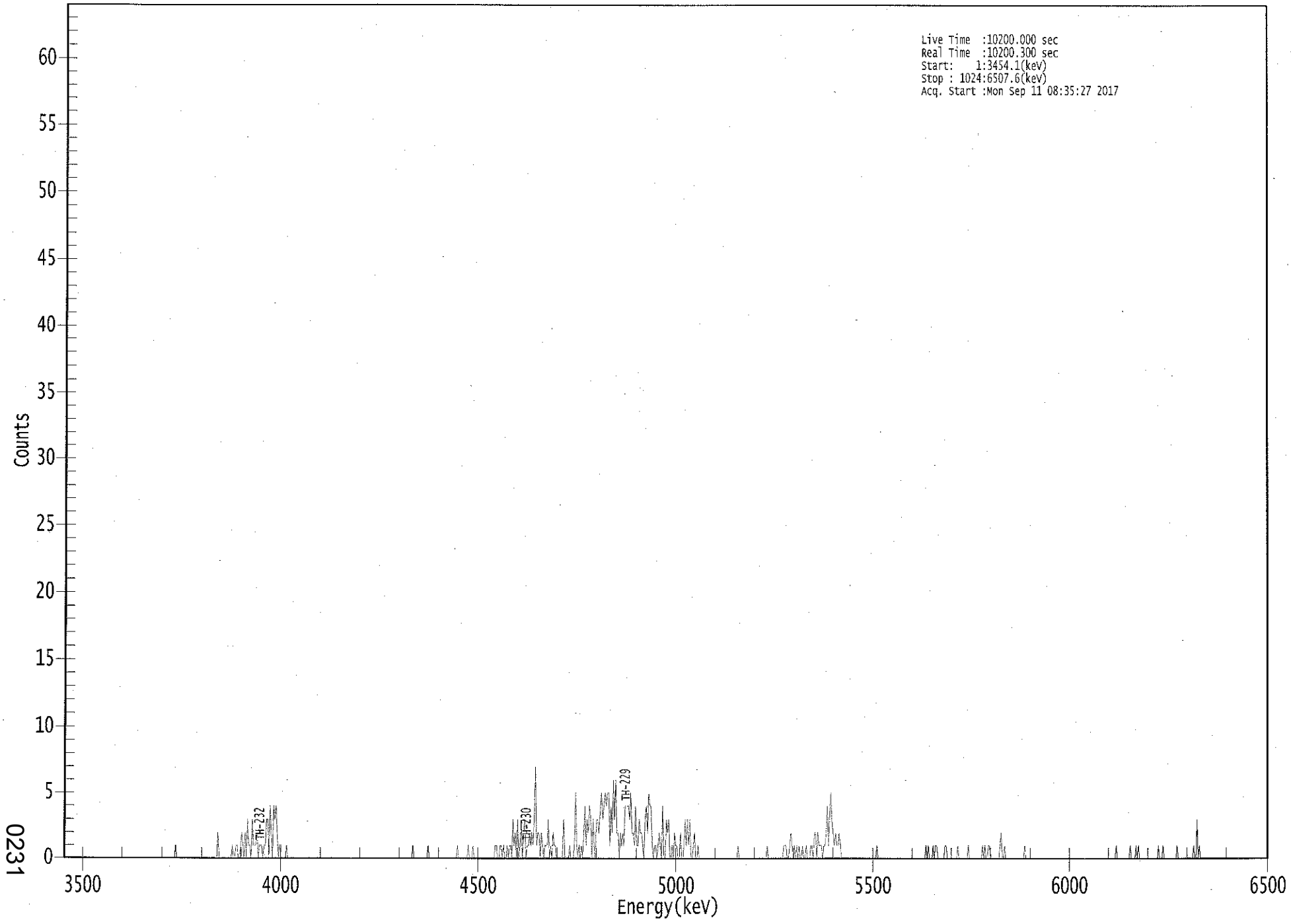
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.988	5850.00*	1.08E-001 +/- 6.94E-002	5.43E-002 +/- 7.99E-003
TH-228	0.991	5400.00*	6.04E-001 +/- 1.86E-001	7.40E-002 +/- 1.09E-002
TH-229	1.000	4872.00*	2.15E+000 +/- 3.17E-001	5.66E-002 +/- 8.33E-003
TH-230	0.989	4672.00*	6.87E-001 +/- 1.92E-001	4.78E-002 +/- 7.04E-003
TH-232	0.988	3997.00*	5.69E-001 +/- 1.71E-001	5.98E-002 +/- 8.81E-003

AG
9/11/17

0000193978.CNF



0231

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 04

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	1	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	2	0	0	0	0	0
137:	0	0	0	0	0	0	1	0
145:	0	1	1	0	0	1	2	1
153:	0	2	0	3	1	1	0	3
161:	1	1	1	2	0	1	1	1
169:	0	1	1	3	3	0	4	2
177:	0	4	3	4	2	0	1	1
185:	0	0	0	0	1	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	1
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	1	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	1	0	0
337:	0	0	0	0	0	0	1	0
345:	0	0	1	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	1	1	0

369:	0	1	1	0	1	0	0	1

Sample Title: 04

Channel								
377:	0	1	1	0	3	1	2	0
385:	3	0	1	3	0	2	3	0
393:	1	1	2	1	2	1	3	7
401:	1	2	2	0	2	1	0	1
409:	1	1	3	0	1	0	2	1
417:	1	0	0	0	0	0	0	3
425:	0	0	0	0	1	0	0	0
433:	1	5	1	0	1	0	1	0
441:	2	4	1	3	2	4	3	0
449:	3	1	0	3	3	2	4	5
457:	3	4	5	4	5	5	1	4
465:	2	6	3	6	2	2	0	2
473:	1	2	1	4	4	4	4	3
481:	5	2	2	1	4	1	1	3
489:	2	2	1	0	3	4	2	5
497:	4	4	1	0	1	1	0	1
505:	2	1	0	4	0	0	3	2
513:	3	0	0	1	0	2	1	1
521:	0	0	2	0	0	1	3	1
529:	3	1	3	0	0	1	2	0
537:	0	1	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	1	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	1	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	1	1	1	0	0	1
617:	2	1	0	1	0	1	0	1
625:	0	0	1	0	0	1	0	0
633:	0	1	1	0	2	2	0	2
641:	1	1	1	0	1	1	2	4
649:	1	3	5	3	2	1	2	1
657:	1	2	1	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	1	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	1	0	1	0	0
737:	0	1	0	1	1	0	0	0
745:	0	0	0	1	1	0	0	0
753:	0	0	0	0	0	0	1	0
761:	0	0	0	0	0	0	0	1
769:	0	0	0	0	0	0	0	0
777:	0	0	0	1	0	1	0	0
785:	1	1	0	0	0	0	0	0
793:	0	0	1	2	0	0	1	0

801:	0	0	0	0	0	0	0	0

Sample Title: 04

Channel								
809:	0	0	0	0	0	0	0	1
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	1	0	0
897:	0	0	0	0	0	0	0	0
905:	0	1	0	0	0	0	1	0
913:	1	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	1	0	0	0	1	0	0
937:	0	0	0	0	0	0	0	0
945:	0	1	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	1
961:	0	0	3	0	1	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB 9/11/17

Sample Description: HTC-A08-S001-0612-02
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 05
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_036
Chamber Serial Number: 04026477B
Detector Serial Number: 84167
Env. Background: System Bkgd 196027
Reagent Blank: <not performed>

Sample Size: 1.160E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:28 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.1893 +/- 0.0160
Counting Efficiency: 0.1824 +/- 0.0031 on 11/18/2016 10:08:54 AM
Chem. Recovery Factor: 1.0381 +/- 0.0895

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.772	4.66	94.59	0.34	0.00E+000	3.0
TH-228		5.360	103.47	19.43	1.53	0.00E+000	11.9
TH-229	T	4.860	162.98	15.41	1.02	0.00E+000	7.0
TH-230		4.640	103.15	19.39	0.85	0.00E+000	6.5
TH-232		3.953	88.32	20.95	0.68	0.00E+000	3.2

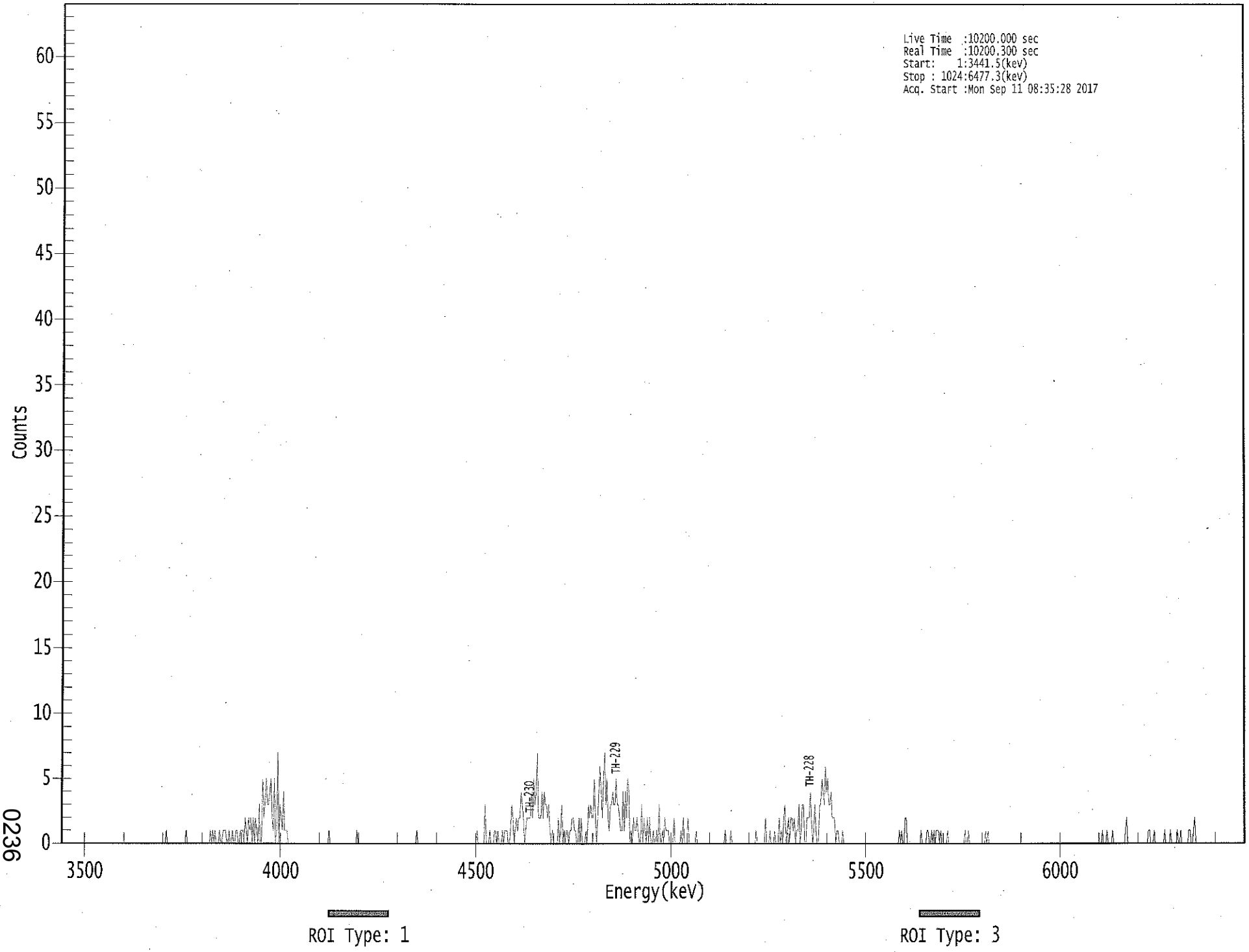
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.968	5850.00*	5.83E-002 +/- 5.60E-002	5.98E-002 +/- 9.90E-003
TH-228	0.991	5400.00*	1.40E+000 +/- 3.59E-001	9.65E-002 +/- 1.60E-002
TH-229	0.999	4872.00*	1.98E+000 +/- 3.27E-001	7.64E-002 +/- 1.27E-002
TH-230	0.994	4672.00*	1.25E+000 +/- 3.18E-001	7.24E-002 +/- 1.20E-002
TH-232	0.990	3997.00*	1.07E+000 +/- 2.85E-001	6.81E-002 +/- 1.13E-002

AG 9/11/17

0000193979.CNF



0236

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 05

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	1	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	1	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	1	0	1	0	1	0	0	0
137:	1	0	0	1	1	1	0	0
145:	1	0	0	1	0	0	1	1
153:	0	0	1	1	1	0	2	1
161:	0	2	1	2	0	2	0	2
169:	1	0	3	0	0	5	2	3
177:	5	3	3	4	5	2	1	5
185:	0	1	7	0	3	2	1	4
193:	1	1	1	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	1	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	1	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	1	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	1	0
361:	0	0	0	0	0	3	0	0

369:	0	1	0	0	0	1	1	0

Sample Title: 05

Channel								
377:	1	0	0	0	1	0	1	1
385:	1	0	0	1	3	2	0	1
393:	2	1	2	2	4	3	2	0
401:	1	2	2	2	2	4	2	5
409:	3	4	7	2	2	2	4	2
417:	4	3	3	2	3	1	0	1
425:	0	0	0	0	2	0	1	3
433:	0	1	0	1	1	0	1	1
441:	2	2	1	1	0	0	2	0
449:	2	0	0	0	1	0	3	2
457:	3	2	2	5	2	0	2	4
465:	6	4	2	5	7	3	5	2
473:	1	3	3	4	3	3	5	3
481:	3	2	1	1	4	1	4	2
489:	5	4	0	1	0	2	1	1
497:	2	1	0	0	3	0	2	1
505:	0	2	0	2	0	0	1	0
513:	0	1	0	3	0	0	1	0
521:	2	1	1	1	0	0	0	0
529:	2	0	0	0	0	0	1	0
537:	2	0	0	0	2	0	0	0
545:	0	0	0	1	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	1	0	0	0
577:	0	1	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	1
601:	0	0	0	0	0	0	0	2
609:	0	0	0	1	0	0	0	1
617:	0	0	0	2	0	1	0	2
625:	3	0	1	2	0	2	2	1
633:	2	0	1	1	3	0	1	3
641:	3	0	0	2	2	2	4	2
649:	0	1	3	1	0	0	3	3
657:	5	4	3	6	4	5	3	3
665:	4	2	2	2	0	1	1	0
673:	0	0	1	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	1	0	1	0	0
729:	2	2	0	0	0	0	0	0
737:	0	0	0	0	0	0	1	0
745:	0	0	0	1	1	0	0	1
753:	0	1	0	1	1	1	0	1
761:	0	0	0	0	0	1	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	1	0	0	1
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	1	0

801:	1	0	0	0	0	0	0	0

Sample Title: 05

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	1	0	0	0	1
905:	0	0	0	0	1	0	0	0
913:	0	0	0	0	0	0	0	1
921:	2	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	1	1	0	0	0
945:	1	0	0	0	0	0	0	0
953:	0	1	0	0	0	0	1	0
961:	0	0	0	0	1	0	0	1
969:	0	0	0	0	0	0	1	1
977:	0	0	1	2	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

NB 9/11/17

Apex-Alpha™

Sample Description: HTC-A08-S001-1218-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 06
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_037
Chamber Serial Number: 04026478A
Detector Serial Number: 91133
Env. Background: System Bkgd 196028
Reagent Blank: <not performed>

Sample Size: 1.220E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:30 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.1920 +/- 0.0161
Counting Efficiency: 0.1587 +/- 0.0027 on 11/18/2016 10:08:53 AM
Chem. Recovery Factor: 1.2097 +/- 0.1033

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.782	9.49	65.59	0.51	0.00E+000	3.0
TH-228		5.383	113.49	18.45	0.51	0.00E+000	4.5
TH-229	T	4.888	165.83	15.23	0.17	0.00E+000	3.3
TH-230		4.646	117.32	18.16	0.68	0.00E+000	12.0
TH-232		3.966	111.83	18.55	0.17	0.00E+000	4.8

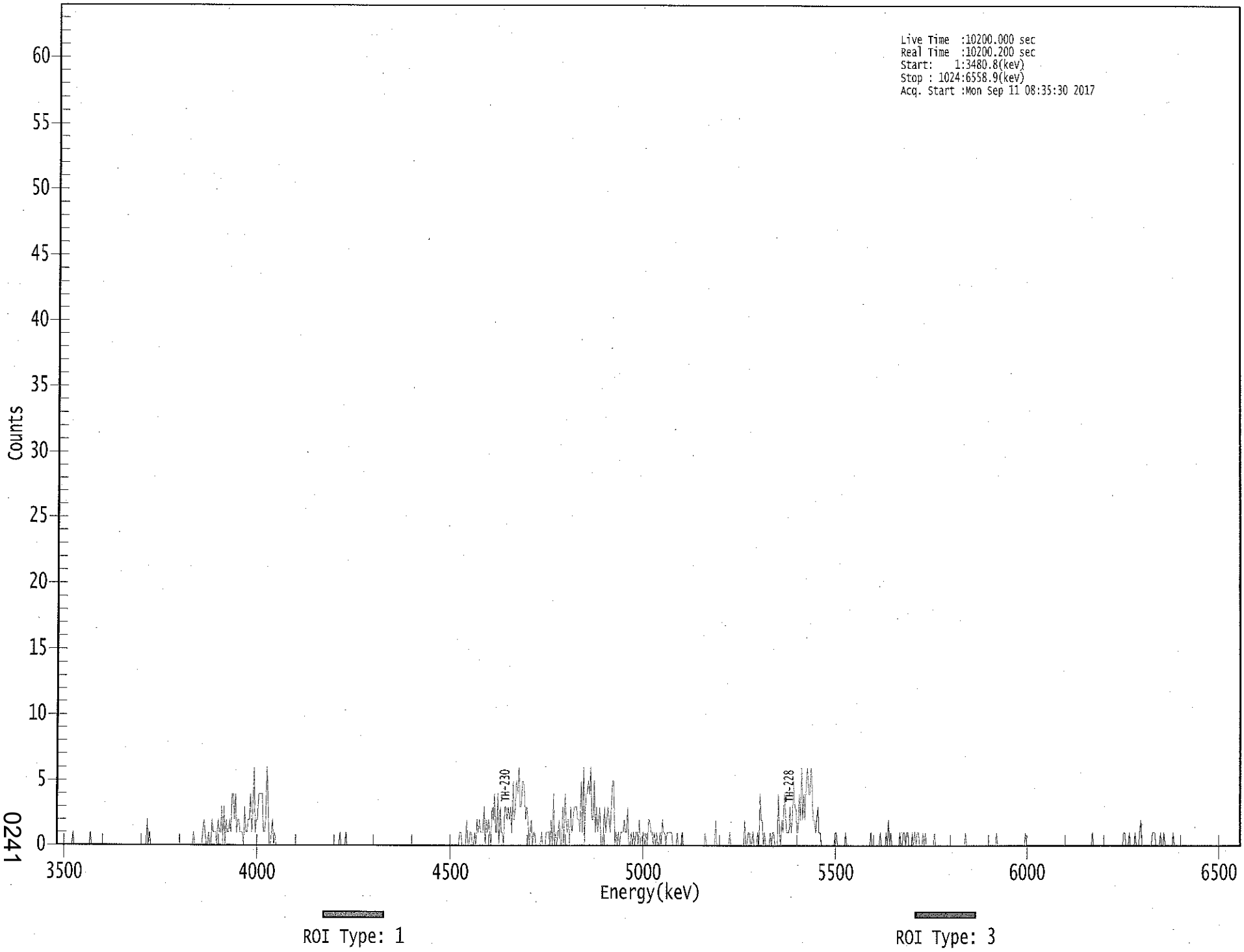
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.976	5850.00*	1.11E-001 +/- 7.52E-002	6.15E-002 +/- 1.01E-002
TH-228	0.998	5400.00*	1.45E+000 +/- 3.57E-001	6.68E-002 +/- 1.10E-002
TH-229	0.999	4872.00*	1.88E+000 +/- 3.09E-001	4.74E-002 +/- 7.78E-003
TH-230	0.997	4672.00*	1.33E+000 +/- 3.25E-001	6.39E-002 +/- 1.05E-002
TH-232	0.995	3997.00*	1.26E+000 +/- 3.13E-001	4.72E-002 +/- 7.74E-003

AG
9/11/17

0000193985.CNF



0241

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 06

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel							
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	1	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	1	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	2	0
81:	1	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	1	0
121:	0	0	0	0	0	0	1	2
129:	1	0	0	1	0	0	2	1
137:	1	1	0	2	1	1	3	0
145:	3	0	2	1	1	2	1	4
153:	4	2	4	1	2	2	1	1
161:	1	0	3	1	1	2	2	4
169:	1	3	6	1	2	2	4	4
177:	4	4	1	1	2	6	4	0
185:	0	1	2	0	1	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	1	0	0	0
249:	0	1	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	1	1	0	0	0
353:	0	2	0	0	1	1	0	0
361:	1	0	2	1	2	1	1	1

369:	3	0	2	1	2	1	0	3

Sample Title: 06

Channel								
377:	2	4	1	1	4	0	3	1
385:	1	0	3	3	2	3	2	3
393:	1	5	2	3	5	4	6	3
401:	3	5	5	4	2	3	2	0
409:	1	2	0	1	1	0	0	0
417:	0	0	1	0	0	0	1	1
425:	1	0	2	0	4	0	1	0
433:	1	2	0	0	3	0	4	2
441:	1	2	0	3	1	2	3	3
449:	3	2	2	1	5	1	6	0
457:	4	4	5	4	6	2	2	5
465:	1	3	1	2	3	0	0	1
473:	3	1	2	3	2	1	3	5
481:	5	0	1	0	1	0	1	1
489:	1	2	1	1	3	0	0	1
497:	0	1	0	1	1	0	2	0
505:	0	1	1	0	1	0	2	2
513:	1	1	0	1	0	1	0	0
521:	1	0	2	1	1	0	1	1
529:	1	1	1	0	0	0	0	1
537:	0	0	0	1	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	1
561:	0	0	0	0	0	0	0	0
569:	2	0	0	0	0	0	0	0
577:	0	0	0	0	1	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	2	0	0	1	1	0	0
601:	1	0	0	0	1	0	4	2
609:	2	0	1	0	0	0	0	1
617:	0	1	1	0	0	0	4	1
625:	0	2	1	4	3	1	1	1
633:	3	1	2	5	3	3	1	1
641:	4	2	6	2	4	2	5	6
649:	4	4	6	5	2	2	1	2
657:	3	1	1	0	0	0	0	0
665:	0	0	0	0	0	0	0	1
673:	1	0	0	0	0	0	0	0
681:	1	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	1	0
705:	0	0	0	0	0	0	1	0
713:	0	0	0	1	0	2	0	1
721:	0	0	0	0	0	0	0	1
729:	0	0	1	1	0	1	1	0
737:	0	0	1	0	1	0	1	1
745:	0	0	0	1	0	1	0	0
753:	0	0	0	0	0	1	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	1	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 06

Channel								
809:	0	0	0	1	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	1	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	1	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	1	1	0	0	0	1	0
929:	0	0	0	1	0	0	0	1
937:	2	0	0	0	0	0	0	0
945:	0	0	1	1	1	0	0	0
953:	0	1	0	0	1	0	0	0
961:	0	0	0	0	1	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

VCB 9/11/17

Apex-Alpha™

Sample Description: HTC-A08-S001-1824-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 07
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_038
Chamber Serial Number: 04026478B
Detector Serial Number: 91134
Env. Background: System Bkgd 196029
Reagent Blank: <not performed>

Sample Size: 1.160E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:32 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.227 mL
Effective Efficiency: 0.1819 +/- 0.0156
Counting Efficiency: 0.1543 +/- 0.0027 on 11/18/2016 10:08:51 AM
Chem. Recovery Factor: 1.1783 +/- 0.1030

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.856	3.83	102.72	0.17	0.00E+000	3.0
TH-228		5.333	115.30	18.41	1.70	0.00E+000	4.0
TH-229	T	4.850	157.32	15.67	0.68	0.00E+000	6.3
TH-230		4.613	125.32	17.56	0.68	0.00E+000	4.1
TH-232		3.940	120.66	17.87	0.34	0.00E+000	9.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	4.99E-002 +/- 5.19E-002	5.43E-002 +/- 9.13E-003
TH-228	0.977	5400.00*	1.63E+000 +/- 4.07E-001	1.04E-001 +/- 1.75E-002
TH-229	0.997	4872.00*	1.99E+000 +/- 3.34E-001	7.12E-002 +/- 1.20E-002
TH-230	0.982	4672.00*	1.58E+000 +/- 3.83E-001	7.10E-002 +/- 1.19E-002
TH-232	0.983	3997.00*	1.52E+000 +/- 3.72E-001	6.01E-002 +/- 1.01E-002

AG
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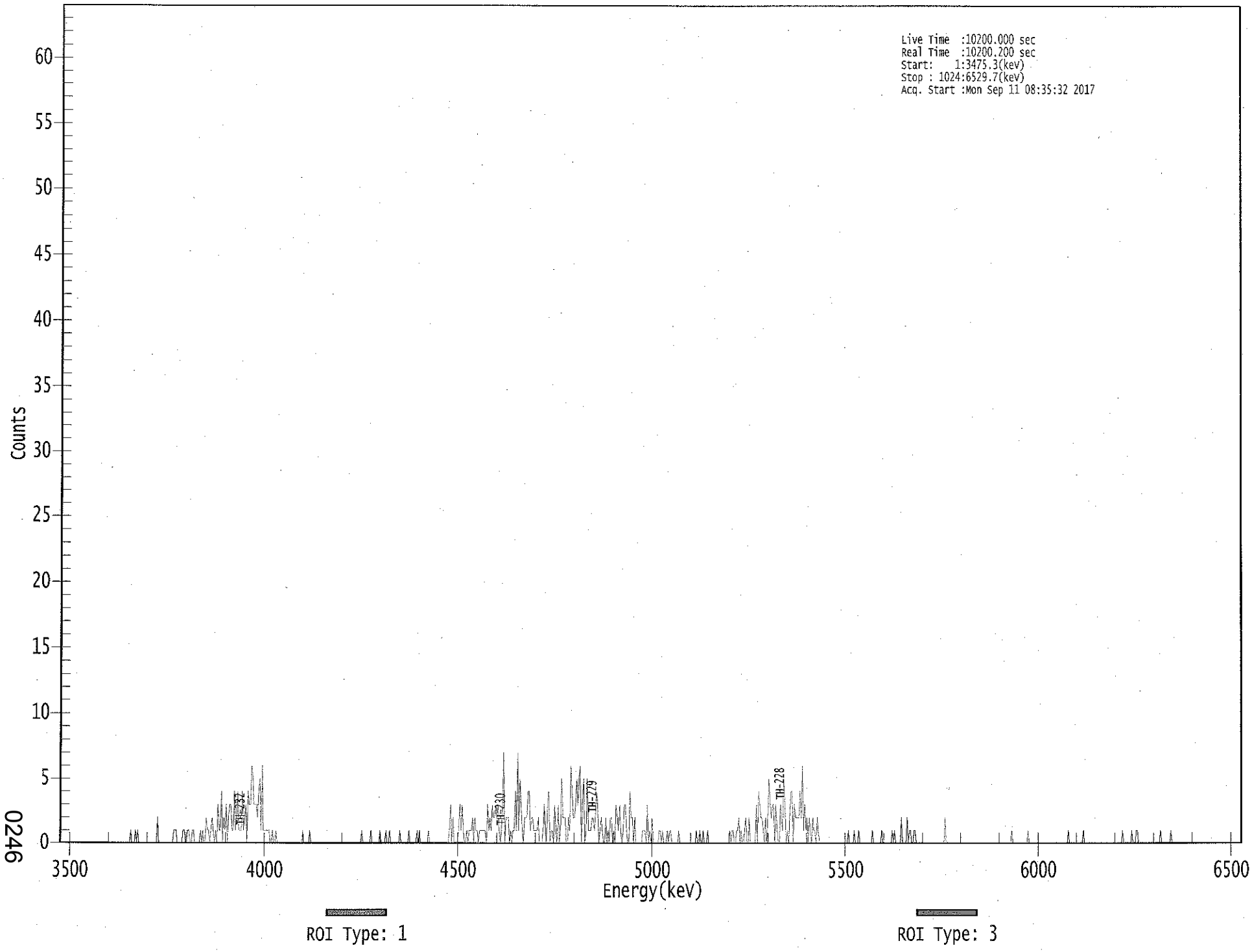
0000193980.CNF



0246

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 07

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	1	0	0
65:	0	1	0	1	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	2	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	1	1	1	0	0	0
105:	0	0	1	1	0	0	1	1
113:	0	0	1	1	0	0	0	0
121:	0	1	0	1	0	0	2	1
129:	1	0	1	2	1	0	1	0
137:	3	1	1	4	0	2	1	3
145:	0	2	3	3	1	1	4	1
153:	2	4	1	1	1	4	1	2
161:	3	0	4	3	3	6	5	3
169:	3	3	2	4	5	1	6	1
177:	1	1	1	1	1	0	0	1
185:	0	0	1	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	1	0	0	0	0	0	1
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	1	0	0	0
265:	0	0	0	0	1	0	0	0
273:	0	0	0	0	1	0	0	0
281:	0	1	0	0	1	0	0	0
289:	0	0	0	0	0	1	0	0
297:	0	0	0	0	0	1	0	0
305:	0	0	0	0	1	0	1	0
313:	0	0	0	0	0	0	1	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	1	3	0	2	0	0	0	0
345:	1	3	1	3	1	0	0	1
353:	0	1	1	1	2	0	2	1
361:	1	0	1	1	1	1	1	1

369:	0	3	1	2	1	3	2	2

Sample Title: 07

Channel								
377:	3	2	3	1	0	1	3	7
385:	0	2	2	2	0	1	0	1
393:	1	4	1	7	1	5	3	1
401:	0	2	2	2	4	4	1	2
409:	2	1	1	1	1	2	0	0
417:	0	1	3	1	0	3	4	0
425:	1	1	0	3	1	0	3	0
433:	1	5	2	2	2	0	0	2
441:	1	6	4	2	2	3	5	3
449:	5	6	0	3	5	0	1	5
457:	1	1	1	2	2	1	2	4
465:	3	0	1	2	1	0	0	2
473:	0	1	0	2	2	0	1	0
481:	3	2	1	3	1	0	1	3
489:	3	1	0	0	4	2	2	0
497:	2	0	0	0	0	0	0	1
505:	1	1	0	3	0	1	0	2
513:	0	0	0	0	0	1	1	0
521:	1	0	0	0	1	0	1	1
529:	0	0	0	0	0	0	1	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	1	0	0
553:	1	0	0	1	0	0	0	1
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	1	0	1	1	0	0
585:	1	1	2	0	1	0	0	1
593:	2	0	0	2	0	0	0	0
601:	0	3	0	4	3	2	2	1
609:	0	2	0	2	5	3	2	3
617:	3	0	3	1	0	0	3	2
625:	1	5	3	0	1	0	2	4
633:	4	0	3	2	2	2	2	4
641:	2	6	1	3	1	2	0	2
649:	1	0	2	1	1	0	2	1
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	1	0	0	0	0	1	0
689:	0	0	1	0	0	0	0	0
697:	0	0	0	0	0	0	1	0
705:	0	0	0	0	0	0	1	0
713:	0	0	0	0	0	0	0	1
721:	0	1	0	0	0	0	0	2
729:	0	0	0	0	2	0	1	1
737:	0	0	1	1	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	2	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 07

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	1
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	1	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	1	0	0	0	0	0	0	0
881:	0	0	0	0	0	1	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	1
921:	0	0	0	0	0	0	0	1
929:	0	0	0	1	1	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	1	0	0	0	0	0	0	0
961:	0	1	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB 9/11/17

Sample Description: HTC-A08-S001-2430-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 08
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_039
Chamber Serial Number: 06027396A
Detector Serial Number: 83109
Env. Background: System Bkgd 196030
Reagent Blank: <not performed>

Sample Size: 1.370E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:35 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.1659 +/- 0.0149
Counting Efficiency: 0.1852 +/- 0.0031 on 11/18/2016 10:08:50 AM
Chem. Recovery Factor: 0.8961 +/- 0.0817

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.812	4.15	107.12	0.85	0.00E+000	3.0
TH-228		5.350	124.79	17.73	2.21	0.00E+000	12.7
TH-229	T	4.860	143.30	16.49	1.70	0.00E+000	5.2
TH-230		4.630	124.64	17.67	1.36	0.00E+000	3.6
TH-232		3.950	117.32	18.16	0.68	0.00E+000	4.7

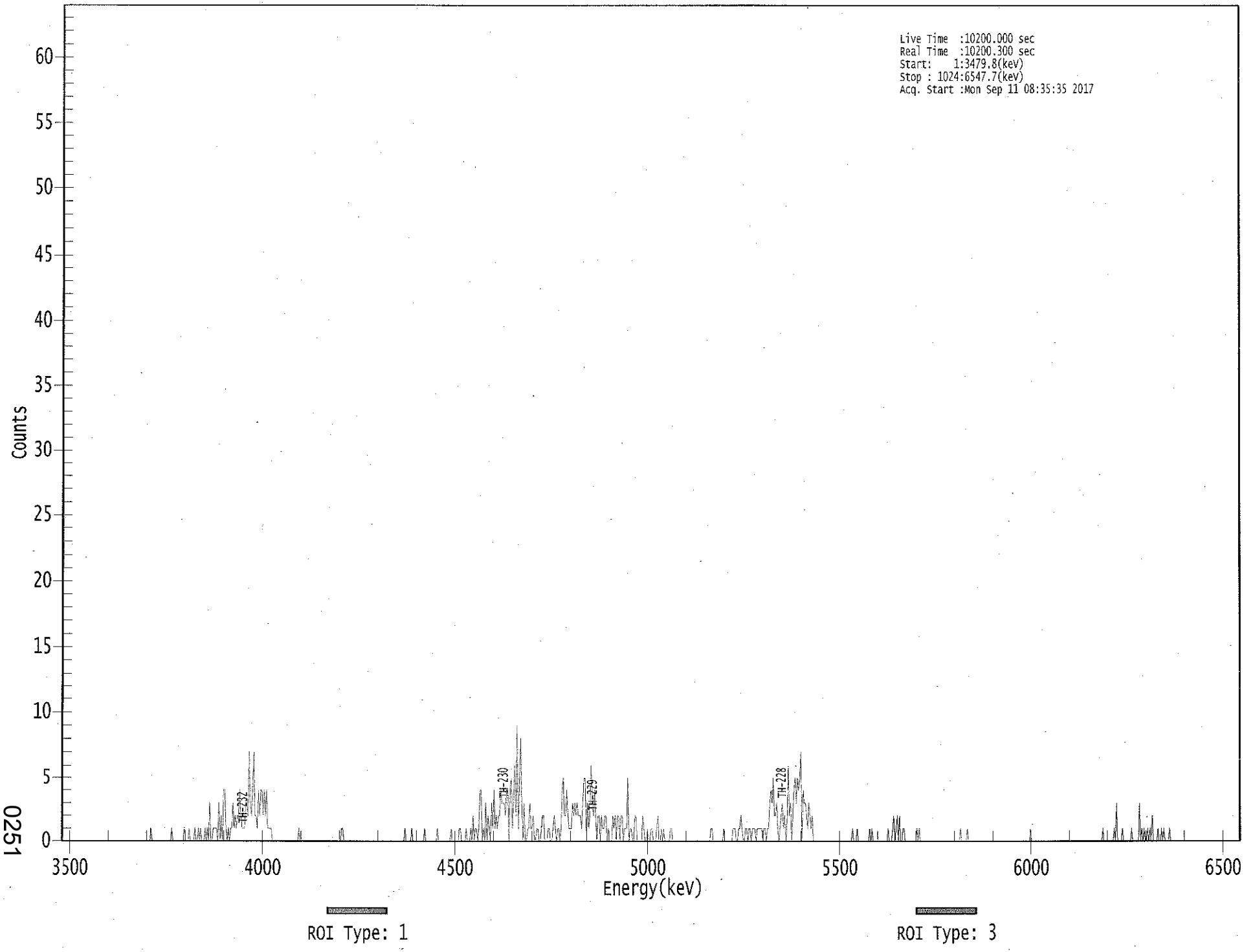
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.992	5850.00*	5.01E-002 +/- 5.44E-002	7.23E-002 +/- 1.27E-002
TH-228	0.987	5400.00*	1.64E+000 +/- 4.09E-001	1.05E-001 +/- 1.84E-002
TH-229	0.999	4872.00*	1.68E+000 +/- 2.95E-001	8.60E-002 +/- 1.51E-002
TH-230	0.991	4672.00*	1.46E+000 +/- 3.63E-001	8.01E-002 +/- 1.41E-002
TH-232	0.988	3997.00*	1.37E+000 +/- 3.45E-001	6.57E-002 +/- 1.16E-002

AG 9/11/17

0000193986.CNF



0251

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 08

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel							
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	1	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	1
97:	0	0	0	0	0	0	0	0
105:	0	0	1	0	0	0	1	0
113:	0	0	0	1	0	0	1	0
121:	1	0	0	0	1	0	1	0
129:	3	0	0	1	1	1	1	0
137:	3	0	2	0	4	4	1	0
145:	1	0	1	1	3	1	2	1
153:	2	2	4	2	1	1	1	3
161:	3	2	7	3	2	4	7	2
169:	2	1	4	2	4	4	2	4
177:	2	4	1	1	1	1	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	1	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	1	1	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	1	0	0	0	0	0	1
305:	0	0	0	0	0	0	0	0
313:	0	0	1	0	0	0	0	0
321:	0	0	0	0	0	1	0	0
329:	0	0	0	0	0	0	0	0
337:	0	1	0	0	0	0	0	0
345:	1	1	0	0	0	0	1	0
353:	0	0	1	0	2	0	1	1
361:	0	1	4	4	0	1	0	3

369:	0	2	1	0	3	1	4	1

Sample Title: 08

Channel								
377:	2	1	2	2	4	3	3	3
385:	2	4	4	0	4	5	1	3
393:	6	2	9	1	4	8	3	0
401:	3	0	0	1	1	3	1	1
409:	2	0	0	1	1	0	0	1
417:	2	2	0	0	0	1	1	0
425:	0	1	2	1	0	1	1	0
433:	1	4	5	2	2	4	2	1
441:	1	1	3	2	3	2	3	2
449:	2	2	1	3	5	5	0	3
457:	1	2	6	3	2	4	2	0
465:	2	2	0	2	1	1	2	2
473:	0	1	0	0	0	2	1	2
481:	0	2	2	0	2	2	0	1
489:	1	1	5	0	1	1	0	0
497:	2	2	0	0	0	0	0	2
505:	1	0	0	1	0	0	1	1
513:	0	0	0	1	2	0	0	1
521:	0	1	0	0	0	0	0	1
529:	1	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	1	1	0	0	0	0
569:	0	0	0	0	0	1	0	0
577:	0	0	0	0	0	1	1	1
585:	0	0	1	1	2	1	0	0
593:	1	1	0	1	1	0	1	1
601:	1	0	1	1	1	1	1	0
609:	1	1	0	1	1	3	4	3
617:	5	2	2	3	1	0	1	2
625:	3	1	2	0	1	6	2	3
633:	0	2	4	5	3	5	4	5
641:	7	0	4	3	3	2	1	3
649:	2	1	2	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	1	0	0
689:	0	1	0	0	0	0	0	0
697:	0	0	0	0	1	0	1	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	1	0	0	0
721:	1	2	0	1	2	0	2	0
729:	0	1	1	0	0	0	0	0
737:	0	0	0	0	0	1	0	1
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	1	0	0	0	0
785:	0	1	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 08

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	1	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	1
905:	0	0	0	0	0	0	0	0
913:	0	1	0	3	0	0	0	0
921:	1	0	0	0	0	0	0	0
929:	1	0	0	0	0	0	0	3
937:	0	1	0	1	0	0	1	0
945:	1	0	2	0	0	0	0	1
953:	0	0	1	0	1	0	0	0
961:	0	1	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

XB 9/11/17

Apex-Alpha™

Sample Description: HTC-A08-S001-3036-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 09
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_040
Chamber Serial Number: 06027396B
Detector Serial Number: 91135
Env. Background: System Bkgd 196031
Reagent Blank: <not performed>

Sample Size: 1.350E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:37 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.223 mL
Effective Efficiency: 0.1877 +/- 0.0160
Counting Efficiency: 0.1813 +/- 0.0031 on 11/18/2016 10:08:48 AM
Chem. Recovery Factor: 1.0353 +/- 0.0897

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.835	15.66	50.15	0.34	0.00E+000	3.0
TH-228		5.364	128.81	17.36	1.19	0.00E+000	7.2
TH-229	T	4.881	159.83	15.51	0.17	0.00E+000	6.6
TH-230		4.623	95.49	20.12	0.51	0.00E+000	4.0
TH-232		3.951	119.83	17.92	0.17	0.00E+000	4.4

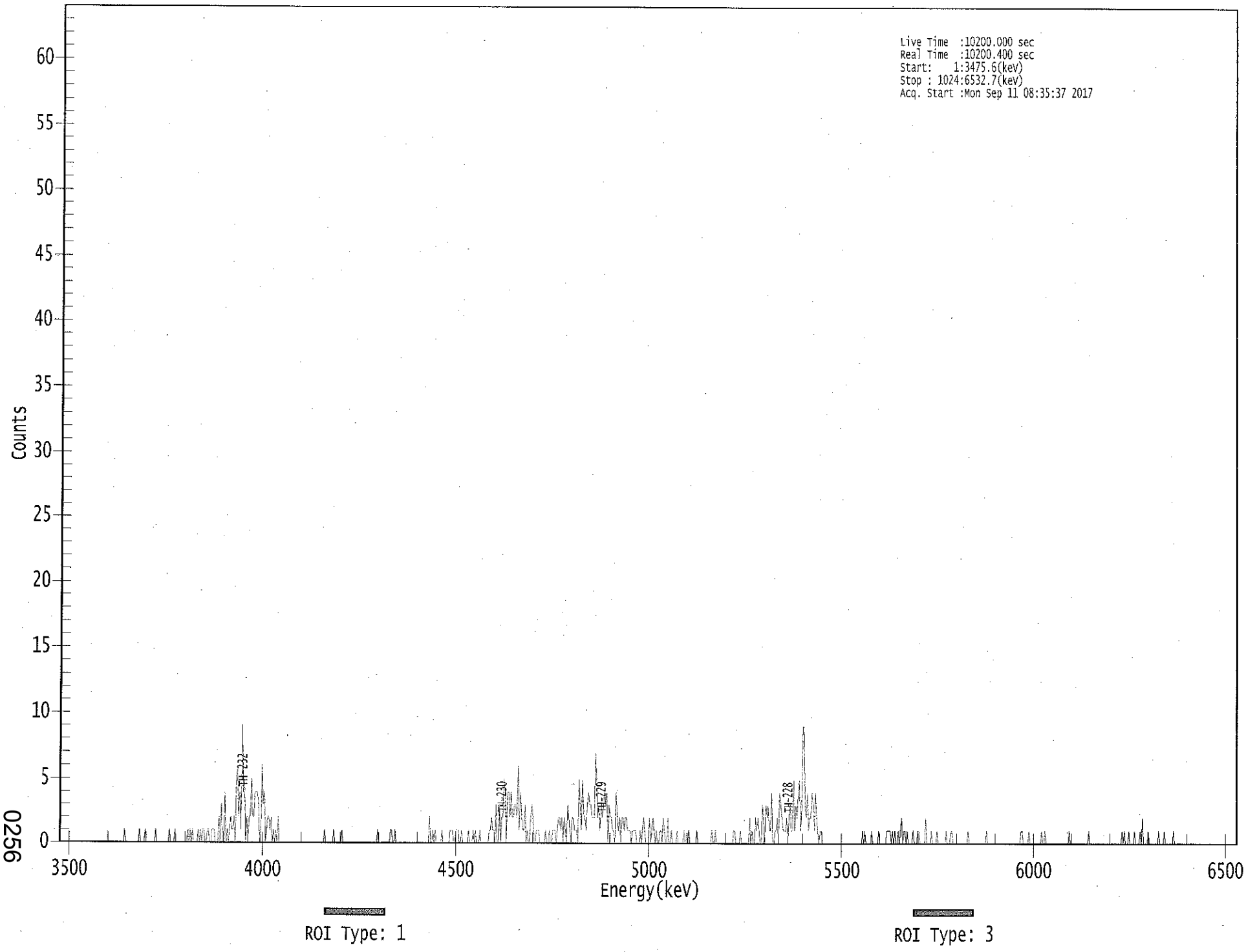
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	1.70E-001 +/- 8.97E-002	5.18E-002 +/- 8.63E-003
TH-228	0.993	5400.00*	1.52E+000 +/- 3.65E-001	7.76E-002 +/- 1.29E-002
TH-229	1.000	4872.00*	1.68E+000 +/- 2.80E-001	4.38E-002 +/- 7.30E-003
TH-230	0.987	4672.00*	1.00E+000 +/- 2.61E-001	5.50E-002 +/- 9.16E-003
TH-232	0.989	3997.00*	1.25E+000 +/- 3.07E-001	4.36E-002 +/- 7.27E-003

AG 9/11/17

0000193987.CNF



0256

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 09

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel							
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	1	0	0	0	0	0	0	0
65:	0	0	0	0	0	1	0	0
73:	0	0	1	0	0	0	0	0
81:	0	0	0	1	0	0	0	0
89:	0	0	0	0	0	0	0	1
97:	0	0	0	0	1	0	0	0
105:	0	0	0	0	0	0	0	1
113:	0	1	0	1	0	0	0	0
121:	1	0	1	0	1	1	0	0
129:	1	1	0	0	1	1	1	0
137:	0	0	2	0	3	0	0	4
145:	0	1	0	1	2	1	1	2
153:	0	5	6	2	4	1	9	4
161:	5	0	2	0	2	2	5	2
169:	2	4	4	4	3	0	0	6
177:	3	4	0	1	2	2	1	2
185:	0	1	0	1	0	2	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	1	0	0
233:	0	0	0	0	0	1	0	0
241:	0	0	0	0	1	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	1	0	0	0	0
281:	0	0	0	0	0	0	1	1
289:	0	0	1	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	2	0	0	1	0	1	0	0
329:	0	0	0	1	0	0	0	0
337:	0	0	1	1	1	0	0	1
345:	1	1	0	0	1	0	0	0
353:	0	0	1	0	0	0	1	0
361:	1	0	0	0	1	0	0	0

369:	0	0	0	0	1	1	2	1

Sample Title: 09

Channel								
377:	1	0	3	0	0	3	0	2
385:	2	5	4	0	4	4	2	4
393:	2	2	3	3	2	6	1	4
401:	2	1	1	3	0	1	0	0
409:	2	3	2	0	0	1	1	1
417:	0	0	0	0	0	1	0	0
425:	1	0	0	1	1	1	0	1
433:	2	2	1	2	0	2	1	0
441:	3	2	1	0	2	2	1	1
449:	1	0	5	3	1	5	2	2
457:	1	3	4	3	3	2	2	2
465:	7	5	2	3	1	3	2	3
473:	4	3	4	0	3	2	2	1
481:	1	0	4	2	1	2	0	2
489:	2	1	2	2	1	1	1	0
497:	1	1	1	1	0	0	0	1
505:	0	1	2	1	0	0	0	2
513:	0	1	2	1	0	1	0	0
521:	1	1	0	2	1	0	0	2
529:	0	0	1	0	0	0	0	1
537:	0	0	0	0	0	1	0	0
545:	0	1	0	0	0	0	0	0
553:	1	0	0	0	0	0	0	0
561:	0	0	0	0	0	1	0	0
569:	1	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	1	1	0	0	0	0	1	0
593:	0	0	0	0	0	0	2	0
601:	1	0	0	2	1	2	1	0
609:	0	3	2	0	3	2	3	1
617:	1	4	0	0	1	1	2	0
625:	4	3	2	1	1	1	2	0
633:	2	3	1	1	5	1	3	2
641:	4	5	1	2	9	9	3	2
649:	4	1	2	2	4	3	1	4
657:	2	1	0	1	1	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	1	0	1	0	0	0	0	0
705:	1	0	0	0	0	0	1	0
713:	0	0	0	0	0	1	1	1
721:	1	0	1	0	1	0	0	1
729:	0	1	2	0	1	1	0	1
737:	0	0	0	0	1	0	0	0
745:	1	1	0	0	0	0	0	2
753:	0	0	0	0	1	0	0	0
761:	0	1	0	0	0	0	0	0
769:	0	1	0	0	0	1	1	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	1	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	1	0	0	0

Sample Title: 09

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	1	1	0	0	0	0
841:	0	1	0	0	0	0	0	0
849:	0	0	0	0	1	0	0	1
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	1	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	1	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	1	0	1	0	0	0
929:	1	0	0	0	0	1	0	0
937:	0	0	1	0	2	0	0	0
945:	0	1	0	0	0	0	0	0
953:	0	0	1	0	0	0	0	1
961:	0	0	0	0	0	0	0	1
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

VB 9/11/17

Apex-Alpha™

Sample Description: HTC-A08-S001-3642-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 10
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_043
Chamber Serial Number: 04026481A
Detector Serial Number: 91088
Env. Background: System Bkgd 196032
Reagent Blank: <not performed>

Sample Size: 1.180E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:39 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.1712 +/- 0.0151
Counting Efficiency: 0.1874 +/- 0.0032 on 11/18/2016 10:08:43 AM
Chem. Recovery Factor: 0.9133 +/- 0.0822

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.801	3.47	129.55	1.53	0.00E+000	3.0
TH-228		5.376	97.64	20.00	1.36	0.00E+000	10.1
TH-229	T	4.878	147.64	16.22	1.36	0.00E+000	6.3
TH-230		4.636	93.81	20.39	1.19	0.00E+000	5.3
TH-232		3.956	101.15	19.58	0.85	0.00E+000	29.3

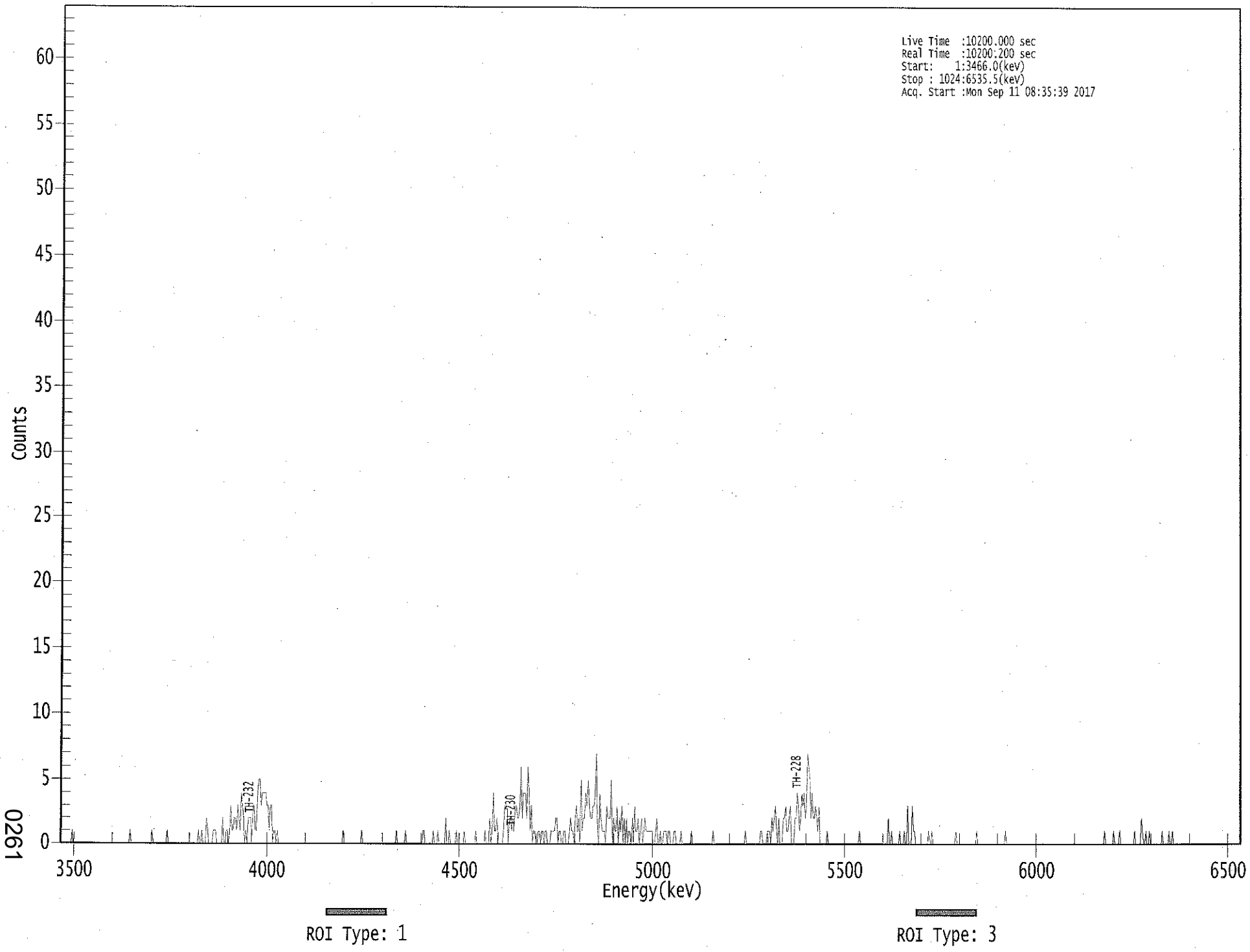
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.988	5850.00*	4.72E-002 +/- 6.16E-002	9.66E-002 +/- 1.67E-002
TH-228	0.997	5400.00*	1.44E+000 +/- 3.82E-001	1.01E-001 +/- 1.75E-002
TH-229	1.000	4872.00*	1.95E+000 +/- 3.37E-001	9.04E-002 +/- 1.57E-002
TH-230	0.993	4672.00*	1.23E+000 +/- 3.30E-001	8.66E-002 +/- 1.50E-002
TH-232	0.991	3997.00*	1.33E+000 +/- 3.47E-001	7.85E-002 +/- 1.36E-002

AG
9/11/17

0000193998.CNF



0261

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 10

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	1	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	1	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	1
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	1	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	1
121:	0	0	1	0	0	0	2	1
129:	0	0	0	0	1	1	1	0
137:	0	0	0	0	2	0	0	1
145:	1	0	1	3	1	1	2	2
153:	1	3	2	1	4	3	2	0
161:	1	0	2	2	2	0	3	3
169:	1	1	4	5	5	3	4	4
177:	4	4	3	3	1	3	3	0
185:	1	1	0	1	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	1	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	1	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	1	0	0	0	0	0
297:	0	0	1	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	1	1	0	0	0	0	0
321:	0	0	1	0	0	0	1	0
329:	0	0	0	0	0	2	0	0
337:	1	0	0	0	0	0	1	0
345:	0	0	0	0	0	1	0	0
353:	0	0	0	0	0	0	0	1
361:	0	0	0	0	0	0	0	1

369:	0	0	0	2	0	1	4	1

Sample Title: 10

Channel								
377:	1	2	1	0	0	0	0	1
385:	3	3	3	0	2	2	1	2
393:	1	3	3	2	2	3	6	2
401:	4	4	4	2	6	4	1	3
409:	0	1	1	0	0	1	1	0
417:	1	1	0	1	1	0	0	0
425:	1	1	1	1	2	2	0	1
433:	1	0	0	1	1	0	0	0
441:	1	2	1	1	0	2	3	1
449:	2	0	5	1	2	2	4	3
457:	5	3	2	2	3	3	4	7
465:	1	0	4	2	1	1	1	0
473:	3	2	2	2	5	0	2	1
481:	1	3	0	2	1	3	0	2
489:	0	2	0	1	1	0	2	0
497:	3	1	1	2	0	1	2	0
505:	1	2	1	1	1	1	1	1
513:	0	0	1	2	0	0	1	0
521:	0	1	1	1	0	1	1	0
529:	0	0	1	1	0	0	0	0
537:	1	0	0	0	0	0	0	0
545:	0	1	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	1	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	1	0	0	0	0	0	0	0
601:	0	0	0	0	0	1	1	0
609:	0	0	0	1	1	1	0	2
617:	1	2	3	1	0	2	0	0
625:	0	2	2	3	1	1	2	3
633:	0	0	0	2	2	4	3	1
641:	2	4	3	4	2	3	7	6
649:	5	2	4	2	2	3	2	1
657:	3	0	0	0	0	0	0	1
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	1	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	2	0	0	1
721:	0	0	0	0	0	0	1	0
729:	0	0	1	0	0	3	0	0
737:	0	3	1	1	0	0	0	0
745:	0	0	0	0	0	0	0	1
753:	0	0	1	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	1
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	1	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 10

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	1	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	1	0	0	0	0	0	0	0
913:	1	0	0	0	0	1	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	1	0	0	0	0	0
937:	2	1	0	0	1	0	0	1
945:	0	0	0	0	0	0	0	0
953:	0	0	1	0	0	0	0	0
961:	1	0	0	1	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

NG 9/11/17

Sample Description: HTC-A08-S001-4248-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 11
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_044
Chamber Serial Number: 04026481B
Detector Serial Number: 84168
Env. Background: System Bkgd 196033
Reagent Blank: <not performed>

Sample Size: 1.160E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:42 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.2067 +/- 0.0168
Counting Efficiency: 0.1793 +/- 0.0030 on 11/18/2016 10:08:42 AM
Chem. Recovery Factor: 1.1531 +/- 0.0955

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.796	10.49	62.21	0.51	0.00E+000	6.0
TH-228		5.377	95.81	20.17	1.19	0.00E+000	9.4
TH-229	T	4.874	178.66	14.68	0.34	0.00E+000	3.5
TH-230		4.632	97.83	19.84	0.17	0.00E+000	6.0
TH-232		3.964	101.81	19.56	1.19	0.00E+000	9.8

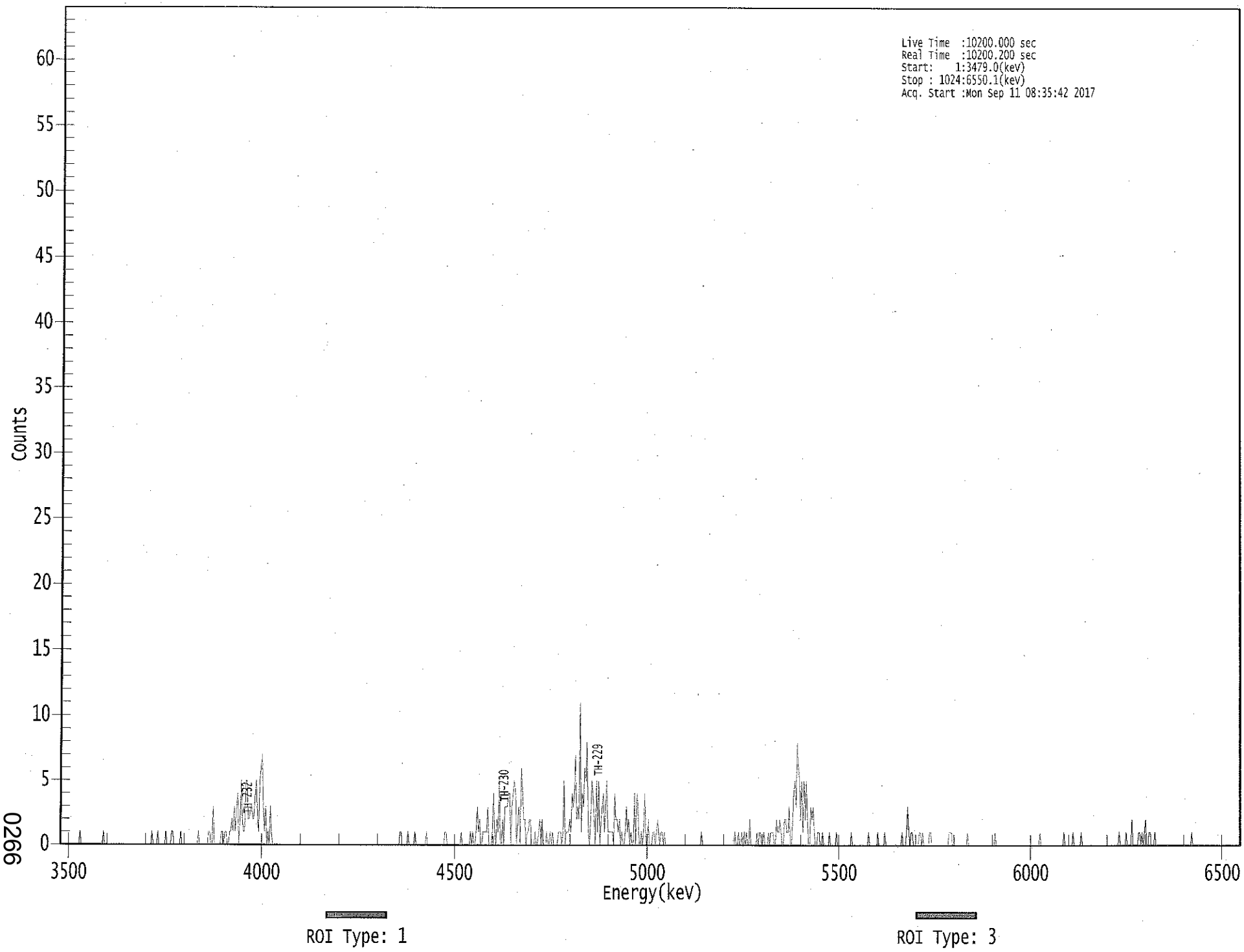
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.985	5850.00*	1.20E-001 +/- 7.71E-002	6.01E-002 +/- 9.55E-003
TH-228	0.997	5400.00*	1.19E+000 +/- 3.06E-001	8.20E-002 +/- 1.30E-002
TH-229	1.000	4872.00*	1.98E+000 +/- 3.15E-001	5.31E-002 +/- 8.43E-003
TH-230	0.992	4672.00*	1.08E+000 +/- 2.75E-001	4.62E-002 +/- 7.34E-003
TH-232	0.994	3997.00*	1.13E+000 +/- 2.83E-001	7.28E-002 +/- 1.16E-002

AG 9/11/17

0000193984.CNF



0266

```
*******************************************************
*****   S P E C T R A L   D A T A   R E P O R T   *****
*******************************************************
```

Sample Title: 11

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	1	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	1	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	1
81:	0	0	0	0	1	0	0	0
89:	0	0	0	1	0	0	0	0
97:	1	1	0	0	0	0	0	0
105:	1	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	1
121:	0	0	0	0	0	0	0	0
129:	1	1	0	0	3	0	0	0
137:	0	0	0	1	1	0	1	1
145:	0	0	1	1	2	1	3	1
153:	3	4	0	2	5	2	1	1
161:	5	5	2	2	3	3	2	2
169:	4	5	2	1	5	6	7	3
177:	1	3	0	1	0	3	1	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	1	1	0
297:	0	0	0	0	1	0	0	0
305:	0	0	1	0	0	0	0	0
313:	0	0	0	0	1	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	1	1	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	1	0	0	0	0	0
353:	0	0	1	0	1	0	0	1
361:	3	1	2	0	0	1	1	1

369:	1	3	0	0	0	1	4	1

Sample Title: 11

Channel								
377:	0	2	1	5	0	0	2	0
385:	3	3	3	4	4	0	3	4
393:	5	4	0	2	3	0	6	4
401:	2	2	0	1	1	2	2	0
409:	0	0	1	0	0	1	2	0
417:	2	0	0	0	1	0	0	1
425:	0	1	0	0	0	0	1	1
433:	1	0	1	5	0	1	1	1
441:	2	1	4	3	4	7	2	3
449:	2	11	1	4	3	6	5	8
457:	1	0	2	5	4	2	0	5
465:	1	5	0	2	3	4	1	3
473:	5	1	1	1	1	1	0	4
481:	2	2	1	2	0	1	0	0
489:	1	3	1	2	0	1	0	0
497:	4	0	4	3	0	0	1	0
505:	1	4	0	0	2	0	0	0
513:	1	1	0	1	2	1	0	1
521:	1	0	1	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	1	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	1
585:	0	0	1	0	0	1	0	1
593:	0	1	0	0	2	0	0	0
601:	0	0	1	0	1	1	0	0
609:	1	0	0	0	1	0	1	1
617:	1	0	0	2	1	1	2	1
625:	0	0	2	2	1	1	3	0
633:	0	2	4	5	3	8	6	5
641:	2	5	1	5	2	5	2	0
649:	0	3	2	3	1	0	0	1
657:	1	0	0	1	0	0	0	0
665:	0	1	0	0	0	0	0	1
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	1	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	1	0	0	0	0
705:	0	0	0	1	0	0	0	0
713:	0	1	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	1	0	0	0	1	3	1	0
737:	1	1	0	0	0	0	0	1
745:	1	0	1	0	0	0	0	0
753:	1	1	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	1	1	1	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	1	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 11

Channel								
809:	0	1	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	1	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	1	0	0
873:	0	0	0	0	0	1	0	0
881:	0	0	0	0	1	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	1	0	0
921:	0	0	0	1	0	0	0	0
929:	2	0	0	0	0	0	1	1
937:	0	1	0	1	2	0	0	1
945:	1	0	0	0	1	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	1	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

NB
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Apex-Alpha™

Sample Description: HTC-A09-S001-0006-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 12
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_045
Chamber Serial Number: 04026482A
Detector Serial Number: 91131
Env. Background: System Bkgd 196034
Reagent Blank: <not performed>

Sample Size: 1.073E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:44 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.1845 +/- 0.0157
Counting Efficiency: 0.1688 +/- 0.0029 on 11/18/2016 10:08:40 AM
Chem. Recovery Factor: 1.0928 +/- 0.0951

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.912	66.49	24.14	0.51	0.00E+000	3.0
TH-228		5.348	15.13	53.91	1.87	0.00E+000	3.0
TH-229	T	4.867	159.15	15.58	0.85	0.00E+000	3.4
TH-230		4.631	1147.98	5.79	1.02	0.00E+000	40.9
TH-232		3.951	15.62	53.83	2.38	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.980	5850.00*	9.22E-001 +/- 2.71E-001	7.28E-002 +/- 1.22E-002
TH-228	0.986	5400.00*	2.28E-001 +/- 1.29E-001	1.14E-001 +/- 1.91E-002
TH-229	1.000	4872.00*	2.14E+000 +/- 3.58E-001	8.05E-002 +/- 1.35E-002
TH-230	0.991	4672.00*	1.54E+001 +/- 2.73E+000	8.45E-002 +/- 1.41E-002
TH-232	0.989	3997.00*	2.09E-001 +/- 1.18E-001	1.10E-001 +/- 1.84E-002

AG
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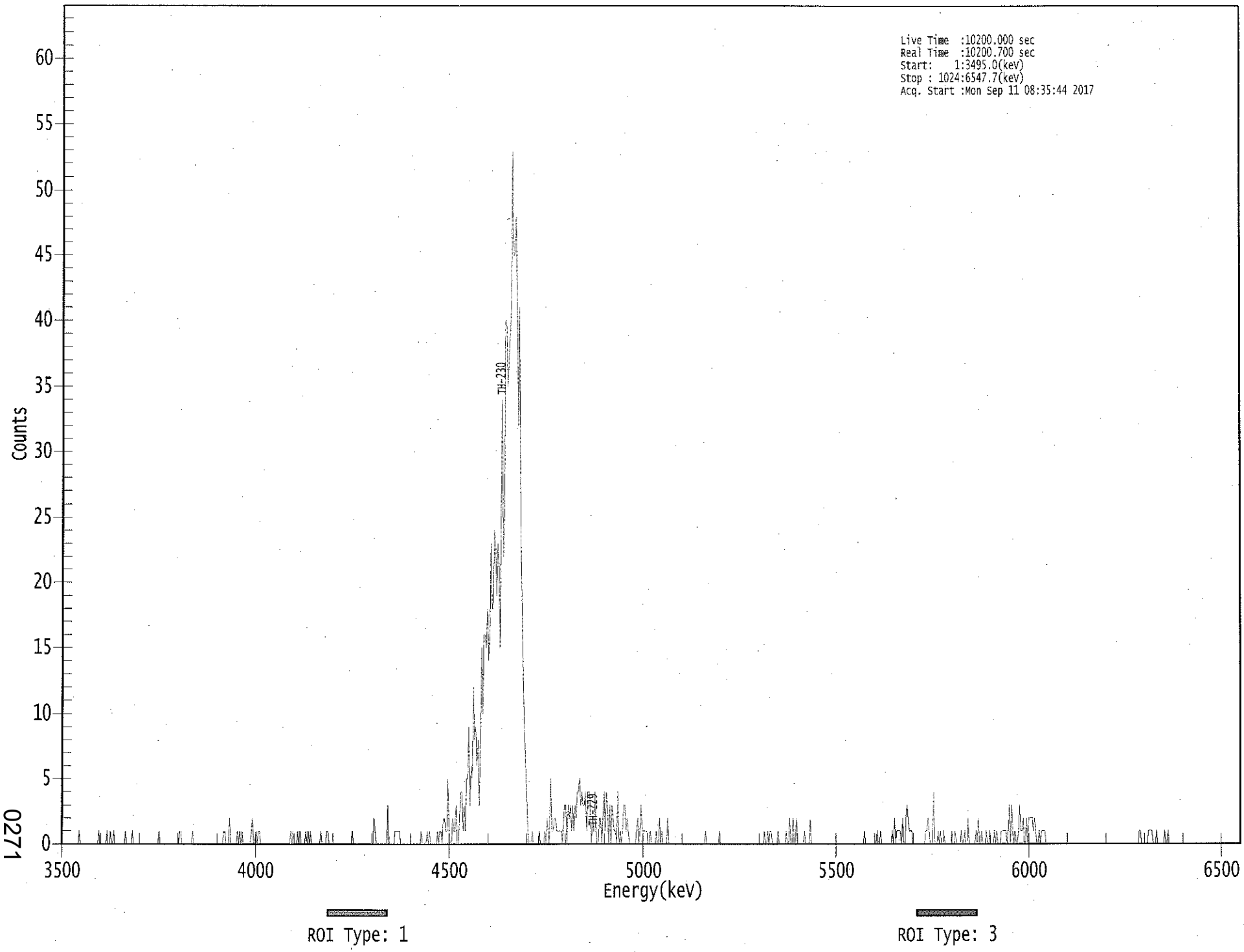
0000193971.CNF



0271

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 12

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	1
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	1	0	0	0	0	0	0	1
41:	0	0	1	0	0	1	0	0
49:	0	0	0	0	0	0	0	1
57:	0	0	0	0	0	1	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	1	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	1	1
105:	0	0	0	0	0	0	0	0
113:	0	1	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	1	1	0	0
145:	0	2	0	0	0	0	0	0
153:	1	0	1	0	1	0	0	0
161:	0	0	0	0	1	2	0	0
169:	1	0	1	1	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	1	0
201:	1	0	0	0	1	0	1	0
209:	0	0	0	1	0	1	0	1
217:	0	0	0	0	0	0	0	0
225:	1	0	0	0	0	1	1	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	1	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	2	1
273:	0	0	0	0	0	0	0	0
281:	0	0	3	0	0	0	0	0
289:	1	1	1	1	1	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	1
313:	0	0	0	0	1	0	1	0
321:	0	0	0	0	0	1	0	1
329:	1	0	2	2	1	1	5	1
337:	0	0	2	1	1	3	0	0
345:	2	4	4	1	3	1	5	5
353:	9	3	6	5	12	8	9	6
361:	8	3	8	15	10	16	16	15

369:	18	14	16	23	18	18	24	23

Sample Title: 12

Channel								
377:	19	23	21	15	26	34	22	25
385:	40	40	35	37	39	41	53	45
393:	45	48	41	32	41	23	18	12
401:	9	6	4	1	0	0	0	1
409:	0	0	0	0	0	1	0	0
417:	0	0	1	0	2	1	0	5
425:	1	1	2	2	1	1	1	1
433:	1	0	2	3	3	0	3	2
441:	3	1	3	1	3	2	4	4
449:	5	3	4	3	3	4	1	4
457:	4	3	0	2	1	4	1	0
465:	0	2	2	0	2	4	1	4
473:	3	0	3	0	3	2	1	1
481:	0	4	0	1	0	1	3	3
489:	1	2	1	0	0	0	0	0
497:	0	1	2	0	1	3	1	1
505:	1	1	1	0	0	1	0	0
513:	0	0	1	0	0	2	0	1
521:	0	0	0	0	2	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	1	0	0
561:	0	0	0	0	0	0	0	0
569:	0	1	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	1	0	0	1	0	1	1	0
617:	0	0	0	0	1	0	0	0
625:	0	0	0	1	0	0	2	0
633:	0	2	0	0	2	0	0	0
641:	0	0	0	1	0	0	0	0
649:	2	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	1
697:	0	0	0	0	0	0	0	0
705:	0	0	1	0	0	1	0	0
713:	0	0	0	0	0	0	0	1
721:	0	2	0	1	1	1	1	0
729:	2	0	0	2	3	2	1	1
737:	1	0	0	0	0	0	0	0
745:	0	0	0	0	1	1	2	1
753:	0	0	0	4	0	0	0	1
761:	0	1	0	0	1	0	0	0
769:	0	0	0	1	0	0	1	0
777:	0	0	0	1	0	0	1	0
785:	0	2	0	0	0	0	0	0
793:	1	0	2	0	0	1	0	0

801:	0	1	0	0	1	0	0	0

Sample Title: 12

Channel								
809:	1	0	1	0	0	0	1	1
817:	1	1	1	0	1	3	0	3
825:	1	0	1	0	0	1	3	1
833:	1	2	0	0	2	0	2	2
841:	2	2	1	2	1	0	0	1
849:	0	1	1	1	1	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	1	1
937:	0	0	0	0	0	0	1	1
945:	1	1	0	0	0	1	0	0
953:	0	0	0	0	1	0	0	1
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

WS 9/11/17

Apex-Alpha™

Sample Description: HTC-A09-S001-0006-01 MS
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 13
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_046
Chamber Serial Number: 04026482B
Detector Serial Number: 58762
Env. Background: System Bkgd 196035
Reagent Blank: <not performed>

Sample Size: 1.068E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:46 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.227 mL
Effective Efficiency: 0.2020 +/- 0.0166
Counting Efficiency: 0.1713 +/- 0.0029 on 11/18/2016 10:08:38 AM
Chem. Recovery Factor: 1.1787 +/- 0.0988

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.856	79.98	22.08	1.02	0.00E+000	3.5
TH-228		5.336	576.64	8.17	1.36	0.00E+000	6.3
TH-229	T	4.869	174.64	14.90	1.36	0.00E+000	4.2
TH-230		4.595	1634.81	4.85	1.19	0.00E+000	65.4
TH-232		3.931	556.30	8.32	1.70	0.00E+000	24.8

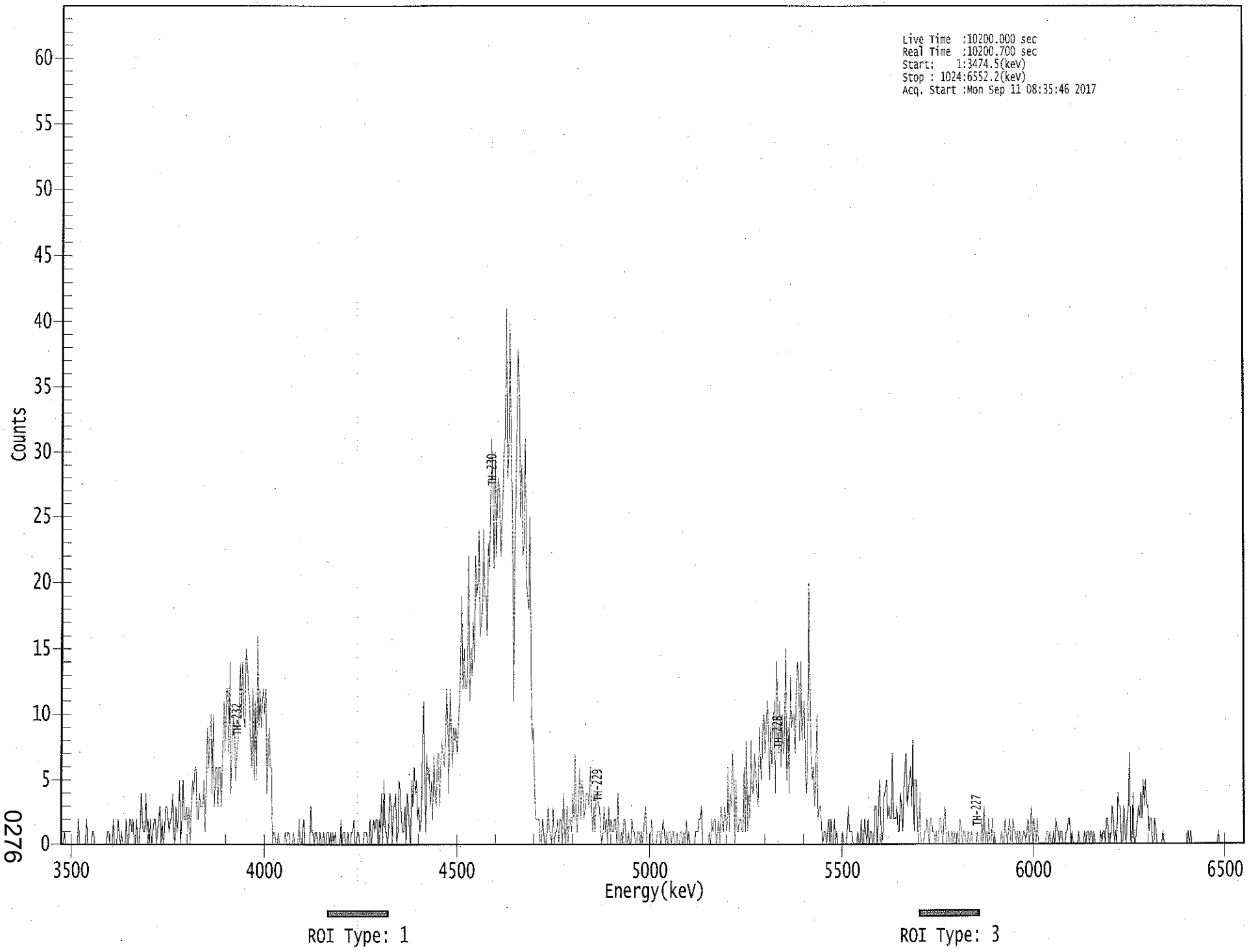
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.02E+000 +/- 2.78E-001	8.02E-002 +/- 1.29E-002
TH-228	0.979	5400.00*	7.97E+000 +/- 1.44E+000	9.48E-002 +/- 1.52E-002
TH-229	1.000	4872.00*	2.16E+000 +/- 3.47E-001	8.46E-002 +/- 1.36E-002
TH-230	0.970	4672.00*	2.01E+001 +/- 3.38E+000	8.11E-002 +/- 1.30E-002
TH-232	0.977	3997.00*	6.83E+000 +/- 1.24E+000	9.02E-002 +/- 1.45E-002

AG
9/11/17

0000193972.CNF



0276

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 13

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel							
1:	1	0	0	1	0	0	0	0
9:	0	0	0	0	0	0	0	2
17:	0	0	0	0	0	0	2	0
25:	0	0	0	1	1	0	0	0
33:	0	0	0	0	0	0	0	0
41:	1	1	0	0	0	2	0	0
49:	0	2	1	0	1	0	0	0
57:	2	0	0	2	2	1	2	0
65:	0	2	0	0	1	4	2	1
73:	1	4	1	2	0	2	0	1
81:	2	2	0	1	2	3	0	2
89:	0	1	3	3	2	1	2	2
97:	4	1	0	3	1	2	5	0
105:	2	5	2	2	3	1	3	0
113:	3	5	4	6	6	2	2	4
121:	3	3	3	5	1	5	9	6
129:	8	10	4	10	3	6	6	3
137:	6	6	3	7	11	7	12	12
145:	7	14	4	8	10	9	5	7
153:	8	10	14	10	14	10	9	15
161:	14	12	11	8	6	12	5	11
169:	5	16	9	12	9	11	12	10
177:	12	4	7	9	6	6	0	1
185:	1	0	0	1	0	0	0	0
193:	0	1	0	1	1	0	0	0
201:	1	0	0	0	0	2	0	0
209:	1	2	0	0	0	0	0	3
217:	1	1	0	1	1	0	0	1
225:	0	0	1	0	0	1	1	0
233:	1	0	1	0	1	0	0	0
241:	0	2	0	1	1	0	0	1
249:	0	0	1	1	2	0	0	1
257:	1	0	0	0	0	1	1	1
265:	0	0	2	0	1	2	1	2
273:	2	0	2	1	4	0	5	1
281:	1	0	1	4	3	0	3	3
289:	4	0	1	5	4	2	1	1
297:	3	0	4	3	1	0	5	3
305:	6	4	5	2	3	1	2	6
313:	11	6	1	7	5	6	3	5
321:	2	7	4	3	7	7	3	6
329:	8	7	6	8	12	9	4	12
337:	9	6	9	8	9	7	9	11
345:	14	19	12	15	12	12	13	22
353:	11	15	13	17	14	22	19	20
361:	24	16	17	18	24	19	19	16

369:	23	21	26	31	27	21	30	22

Sample Title: 13

Channel								
377:	27	28	26	22	25	27	31	31
385:	41	28	30	40	30	26	11	22
393:	26	33	38	34	25	29	22	23
401:	31	20	19	18	25	13	8	9
409:	5	2	2	2	2	0	0	2
417:	1	0	0	1	3	1	1	0
425:	3	0	1	1	2	0	2	2
433:	0	4	1	0	3	0	2	2
441:	1	4	2	7	2	1	3	6
449:	2	5	4	2	3	4	4	3
457:	6	3	1	3	1	4	4	3
465:	3	1	0	1	3	1	2	0
473:	3	1	2	1	1	2	2	0
481:	4	0	0	1	0	2	2	0
489:	0	1	0	0	2	1	1	0
497:	0	1	1	0	1	0	1	2
505:	3	0	0	0	0	2	0	0
513:	0	0	1	1	1	0	1	2
521:	1	0	1	0	1	1	0	1
529:	1	0	0	1	0	0	1	1
537:	0	1	0	2	0	1	0	0
545:	0	0	0	1	1	1	2	2
553:	3	0	0	0	0	0	0	1
561:	0	2	1	2	2	0	1	2
569:	0	3	2	1	3	2	1	6
577:	1	4	3	7	5	0	5	1
585:	1	2	2	1	1	6	1	8
593:	1	4	2	8	4	4	7	6
601:	4	3	9	6	5	9	10	7
609:	9	11	9	5	9	6	9	11
617:	4	14	11	7	11	6	10	7
625:	8	15	5	9	4	13	9	10
633:	10	7	11	14	13	8	14	8
641:	10	11	6	4	8	20	11	7
649:	5	6	3	5	10	2	3	3
657:	1	0	1	1	0	1	2	0
665:	2	0	0	2	0	1	0	0
673:	0	0	1	0	0	0	1	3
681:	1	1	1	0	0	0	0	1
689:	0	0	2	0	0	2	1	0
697:	2	0	1	1	0	0	3	3
705:	0	2	5	2	0	1	4	4
713:	5	2	3	2	2	7	2	2
721:	2	3	1	1	4	3	1	4
729:	6	7	3	4	5	6	3	8
737:	1	5	5	1	1	4	0	0
745:	0	1	1	2	1	0	2	2
753:	1	1	0	1	0	0	2	2
761:	1	0	2	3	0	0	1	0
769:	0	1	0	1	0	0	1	0
777:	2	1	0	1	1	0	0	1
785:	0	0	1	0	0	0	0	1
793:	0	0	0	2	0	3	0	1

801:	0	2	0	0	2	0	1	0

Sample Title: 13

Channel								
809:	0	0	0	0	1	0	0	2
817:	1	0	1	2	0	0	2	1
825:	1	0	1	0	1	0	0	1
833:	1	0	1	2	0	1	3	0
841:	2	1	0	2	0	0	0	0
849:	0	0	0	1	1	0	1	0
857:	0	1	0	2	1	1	0	1
865:	1	0	0	0	1	1	2	2
873:	0	1	0	0	0	0	0	1
881:	0	0	0	0	1	0	1	1
889:	0	1	1	0	1	0	0	0
897:	0	0	1	0	1	1	0	2
905:	2	0	0	1	3	2	0	1
913:	0	4	3	3	0	0	3	1
921:	0	2	3	7	0	0	4	0
929:	0	1	2	3	2	4	2	5
937:	3	5	3	3	1	2	2	0
945:	0	2	1	0	0	0	0	0
953:	1	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	1	0
977:	1	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	1	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB 9/11/17

Sample Description: HTC-A09-S001-0006-01 MSD
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 14
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_047
Chamber Serial Number: 02030596A
Detector Serial Number: 91086
Env. Background: System Bkgd 196036
Reagent Blank: <not performed>

Sample Size: 1.073E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:49 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.2189 +/- 0.0174
Counting Efficiency: 0.1623 +/- 0.0028 on 11/18/2016 10:08:37 AM
Chem. Recovery Factor: 1.3491 +/- 0.1095

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.857	80.15	22.03	0.85	0.00E+000	5.9
TH-228		5.329	541.64	8.43	1.36	0.00E+000	13.5
TH-229	T	4.884	188.81	14.32	1.19	0.00E+000	5.8
TH-230		4.585	1595.49	4.91	0.51	0.00E+000	19.0
TH-232		3.922	544.49	8.40	0.51	0.00E+000	18.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	9.37E-001 +/- 2.53E-001	7.00E-002 +/- 1.09E-002
TH-228	0.974	5400.00*	6.87E+000 +/- 1.22E+000	8.70E-002 +/- 1.35E-002
TH-229	0.999	4872.00*	2.14E+000 +/- 3.33E-001	7.47E-002 +/- 1.16E-002
TH-230	0.961	4672.00*	1.80E+001 +/- 2.94E+000	5.93E-002 +/- 9.22E-003
TH-232	0.971	3997.00*	6.14E+000 +/- 1.09E+000	5.92E-002 +/- 9.20E-003

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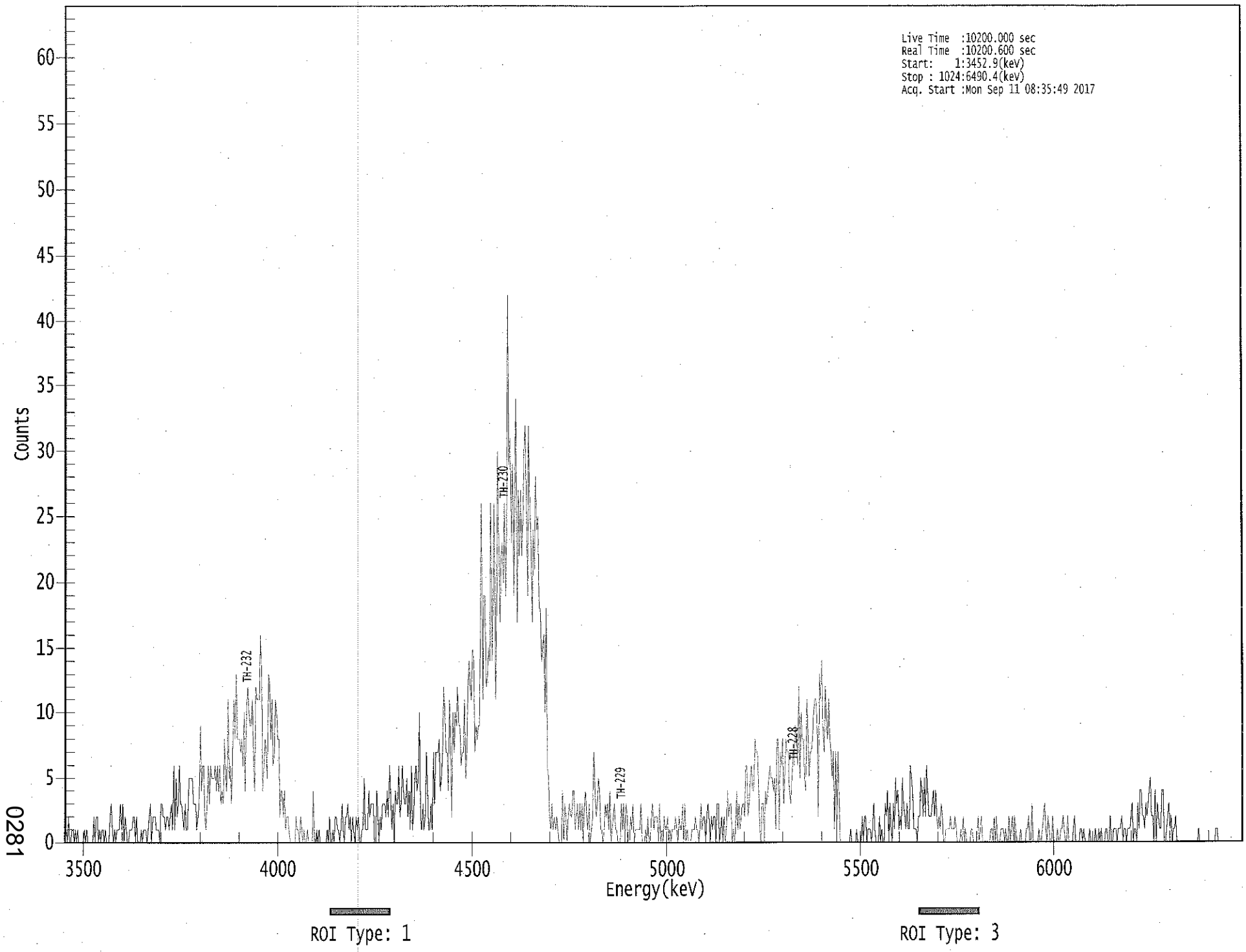
0000193999.CNF



0281

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 14

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	0	1	0	2	0	0	1	1
9:	0	1	0	1	0	0	0	0
17:	0	1	0	1	0	0	0	0
25:	0	2	0	2	2	0	1	0
33:	1	1	0	1	0	0	0	2
41:	3	1	0	1	0	1	1	1
49:	3	1	3	0	2	1	0	0
57:	1	1	1	2	2	0	2	0
65:	0	0	1	0	1	1	1	0
73:	1	2	3	0	2	2	2	1
81:	1	1	0	3	3	2	2	1
89:	2	2	1	2	3	1	6	1
97:	5	2	3	6	3	3	2	1
105:	3	1	1	5	5	5	5	3
113:	3	3	1	2	3	9	4	6
121:	6	2	1	3	6	3	6	5
129:	5	5	6	4	6	4	6	3
137:	4	3	8	5	4	11	5	6
145:	3	7	11	8	13	8	8	8
153:	7	8	6	10	4	10	12	10
161:	9	9	11	7	4	12	11	11
169:	11	16	13	4	6	8	7	5
177:	13	12	8	11	6	7	11	10
185:	8	8	2	4	4	2	4	1
193:	2	2	1	0	0	0	0	0
201:	2	1	1	0	2	1	0	1
209:	0	0	1	0	0	0	0	4
217:	0	0	1	0	1	0	0	0
225:	0	0	0	1	0	2	0	0
233:	1	0	2	2	1	1	0	1
241:	3	1	0	2	2	3	1	2
249:	0	2	1	0	2	1	2	0
257:	0	1	1	5	1	1	1	4
265:	2	3	3	3	0	0	4	2
273:	0	2	1	3	3	3	2	4
281:	2	6	4	1	3	0	4	3
289:	3	6	2	3	6	4	3	3
297:	5	2	4	1	6	1	2	5
305:	6	4	5	10	2	1	3	1
313:	2	7	4	1	1	3	1	7
321:	3	7	7	7	8	4	5	7
329:	12	10	7	7	4	11	8	2
337:	10	7	10	9	12	9	9	6
345:	7	7	11	5	7	12	14	12
353:	11	15	14	7	9	8	9	9
361:	18	26	11	19	19	12	13	15

369:	14	26	14	19	26	11	18	30

Sample Title: 14

Channel								
377:	23	17	22	23	20	26	19	24
385:	42	29	31	23	29	19	27	34
393:	17	27	22	27	22	25	30	32
401:	26	19	32	26	23	17	24	21
409:	28	24	25	18	18	14	15	16
417:	10	18	6	5	2	1	3	1
425:	2	1	2	1	0	0	0	4
433:	0	3	2	0	2	3	2	2
441:	4	4	1	2	3	1	3	1
449:	3	0	3	4	2	1	3	0
457:	1	2	7	4	2	3	5	4
465:	1	1	0	1	3	2	3	1
473:	4	0	1	2	3	1	1	0
481:	0	0	3	1	3	0	3	2
489:	0	0	2	1	3	0	1	1
497:	1	1	1	3	0	0	0	1
505:	0	2	0	0	2	3	1	2
513:	2	2	0	3	0	1	0	2
521:	1	1	2	0	1	0	1	1
529:	1	2	1	0	2	1	1	3
537:	0	3	0	1	0	0	0	1
545:	1	1	2	1	1	0	1	3
553:	1	2	2	0	2	3	2	0
561:	2	1	2	2	0	3	3	0
569:	1	2	0	2	0	1	4	2
577:	3	3	0	1	0	1	4	1
585:	3	1	2	3	3	2	6	6
593:	2	3	5	6	4	4	8	7
601:	7	4	1	0	3	3	0	4
609:	3	4	5	6	5	5	4	5
617:	1	8	8	1	7	6	8	3
625:	5	8	7	7	4	3	5	7
633:	6	9	8	6	12	5	10	8
641:	8	5	4	11	8	5	7	7
649:	8	10	11	11	9	2	13	11
657:	14	9	7	12	9	8	11	8
665:	7	5	7	1	7	0	7	3
673:	0	0	0	0	0	0	0	0
681:	0	1	0	0	0	0	1	0
689:	0	0	0	2	0	2	2	0
697:	1	1	1	0	1	3	1	0
705:	0	0	2	0	1	0	0	3
713:	2	4	0	3	1	0	3	1
721:	5	3	4	1	2	1	5	3
729:	2	1	3	1	1	6	5	4
737:	1	1	1	0	2	2	5	4
745:	2	5	2	6	4	2	2	2
753:	3	4	2	4	2	1	2	1
761:	3	2	0	0	1	1	1	1
769:	2	1	1	1	2	1	0	0
777:	0	1	0	2	0	1	0	0
785:	0	0	1	1	0	0	0	0
793:	2	0	1	2	0	0	0	0

801:	0	0	0	1	1	0	2	0

Sample Title: 14

Channel								
809:	2	0	0	0	1	1	1	0
817:	1	0	0	2	0	1	2	0
825:	2	1	0	0	0	1	0	0
833:	0	0	1	1	2	0	0	3
841:	0	0	0	0	0	1	0	0
849:	1	2	3	1	0	2	1	0
857:	0	2	0	0	0	1	0	0
865:	1	1	2	1	0	0	2	0
873:	0	0	0	1	2	0	0	0
881:	0	1	1	0	1	0	0	0
889:	0	1	0	0	0	0	1	0
897:	0	1	0	1	0	0	0	1
905:	1	0	0	2	0	0	1	1
913:	1	0	1	1	1	2	0	1
921:	1	0	1	1	1	2	3	0
929:	1	1	0	3	1	4	4	2
937:	2	1	3	2	3	4	5	2
945:	2	0	4	0	3	2	1	1
953:	4	4	0	0	1	2	3	1
961:	2	0	1	1	2	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	1	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	1
1001:	1	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	1

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Apex-Alpha™

Sample Description: HTC-A09-S001-0006-02
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 15
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_048
Chamber Serial Number: 02030596B
Detector Serial Number: 83111
Env. Background: System Bkgd 196037
Reagent Blank: <not performed>

Sample Size: 1.250E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:52 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.0668 +/- 0.0091
Counting Efficiency: 0.1633 +/- 0.0028 on 11/18/2016 10:08:35 AM
Chem. Recovery Factor: 0.4091 +/- 0.0560

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.912	66.32	24.21	0.68	0.00E+000	6.7
TH-228		5.367	15.47	52.64	1.53	0.00E+000	3.0
TH-229	T	4.867	57.66	25.90	0.34	0.00E+000	3.7
TH-230		4.631	1318.49	5.40	0.51	0.00E+000	29.0
TH-232		3.961	17.66	47.16	0.34	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.980	5850.00*	2.18E+000 +/- 7.84E-001	1.85E-001 +/- 4.93E-002
TH-228	0.994	5400.00*	5.52E-001 +/- 3.26E-001	2.54E-001 +/- 6.75E-002
TH-229	1.000	4872.00*	1.84E+000 +/- 4.89E-001	1.52E-001 +/- 4.05E-002
TH-230	0.991	4672.00*	4.19E+001 +/- 1.14E+001	1.67E-001 +/- 4.44E-002
TH-232	0.993	3997.00*	5.60E-001 +/- 3.03E-001	1.52E-001 +/- 4.03E-002

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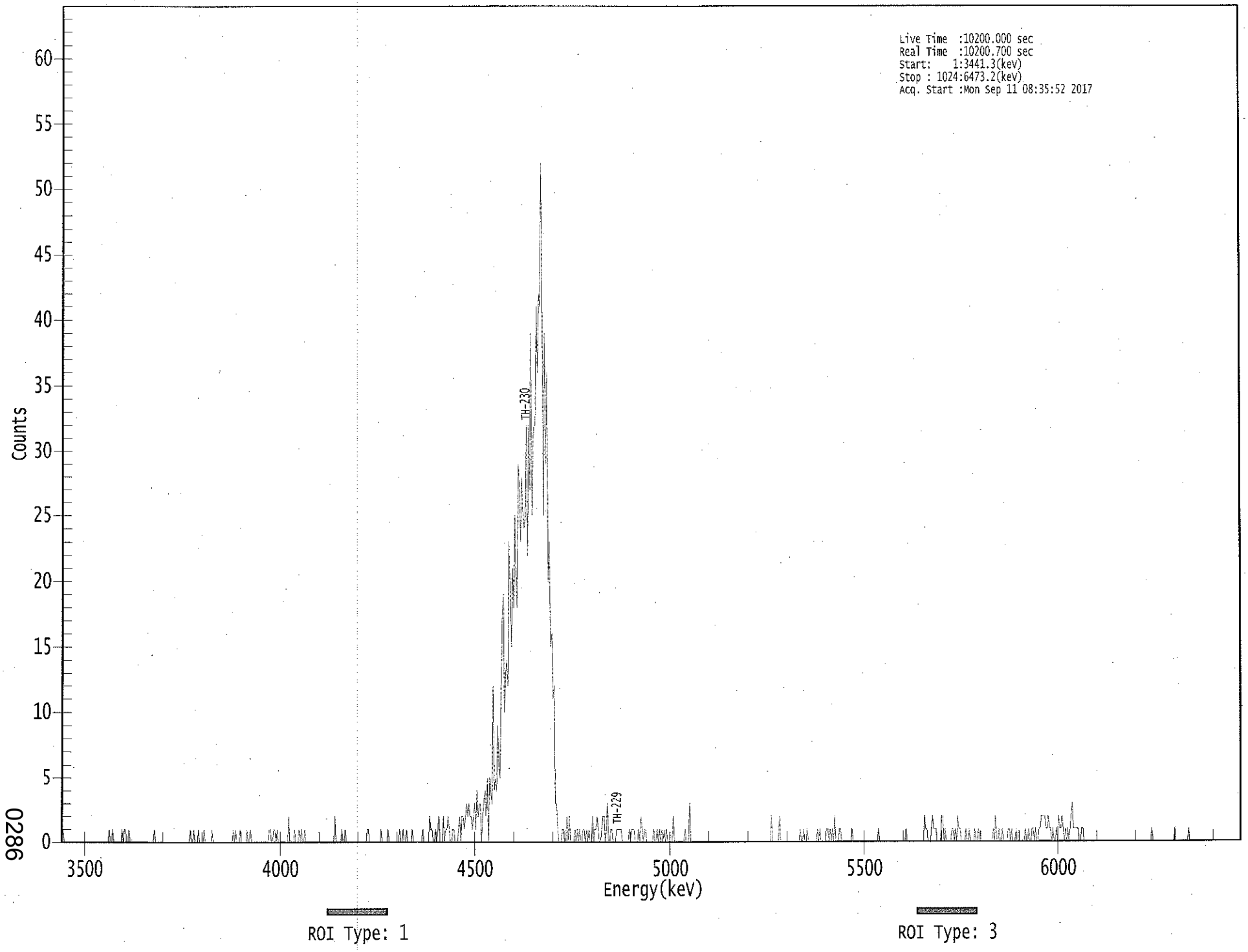
0000193977.CNF



0286

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 15

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	0	1	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	1	0	0	1	0	0	0
49:	0	0	0	0	1	0	1	1
57:	0	0	1	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	1	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	1
113:	0	0	1	0	0	0	1	0
121:	0	0	0	1	0	0	0	0
129:	0	0	1	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	1	0	1	0
153:	0	0	1	0	0	0	0	0
161:	1	0	0	1	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	1	1	0	0	1
185:	1	0	1	0	0	0	0	0
193:	0	0	0	0	2	0	0	0
201:	0	1	0	0	0	1	0	1
209:	0	0	1	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	2	0	0	0
241:	0	0	1	0	0	1	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	1	1	0	0	0	0	0	0
273:	0	0	0	0	1	0	0	0
281:	0	0	1	0	0	0	0	0
289:	0	0	0	0	1	0	0	1
297:	0	0	1	0	0	0	0	1
305:	0	0	0	0	0	0	0	0
313:	1	0	0	0	0	0	2	1
321:	1	0	0	1	0	1	2	0
329:	0	0	2	0	1	1	2	1
337:	0	0	1	1	0	0	0	1
345:	2	0	2	2	1	2	3	2
353:	3	2	2	1	2	3	1	4
361:	2	3	3	0	2	3	4	2

369:	5	0	5	4	3	12	4	5

Sample Title: 15

Channel								
377:	4	9	6	5	12	17	19	10
385:	13	14	12	23	19	15	21	18
393:	25	20	18	29	28	23	28	25
401:	24	25	32	22	32	27	39	25
409:	31	32	32	41	36	42	41	52
417:	42	25	39	29	36	20	23	15
425:	16	11	12	3	3	1	0	0
433:	0	1	1	0	0	2	0	2
441:	0	0	0	0	1	0	1	0
449:	1	0	0	1	1	0	1	0
457:	1	0	0	2	0	1	1	2
465:	1	0	0	1	2	2	0	1
473:	3	0	0	1	1	0	0	0
481:	1	1	1	1	1	0	0	0
489:	0	0	0	1	0	1	1	1
497:	0	0	0	1	0	2	1	0
505:	1	1	0	0	0	0	0	0
513:	1	0	0	1	0	1	0	1
521:	0	1	0	1	0	0	0	0
529:	0	2	0	0	0	0	0	0
537:	0	0	0	1	0	0	0	3
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	2	0
617:	0	0	0	0	0	2	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	1
641:	0	0	1	0	0	1	0	0
649:	0	0	0	0	0	0	1	0
657:	1	0	0	0	0	0	1	1
665:	0	1	0	1	0	2	0	0
673:	0	1	1	0	0	0	0	0
681:	0	0	0	0	1	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	1	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	1	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	2	1	1	0	0
753:	0	1	2	1	1	1	0	0
761:	0	0	2	2	0	1	0	0
769:	0	0	0	1	1	0	1	0
777:	2	1	1	0	0	0	0	1
785:	0	0	1	0	0	0	0	1
793:	0	0	1	0	0	0	0	0

801:	0	0	0	0	0	0	0	1

Sample Title: 15

Channel								
809:	0	2	0	0	1	0	0	1
817:	0	0	0	0	1	1	0	1
825:	0	0	0	1	0	0	0	0
833:	0	0	0	1	0	0	1	0
841:	0	1	1	0	1	0	0	1
849:	1	2	2	2	2	1	1	2
857:	1	1	0	1	0	0	1	0
865:	2	1	1	2	1	0	1	0
873:	1	0	1	2	3	1	1	1
881:	1	1	0	0	1	1	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	1	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	1	0	0
969:	0	0	0	0	0	0	0	0
977:	0	1	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB 9/11/17

Sample Description: HTC-A09-S001-0612-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 16
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_049
Chamber Serial Number: 10006121A
Detector Serial Number: 49
Env. Background: System Bkgd 196038
Reagent Blank: <not performed>

Sample Size: 1.510E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:54 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.1470 +/- 0.0139
Counting Efficiency: 0.1488 +/- 0.0026 on 11/18/2016 3:34:20 PM
Chem. Recovery Factor: 0.9874 +/- 0.0949

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.877	20.32	44.32	0.68	0.00E+000	3.0
TH-228		5.351	111.32	18.64	0.68	0.00E+000	3.8
TH-229	T	4.870	126.81	17.50	1.19	0.00E+000	5.5
TH-230		4.622	242.49	12.60	0.51	0.00E+000	7.3
TH-232		3.954	114.98	18.37	1.02	0.00E+000	18.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.996	5850.00*	2.51E-001 +/- 1.21E-001	6.98E-002 +/- 1.29E-002
TH-228	0.988	5400.00*	1.50E+000 +/- 3.93E-001	7.58E-002 +/- 1.40E-002
TH-229	1.000	4872.00*	1.52E+000 +/- 2.82E-001	7.90E-002 +/- 1.46E-002
TH-230	0.987	4672.00*	2.90E+000 +/- 6.50E-001	6.28E-002 +/- 1.16E-002
TH-232	0.990	3997.00*	1.37E+000 +/- 3.58E-001	7.52E-002 +/- 1.39E-002

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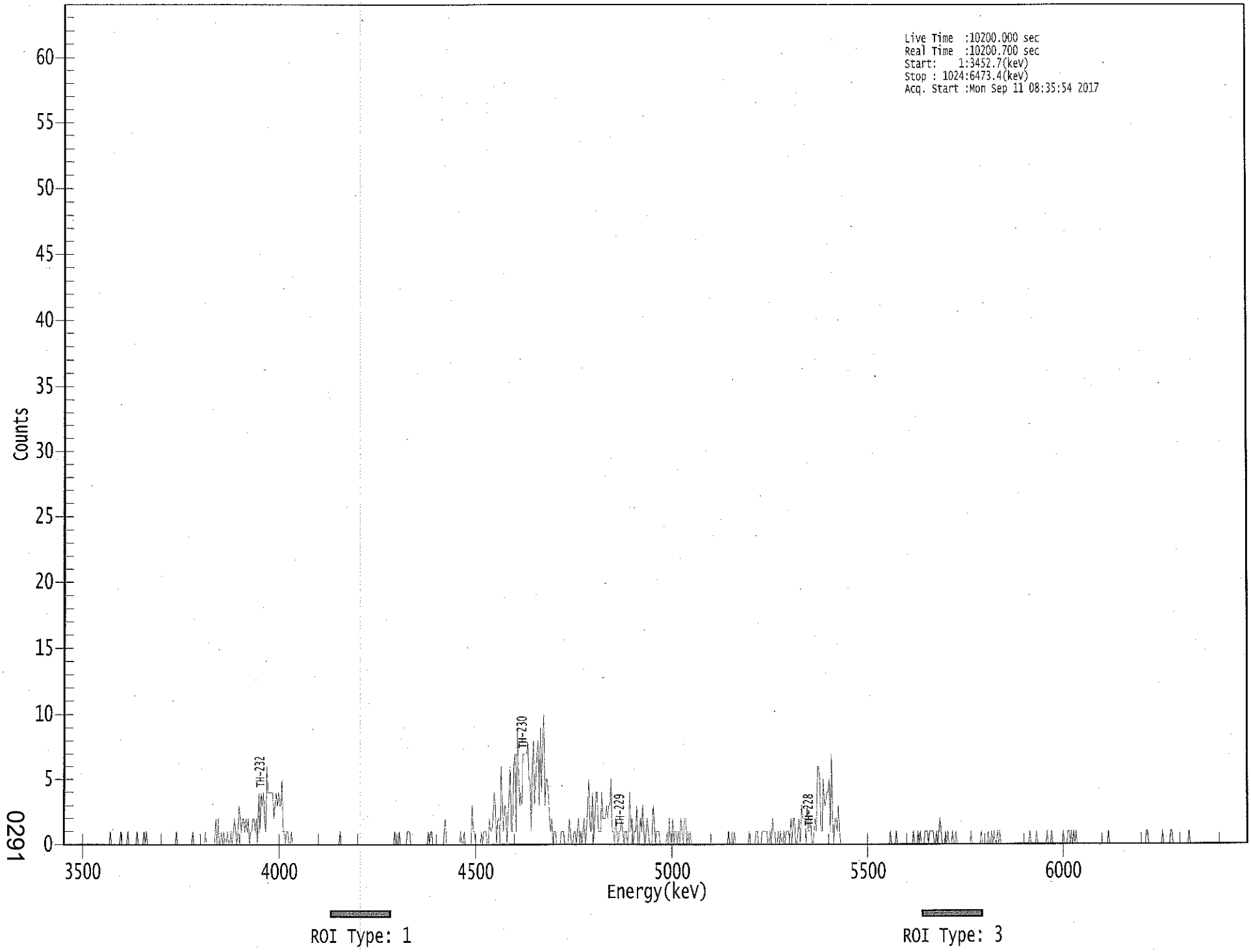
0000193982.CNF



0291

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 16

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	1	0	0	0	0	0	0	0
49:	0	1	0	0	0	0	0	1
57:	0	0	0	0	0	0	0	1
65:	0	0	0	0	0	1	0	1
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	1	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	1
113:	0	0	0	0	0	0	0	0
121:	0	0	1	0	0	0	0	0
129:	0	0	0	2	0	2	0	0
137:	1	0	1	0	0	1	0	0
145:	1	0	1	2	1	0	1	3
153:	2	1	2	2	1	2	1	2
161:	0	1	1	2	2	1	2	0
169:	4	1	4	3	4	2	1	6
177:	4	4	4	4	4	2	3	4
185:	3	4	3	3	5	1	1	0
193:	1	1	0	0	1	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	1	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	1	0	0
289:	0	1	0	0	0	0	0	0
297:	1	1	1	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	1	0	1	1	0	0
321:	0	0	0	0	0	0	0	0
329:	1	2	0	0	0	0	0	0
337:	0	0	0	0	0	0	1	0
345:	0	1	0	0	0	0	0	0
353:	3	1	1	0	0	0	0	0
361:	1	0	1	1	1	0	0	2

369:	1	1	2	4	3	0	2	2

Sample Title: 16

Channel								
377:	0	6	3	1	3	3	0	2
385:	4	6	1	1	6	7	1	9
393:	6	3	4	3	7	7	7	7
401:	8	5	5	1	6	8	3	5
409:	7	8	3	9	4	8	10	3
417:	5	5	4	2	1	2	0	1
425:	1	0	0	0	0	1	1	1
433:	0	0	0	0	2	1	0	0
441:	1	1	0	1	2	0	1	0
449:	1	2	0	1	3	5	1	1
457:	4	0	2	4	4	1	1	1
465:	4	2	2	2	3	2	3	3
473:	5	1	1	0	2	1	0	1
481:	1	2	1	0	1	1	0	1
489:	4	1	2	0	1	1	3	0
497:	0	2	1	3	1	0	1	2
505:	1	0	0	0	3	2	0	1
513:	1	1	0	0	0	0	0	0
521:	1	0	2	0	0	2	0	1
529:	1	0	1	0	2	1	0	2
537:	2	0	1	0	1	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	1	0	0
577:	1	0	1	0	0	0	0	0
585:	0	0	0	0	0	0	0	1
593:	0	0	0	0	0	1	1	0
601:	0	0	1	1	1	1	1	0
609:	0	1	0	2	1	1	0	0
617:	1	0	1	0	0	1	0	1
625:	1	1	0	2	0	2	2	0
633:	0	1	2	0	3	2	2	2
641:	0	3	1	1	2	0	0	1
649:	2	1	6	6	5	1	1	5
657:	3	3	4	4	5	1	7	2
665:	0	2	2	1	3	1	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	1	0	0	0	0	1	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	1	0	0
737:	0	1	0	1	0	0	0	1
745:	1	1	0	1	1	1	1	0
753:	0	1	0	1	2	1	0	0
761:	0	1	0	1	0	0	0	1
769:	0	0	1	0	0	0	0	0
777:	0	0	0	0	0	0	0	1
785:	0	0	0	0	0	0	0	0
793:	1	0	0	0	0	0	1	0

801:	0	1	0	1	0	0	1	0

Sample Title: 16

Channel								
809:	1	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	1	0	0	0	0	0
841:	1	0	0	0	0	0	0	0
849:	0	1	0	0	0	1	0	0
857:	0	0	0	0	0	0	0	1
865:	0	0	0	1	1	0	1	0
873:	1	0	1	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	1	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	1
937:	1	0	0	0	0	0	0	0
945:	0	0	0	0	0	1	0	0
953:	0	0	0	0	1	1	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	1	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

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Sample Description: HTC-A09-S001-1218-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 17
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_050
Chamber Serial Number: 10006121B
Detector Serial Number: 50
Env. Background: System Bkgd 196039
Reagent Blank: <not performed>

Sample Size: 1.200E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:35:57 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.1427 +/- 0.0137
Counting Efficiency: 0.1433 +/- 0.0025 on 11/18/2016 3:34:18 PM
Chem. Recovery Factor: 0.9962 +/- 0.0972

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.805	10.30	66.71	1.70	0.00E+000	3.0
TH-228		5.376	80.94	22.26	3.06	0.00E+000	3.8
TH-229	T	4.859	123.13	17.82	1.87	0.00E+000	7.7
TH-230		4.634	158.96	15.66	2.04	0.00E+000	8.9
TH-232		3.967	99.15	19.78	0.85	0.00E+000	3.8

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.989	5850.00*	1.65E-001 +/- 1.14E-001	1.18E-001 +/- 2.22E-002
TH-228	0.997	5400.00*	1.41E+000 +/- 4.11E-001	1.55E-001 +/- 2.93E-002
TH-229	0.999	4872.00*	1.91E+000 +/- 3.60E-001	1.18E-001 +/- 2.22E-002
TH-230	0.992	4672.00*	2.46E+000 +/- 6.03E-001	1.21E-001 +/- 2.27E-002
TH-232	0.995	3997.00*	1.53E+000 +/- 4.19E-001	9.26E-002 +/- 1.74E-002

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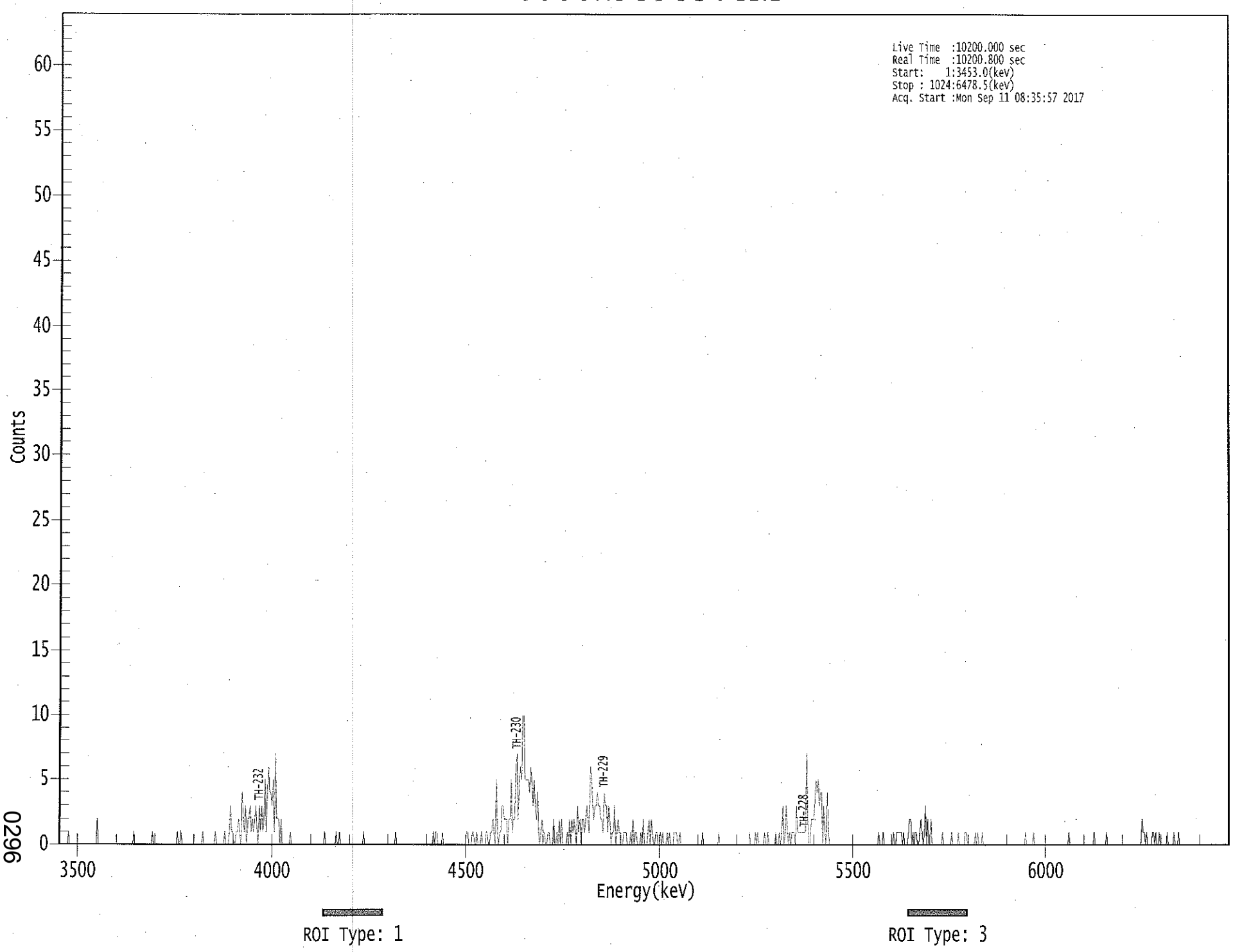
0000193983.CNF



0296

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 17

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	0	0	0	0	0	0	0	0
9:	1	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	2	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	1	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	1	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	1
105:	0	0	1	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	1	0	0
129:	0	0	0	0	0	0	0	0
137:	1	0	0	0	0	0	0	0
145:	1	0	0	0	1	3	1	1
153:	0	0	1	1	2	1	0	4
161:	2	1	3	0	2	2	3	1
169:	2	1	2	3	1	0	3	1
177:	3	1	2	5	1	4	6	4
185:	4	3	5	1	7	2	2	2
193:	0	2	0	0	0	0	0	0
201:	0	1	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	1
233:	0	0	0	0	0	0	0	0
241:	0	1	0	0	1	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	1	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	1	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	1	0
329:	1	1	0	0	0	0	1	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	1	1	0	0	0
361:	1	1	0	0	1	0	0	0

369:	1	0	0	0	1	1	0	0

Sample Title: 17

Channel								
377:	1	1	2	1	0	5	1	0
385:	1	1	3	3	2	2	2	0
393:	2	2	5	1	2	2	6	7
401:	2	5	6	5	10	10	5	5
409:	5	5	4	6	5	3	5	3
417:	2	4	1	0	1	2	1	1
425:	0	0	1	1	0	0	0	2
433:	0	0	1	0	2	0	2	0
441:	0	0	0	1	0	2	0	2
449:	1	2	1	0	3	1	2	0
457:	2	2	1	2	3	2	1	6
465:	5	3	2	3	3	4	3	3
473:	2	2	1	4	3	3	1	3
481:	2	0	1	1	3	0	1	2
489:	1	1	0	0	1	1	1	0
497:	0	0	1	0	2	0	1	1
505:	0	0	0	1	0	2	0	0
513:	0	1	2	0	2	1	0	0
521:	1	1	0	0	1	0	1	0
529:	0	0	1	0	1	0	0	0
537:	1	1	1	0	0	1	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	1	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	1
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	1	0	0	0	0	1
609:	0	1	0	0	0	0	0	1
617:	0	0	1	0	0	0	0	0
625:	0	1	0	0	1	0	1	3
633:	0	1	3	1	0	1	0	1
641:	1	1	0	3	1	1	1	1
649:	1	1	1	1	7	2	0	0
657:	2	2	2	3	5	4	5	3
665:	4	4	0	3	1	0	4	1
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	1	0	0	0	1
721:	0	0	0	0	0	0	0	0
729:	1	0	0	1	1	1	1	1
737:	0	1	0	0	0	1	2	2
745:	0	1	0	1	1	0	0	1
753:	2	1	0	1	3	0	2	0
761:	0	2	0	0	0	0	0	0
769:	0	0	0	1	0	0	0	0
777:	0	0	0	1	0	0	0	0
785:	0	1	0	0	0	0	0	1
793:	1	0	0	0	0	0	0	0

801:	1	0	1	0	0	0	1	0

Sample Title: 17

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	1	0	0	0
849:	0	0	0	1	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	1	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	1	0	0	0	0	0	0	0
913:	0	0	0	1	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	2	1	1	0	1	0
953:	0	0	0	1	1	0	1	0
961:	0	1	0	0	0	0	0	0
969:	1	0	0	0	0	0	1	0
977:	0	0	1	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

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Apex-Alpha™

Sample Description: HTC-A09-S001-1824-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 18
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_052
Chamber Serial Number: 10006123B
Detector Serial Number: 52
Env. Background: System Bkgd 196040
Reagent Blank: <not performed>

Sample Size: 1.010E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:36:00 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.1320 +/- 0.0131
Counting Efficiency: 0.1737 +/- 0.0030 on 11/18/2016 3:34:15 PM
Chem. Recovery Factor: 0.7597 +/- 0.0764

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.791	4.83	91.00	0.17	0.00E+000	3.0
TH-228		5.347	60.32	25.40	0.68	0.00E+000	5.9
TH-229	T	4.860	113.98	18.45	1.02	0.00E+000	6.9
TH-230		4.605	108.64	18.94	1.36	0.00E+000	5.9
TH-232		3.936	70.32	23.50	0.68	0.00E+000	4.4

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.982	5850.00*	9.95E-002 +/- 9.26E-002	8.60E-002 +/- 1.67E-002
TH-228	0.985	5400.00*	1.35E+000 +/- 4.31E-001	1.26E-001 +/- 2.45E-002
TH-229	0.999	4872.00*	2.28E+000 +/- 4.42E-001	1.26E-001 +/- 2.44E-002
TH-230	0.977	4672.00*	2.16E+000 +/- 5.87E-001	1.37E-001 +/- 2.65E-002
TH-232	0.981	3997.00*	1.40E+000 +/- 4.26E-001	1.12E-001 +/- 2.18E-002

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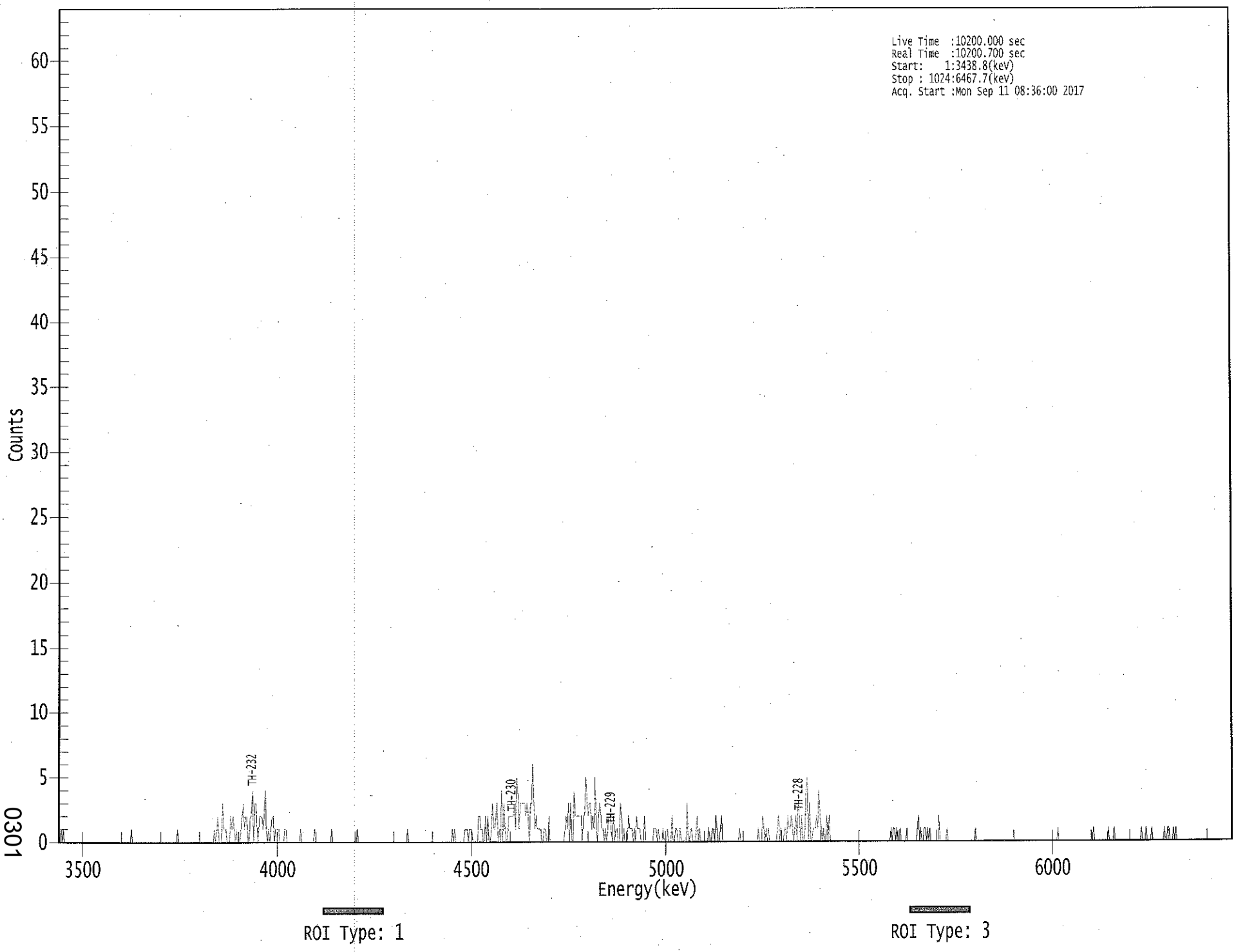
0000193973.CNF



0301

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 18

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	1	0	1	0	1	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	1
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	1
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	1
137:	0	1	2	0	0	0	3	1
145:	1	1	0	0	0	2	1	2
153:	1	0	1	0	0	0	1	2
161:	3	1	2	2	0	0	2	2
169:	4	0	3	3	1	0	2	2
177:	2	1	2	4	1	0	1	0
185:	1	2	2	0	1	1	1	1
193:	0	0	0	0	1	1	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	1	0	0	0	0	0
217:	0	0	0	0	0	0	1	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	1	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	1	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	1
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	1	0
345:	1	0	0	0	0	0	0	0
353:	0	1	1	1	0	1	1	1
361:	0	0	0	0	0	2	2	1

369:	1	0	0	2	0	2	0	0

Sample Title: 18

Channel								
377:	1	3	1	1	2	3	0	1
385:	0	4	0	3	1	0	0	2
393:	2	2	2	2	3	1	5	4
401:	1	3	3	3	3	3	2	3
409:	2	0	3	3	6	3	1	2
417:	1	1	1	1	0	0	1	1
425:	0	0	2	0	0	0	0	0
433:	0	0	0	0	0	0	0	0
441:	1	2	1	3	0	3	0	0
449:	4	2	2	2	2	2	2	0
457:	2	2	5	3	2	3	3	1
465:	2	1	5	1	0	2	3	2
473:	1	1	0	1	0	1	2	2
481:	1	0	2	0	1	1	0	0
489:	3	2	0	1	0	0	0	2
497:	1	1	1	0	1	0	2	1
505:	1	1	0	0	0	2	0	0
513:	0	0	0	0	0	1	1	1
521:	0	1	0	0	0	1	0	0
529:	0	1	0	0	0	2	0	0
537:	1	1	0	0	1	0	0	0
545:	0	0	3	0	0	1	1	0
553:	0	0	1	2	0	1	0	0
561:	0	0	0	0	0	1	0	0
569:	1	1	0	2	1	0	0	1
577:	2	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	1	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	1	0	0	0	2	1	0	1
617:	0	1	0	0	0	0	0	0
625:	0	1	2	0	1	0	0	1
633:	1	0	2	1	1	2	1	0
641:	1	2	0	3	2	0	2	0
649:	0	1	4	5	0	3	0	0
657:	1	1	1	2	1	4	2	1
665:	0	1	0	0	2	0	2	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	1	0	1	1
729:	0	1	0	0	1	0	0	0
737:	0	0	1	0	0	0	0	0
745:	0	0	0	1	2	0	1	0
753:	0	1	1	0	1	0	1	0
761:	0	0	0	0	0	0	2	0
769:	0	0	0	0	0	1	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	1	0

801:	0	0	0	0	0	0	0	0

Sample Title: 18

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	1	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	1	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	1	0	0	0	0	1
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	1
945:	0	0	0	1	0	0	0	0
953:	1	0	0	0	0	0	0	0
961:	0	0	0	1	0	0	1	1
969:	0	0	0	1	0	1	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

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Sample Description: HTC-A09-S001-2430-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 19
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_053
Chamber Serial Number: 10006122A
Detector Serial Number: 53
Env. Background: System Bkgd 196041
Reagent Blank: <not performed>

Sample Size: 1.220E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:36:03 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.227 mL
Effective Efficiency: 0.1742 +/- 0.0152
Counting Efficiency: 0.1515 +/- 0.0026 on 11/18/2016 3:34:14 PM
Chem. Recovery Factor: 1.1502 +/- 0.1022

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.752	21.15	43.61	0.85	0.00E+000	4.5
TH-228		5.385	74.15	22.91	0.85	0.00E+000	15.9
TH-229	T	4.891	150.83	15.97	0.17	0.00E+000	3.6
TH-230		4.662	124.32	17.63	0.68	0.00E+000	6.3
TH-232		3.980	110.83	18.63	0.17	0.00E+000	4.2

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.951	5850.00*	2.73E-001 +/- 1.28E-001	7.74E-002 +/- 1.32E-002
TH-228	0.999	5400.00*	1.04E+000 +/- 2.97E-001	8.40E-002 +/- 1.43E-002
TH-229	0.998	4872.00*	1.89E+000 +/- 3.23E-001	5.23E-002 +/- 8.93E-003
TH-230	1.000	4672.00*	1.55E+000 +/- 3.81E-001	7.05E-002 +/- 1.20E-002
TH-232	0.998	3997.00*	1.38E+000 +/- 3.49E-001	5.20E-002 +/- 8.89E-003

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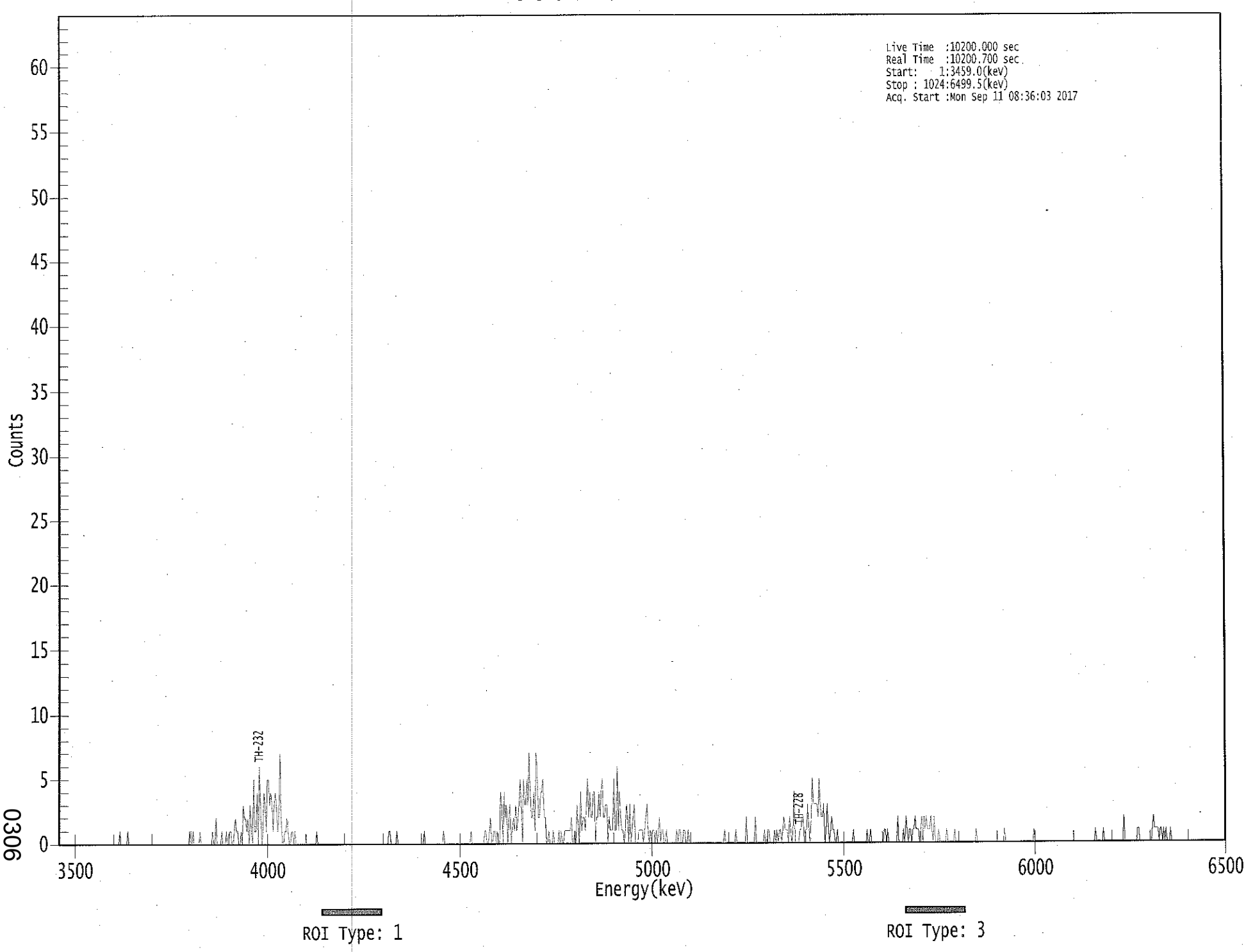


0306

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 19

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	1	0	0
57:	0	0	0	0	1	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	1	1	0	1	0	0
121:	0	0	0	1	0	0	0	0
129:	0	0	0	0	0	0	1	0
137:	0	2	0	0	0	0	1	0
145:	0	0	1	0	0	1	1	0
153:	0	1	2	1	1	0	0	1
161:	0	3	2	2	1	2	0	3
169:	1	0	5	1	1	4	0	6
177:	3	0	1	4	3	1	5	5
185:	3	4	3	1	3	4	3	1
193:	2	7	2	0	0	1	1	2
201:	1	0	0	1	1	0	1	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	1	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	1	1	0	0	0	0	0	1
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	1
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	1	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	1	0	0	0	0	0	0	0

369:	0	0	0	0	1	1	0	0

Sample Title: 19

Channel								
377:	1	2	0	0	1	1	0	1
385:	0	0	4	3	0	4	2	3
393:	0	2	3	0	1	2	1	3
401:	1	2	3	5	3	0	5	3
409:	3	5	3	7	4	2	2	4
417:	1	7	6	2	2	4	4	5
425:	2	2	0	0	1	0	0	0
433:	1	0	0	0	0	1	0	1
441:	0	0	1	1	1	1	1	1
449:	2	0	0	1	0	3	1	0
457:	4	1	2	2	1	3	5	2
465:	4	2	2	4	4	0	2	2
473:	4	2	4	5	2	2	3	3
481:	0	2	1	1	1	5	1	1
489:	6	1	4	2	1	1	0	1
497:	3	2	0	3	0	1	2	3
505:	0	0	0	1	1	1	1	0
513:	1	2	3	1	0	1	0	1
521:	1	0	1	0	1	2	0	1
529:	1	0	0	1	0	0	0	0
537:	0	0	0	0	1	0	1	1
545:	0	0	1	1	0	0	1	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	1	0
585:	0	0	0	0	0	0	0	0
593:	1	0	0	0	0	0	0	0
601:	0	2	0	0	0	0	0	0
609:	0	2	0	0	0	0	0	0
617:	0	1	0	0	1	1	0	0
625:	0	0	1	0	1	0	1	1
633:	0	1	2	1	1	1	0	2
641:	1	0	1	4	0	0	0	0
649:	1	1	2	2	0	1	1	3
657:	1	0	2	5	3	3	3	3
665:	2	5	3	2	2	3	0	1
673:	3	1	0	1	2	1	1	0
681:	0	1	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	1
697:	0	0	0	0	0	0	0	0
705:	0	0	0	1	0	0	1	0
713:	0	0	0	0	0	0	0	0
721:	0	0	1	1	0	1	0	0
729:	0	0	0	0	0	0	2	0
737:	0	0	0	1	0	2	1	0
745:	1	1	0	1	1	2	1	1
753:	1	0	1	2	0	2	1	2
761:	1	1	1	2	1	0	2	0
769:	0	0	1	0	0	0	0	0
777:	0	1	0	0	0	0	0	0
785:	1	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	1	0	0	0	0

Sample Title: 19

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	1	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	1	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	1	0	0	0
913:	0	0	0	1	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	2	0	0
937:	0	0	0	0	0	0	0	0
945:	0	1	1	0	0	0	0	0
953:	0	0	0	0	0	0	1	2
961:	1	1	1	1	0	1	1	0
969:	1	0	1	0	0	0	1	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

VB 9/11/17

Sample Description: HTC-A09-S001-3036-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001939
Batch Identification: 1707092A-TH
Sample Identification: 20
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_054
Chamber Serial Number: 10006122B
Detector Serial Number: 54
Env. Background: System Bkgd 196042
Reagent Blank: <not performed>

Sample Size: 1.040E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 5:57:04 AM
Acquisition Date/Time: 9/11/2017 8:36:06 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.1687 +/- 0.0150
Counting Efficiency: 0.1363 +/- 0.0024 on 11/18/2016 3:34:12 PM
Chem. Recovery Factor: 1.2375 +/- 0.1118

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.822	9.49	65.59	0.51	0.00E+000	3.0
TH-228		5.383	68.64	23.93	1.36	0.00E+000	4.7
TH-229	T	4.871	145.49	16.28	0.51	0.00E+000	4.9
TH-230		4.639	85.15	21.36	0.85	0.00E+000	6.2
TH-232		3.959	74.83	22.69	0.17	0.00E+000	4.9

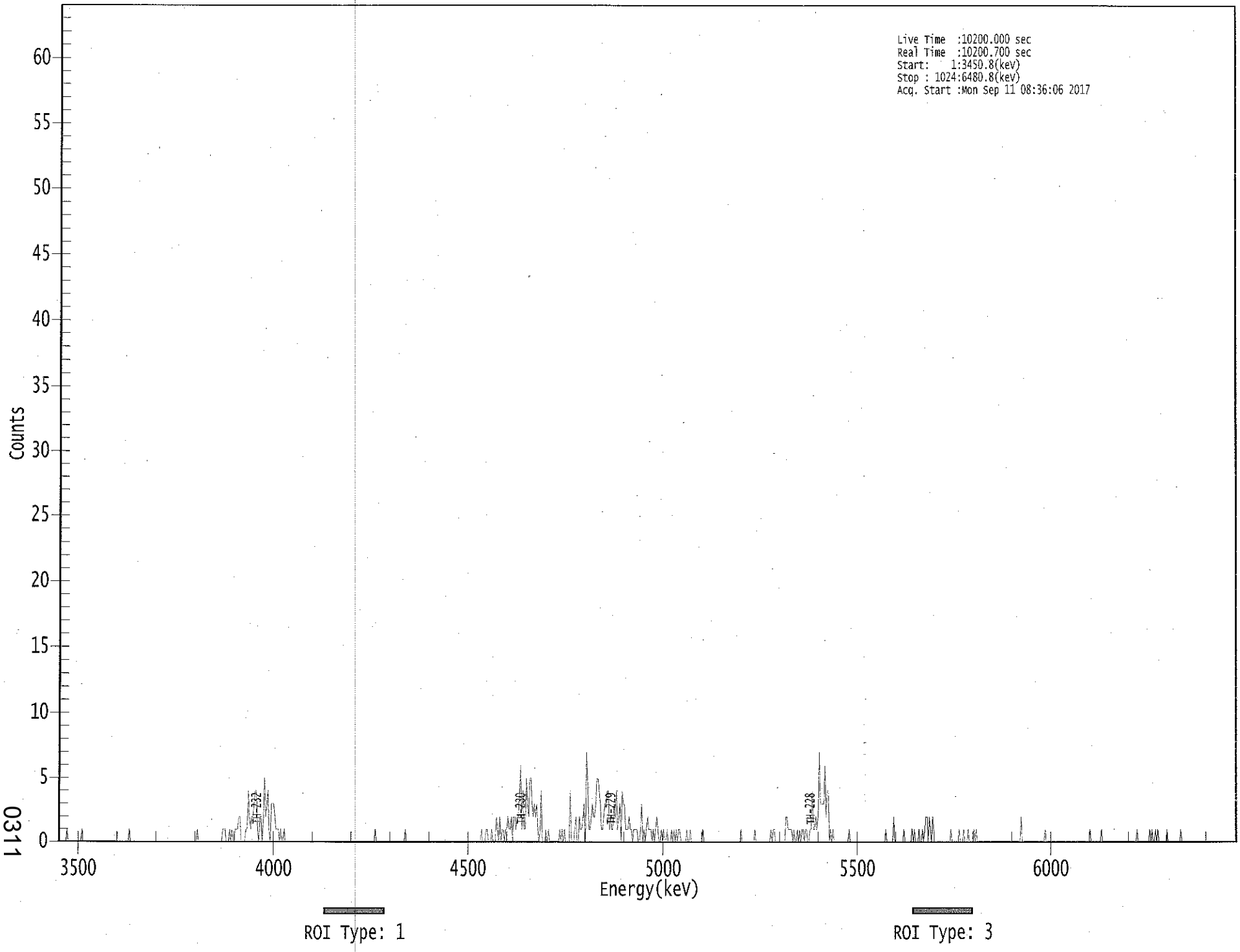
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.996	5850.00*	1.49E-001 +/- 1.01E-001	8.21E-002 +/- 1.43E-002
TH-228	0.998	5400.00*	1.17E+000 +/- 3.45E-001	1.16E-001 +/- 2.02E-002
TH-229	1.000	4872.00*	2.21E+000 +/- 3.84E-001	7.96E-002 +/- 1.38E-002
TH-230	0.994	4672.00*	1.29E+000 +/- 3.55E-001	9.06E-002 +/- 1.57E-002
TH-232	0.992	3997.00*	1.13E+000 +/- 3.23E-001	6.30E-002 +/- 1.10E-002

AG 9/11/17

0000193975.CNF



0311

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 20

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	0	0	0	0	0	0	0	1
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	1	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	1	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	1	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	1	1
145:	1	0	0	0	1	0	1	0
153:	0	1	1	1	2	2	0	0
161:	0	0	1	1	4	2	1	2
169:	2	3	4	4	1	0	2	2
177:	0	2	5	2	3	4	1	0
185:	3	3	3	2	1	1	1	0
193:	1	0	0	1	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	1	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	1	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	1	0

369:	0	0	1	1	0	0	0	1

Sample Title: 20

Channel								
377:	0	0	0	2	1	0	2	0
385:	1	1	0	1	1	2	1	1
393:	2	0	2	2	1	2	2	4
401:	6	1	4	1	1	5	3	2
409:	5	5	3	2	3	2	3	1
417:	0	1	4	0	0	0	1	0
425:	1	0	0	0	0	0	0	0
433:	0	0	1	0	1	0	1	0
441:	0	0	0	4	0	0	0	1
449:	2	0	0	2	1	1	2	3
457:	0	7	4	1	1	2	3	2
465:	2	3	5	5	4	3	1	1
473:	2	3	3	4	4	1	2	1
481:	1	3	2	4	1	2	3	0
489:	4	3	3	1	1	1	2	1
497:	1	0	1	1	1	1	0	0
505:	1	3	0	1	0	1	2	1
513:	1	1	0	1	0	1	2	1
521:	0	0	1	0	1	0	0	1
529:	0	0	0	1	0	1	0	1
537:	0	1	1	0	0	0	0	0
545:	1	0	0	1	0	0	0	0
553:	0	0	0	0	0	0	1	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	1
593:	0	0	0	0	0	0	0	0
601:	0	0	0	1	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	1	0	1	1	0	0	0
625:	0	0	0	0	0	0	2	2
633:	1	1	1	1	0	1	0	0
641:	1	0	1	0	1	1	0	1
649:	1	0	0	1	1	4	1	1
657:	2	1	2	7	3	3	3	3
665:	6	2	4	4	0	1	0	1
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	1	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	1	0	0
721:	0	0	0	0	2	0	0	0
729:	0	0	0	0	0	1	0	0
737:	0	0	0	0	1	0	1	0
745:	0	0	1	0	0	1	0	1
753:	2	2	0	2	1	0	2	1
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	1	0
777:	0	0	0	0	0	1	0	0
785:	0	1	0	0	0	1	0	0
793:	0	0	1	0	1	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 20

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	2	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	1	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	1
897:	0	0	0	0	0	0	0	0
905:	0	1	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	1	0	0	0	0	0	0	0
945:	0	0	0	1	0	1	0	0
953:	1	0	1	0	0	0	0	0
961:	0	0	1	0	0	0	0	0
969:	0	0	0	0	0	0	1	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

9/11/2017 5:31:40 AM

Apex-Alpha™

QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 9/11/2017
Time : 5:31:40 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_001	21f	ALL	Not Done	
Alpha_002	21f	ALL	Not Done	
Alpha_003	21f	ALL	Passed	9/11/2017 5:16:35 AM
Alpha_004	21f	ALL	Passed	9/11/2017 5:16:36 AM
Alpha_005	21f	ALL	Not Done	
Alpha_006	21f	ALL	Not Done	
Alpha_007	21f	ALL	Not Done	
Alpha_008	21f	ALL	Not Done	
Alpha_009	21f	ALL	Not Done	
Alpha_010	21f	ALL	Passed	9/11/2017 5:16:37 AM
Alpha_011	21f	ALL	Passed	9/11/2017 5:16:38 AM
Alpha_012	21f	ALL	Passed	9/11/2017 5:16:39 AM
Alpha_013	21f	ALL	Not Done	
Alpha_014	21f	ALL	Passed	9/11/2017 5:16:40 AM
Alpha_015	21f	ALL	Not Done	
Alpha_016	21f	ALL	Not Done	
Alpha_033	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:16:41 AM
Alpha_034	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:16:42 AM
Alpha_035	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:16:44 AM
Alpha_036	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:16:46 AM
Alpha_037	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:16:47 AM
Alpha_038	Alpha Analyst100DC	Peak Energy	Action	9/11/2017 5:16:49 AM
Alpha_039	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:16:52 AM
Alpha_040	Alpha Analyst100DC	Peak FWHM	Action	9/11/2017 5:16:54 AM
Alpha_041	Alpha Analyst100DC	ALL	Not Done	
Alpha_042	Alpha Analyst100DC	ALL	Not Done	
Alpha_043	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:16:56 AM
Alpha_044	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:16:58 AM
Alpha_045	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:01 AM
Alpha_046	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:03 AM
Alpha_047	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:06 AM
Alpha_048	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:08 AM
Alpha_049	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:11 AM
Alpha_050	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:14 AM
Alpha_051	Alpha Analyst100DC	ALL	Not Done	
Alpha_052	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:17 AM
Alpha_053	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:19 AM
Alpha_054	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:22 AM
Alpha_055	Alpha Analyst100DC	ALL	Not Done	
Alpha_056	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:25 AM
Alpha_057	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:28 AM
Alpha_058	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:31 AM

Review of QA Results - Pulser Check

9/11/2017 5:31:40 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_059	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:34 AM
Alpha_060	Alpha Analyst100DC	ALL	Passed	9/11/2017 5:17:37 AM

APPROVED BY: _____

APPROVAL DATE: 9/11/17

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***** L I B R A R Y L I S T I N G R E P O R T *****
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Nuclide Library Title: Thorium

Nuclide Library Description: Th-227,-228,-229,-230,-232

Nuclide Name	Half-Life (Seconds)	Energy (keV)	Energy Uncert. (keV)	Yield (%)	Yield Uncert.(Abs.+-)
TH-227	6.873E+008	5850.000*	0.000	97.5000	0.0000
TH-228	6.034E+007	5400.000*	0.000	99.9400	0.0000
TH-229	2.487E+011	4872.000*	0.000	99.5200	0.0000
TH-230	2.379E+012	4672.000*	0.000	99.8200	0.0000
TH-232	4.434E+017	3997.000*	0.000	100.0000	0.0000

* = key line

TOTALS: 5 Nuclides 5 Energy Lines

SECTION X

ANALYTICAL DATA (GAMMA SPECTROSCOPY)

Eberline Services
Oak Ridge Laboratory
Analysis Sheet

17-07092
Gamma
Run 2

Work Order	17-07092
Analysis Code	Gamma
Run	2
Date Received	7/18/2017
Lab Deadline	8/10/2017
Client	Weston Solutions, Inc.
Project	94759
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	EPA 901.1 Modified
Instrument Type	Gamma Spectroscopy
Radiometric Tracer	
Radiometric Sol#	
Tracer Act (dpm/g)	
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		07/19/17 00:00	1.0000E+00
02	MBL	BLANK		07/19/17 00:00	1.0000E+00
03	DUP	HTC-A08-S001-0006-01	34	05/16/17 15:01	6.4861E+02
04	DO	HTC-A08-S001-0006-01	34	05/16/17 15:01	6.4861E+02
05	TRG	HTC-A08-S001-0612-02	39	05/16/17 14:58	6.2434E+02
06	TRG	HTC-A08-S001-1218-01	30	05/15/17 14:55	6.0419E+02
07	TRG	HTC-A08-S001-1824-01	44	05/15/17 14:52	5.8563E+02
08	TRG	HTC-A08-S001-2430-01	28	05/15/17 14:49	6.4980E+02
09	TRG	HTC-A08-S001-3036-01	34	05/15/17 14:46	6.1309E+02
10	TRG	HTC-A08-S001-3642-01	45	05/15/17 14:43	6.6334E+02
11	TRG	HTC-A08-S001-4248-01	33	05/15/17 14:40	6.1682E+02
12	TRG	HTC-A09-S001-0006-01	90	05/16/17 12:50	7.4207E+02
15	TRG	HTC-A09-S001-0006-02	122	05/16/17 12:50	8.0382E+02
16	TRG	HTC-A09-S001-0612-01	44	05/16/17 12:48	6.9103E+02
17	TRG	HTC-A09-S001-1218-01	41	05/16/17 12:46	6.8771E+02
18	TRG	HTC-A09-S001-1824-01	47	05/16/17 12:44	5.4714E+02
19	TRG	HTC-A09-S001-2430-01	36	05/16/17 12:42	6.4872E+02
20	TRG	HTC-A09-S001-3036-01	60	05/16/17 12:39	6.8486E+02

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

17-07092
Gamma
Run 2

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS				0.00								
02	MBL				0.00								
03	DUP				0.00								
04	DO				0.00								
05	TRG				0.00								
06	TRG				0.00								
07	TRG				0.00								
08	TRG				0.00								
09	TRG				0.00								
10	TRG				0.00								
11	TRG				0.00								
12	TRG				0.00								
15	TRG				0.00								
16	TRG				0.00								
17	TRG				0.00								
18	TRG				0.00								
19	TRG				0.00								
20	TRG				0.00								

0320

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

17-07092
Gamma
Run 2

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS								
02	MBL								
03	DUP								
04	DO	08/03/17 08:50	KSALLINGS						
05	TRG	08/03/17 08:50	KSALLINGS						
06	TRG	08/03/17 08:50	KSALLINGS						
07	TRG	08/03/17 08:50	KSALLINGS						
08	TRG	08/03/17 08:50	KSALLINGS						
09	TRG	08/03/17 08:50	KSALLINGS						
10	TRG	08/03/17 08:50	KSALLINGS						
11	TRG	08/03/17 08:50	KSALLINGS						
12	TRG	08/03/17 08:50	KSALLINGS						
15	TRG	08/03/17 08:50	KSALLINGS						
16	TRG	08/03/17 08:50	KSALLINGS						
17	TRG	08/03/17 08:50	KSALLINGS						
18	TRG	08/03/17 08:50	KSALLINGS						
19	TRG	08/03/17 08:50	KSALLINGS						
20	TRG	08/03/17 08:50	KSALLINGS						

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Preliminary Data Report & Analytical Calculations

Work Order: 17-07092-Gamma-2

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
01	CO-60	LCS	LCS	pCi/g	1.25E+02	7.56E+00	1.35E+00	1.35E+02	92.35	OK		07/19/17 00:00	1.00E+00	08/24/17 14:31	YES
01	CS-137	LCS	LCS	pCi/g	7.99E+01	9.77E+00	1.61E+00	8.44E+01	94.70	OK		07/19/17 00:00	1.00E+00	08/24/17 14:31	YES
02	AC-228	MBL	BLANK	pCi/g	-4.91E-02	1.32E-01	1.73E-01					07/19/17 00:00	1.00E+00	08/24/17 13:30	NO
02	BI-212	MBL	BLANK	pCi/g	1.16E-01	2.04E-01	3.67E-01					07/19/17 00:00	1.00E+00	08/24/17 13:30	NO
02	BI-214	MBL	BLANK	pCi/g	6.21E-02	5.44E-02	1.06E-01					07/19/17 00:00	1.00E+00	08/24/17 13:30	NO
02	CS-137	MBL	BLANK	pCi/g	3.47E-03	3.06E-02	4.79E-02					07/19/17 00:00	1.00E+00	08/24/17 13:30	NO
02	K-40	MBL	BLANK	pCi/g	-2.26E-01	3.74E-01	5.31E-01					07/19/17 00:00	1.00E+00	08/24/17 13:30	NO
02	PA-234M	MBL	BLANK	pCi/g	6.26E-01	3.06E+00	3.37E+00					07/19/17 00:00	1.00E+00	08/24/17 13:30	NO
02	PB-212	MBL	BLANK	pCi/g	8.70E-03	3.65E-02	5.68E-02					07/19/17 00:00	1.00E+00	08/24/17 13:30	NO
02	PB-214	MBL	BLANK	pCi/g	2.57E-02	5.06E-02	8.56E-02					07/19/17 00:00	1.00E+00	08/24/17 13:30	NO
02	RA-224	MBL	BLANK	pCi/g	-5.14E-02	4.36E-01	6.47E-01					07/19/17 00:00	1.00E+00	08/24/17 13:30	NO
02	RA-226	MBL	BLANK	pCi/g	6.21E-02	5.44E-02	1.06E-01					07/19/17 00:00	1.00E+00	08/24/17 13:30	NO
02	RA-228	MBL	BLANK	pCi/g	-4.91E-02	1.32E-01	1.73E-01					07/19/17 00:00	1.00E+00	08/24/17 13:30	NO
02	TH-234	MBL	BLANK	pCi/g	2.68E-01	3.99E-01	6.33E-01					07/19/17 00:00	1.00E+00	08/24/17 13:30	NO
02	TL-208	MBL	BLANK	pCi/g	5.00E-02	7.66E-02	1.41E-01					07/19/17 00:00	1.00E+00	08/24/17 13:30	NO
03	AC-228	DUP	HTC-A08-S001-0006-01	pCi/g	1.18E+00	1.96E-01	3.84E-01					05/16/17 15:01	6.49E+02	08/24/17 14:16	YES
03	BI-212	DUP	HTC-A08-S001-0006-01	pCi/g	7.18E-01	4.79E-01	7.67E-01					05/16/17 15:01	6.49E+02	08/24/17 14:16	YES
03	BI-214	DUP	HTC-A08-S001-0006-01	pCi/g	1.19E+00	1.85E-01	2.97E-01					05/16/17 15:01	6.49E+02	08/24/17 14:16	YES
03	CS-137	DUP	HTC-A08-S001-0006-01	pCi/g	1.82E-01	6.19E-02	1.08E-01					05/16/17 15:01	6.49E+02	08/24/17 14:16	NO
03	K-40	DUP	HTC-A08-S001-0006-01	pCi/g	2.05E+01	2.21E+00	7.86E-01				OK	05/16/17 15:01	6.49E+02	08/24/17 14:16	YES
03	PA-234M	DUP	HTC-A08-S001-0006-01	pCi/g	4.75E+00	4.37E+00	7.61E+00					05/16/17 15:01	6.49E+02	08/24/17 14:16	NO
03	PB-212	DUP	HTC-A08-S001-0006-01	pCi/g	1.26E+00	1.41E-01	2.04E-01					05/16/17 15:01	6.49E+02	08/24/17 14:16	YES
03	PB-214	DUP	HTC-A08-S001-0006-01	pCi/g	1.23E+00	1.30E-01	2.20E-01					05/16/17 15:01	6.49E+02	08/24/17 14:16	YES
03	RA-224	DUP	HTC-A08-S001-0006-01	pCi/g	3.72E+00	1.21E+00	2.30E+00					05/16/17 15:01	6.49E+02	08/24/17 14:16	YES
03	RA-226	DUP	HTC-A08-S001-0006-01	pCi/g	1.19E+00	1.85E-01	2.97E-01				OK	05/16/17 15:01	6.49E+02	08/24/17 14:16	YES
03	RA-228	DUP	HTC-A08-S001-0006-01	pCi/g	1.18E+00	1.96E-01	3.84E-01				OK	05/16/17 15:01	6.49E+02	08/24/17 14:16	YES
03	TH-234	DUP	HTC-A08-S001-0006-01	pCi/g	1.08E+00	1.27E+00	2.13E+00					05/16/17 15:01	6.49E+02	08/24/17 14:16	YES
03	TL-208	DUP	HTC-A08-S001-0006-01	pCi/g	1.01E+00	1.68E-01	1.54E-01					05/16/17 15:01	6.49E+02	08/24/17 14:16	YES
04	AC-228	DO	HTC-A08-S001-0006-01	pCi/g	1.25E+00	1.98E-01	3.83E-01					05/16/17 15:01	6.49E+02	08/24/17 15:17	YES
04	BI-212	DO	HTC-A08-S001-0006-01	pCi/g	7.15E-01	4.45E-01	7.04E-01					05/16/17 15:01	6.49E+02	08/24/17 15:17	YES
04	BI-214	DO	HTC-A08-S001-0006-01	pCi/g	9.91E-01	1.44E-01	1.77E-01					05/16/17 15:01	6.49E+02	08/24/17 15:17	YES
04	CS-137	DO	HTC-A08-S001-0006-01	pCi/g	1.83E-01	6.37E-02	9.01E-02					05/16/17 15:01	6.49E+02	08/24/17 15:17	YES
04	K-40	DO	HTC-A08-S001-0006-01	pCi/g	1.78E+01	1.98E+00	1.12E+00					05/16/17 15:01	6.49E+02	08/24/17 15:17	YES
04	PA-234M	DO	HTC-A08-S001-0006-01	pCi/g	2.00E+00	4.36E+00	7.15E+00					05/16/17 15:01	6.49E+02	08/24/17 15:17	NO
04	PB-212	DO	HTC-A08-S001-0006-01	pCi/g	1.26E+00	1.43E-01	2.33E-01					05/16/17 15:01	6.49E+02	08/24/17 15:17	YES
04	PB-214	DO	HTC-A08-S001-0006-01	pCi/g	1.05E+00	1.68E-01	2.48E-01					05/16/17 15:01	6.49E+02	08/24/17 15:17	YES
04	RA-224	DO	HTC-A08-S001-0006-01	pCi/g	3.28E+00	1.22E+00	2.63E+00					05/16/17 15:01	6.49E+02	08/24/17 15:17	YES
04	RA-226	DO	HTC-A08-S001-0006-01	pCi/g	9.91E-01	1.44E-01	1.77E-01					05/16/17 15:01	6.49E+02	08/24/17 15:17	YES

Work Order: 17-07092-Gamma-2

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
04	RA-228	DO	HTC-A08-S001-0006-01	pCi/g	1.25E+00	1.98E-01	3.83E-01					05/16/17 15:01	6.49E+02	08/24/17 15:17	YES
04	TH-234	DO	HTC-A08-S001-0006-01	pCi/g	1.60E+00	1.12E+00	1.84E+00					05/16/17 15:01	6.49E+02	08/24/17 15:17	YES
04	TL-208	DO	HTC-A08-S001-0006-01	pCi/g	1.12E+00	1.53E-01	1.51E-01					05/16/17 15:01	6.49E+02	08/24/17 15:17	YES
05	AC-228	TRG	HTC-A08-S001-0612-02	pCi/g	1.16E+00	2.03E-01	3.56E-01					05/16/17 14:58	6.24E+02	08/24/17 14:16	YES
05	BI-212	TRG	HTC-A08-S001-0612-02	pCi/g	7.39E-01	4.64E-01	7.34E-01					05/16/17 14:58	6.24E+02	08/24/17 14:16	YES
05	BI-214	TRG	HTC-A08-S001-0612-02	pCi/g	8.57E-01	1.44E-01	2.03E-01					05/16/17 14:58	6.24E+02	08/24/17 14:16	YES
05	CS-137	TRG	HTC-A08-S001-0612-02	pCi/g	4.76E-02	5.17E-02	8.56E-02					05/16/17 14:58	6.24E+02	08/24/17 14:16	NO
05	K-40	TRG	HTC-A08-S001-0612-02	pCi/g	2.08E+01	2.48E+00	1.17E+00					05/16/17 14:58	6.24E+02	08/24/17 14:16	YES
05	PA-234M	TRG	HTC-A08-S001-0612-02	pCi/g	3.96E+00	4.86E+00	8.24E+00					05/16/17 14:58	6.24E+02	08/24/17 14:16	NO
05	PB-212	TRG	HTC-A08-S001-0612-02	pCi/g	1.26E+00	1.42E-01	2.09E-01					05/16/17 14:58	6.24E+02	08/24/17 14:16	YES
05	PB-214	TRG	HTC-A08-S001-0612-02	pCi/g	1.05E+00	1.29E-01	1.86E-01					05/16/17 14:58	6.24E+02	08/24/17 14:16	YES
05	RA-224	TRG	HTC-A08-S001-0612-02	pCi/g	2.48E+00	1.22E+00	2.36E+00					05/16/17 14:58	6.24E+02	08/24/17 14:16	YES
05	RA-226	TRG	HTC-A08-S001-0612-02	pCi/g	8.57E-01	1.44E-01	2.03E-01					05/16/17 14:58	6.24E+02	08/24/17 14:16	YES
05	RA-228	TRG	HTC-A08-S001-0612-02	pCi/g	1.16E+00	2.03E-01	3.56E-01					05/16/17 14:58	6.24E+02	08/24/17 14:16	YES
05	TH-234	TRG	HTC-A08-S001-0612-02	pCi/g	1.63E+00	7.84E-01	1.28E+00					05/16/17 14:58	6.24E+02	08/24/17 14:16	NO
05	TL-208	TRG	HTC-A08-S001-0612-02	pCi/g	1.18E+00	1.77E-01	2.27E-01					05/16/17 14:58	6.24E+02	08/24/17 14:16	YES
06	AC-228	TRG	HTC-A08-S001-1218-01	pCi/g	1.25E+00	2.84E-01	4.46E-01					05/15/17 14:55	6.04E+02	08/24/17 14:16	YES
06	BI-212	TRG	HTC-A08-S001-1218-01	pCi/g	1.52E+00	7.47E-01	1.16E+00					05/15/17 14:55	6.04E+02	08/24/17 14:16	YES
06	BI-214	TRG	HTC-A08-S001-1218-01	pCi/g	1.21E+00	1.82E-01	7.43E-02					05/15/17 14:55	6.04E+02	08/24/17 14:16	YES
06	CS-137	TRG	HTC-A08-S001-1218-01	pCi/g	2.39E-02	6.71E-02	1.05E-01					05/15/17 14:55	6.04E+02	08/24/17 14:16	NO
06	K-40	TRG	HTC-A08-S001-1218-01	pCi/g	2.50E+01	2.86E+00	1.13E+00					05/15/17 14:55	6.04E+02	08/24/17 14:16	YES
06	PA-234M	TRG	HTC-A08-S001-1218-01	pCi/g	1.91E-01	7.02E+00	1.09E+01					05/15/17 14:55	6.04E+02	08/24/17 14:16	NO
06	PB-212	TRG	HTC-A08-S001-1218-01	pCi/g	1.43E+00	1.75E-01	3.10E-01					05/15/17 14:55	6.04E+02	08/24/17 14:16	YES
06	PB-214	TRG	HTC-A08-S001-1218-01	pCi/g	1.19E+00	1.59E-01	2.55E-01					05/15/17 14:55	6.04E+02	08/24/17 14:16	YES
06	RA-224	TRG	HTC-A08-S001-1218-01	pCi/g	3.47E+00	1.53E+00	3.51E+00					05/15/17 14:55	6.04E+02	08/24/17 14:16	YES
06	RA-226	TRG	HTC-A08-S001-1218-01	pCi/g	1.21E+00	1.82E-01	7.43E-02					05/15/17 14:55	6.04E+02	08/24/17 14:16	YES
06	RA-228	TRG	HTC-A08-S001-1218-01	pCi/g	1.25E+00	2.84E-01	4.46E-01					05/15/17 14:55	6.04E+02	08/24/17 14:16	YES
06	TH-234	TRG	HTC-A08-S001-1218-01	pCi/g	1.27E+00	1.34E+00	1.77E+00					05/15/17 14:55	6.04E+02	08/24/17 14:16	NO
06	TL-208	TRG	HTC-A08-S001-1218-01	pCi/g	1.29E+00	2.19E-01	2.86E-01					05/15/17 14:55	6.04E+02	08/24/17 14:16	YES
07	AC-228	TRG	HTC-A08-S001-1824-01	pCi/g	1.23E+00	2.90E-01	9.93E-01					05/15/17 14:52	5.86E+02	08/24/17 15:04	YES
07	BI-212	TRG	HTC-A08-S001-1824-01	pCi/g	1.76E+00	8.27E-01	1.23E+00					05/15/17 14:52	5.86E+02	08/24/17 15:04	YES
07	BI-214	TRG	HTC-A08-S001-1824-01	pCi/g	1.22E+00	2.55E-01	2.99E-01					05/15/17 14:52	5.86E+02	08/24/17 15:04	YES
07	CS-137	TRG	HTC-A08-S001-1824-01	pCi/g	1.51E-03	1.07E-01	1.47E-01					05/15/17 14:52	5.86E+02	08/24/17 15:04	NO
07	K-40	TRG	HTC-A08-S001-1824-01	pCi/g	2.52E+01	3.23E+00	1.45E+00					05/15/17 14:52	5.86E+02	08/24/17 15:04	YES
07	PA-234M	TRG	HTC-A08-S001-1824-01	pCi/g	2.30E+00	5.07E+00	1.65E+01					05/15/17 14:52	5.86E+02	08/24/17 15:04	NO
07	PB-212	TRG	HTC-A08-S001-1824-01	pCi/g	1.40E+00	1.97E-01	2.81E-01					05/15/17 14:52	5.86E+02	08/24/17 15:04	YES
07	PB-214	TRG	HTC-A08-S001-1824-01	pCi/g	1.32E+00	2.10E-01	3.64E-01					05/15/17 14:52	5.86E+02	08/24/17 15:04	YES
07	RA-224	TRG	HTC-A08-S001-1824-01	pCi/g	3.03E+00	1.84E+00	3.16E+00					05/15/17 14:52	5.86E+02	08/24/17 15:04	YES

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
07	RA-226	TRG	HTC-A08-S001-1824-01	pCi/g	1.22E+00	2.55E-01	2.99E-01					05/15/17 14:52	5.86E+02	08/24/17 15:04	YES
07	RA-228	TRG	HTC-A08-S001-1824-01	pCi/g	1.23E+00	2.90E-01	9.93E-01					05/15/17 14:52	5.86E+02	08/24/17 15:04	YES
07	TH-234	TRG	HTC-A08-S001-1824-01	pCi/g	1.80E+00	1.48E+00	2.24E+00					05/15/17 14:52	5.86E+02	08/24/17 15:04	NO
07	TL-208	TRG	HTC-A08-S001-1824-01	pCi/g	1.68E+00	2.84E-01	7.56E-02					05/15/17 14:52	5.86E+02	08/24/17 15:04	YES
08	AC-228	TRG	HTC-A08-S001-2430-01	pCi/g	1.35E+00	2.10E-01	3.77E-01					05/15/17 14:49	6.50E+02	08/24/17 15:17	YES
08	BI-212	TRG	HTC-A08-S001-2430-01	pCi/g	8.36E-01	6.00E-01	9.74E-01					05/15/17 14:49	6.50E+02	08/24/17 15:17	YES
08	BI-214	TRG	HTC-A08-S001-2430-01	pCi/g	9.53E-01	1.43E-01	1.67E-01					05/15/17 14:49	6.50E+02	08/24/17 15:17	YES
08	CS-137	TRG	HTC-A08-S001-2430-01	pCi/g	-8.20E-03	5.28E-02	7.77E-02					05/15/17 14:49	6.50E+02	08/24/17 15:17	NO
08	K-40	TRG	HTC-A08-S001-2430-01	pCi/g	2.54E+01	2.84E+00	8.08E-01					05/15/17 14:49	6.50E+02	08/24/17 15:17	YES
08	PA-234M	TRG	HTC-A08-S001-2430-01	pCi/g	1.20E+00	5.58E+00	8.79E+00					05/15/17 14:49	6.50E+02	08/24/17 15:17	NO
08	PB-212	TRG	HTC-A08-S001-2430-01	pCi/g	1.35E+00	1.46E-01	2.11E-01					05/15/17 14:49	6.50E+02	08/24/17 15:17	YES
08	PB-214	TRG	HTC-A08-S001-2430-01	pCi/g	9.29E-01	1.20E-01	1.38E-01					05/15/17 14:49	6.50E+02	08/24/17 15:17	YES
08	RA-224	TRG	HTC-A08-S001-2430-01	pCi/g	3.73E+00	1.43E+00	2.43E+00					05/15/17 14:49	6.50E+02	08/24/17 15:17	YES
08	RA-226	TRG	HTC-A08-S001-2430-01	pCi/g	9.53E-01	1.43E-01	1.67E-01					05/15/17 14:49	6.50E+02	08/24/17 15:17	YES
08	RA-228	TRG	HTC-A08-S001-2430-01	pCi/g	1.35E+00	2.10E-01	3.77E-01					05/15/17 14:49	6.50E+02	08/24/17 15:17	YES
08	TH-234	TRG	HTC-A08-S001-2430-01	pCi/g	6.41E-01	7.97E-01	1.24E+00					05/15/17 14:49	6.50E+02	08/24/17 15:17	NO
08	TL-208	TRG	HTC-A08-S001-2430-01	pCi/g	1.04E+00	1.68E-01	2.28E-01					05/15/17 14:49	6.50E+02	08/24/17 15:17	YES
09	AC-228	TRG	HTC-A08-S001-3036-01	pCi/g	1.20E+00	2.41E-01	3.79E-01					05/15/17 14:46	6.13E+02	08/24/17 15:17	YES
09	BI-212	TRG	HTC-A08-S001-3036-01	pCi/g	7.79E-01	4.44E-01	9.46E-01					05/15/17 14:46	6.13E+02	08/24/17 15:17	YES
09	BI-214	TRG	HTC-A08-S001-3036-01	pCi/g	8.68E-01	1.68E-01	2.37E-01					05/15/17 14:46	6.13E+02	08/24/17 15:17	YES
09	CS-137	TRG	HTC-A08-S001-3036-01	pCi/g	4.51E-02	6.23E-02	1.02E-01					05/15/17 14:46	6.13E+02	08/24/17 15:17	NO
09	K-40	TRG	HTC-A08-S001-3036-01	pCi/g	2.42E+01	2.75E+00	1.55E+00					05/15/17 14:46	6.13E+02	08/24/17 15:17	YES
09	PA-234M	TRG	HTC-A08-S001-3036-01	pCi/g	2.92E+00	7.13E+00	1.13E+01					05/15/17 14:46	6.13E+02	08/24/17 15:17	NO
09	PB-212	TRG	HTC-A08-S001-3036-01	pCi/g	1.18E+00	1.57E-01	2.47E-01					05/15/17 14:46	6.13E+02	08/24/17 15:17	YES
09	PB-214	TRG	HTC-A08-S001-3036-01	pCi/g	1.00E+00	1.62E-01	2.36E-01					05/15/17 14:46	6.13E+02	08/24/17 15:17	YES
09	RA-224	TRG	HTC-A08-S001-3036-01	pCi/g	2.83E+00	1.41E+00	2.80E+00					05/15/17 14:46	6.13E+02	08/24/17 15:17	YES
09	RA-226	TRG	HTC-A08-S001-3036-01	pCi/g	8.68E-01	1.68E-01	2.37E-01					05/15/17 14:46	6.13E+02	08/24/17 15:17	YES
09	RA-228	TRG	HTC-A08-S001-3036-01	pCi/g	1.20E+00	2.41E-01	3.79E-01					05/15/17 14:46	6.13E+02	08/24/17 15:17	YES
09	TH-234	TRG	HTC-A08-S001-3036-01	pCi/g	1.06E+00	1.30E+00	1.72E+00					05/15/17 14:46	6.13E+02	08/24/17 15:17	NO
09	TL-208	TRG	HTC-A08-S001-3036-01	pCi/g	1.11E+00	1.90E-01	1.15E-01					05/15/17 14:46	6.13E+02	08/24/17 15:17	YES
10	AC-228	TRG	HTC-A08-S001-3642-01	pCi/g	1.04E+00	3.08E-01	6.91E-01					05/15/17 14:43	6.63E+02	08/24/17 16:07	YES
10	BI-212	TRG	HTC-A08-S001-3642-01	pCi/g	5.79E-01	7.41E-01	1.12E+00					05/15/17 14:43	6.63E+02	08/24/17 16:07	NO
10	BI-214	TRG	HTC-A08-S001-3642-01	pCi/g	9.07E-01	2.07E-01	3.06E-01					05/15/17 14:43	6.63E+02	08/24/17 16:07	YES
10	CS-137	TRG	HTC-A08-S001-3642-01	pCi/g	1.78E-02	5.66E-02	1.39E-01					05/15/17 14:43	6.63E+02	08/24/17 16:07	NO
10	K-40	TRG	HTC-A08-S001-3642-01	pCi/g	2.28E+01	2.88E+00	1.19E+00					05/15/17 14:43	6.63E+02	08/24/17 16:07	YES
10	PA-234M	TRG	HTC-A08-S001-3642-01	pCi/g	-4.16E-01	1.05E+01	1.48E+01					05/15/17 14:43	6.63E+02	08/24/17 16:07	NO
10	PB-212	TRG	HTC-A08-S001-3642-01	pCi/g	1.30E+00	1.76E-01	2.71E-01					05/15/17 14:43	6.63E+02	08/24/17 16:07	YES
10	PB-214	TRG	HTC-A08-S001-3642-01	pCi/g	8.18E-01	1.96E-01	3.39E-01					05/15/17 14:43	6.63E+02	08/24/17 16:07	YES

Work Order: 17-07092-Gamma-2

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
10	RA-224	TRG	HTC-A08-S001-3642-01	pCi/g	2.75E+00	1.53E+00	3.06E+00					05/15/17 14:43	6.63E+02	08/24/17 16:07	YES
10	RA-226	TRG	HTC-A08-S001-3642-01	pCi/g	9.07E-01	2.07E-01	3.05E-01					05/15/17 14:43	6.63E+02	08/24/17 16:07	YES
10	RA-228	TRG	HTC-A08-S001-3642-01	pCi/g	1.04E+00	3.08E-01	6.91E-01					05/15/17 14:43	6.63E+02	08/24/17 16:07	YES
10	TH-234	TRG	HTC-A08-S001-3642-01	pCi/g	1.29E+00	1.31E+00	1.96E+00					05/15/17 14:43	6.63E+02	08/24/17 16:07	NO
10	TL-208	TRG	HTC-A08-S001-3642-01	pCi/g	1.07E+00	2.34E-01	2.87E-01					05/15/17 14:43	6.63E+02	08/24/17 16:07	YES
11	AC-228	TRG	HTC-A08-S001-4248-01	pCi/g	1.16E+00	1.86E-01	3.46E-01					05/15/17 14:40	6.17E+02	08/24/17 16:19	YES
11	BI-212	TRG	HTC-A08-S001-4248-01	pCi/g	5.44E-01	4.15E-01	7.38E-01					05/15/17 14:40	6.17E+02	08/24/17 16:19	YES
11	BI-214	TRG	HTC-A08-S001-4248-01	pCi/g	9.22E-01	1.47E-01	1.83E-01					05/15/17 14:40	6.17E+02	08/24/17 16:19	YES
11	CS-137	TRG	HTC-A08-S001-4248-01	pCi/g	-1.70E-02	4.88E-02	7.14E-02					05/15/17 14:40	6.17E+02	08/24/17 16:19	NO
11	K-40	TRG	HTC-A08-S001-4248-01	pCi/g	2.38E+01	2.50E+00	1.03E+00					05/15/17 14:40	6.17E+02	08/24/17 16:19	YES
11	PA-234M	TRG	HTC-A08-S001-4248-01	pCi/g	6.61E+00	4.90E+00	8.62E+00					05/15/17 14:40	6.17E+02	08/24/17 16:19	NO
11	PB-212	TRG	HTC-A08-S001-4248-01	pCi/g	1.35E+00	1.49E-01	2.16E-01					05/15/17 14:40	6.17E+02	08/24/17 16:19	YES
11	PB-214	TRG	HTC-A08-S001-4248-01	pCi/g	9.77E-01	1.36E-01	2.03E-01					05/15/17 14:40	6.17E+02	08/24/17 16:19	YES
11	RA-224	TRG	HTC-A08-S001-4248-01	pCi/g	2.78E+00	1.22E+00	2.43E+00					05/15/17 14:40	6.17E+02	08/24/17 16:19	YES
11	RA-226	TRG	HTC-A08-S001-4248-01	pCi/g	9.22E-01	1.47E-01	1.83E-01					05/15/17 14:40	6.17E+02	08/24/17 16:19	YES
11	RA-228	TRG	HTC-A08-S001-4248-01	pCi/g	1.16E+00	1.86E-01	3.46E-01					05/15/17 14:40	6.17E+02	08/24/17 16:19	YES
11	TH-234	TRG	HTC-A08-S001-4248-01	pCi/g	1.11E+00	1.18E+00	1.97E+00					05/15/17 14:40	6.17E+02	08/24/17 16:19	YES
11	TL-208	TRG	HTC-A08-S001-4248-01	pCi/g	1.20E+00	1.80E-01	1.11E-01					05/15/17 14:40	6.17E+02	08/24/17 16:19	YES
12	AC-228	TRG	HTC-A09-S001-0006-01	pCi/g	4.96E-01	3.59E-01	6.61E-01					05/16/17 12:50	7.42E+02	08/24/17 16:19	YES
12	BI-212	TRG	HTC-A09-S001-0006-01	pCi/g	4.65E-01	8.96E-01	1.33E+00					05/16/17 12:50	7.42E+02	08/24/17 16:19	NO
12	BI-214	TRG	HTC-A09-S001-0006-01	pCi/g	4.54E+01	2.15E+00	5.65E-01					05/16/17 12:50	7.42E+02	08/24/17 16:19	YES
12	CS-137	TRG	HTC-A09-S001-0006-01	pCi/g	-9.79E-01	2.05E-01	1.92E-01					05/16/17 12:50	7.42E+02	08/24/17 16:19	NO
12	K-40	TRG	HTC-A09-S001-0006-01	pCi/g	2.21E+00	1.79E+00	2.95E+00					05/16/17 12:50	7.42E+02	08/24/17 16:19	YES
12	PA-234M	TRG	HTC-A09-S001-0006-01	pCi/g	5.81E+01	1.94E+01	3.02E+01					05/16/17 12:50	7.42E+02	08/24/17 16:19	YES
12	PB-212	TRG	HTC-A09-S001-0006-01	pCi/g	4.17E-01	1.91E-01	7.78E-01					05/16/17 12:50	7.42E+02	08/24/17 16:19	YES
12	PB-214	TRG	HTC-A09-S001-0006-01	pCi/g	4.57E+01	2.48E+00	6.17E-01					05/16/17 12:50	7.42E+02	08/24/17 16:19	YES
12	RA-224	TRG	HTC-A09-S001-0006-01	pCi/g	8.57E+01	7.42E+00	6.68E+00					05/16/17 12:50	7.42E+02	08/24/17 16:19	NO
12	RA-226	TRG	HTC-A09-S001-0006-01	pCi/g	4.54E+01	2.15E+00	5.65E-01					05/16/17 12:50	7.42E+02	08/24/17 16:19	YES
12	RA-228	TRG	HTC-A09-S001-0006-01	pCi/g	4.96E-01	3.59E-01	6.61E-01					05/16/17 12:50	7.42E+02	08/24/17 16:19	YES
12	TH-234	TRG	HTC-A09-S001-0006-01	pCi/g	2.56E+01	4.51E+00	6.69E+00					05/16/17 12:50	7.42E+02	08/24/17 16:19	YES
12	TL-208	TRG	HTC-A09-S001-0006-01	pCi/g	4.07E-01	3.02E-01	2.63E-01					05/16/17 12:50	7.42E+02	08/24/17 16:19	NO
15	AC-228	TRG	HTC-A09-S001-0006-02	pCi/g	2.94E-01	5.42E-01	8.09E-01					05/16/17 12:50	8.04E+02	08/24/17 16:19	NO
15	BI-212	TRG	HTC-A09-S001-0006-02	pCi/g	1.04E-01	1.07E+00	1.56E+00					05/16/17 12:50	8.04E+02	08/24/17 16:19	NO
15	BI-214	TRG	HTC-A09-S001-0006-02	pCi/g	3.93E+01	1.98E+00	6.43E-01					05/16/17 12:50	8.04E+02	08/24/17 16:19	YES
15	CS-137	TRG	HTC-A09-S001-0006-02	pCi/g	7.50E-03	7.57E-02	2.24E-01					05/16/17 12:50	8.04E+02	08/24/17 16:19	NO
15	K-40	TRG	HTC-A09-S001-0006-02	pCi/g	1.03E+00	1.76E+00	2.45E+00					05/16/17 12:50	8.04E+02	08/24/17 16:19	NO
15	PA-234M	TRG	HTC-A09-S001-0006-02	pCi/g	5.62E+01	2.10E+01	3.29E+01					05/16/17 12:50	8.04E+02	08/24/17 16:19	YES
15	PB-212	TRG	HTC-A09-S001-0006-02	pCi/g	-9.57E-01	4.03E-01	5.38E-01					05/16/17 12:50	8.04E+02	08/24/17 16:19	NO

0325

Work Order: 17-07092-Gamma-2

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
15	PB-214	TRG	HTC-A09-S001-0006-02	pCi/g	4.05E+01	2.55E+00	8.87E-01					05/16/17 12:50	8.04E+02	08/24/17 16:19	YES
15	RA-224	TRG	HTC-A09-S001-0006-02	pCi/g	7.34E+01	7.18E+00	6.90E+00					05/16/17 12:50	8.04E+02	08/24/17 16:19	NO
15	RA-226	TRG	HTC-A09-S001-0006-02	pCi/g	3.93E+01	1.98E+00	6.43E-01					05/16/17 12:50	8.04E+02	08/24/17 16:19	YES
15	RA-228	TRG	HTC-A09-S001-0006-02	pCi/g	2.94E-01	5.42E-01	8.09E-01					05/16/17 12:50	8.04E+02	08/24/17 16:19	NO
15	TH-234	TRG	HTC-A09-S001-0006-02	pCi/g	3.09E+01	4.05E+00	5.40E+00					05/16/17 12:50	8.04E+02	08/24/17 16:19	YES
15	TL-208	TRG	HTC-A09-S001-0006-02	pCi/g	5.24E-01	4.22E-01	3.23E-01					05/16/17 12:50	8.04E+02	08/24/17 16:19	NO
16	AC-228	TRG	HTC-A09-S001-0612-01	pCi/g	1.17E+00	3.92E-01	6.73E-01					05/16/17 12:48	6.91E+02	08/24/17 17:07	YES
16	BI-212	TRG	HTC-A09-S001-0612-01	pCi/g	8.02E-01	7.64E-01	1.26E+00					05/16/17 12:48	6.91E+02	08/24/17 17:07	YES
16	BI-214	TRG	HTC-A09-S001-0612-01	pCi/g	3.97E+00	4.63E-01	4.19E-01					05/16/17 12:48	6.91E+02	08/24/17 17:07	YES
16	CS-137	TRG	HTC-A09-S001-0612-01	pCi/g	1.05E-02	3.69E-02	1.58E-01					05/16/17 12:48	6.91E+02	08/24/17 17:07	NO
16	K-40	TRG	HTC-A09-S001-0612-01	pCi/g	2.11E+01	3.02E+00	2.63E+00					05/16/17 12:48	6.91E+02	08/24/17 17:07	YES
16	PA-234M	TRG	HTC-A09-S001-0612-01	pCi/g	8.12E+00	1.25E+01	1.86E+01					05/16/17 12:48	6.91E+02	08/24/17 17:07	NO
16	PB-212	TRG	HTC-A09-S001-0612-01	pCi/g	1.42E+00	2.16E-01	3.85E-01					05/16/17 12:48	6.91E+02	08/24/17 17:07	YES
16	PB-214	TRG	HTC-A09-S001-0612-01	pCi/g	4.08E+00	3.79E-01	4.65E-01					05/16/17 12:48	6.91E+02	08/24/17 17:07	YES
16	RA-224	TRG	HTC-A09-S001-0612-01	pCi/g	2.01E+01	2.66E+00	3.85E+00					05/16/17 12:48	6.91E+02	08/24/17 17:07	NO
16	RA-226	TRG	HTC-A09-S001-0612-01	pCi/g	3.97E+00	4.63E-01	4.19E-01					05/16/17 12:48	6.91E+02	08/24/17 17:07	YES
16	RA-228	TRG	HTC-A09-S001-0612-01	pCi/g	1.17E+00	3.92E-01	6.73E-01					05/16/17 12:48	6.91E+02	08/24/17 17:07	YES
16	TH-234	TRG	HTC-A09-S001-0612-01	pCi/g	6.99E+00	2.49E+00	8.21E+00					05/16/17 12:48	6.91E+02	08/24/17 17:07	YES
16	TL-208	TRG	HTC-A09-S001-0612-01	pCi/g	1.31E+00	2.70E-01	6.41E-02					05/16/17 12:48	6.91E+02	08/24/17 17:07	YES
17	AC-228	TRG	HTC-A09-S001-1218-01	pCi/g	1.04E+00	2.68E-01	4.75E-01					05/16/17 12:46	6.88E+02	08/24/17 17:19	NO
17	BI-212	TRG	HTC-A09-S001-1218-01	pCi/g	6.85E-01	5.13E-01	8.33E-01					05/16/17 12:46	6.88E+02	08/24/17 17:19	YES
17	BI-214	TRG	HTC-A09-S001-1218-01	pCi/g	3.93E+00	3.04E-01	2.24E-01					05/16/17 12:46	6.88E+02	08/24/17 17:19	YES
17	CS-137	TRG	HTC-A09-S001-1218-01	pCi/g	-5.75E-02	6.25E-02	8.46E-02					05/16/17 12:46	6.88E+02	08/24/17 17:19	NO
17	K-40	TRG	HTC-A09-S001-1218-01	pCi/g	2.70E+01	2.75E+00	1.39E+00					05/16/17 12:46	6.88E+02	08/24/17 17:19	YES
17	PA-234M	TRG	HTC-A09-S001-1218-01	pCi/g	2.88E+00	5.93E+00	9.33E+00					05/16/17 12:46	6.88E+02	08/24/17 17:19	NO
17	PB-212	TRG	HTC-A09-S001-1218-01	pCi/g	1.43E+00	1.63E-01	2.98E-01					05/16/17 12:46	6.88E+02	08/24/17 17:19	YES
17	PB-214	TRG	HTC-A09-S001-1218-01	pCi/g	3.77E+00	2.91E-01	3.56E-01					05/16/17 12:46	6.88E+02	08/24/17 17:19	YES
17	RA-224	TRG	HTC-A09-S001-1218-01	pCi/g	8.32E+00	1.58E+00	3.37E+00					05/16/17 12:46	6.88E+02	08/24/17 17:19	YES
17	RA-226	TRG	HTC-A09-S001-1218-01	pCi/g	3.93E+00	3.04E-01	2.24E-01					05/16/17 12:46	6.88E+02	08/24/17 17:19	YES
17	RA-228	TRG	HTC-A09-S001-1218-01	pCi/g	1.04E+00	2.68E-01	4.75E-01					05/16/17 12:46	6.88E+02	08/24/17 17:19	NO
17	TH-234	TRG	HTC-A09-S001-1218-01	pCi/g	2.63E+00	1.52E+00	2.50E+00					05/16/17 12:46	6.88E+02	08/24/17 17:19	YES
17	TL-208	TRG	HTC-A09-S001-1218-01	pCi/g	1.15E+00	1.73E-01	1.49E-01					05/16/17 12:46	6.88E+02	08/24/17 17:19	YES
18	AC-228	TRG	HTC-A09-S001-1824-01	pCi/g	1.42E+00	2.77E-01	3.67E-01					05/16/17 12:44	5.47E+02	08/24/17 17:19	YES
18	BI-212	TRG	HTC-A09-S001-1824-01	pCi/g	7.93E-01	6.67E-01	1.09E+00					05/16/17 12:44	5.47E+02	08/24/17 17:19	YES
18	BI-214	TRG	HTC-A09-S001-1824-01	pCi/g	1.98E+00	2.08E-01	2.22E-01					05/16/17 12:44	5.47E+02	08/24/17 17:19	YES
18	CS-137	TRG	HTC-A09-S001-1824-01	pCi/g	-1.21E-02	2.44E-02	9.53E-02					05/16/17 12:44	5.47E+02	08/24/17 17:19	NO
18	K-40	TRG	HTC-A09-S001-1824-01	pCi/g	3.12E+01	3.52E+00	1.42E+00					05/16/17 12:44	5.47E+02	08/24/17 17:19	YES
18	PA-234M	TRG	HTC-A09-S001-1824-01	pCi/g	4.66E+00	6.71E+00	1.11E+01					05/16/17 12:44	5.47E+02	08/24/17 17:19	NO

0326

Work Order: 17-07092-Gamma-2

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
18	PB-212	TRG	HTC-A09-S001-1824-01	pCi/g	1.60E+00	1.74E-01	2.81E-01					05/16/17 12:44	5.47E+02	08/24/17 17:19	YES
18	PB-214	TRG	HTC-A09-S001-1824-01	pCi/g	2.01E+00	1.91E-01	2.38E-01					05/16/17 12:44	5.47E+02	08/24/17 17:19	YES
18	RA-224	TRG	HTC-A09-S001-1824-01	pCi/g	5.85E+00	1.65E+00	3.21E+00					05/16/17 12:44	5.47E+02	08/24/17 17:19	YES
18	RA-226	TRG	HTC-A09-S001-1824-01	pCi/g	1.98E+00	2.08E-01	2.22E-01					05/16/17 12:44	5.47E+02	08/24/17 17:19	YES
18	RA-228	TRG	HTC-A09-S001-1824-01	pCi/g	1.42E+00	2.77E-01	3.67E-01					05/16/17 12:44	5.47E+02	08/24/17 17:19	YES
18	TH-234	TRG	HTC-A09-S001-1824-01	pCi/g	3.40E+00	1.02E+00	1.69E+00					05/16/17 12:44	5.47E+02	08/24/17 17:19	NO
18	TL-208	TRG	HTC-A09-S001-1824-01	pCi/g	1.11E+00	1.85E-01	2.17E-01					05/16/17 12:44	5.47E+02	08/24/17 17:19	YES
19	AC-228	TRG	HTC-A09-S001-2430-01	pCi/g	1.50E+00	2.56E-01	4.07E-01					05/16/17 12:42	6.49E+02	08/24/17 17:20	YES
19	BI-212	TRG	HTC-A09-S001-2430-01	pCi/g	5.90E-01	5.50E-01	9.07E-01					05/16/17 12:42	6.49E+02	08/24/17 17:20	NO
19	BI-214	TRG	HTC-A09-S001-2430-01	pCi/g	1.72E+00	2.23E-01	2.84E-01					05/16/17 12:42	6.49E+02	08/24/17 17:20	YES
19	CS-137	TRG	HTC-A09-S001-2430-01	pCi/g	-4.75E-02	6.98E-02	9.33E-02					05/16/17 12:42	6.49E+02	08/24/17 17:20	NO
19	K-40	TRG	HTC-A09-S001-2430-01	pCi/g	2.62E+01	2.92E+00	1.16E+00					05/16/17 12:42	6.49E+02	08/24/17 17:20	YES
19	PA-234M	TRG	HTC-A09-S001-2430-01	pCi/g	-2.93E-01	7.17E+00	1.08E+01					05/16/17 12:42	6.49E+02	08/24/17 17:20	NO
19	PB-212	TRG	HTC-A09-S001-2430-01	pCi/g	1.37E+00	1.79E-01	2.82E-01					05/16/17 12:42	6.49E+02	08/24/17 17:20	YES
19	PB-214	TRG	HTC-A09-S001-2430-01	pCi/g	1.88E+00	2.28E-01	3.10E-01					05/16/17 12:42	6.49E+02	08/24/17 17:20	YES
19	RA-224	TRG	HTC-A09-S001-2430-01	pCi/g	1.84E+01	2.25E+00	3.26E+00					05/16/17 12:42	6.49E+02	08/24/17 17:20	NO
19	RA-226	TRG	HTC-A09-S001-2430-01	pCi/g	1.72E+00	2.23E-01	2.84E-01					05/16/17 12:42	6.49E+02	08/24/17 17:20	YES
19	RA-228	TRG	HTC-A09-S001-2430-01	pCi/g	1.50E+00	2.56E-01	4.07E-01					05/16/17 12:42	6.49E+02	08/24/17 17:20	YES
19	TH-234	TRG	HTC-A09-S001-2430-01	pCi/g	2.86E+00	1.35E+00	1.87E+00					05/16/17 12:42	6.49E+02	08/24/17 17:20	NO
19	TL-208	TRG	HTC-A09-S001-2430-01	pCi/g	1.03E+00	1.84E-01	1.09E-01					05/16/17 12:42	6.49E+02	08/24/17 17:20	YES
20	AC-228	TRG	HTC-A09-S001-3036-01	pCi/g	1.24E+00	2.90E-01	6.29E-01					05/16/17 12:39	6.85E+02	08/24/17 18:10	YES
20	BI-212	TRG	HTC-A09-S001-3036-01	pCi/g	7.25E-01	7.17E-01	1.18E+00					05/16/17 12:39	6.85E+02	08/24/17 18:10	YES
20	BI-214	TRG	HTC-A09-S001-3036-01	pCi/g	1.61E+00	2.69E-01	3.88E-01					05/16/17 12:39	6.85E+02	08/24/17 18:10	YES
20	CS-137	TRG	HTC-A09-S001-3036-01	pCi/g	2.36E-02	1.07E-01	1.51E-01					05/16/17 12:39	6.85E+02	08/24/17 18:10	NO
20	K-40	TRG	HTC-A09-S001-3036-01	pCi/g	2.20E+01	2.83E+00	1.50E+00					05/16/17 12:39	6.85E+02	08/24/17 18:10	YES
20	PA-234M	TRG	HTC-A09-S001-3036-01	pCi/g	4.09E+00	9.86E+00	1.47E+01					05/16/17 12:39	6.85E+02	08/24/17 18:10	NO
20	PB-212	TRG	HTC-A09-S001-3036-01	pCi/g	1.11E+00	1.67E-01	3.01E-01					05/16/17 12:39	6.85E+02	08/24/17 18:10	YES
20	PB-214	TRG	HTC-A09-S001-3036-01	pCi/g	1.62E+00	2.09E-01	3.30E-01					05/16/17 12:39	6.85E+02	08/24/17 18:10	YES
20	RA-224	TRG	HTC-A09-S001-3036-01	pCi/g	3.69E+00	1.65E+00	3.39E+00					05/16/17 12:39	6.85E+02	08/24/17 18:10	YES
20	RA-226	TRG	HTC-A09-S001-3036-01	pCi/g	1.61E+00	2.69E-01	3.88E-01					05/16/17 12:39	6.85E+02	08/24/17 18:10	YES
20	RA-228	TRG	HTC-A09-S001-3036-01	pCi/g	1.24E+00	2.90E-01	6.29E-01					05/16/17 12:39	6.85E+02	08/24/17 18:10	YES
20	TH-234	TRG	HTC-A09-S001-3036-01	pCi/g	1.56E+00	1.68E+00	2.80E+00					05/16/17 12:39	6.85E+02	08/24/17 18:10	YES
20	TL-208	TRG	HTC-A09-S001-3036-01	pCi/g	1.11E+00	2.49E-01	6.47E-02					05/16/17 12:39	6.85E+02	08/24/17 18:10	YES

Count Room Report
Client: Weston Solutions, Inc.

17-07092-Gamma-2 (pCi/g) in SO
Tracer ID:

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	07/19/17 00:00	1.0000				0.00		
02	MBL	BLANK	07/19/17 00:00	1.0000				0.00		
03	DUP	HTC-A08-S001-0006-01	05/16/17 15:01	648.6100				0.00		
04	DO	HTC-A08-S001-0006-01	05/16/17 15:01	648.6100				0.00		
05	TRG	HTC-A08-S001-0612-02	05/16/17 14:58	624.3400				0.00		
06	TRG	HTC-A08-S001-1218-01	05/15/17 14:55	604.1900				0.00		
07	TRG	HTC-A08-S001-1824-01	05/15/17 14:52	585.6300				0.00		
08	TRG	HTC-A08-S001-2430-01	05/15/17 14:49	649.8000				0.00		
09	TRG	HTC-A08-S001-3036-01	05/15/17 14:46	613.0900				0.00		
10	TRG	HTC-A08-S001-3642-01	05/15/17 14:43	663.3400				0.00		
11	TRG	HTC-A08-S001-4248-01	05/15/17 14:40	616.8200				0.00		
12	TRG	HTC-A09-S001-0006-01	05/16/17 12:50	742.0700				0.00		
15	TRG	HTC-A09-S001-0006-02	05/16/17 12:50	803.8200				0.00		
16	TRG	HTC-A09-S001-0612-01	05/16/17 12:48	691.0300				0.00		
17	TRG	HTC-A09-S001-1218-01	05/16/17 12:46	687.7100				0.00		
18	TRG	HTC-A09-S001-1824-01	05/16/17 12:44	547.1400				0.00		
19	TRG	HTC-A09-S001-2430-01	05/16/17 12:42	648.7200				0.00		
20	TRG	HTC-A09-S001-3036-01	05/16/17 12:39	684.8600				0.00		

Eberline Analytical
Oak Ridge Laboratory

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
17-07092	2	Gamma	grams	8/10/2017	KSALLINGS

Lab Fraction	Weston Solutions, Inc. Client ID	Sample Type	Muffle Data Ratio Post/Pre	Dilution Data No of Dils	Dil Factor	Ratio	Aliquot Data Aliquot	Net Equiv	MS Aliquot Data Aliquot	Net Equiv	H-3 Solids Only Water Added (ml)	H3 Dist Aliq
01	LCS	LCS					1.0000E+00	1.0000E+00				
02	BLANK	MBL					1.0000E+00	1.0000E+00				
03	HTC-A08-S001-0006-01	DUP					6.4861E+02	6.4861E+02				
04	HTC-A08-S001-0006-01	DO					6.4861E+02	6.4861E+02				
05	HTC-A08-S001-0612-02	TRG					6.2434E+02	6.2434E+02				
06	HTC-A08-S001-1218-01	TRG					6.0419E+02	6.0419E+02				
07	HTC-A08-S001-1824-01	TRG					5.8563E+02	5.8563E+02				
08	HTC-A08-S001-2430-01	TRG					6.4980E+02	6.4980E+02				
09	HTC-A08-S001-3036-01	TRG					6.1309E+02	6.1309E+02				
10	HTC-A08-S001-3642-01	TRG					6.6334E+02	6.6334E+02				
11	HTC-A08-S001-4248-01	TRG					6.1682E+02	6.1682E+02				
12	HTC-A09-S001-0006-01	TRG					7.4207E+02	7.4207E+02				
15	HTC-A09-S001-0006-02	TRG					8.0382E+02	8.0382E+02				
16	HTC-A09-S001-0612-01	TRG					6.9103E+02	6.9103E+02				
17	HTC-A09-S001-1218-01	TRG					6.8771E+02	6.8771E+02				
18	HTC-A09-S001-1824-01	TRG					5.4714E+02	5.4714E+02				
19	HTC-A09-S001-2430-01	TRG					6.4872E+02	6.4872E+02				
20	HTC-A09-S001-3036-01	TRG					6.8486E+02	6.8486E+02				

Comments	

0329

Technician: Kenny Sales Date: 8/3/17

Eberline Services - Oak Ridge
Prep Logbook
Version 2.0 8/1999

Rough Sample Preparation Log Book

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
17-07092	8/10/2017	8/2/2017	8/3/2017	8/4/2017	KSALLINGS

Bico Pulverizer: 000302 [✓] Jaw Crusher 68275 [ ]

Eberline Fraction	Weston Solutions, Inc. Client ID	Tare (g) Pan Wt	Gross (g) Wet Wt.	Gross (g) Dry Wt.	Net (g) Wet Wt.	Net (g) Dry Wt.	Percent Liquid	Percent Solid	Gamma Dry Wt.	Gamma LEPS Wt.	Special Info
04	HTC-A08-S001-0006-01	14.6600	962.3400	751.5000	947.6800	736.8400	22.25%	77.75%	0.0000	0.0000	
05	HTC-A08-S001-0612-02	14.7000	887.1800	712.0200	872.4800	697.3200	20.08%	79.92%	0.0000	0.0000	
06	HTC-A08-S001-1218-01	14.7300	863.6400	695.0000	848.9100	680.2700	19.87%	80.13%	0.0000	0.0000	
07	HTC-A08-S001-1824-01	14.7200	875.8600	711.2400	861.1400	696.5200	19.12%	80.88%	0.0000	0.0000	
08	HTC-A08-S001-2430-01	14.6400	908.7600	740.4700	894.1200	725.8300	18.82%	81.18%	0.0000	0.0000	
09	HTC-A08-S001-3036-01	14.6300	891.6600	743.8200	877.0300	729.1900	16.86%	83.14%	0.0000	0.0000	
10	HTC-A08-S001-3642-01	14.6200	934.1200	767.9400	919.5000	753.3200	18.07%	81.93%	0.0000	0.0000	
11	HTC-A08-S001-4248-01	14.6300	848.9600	681.9100	834.3300	667.2800	20.02%	79.98%	0.0000	0.0000	
12	HTC-A09-S001-0006-01	14.6200	852.3600	811.4000	837.7400	796.7800	4.89%	95.11%	0.0000	0.0000	
13	HTC-A09-S001-0006-01 MS	14.6300	893.8600	857.1400	879.2300	842.5100	4.18%	95.82%	0.0000	0.0000	
14	HTC-A09-S001-0006-01 MSD	14.6300	893.8600	857.1400	879.2300	842.5100	4.18%	95.82%	0.0000	0.0000	
15	HTC-A09-S001-0006-02	14.6000	901.2800	889.2200	886.6800	874.6200	1.36%	98.64%	0.0000	0.0000	
16	HTC-A09-S001-0612-01	14.5800	1006.5200	788.4100	991.9400	773.8300	21.99%	78.01%	0.0000	0.0000	
17	HTC-A09-S001-1218-01	14.5400	941.7800	769.3100	927.2400	754.7700	18.60%	81.40%	0.0000	0.0000	
18	HTC-A09-S001-1824-01	14.4900	764.8700	625.0200	750.3800	610.5300	18.64%	81.36%	0.0000	0.0000	
19	HTC-A09-S001-2430-01	14.5500	934.6600	770.1100	920.1100	755.5600	17.88%	82.12%	0.0000	0.0000	
20	HTC-A09-S001-3036-01	14.3400	919.4800	764.9900	905.1400	750.6500	17.07%	82.93%	0.0000	0.0000	

OVENS Fisher Isotemp SN 00579 [✓] VWR SN 000588 [ ]

Comments	
Special Codes	H: Hot, O: Organic Hazard, P: PCB Hazard, R: Rush, T: Other (see comments)

0330

Technician: Kenny Sallings

Date: Analysis: Rough Prep Logbook

Analysis: Gamma Page No. 10183

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

GAS-1402

98503
Sand in 16 Ounce PP Taral Jar Filled to Capacity

Customer: Eberline Analytical Corporation
P.O. No.: OR-1405030, Item 6 Product Code: 8401-EG-SAN
Reference Date: 01-Oct-2014 12:00 PM EST **Grams of Master Source:** 0.017608

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solutions. Additional radionuclides were added gravimetrically from solutions calibrated by gamma-ray spectrometry, ionization chamber, or liquid scintillation counting. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. 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.

Nuclide	Gamma-Ray Energy (keV)	Half-Life, Days	Master Source* γps/gram	This Source γps	Uncertainty*, % Type u_A	u_B	U	Calibration Method*
Am-241	59.5	1.580E+05	———	2.030E+03	0.1	1.8	3.6	4π LS
Cd-109	88.0	4.614E+02	1.663E+05	2.929E+03	0.5	2.0	4.1	HPGe
Co-57	122.1	2.717E+02	8.913E+04	1.569E+03	0.4	1.7	3.5	HPGe
Ce-139	165.9	1.376E+02	1.241E+05	2.185E+03	0.4	1.7	3.5	HPGe
Hg-203	279.2	4.659E+01	2.675E+05	4.710E+03	0.3	1.7	3.5	HPGe
Sn-113	391.7	1.151E+02	1.796E+05	3.163E+03	0.4	1.9	3.9	HPGe
Cs-137	661.7	1.099E+04	1.111E+05	1.956E+03	0.7	1.9	4.0	HPGe
Y-88	898.0	1.066E+02	4.223E+05	7.435E+03	0.7	1.7	3.7	HPGe
Co-60	1173.2	1.925E+03	2.091E+05	3.683E+03	0.7	1.8	3.9	HPGe
Co-60	1332.5	1.925E+03	2.094E+05	3.687E+03	0.7	1.8	3.9	HPGe
Y-88	1836.1	1.066E+02	4.471E+05	7.872E+03	0.7	1.7	3.7	HPGe

* Master Source refers to Analytics' 8-isotope mixture which is calibrated quarterly.

Calibration Methods: 4π LS - 4 pi Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber. **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)

ANA Form005 Rev. —

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1954

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

Apex-Gamma

Analysis Report for 1707092-01
GAS-1402

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-01
Sample Description	: GAS-1402
Sample Type	: SOIL
Sample Size	: 7.360E+02 grams
Facility	: Countroom
Sample Taken On	: 10/1/2014 7:37:19AM
Acquisition Started	: 8/24/2017 2:31:43PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 1800.0 seconds
Real Time	: 1824.6 seconds
Dead Time	: 1.35 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 15 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55915

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-01

GAS-1402

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 3:02:11PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	22.62	21.66	0.0000	0.00
2	31.97	31.01	0.0000	0.00
3	52.03	51.08	0.0000	0.00
4	59.40	58.45	0.0000	0.00
5	69.20	68.25	0.0000	0.00
6	87.85	86.91	0.0000	0.00
7	103.29	102.36	0.0000	0.00
8	121.91	120.98	0.0000	0.00
9	136.05	135.13	0.0000	0.00
10	156.36	155.44	0.0000	0.00
11	165.93	165.01	0.0000	0.00
12	178.04	177.12	0.0000	0.00
13	190.51	189.60	0.0000	0.00
14	222.65	221.75	0.0000	0.00
15	252.35	251.46	0.0000	0.00
16	509.67	508.88	0.0000	0.00
17	565.04	564.26	0.0000	0.00
18	661.54	660.80	0.0000	0.00
19	898.63	897.98	0.0000	0.00
20	1112.50	1111.95	0.0000	0.00
21	1173.00	1172.48	0.0000	0.00
22	1208.96	1208.46	0.0000	0.00
23	1219.84	1219.34	0.0000	0.00
24	1332.24	1331.80	0.0000	0.00
25	1589.13	1588.82	0.0000	0.00
26	1654.63	1654.35	0.0000	0.00
27	1665.07	1664.80	0.0000	0.00
28	1712.90	1712.65	0.0000	0.00
29	1803.16	1802.97	0.0000	0.00
30	1836.15	1835.97	0.0000	0.00
31	1853.45	1853.29	0.0000	0.00
32	1885.88	1885.73	0.0000	0.00
33	2370.73	2370.88	0.0000	0.00
34	2505.05	2505.29	0.0000	0.00
35	2614.32	2614.64	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-01

GAS-1402

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 3:02:11PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	22.62	20 -	25	21.66	6.76E+04	882.65	8.75E+04	1.91
	2	31.97	29 -	34	31.01	1.51E+03	240.41	1.05E+04	2.24
M	3	52.03	43 -	62	51.08	1.47E+04	804.62	4.30E+04	5.02
m	4	59.40	43 -	62	58.45	8.65E+04	661.16	1.73E+04	2.44
	5	69.20	64 -	75	68.25	1.39E+03	503.06	3.11E+04	3.44
	6	87.85	80 -	93	86.91	2.69E+04	603.63	2.80E+04	2.24
	7	103.29	100 -	105	102.36	2.58E+02	203.20	8.04E+03	3.04
	8	121.91	116 -	125	120.98	4.47E+03	341.28	1.41E+04	2.13
	9	136.05	132 -	139	135.13	5.79E+02	253.66	1.03E+04	2.78
	10	156.36	153 -	158	155.44	2.08E+02	190.34	7.05E+03	3.83
	11	165.93	162 -	169	165.01	4.94E+02	236.79	9.00E+03	3.05
	12	178.04	175 -	179	177.12	1.33E+02	160.42	5.59E+03	2.32
	13	190.51	181 -	198	189.60	1.07E+03	482.43	2.08E+04	12.39
	14	222.65	219 -	225	221.75	2.28E+02	217.62	8.43E+03	3.30
	15	252.35	249 -	254	251.46	2.74E+02	170.41	5.58E+03	5.74
	16	509.67	506 -	513	508.88	1.49E+02	156.18	3.98E+03	3.69
	17	565.04	562 -	568	564.26	1.25E+02	121.24	2.60E+03	3.15
	18	661.54	655 -	666	660.80	1.52E+04	307.57	4.21E+03	2.44
	19	898.63	894 -	901	897.98	1.80E+02	140.19	3.15E+03	3.98
	20	1112.50	1109 -	1115	1111.95	1.08E+02	108.42	2.05E+03	1.68
	21	1173.00	1165 -	1179	1172.48	1.22E+04	262.70	2.10E+03	2.62
	22	1208.96	1205 -	1213	1208.46	6.31E+01	69.89	6.96E+02	2.82
	23	1219.84	1215 -	1223	1219.34	6.40E+01	61.99	5.48E+02	3.10
	24	1332.24	1324 -	1338	1331.80	1.07E+04	218.40	5.19E+02	2.67
	25	1589.13	1585 -	1592	1588.82	2.44E+01	16.85	2.92E+01	1.56
	26	1654.63	1651 -	1656	1654.35	1.04E+01	13.64	2.73E+01	1.73
	27	1665.07	1662 -	1668	1664.80	1.21E+01	13.48	2.37E+01	1.64
	28	1712.90	1707 -	1719	1712.65	1.74E+01	18.63	3.33E+01	8.24
	29	1803.16	1797 -	1810	1802.97	2.82E+01	20.71	3.56E+01	5.45
M	30	1836.15	1829 -	1857	1835.97	2.59E+01	20.04	3.76E+01	3.60
m	31	1853.45	1829 -	1857	1853.29	1.99E+01	17.13	2.07E+01	3.61
	32	1885.88	1877 -	1895	1885.73	2.99E+01	27.74	5.42E+01	9.55
	33	2370.73	2368 -	2373	2370.88	4.58E+00	5.74	2.83E+00	1.85
	34	2505.05	2500 -	2509	2505.29	7.80E+01	17.66	0.00E+00	2.93
	35	2614.32	2610 -	2618	2614.64	1.10E+01	6.63	0.00E+00	2.00

Analysis Report for 1707092-01

GAS-1402

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 3:02:11PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	22.62	20 -	25	6.76E+04	882.65	8.75E+04	5.86E+02
	2	31.97	29 -	34	1.51E+03	240.41	1.05E+04	1.87E+02
M	3	52.03	43 -	62	1.47E+04	804.62	4.30E+04	3.41E+02
m	4	59.40	43 -	62	8.65E+04	661.16	1.73E+04	2.16E+02
	5	69.20	64 -	75	1.39E+03	503.06	3.11E+04	4.09E+02
	6	87.85	80 -	93	2.69E+04	603.63	2.80E+04	4.16E+02
	7	103.29	100 -	105	2.58E+02	203.20	8.04E+03	1.65E+02
	8	121.91	116 -	125	4.47E+03	341.28	1.41E+04	2.58E+02
	9	136.05	132 -	139	5.79E+02	253.66	1.03E+04	2.05E+02
	10	156.36	153 -	158	2.08E+02	190.34	7.05E+03	1.55E+02
	11	165.93	162 -	169	4.94E+02	236.79	9.00E+03	1.91E+02
	12	178.04	175 -	179	1.33E+02	160.42	5.59E+03	1.30E+02
	13	190.51	181 -	198	1.07E+03	482.43	2.08E+04	3.93E+02
	14	222.65	219 -	225	2.28E+02	217.62	8.43E+03	1.77E+02
	15	252.35	249 -	254	2.74E+02	170.41	5.58E+03	1.37E+02
	16	509.67	506 -	513	1.49E+02	156.18	3.98E+03	1.27E+02
	17	565.04	562 -	568	1.25E+02	121.24	2.60E+03	9.80E+01
	18	661.54	655 -	666	1.52E+04	307.57	4.21E+03	1.51E+02
	19	898.63	894 -	901	1.80E+02	140.19	3.15E+03	1.13E+02
	20	1112.50	1109 -	1115	1.08E+02	108.42	2.05E+03	8.75E+01
	21	1173.00	1165 -	1179	1.22E+04	262.70	2.10E+03	1.16E+02
	22	1208.96	1205 -	1213	6.31E+01	69.89	6.96E+02	5.59E+01
	23	1219.84	1215 -	1223	6.40E+01	61.99	5.48E+02	4.92E+01
	24	1332.24	1324 -	1338	1.07E+04	218.40	5.19E+02	5.73E+01
	25	1589.13	1585 -	1592	2.44E+01	16.85	2.92E+01	1.12E+01
	26	1654.63	1651 -	1656	1.04E+01	13.64	2.73E+01	9.88E+00
	27	1665.07	1662 -	1668	1.21E+01	13.48	2.37E+01	9.49E+00
	28	1712.90	1707 -	1719	1.74E+01	18.63	3.33E+01	1.37E+01
	29	1803.16	1797 -	1810	2.82E+01	20.71	3.56E+01	1.46E+01
M	30	1836.15	1829 -	1857	2.59E+01	20.04	3.76E+01	1.01E+01
m	31	1853.45	1829 -	1857	1.99E+01	17.13	2.07E+01	7.49E+00

Analysis Report for 1707092-01

GAS-1402

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	1885.88	1877 -	1895	2.99E+01	27.74	5.42E+01	2.10E+01
33	2370.73	2368 -	2373	4.58E+00	5.74	2.83E+00	3.15E+00
34	2505.05	2500 -	2509	7.80E+01	17.66	0.00E+00	0.00E+00
35	2614.32	2610 -	2618	1.10E+01	6.63	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 3:02:11PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	22.62	20 -	25	21.66	6.76E+04	882.65	8.75E+04	.....
	2	31.97	29 -	34	31.01	1.51E+03	240.41	1.05E+04	.....
M	3	52.03	43 -	62	51.08	1.47E+04	804.62	4.30E+04	.....
m	4	59.40	43 -	62	58.45	8.65E+04	661.16	1.73E+04	AM-241
	5	69.20	64 -	75	68.25	1.39E+03	503.06	3.11E+04	.....
	6	87.85	80 -	93	86.91	2.69E+04	603.63	2.80E+04	CD-109
									SN-126
									LU-176
	7	103.29	100 -	105	102.36	2.58E+02	203.20	8.04E+03	GD-153
	8	121.91	116 -	125	120.98	4.47E+03	341.28	1.41E+04	EU-152
									CO-57
									SE-75
	9	136.05	132 -	139	135.13	5.79E+02	253.66	1.03E+04	SE-75
									CO-57
	10	156.36	153 -	158	155.44	2.08E+02	190.34	7.05E+03	.....
	11	165.93	162 -	169	165.01	4.94E+02	236.79	9.00E+03	CE-139
	12	178.04	175 -	179	177.12	1.33E+02	160.42	5.59E+03	.....
	13	190.51	181 -	198	189.60	1.07E+03	482.43	2.08E+04	.....
	14	222.65	219 -	225	221.75	2.28E+02	217.62	8.43E+03	.....
	15	252.35	249 -	254	251.46	2.74E+02	170.41	5.58E+03	.....
	16	509.67	506 -	513	508.88	1.49E+02	156.18	3.98E+03	.....
	17	565.04	562 -	568	564.26	1.25E+02	121.24	2.60E+03	.....

Analysis Report for 1707092-01

GAS-1402

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	18	661.54	655 -	666	660.80	1.52E+04	307.57	4.21E+03	CS-137
	19	898.63	894 -	901	897.98	1.80E+02	140.19	3.15E+03	TL-204 Y-88
	20	1112.50	1109 -	1115	1111.95	1.08E+02	108.42	2.05E+03	EU-152
	21	1173.00	1165 -	1179	1172.48	1.22E+04	262.70	2.10E+03	CO-60
	22	1208.96	1205 -	1213	1208.46	6.31E+01	69.89	6.96E+02	.....
	23	1219.84	1215 -	1223	1219.34	6.40E+01	61.99	5.48E+02	.....
	24	1332.24	1324 -	1338	1331.80	1.07E+04	218.40	5.19E+02	CO-60
	25	1589.13	1585 -	1592	1588.82	2.44E+01	16.85	2.92E+01	.....
	26	1654.63	1651 -	1656	1654.35	1.04E+01	13.64	2.73E+01	.....
	27	1665.07	1662 -	1668	1664.80	1.21E+01	13.48	2.37E+01	.....
	28	1712.90	1707 -	1719	1712.65	1.74E+01	18.63	3.33E+01	.....
	29	1803.16	1797 -	1810	1802.97	2.82E+01	20.71	3.56E+01	.....
M	30	1836.15	1829 -	1857	1835.97	2.59E+01	20.04	3.76E+01	Y-88
m	31	1853.45	1829 -	1857	1853.29	1.99E+01	17.13	2.07E+01	.....
	32	1885.88	1877 -	1895	1885.73	2.99E+01	27.74	5.42E+01	.....
	33	2370.73	2368 -	2373	2370.88	4.58E+00	5.74	2.83E+00	.....
	34	2505.05	2500 -	2509	2505.29	7.80E+01	17.66	0.00E+00	.....
	35	2614.32	2610 -	2618	2614.64	1.10E+01	6.63	0.00E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 3:02:11PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	22.62	6.76E+04	882.65	3.96E-03	1.56E-03
	2	31.97	1.51E+03	240.41	9.06E-03	1.56E-03
M	3	52.03	1.47E+04	804.62	1.85E-02	1.56E-03
m	4	59.40	8.65E+04	661.16	2.07E-02	1.56E-03
	5	69.20	1.39E+03	503.06	2.25E-02	1.77E-03
	6	87.85	2.69E+04	603.63	2.37E-02	2.16E-03
	7	103.29	2.58E+02	203.20	2.33E-02	1.94E-03
	8	121.91	4.47E+03	341.28	2.21E-02	1.65E-03
	9	136.05	5.79E+02	253.66	2.10E-02	1.60E-03
	10	156.36	2.08E+02	190.34	1.93E-02	1.53E-03
	11	165.93	4.94E+02	236.79	1.85E-02	1.49E-03

Analysis Report for 1707092-01

GAS-1402

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	12	178.04	1.33E+02	160.42	1.75E-02	1.44E-03
	13	190.51	1.07E+03	482.43	1.66E-02	1.38E-03
	14	222.65	2.28E+02	217.62	1.45E-02	1.22E-03
	15	252.35	2.74E+02	170.41	1.29E-02	1.08E-03
	16	509.67	1.49E+02	156.18	6.30E-03	6.62E-04
	17	565.04	1.25E+02	121.24	5.68E-03	6.39E-04
	18	661.54	1.52E+04	307.57	4.87E-03	5.99E-04
	19	898.63	1.80E+02	140.19	3.66E-03	3.02E-04
	20	1112.50	1.08E+02	108.42	3.03E-03	2.52E-04
	21	1173.00	1.22E+04	262.70	2.90E-03	2.38E-04
	22	1208.96	6.31E+01	69.89	2.82E-03	2.35E-04
	23	1219.84	6.40E+01	61.99	2.80E-03	2.34E-04
	24	1332.24	1.07E+04	218.40	2.59E-03	2.27E-04
	25	1589.13	2.44E+01	16.85	2.21E-03	1.88E-04
	26	1654.63	1.04E+01	13.64	2.13E-03	1.79E-04
	27	1665.07	1.21E+01	13.48	2.11E-03	1.77E-04
	28	1712.90	1.74E+01	18.63	2.06E-03	1.70E-04
	29	1803.16	2.82E+01	20.71	1.96E-03	1.56E-04
M	30	1836.15	2.59E+01	20.04	1.92E-03	1.51E-04
m	31	1853.45	1.99E+01	17.13	1.90E-03	1.51E-04
	32	1885.88	2.99E+01	27.74	1.87E-03	1.51E-04
	33	2370.73	4.58E+00	5.74	1.45E-03	1.51E-04
	34	2505.05	7.80E+01	17.66	1.35E-03	1.51E-04
	35	2614.32	1.10E+01	6.63	1.28E-03	1.51E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 3:02:11PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	22.62	6.76E+04	882.65			6.76E+04	8.83E+02
	2	31.97	1.51E+03	240.41			1.51E+03	2.40E+02
M	3	52.03	1.47E+04	804.62			1.47E+04	8.05E+02
m	4	59.40	8.65E+04	661.16			8.65E+04	6.61E+02
	5	69.20	1.39E+03	503.06			1.39E+03	5.03E+02
	6	87.85	2.69E+04	603.63			2.69E+04	6.04E+02

Analysis Report for 1707092-01

GAS-1402

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	7	103.29	2.58E+02	203.20			2.58E+02	2.03E+02
	8	121.91	4.47E+03	341.28			4.47E+03	3.41E+02
	9	136.05	5.79E+02	253.66			5.79E+02	2.54E+02
	10	156.36	2.08E+02	190.34			2.08E+02	1.90E+02
	11	165.93	4.94E+02	236.79			4.94E+02	2.37E+02
	12	178.04	1.33E+02	160.42			1.33E+02	1.60E+02
	13	190.51	1.07E+03	482.43			1.07E+03	4.82E+02
	14	222.65	2.28E+02	217.62			2.28E+02	2.18E+02
	15	252.35	2.74E+02	170.41			2.74E+02	1.70E+02
	16	509.67	1.49E+02	156.18			1.49E+02	1.56E+02
	17	565.04	1.25E+02	121.24			1.25E+02	1.21E+02
	18	661.54	1.52E+04	307.57			1.52E+04	3.08E+02
	19	898.63	1.80E+02	140.19			1.80E+02	1.40E+02
	20	1112.50	1.08E+02	108.42			1.08E+02	1.08E+02
	21	1173.00	1.22E+04	262.70			1.22E+04	2.63E+02
	22	1208.96	6.31E+01	69.89			6.31E+01	6.99E+01
	23	1219.84	6.40E+01	61.99			6.40E+01	6.20E+01
	24	1332.24	1.07E+04	218.40			1.07E+04	2.18E+02
	25	1589.13	2.44E+01	16.85			2.44E+01	1.69E+01
	26	1654.63	1.04E+01	13.64			1.04E+01	1.36E+01
	27	1665.07	1.21E+01	13.48			1.21E+01	1.35E+01
	28	1712.90	1.74E+01	18.63			1.74E+01	1.86E+01
	29	1803.16	2.82E+01	20.71			2.82E+01	2.07E+01
M	30	1836.15	2.59E+01	20.04			2.59E+01	2.00E+01
m	31	1853.45	1.99E+01	17.13			1.99E+01	1.71E+01
	32	1885.88	2.99E+01	27.74			2.99E+01	2.77E+01
	33	2370.73	4.58E+00	5.74			4.58E+00	5.74E+00
	34	2505.05	7.80E+01	17.66			7.80E+01	1.77E+01
	35	2614.32	1.10E+01	6.63			1.10E+01	6.63E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 3:02:11PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

Corrected Area is: Original * Peak Ratio - Background

Analysis Report for 1707092-01

GAS-1402

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	22.62	6.76E+04	882.65			6.76E+04	8.83E+02
	2	31.97	1.51E+03	240.41			1.51E+03	2.40E+02
M	3	52.03	1.47E+04	804.62			1.47E+04	8.05E+02
m	4	59.40	8.65E+04	661.16			8.65E+04	6.61E+02
	5	69.20	1.39E+03	503.06			1.39E+03	5.03E+02
	6	87.85	2.69E+04	603.63			2.69E+04	6.04E+02
	7	103.29	2.58E+02	203.20			2.58E+02	2.03E+02
	8	121.91	4.47E+03	341.28			4.47E+03	3.41E+02
	9	136.05	5.79E+02	253.66			5.79E+02	2.54E+02
	10	156.36	2.08E+02	190.34			2.08E+02	1.90E+02
	11	165.93	4.94E+02	236.79			4.94E+02	2.37E+02
	12	178.04	1.33E+02	160.42			1.33E+02	1.60E+02
	13	190.51	1.07E+03	482.43			1.07E+03	4.82E+02
	14	222.65	2.28E+02	217.62			2.28E+02	2.18E+02
	15	252.35	2.74E+02	170.41			2.74E+02	1.70E+02
	16	509.67	1.49E+02	156.18			1.49E+02	1.56E+02
	17	565.04	1.25E+02	121.24			1.25E+02	1.21E+02
	18	661.54	1.52E+04	307.57			1.52E+04	3.08E+02
	19	898.63	1.80E+02	140.19			1.80E+02	1.40E+02
	20	1112.50	1.08E+02	108.42			1.08E+02	1.08E+02
	21	1173.00	1.22E+04	262.70			1.22E+04	2.63E+02
	22	1208.96	6.31E+01	69.89			6.31E+01	6.99E+01
	23	1219.84	6.40E+01	61.99			6.40E+01	6.20E+01
	24	1332.24	1.07E+04	218.40			1.07E+04	2.18E+02
	25	1589.13	2.44E+01	16.85			2.44E+01	1.69E+01
	26	1654.63	1.04E+01	13.64			1.04E+01	1.36E+01
	27	1665.07	1.21E+01	13.48			1.21E+01	1.35E+01
	28	1712.90	1.74E+01	18.63			1.74E+01	1.86E+01
	29	1803.16	2.82E+01	20.71			2.82E+01	2.07E+01
M	30	1836.15	2.59E+01	20.04			2.59E+01	2.00E+01
m	31	1853.45	1.99E+01	17.13			1.99E+01	1.71E+01
	32	1885.88	2.99E+01	27.74			2.99E+01	2.77E+01
	33	2370.73	4.58E+00	5.74			4.58E+00	5.74E+00
	34	2505.05	7.80E+01	17.66			7.80E+01	1.77E+01
	35	2614.32	1.10E+01	6.63			1.10E+01	6.63E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Analysis Report for 1707092-01

GAS-1402

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CO-57	0.921	122.06	*	85.51	7.23E+01	7.78E+00
		136.48	*	10.60	7.97E+01	3.56E+01
CO-60	0.990	1173.22	*	100.00	1.26E+02	1.07E+01
		1332.49	*	100.00	1.24E+02	1.11E+01
Y-88	0.593	898.02	*	93.40	1.05E+03	8.19E+02
		1836.01	*	99.38	2.70E+02	2.10E+02
CD-109	0.969	88.03	*	3.72	3.03E+03	3.37E+02
SN-126	0.988	87.57	*	37.00	6.27E+01	5.89E+00
CS-137	0.998	661.65	*	85.12	7.99E+01	9.97E+00
CE-139	0.743	165.85	*	80.35	1.40E+02	6.80E+01
AM-241	0.997	59.54	*	35.90	2.39E+02	1.81E+01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 3:02:11PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	22.62	3.75594E+01	0.65		
	2	31.97	8.37041E-01	7.98		
M	3	52.03	8.14307E+00	2.74		
	5	69.20	7.69810E-01	18.15		
	7	103.29	1.43195E-01	39.42	Tol.	GD-153
	10	156.36	1.15786E-01	45.66		
	12	178.04	7.37546E-02	60.42		
	13	190.51	5.96314E-01	22.47		
	14	222.65	1.26937E-01	47.62		
	15	252.35	1.51984E-01	31.15		
	16	509.67	8.30158E-02	52.26		
	17	565.04	6.94665E-02	48.48		
	20	1112.50	6.01175E-02	50.10	Tol.	EU-152
	22	1208.96	3.50798E-02	55.34		
	23	1219.84	3.55465E-02	48.44		
	25	1589.13	1.35470E-02	34.56		
	26	1654.63	5.76389E-03	65.73		
	27	1665.07	6.74769E-03	55.50		

Analysis Report for 1707092-01

GAS-1402

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	28	1712.90	9.64052E-03	53.69		
	29	1803.16	1.56763E-02	36.70		
m	31	1853.45	1.10359E-02	43.12		
	32	1885.88	1.66082E-02	46.40		
	33	2370.73	2.54630E-03	62.67		
	34	2505.05	4.33333E-02	11.32	Sum	
	35	2614.32	6.11111E-03	30.15	Tol.	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CO-57	0.92	122.06	*	85.51	7.23E+01	7.78E+00
		136.48	*	10.60	7.97E+01	3.56E+01
CO-60	0.99	1173.22	*	100.00	1.26E+02	1.07E+01
		1332.49	*	100.00	1.24E+02	1.11E+01
Y-88	0.59	898.02	*	93.40	1.05E+03	8.19E+02
		1836.01	*	99.38	2.70E+02	2.10E+02
CD-109	0.96	88.03	*	3.72	3.03E+03	3.37E+02
SN-126	0.98	87.57	*	37.00	6.27E+01	5.89E+00
CS-137	0.99	661.65	*	85.12	7.99E+01	9.97E+00
CE-139	0.74	165.85	*	80.35	1.40E+02	6.80E+01
AM-241	0.99	59.54	*	35.90	2.39E+02	1.81E+01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

Analysis Report for 1707092-01

GAS-1402

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	CO-57	0.921	7.26E+01	7.61E+00	
	CO-60	0.990	1.25E+02	7.72E+00	
	Y-88	0.593	3.18E+02	2.03E+02	
?	CD-109	0.969	3.03E+03	3.37E+02	
?	SN-126	0.988	6.27E+01	5.89E+00	
	CS-137	0.998	7.99E+01	9.97E+00	
	CE-139	0.743	1.40E+02	6.80E+01	
	AM-241	0.997	2.39E+02	1.81E+01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-01

GAS-1402

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 3:02:11PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	22.62	3.75594E+01	0.65		
	2	31.97	8.37041E-01	7.98		
M	3	52.03	8.14307E+00	2.74		
	5	69.20	7.69810E-01	18.15		
	7	103.29	1.43195E-01	39.42	Tol.	GD-153
	10	156.36	1.15786E-01	45.66		
	12	178.04	7.37546E-02	60.42		
	13	190.51	5.96314E-01	22.47		
	14	222.65	1.26937E-01	47.62		
	15	252.35	1.51984E-01	31.15		
	16	509.67	8.30158E-02	52.26		
	17	565.04	6.94665E-02	48.48		
	20	1112.50	6.01175E-02	50.10	Tol.	EU-152
	22	1208.96	3.50798E-02	55.34		
	23	1219.84	3.55465E-02	48.44		
	25	1589.13	1.35470E-02	34.56		
	26	1654.63	5.76389E-03	65.73		
	27	1665.07	6.74769E-03	55.50		
	28	1712.90	9.64052E-03	53.69		
	29	1803.16	1.56763E-02	36.70		
m	31	1853.45	1.10359E-02	43.12		
	32	1885.88	1.66082E-02	46.40		
	33	2370.73	2.54630E-03	62.67		
	34	2505.05	4.33333E-02	11.32	Sum	
	35	2614.32	6.11111E-03	30.15	Tol.	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-01

GAS-1402

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		BE-7	477.59		10.42	2.08E+06	5.98E+06	5.98E+06
+		NA-22	1274.54		99.94	1.05E-02	1.09E+00	1.09E+00
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	0.00E+00		1.00E+26
+		AL-26	1808.65		99.76	-1.22E-02	2.77E-01	2.77E-01
+		K-40	1460.81		10.67	9.45E-01	3.06E+00	3.06E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	9.80E-01	4.31E-01	4.64E-01
			78.34		96.00	5.89E-02		4.31E-01
+		SC-46	889.25		99.98	-4.24E+03	6.84E+03	6.92E+03
			1120.51		99.99	-1.24E+03		6.84E+03
+	@	V-48	983.52		99.98	1.00E+26	1.00E+26	1.00E+26
	@		1312.10		97.50	1.00E+26		1.00E+26
+		CR-51	320.08		9.83	-4.51E+11	1.55E+12	1.55E+12
+		MN-54	834.83		99.97	-2.36E+00	1.03E+01	1.03E+01
+		CO-56	846.75		99.96	-5.74E+02	9.64E+03	1.13E+04
			1037.75		14.03	3.63E+04		9.17E+04
			1238.25		67.00	2.88E+03		9.92E+03
			1771.40		15.51	-7.49E+03		1.87E+04
			2598.48		16.90	2.08E+03		9.64E+03
+		CO-57	122.06	*	85.51	7.23E+01	8.40E+00	8.40E+00
			136.48	*	10.60	7.97E+01		5.68E+01
+		CO-58	810.76		99.40	2.33E+02	2.99E+04	2.99E+04
+		FE-59	1099.22		56.50	-1.23E+07	1.63E+07	2.94E+07
			1291.56		43.20	-1.12E+06		1.63E+07
+		CO-60	1173.22	*	100.00	1.26E+02	1.35E+00	2.43E+00
			1332.49	*	100.00	1.24E+02		1.35E+00
+		ZN-65	1115.52		50.75	4.39E+00	4.69E+01	4.69E+01
+	@	GA-67	93.31		35.70	1.00E+26	1.00E+26	1.00E+26
	@		208.95		2.24	1.00E+26		1.00E+26
	@		300.22		16.00	1.00E+26		1.00E+26
+		SE-75	121.11		16.70	1.14E+04	2.51E+02	1.14E+03
			136.00		59.20	3.49E+02		2.51E+02
			264.65		59.80	5.63E+01		3.37E+02
			279.53		25.20	2.51E+02		8.21E+02
			400.65		11.40	7.86E+02		2.37E+03
+		RB-82	776.52		13.00	2.63E+12	2.03E+13	2.03E+13
+		RB-83	520.41		46.00	-2.28E+03	6.77E+03	6.77E+03
			529.64		30.30	9.82E+02		1.05E+04
			552.65		16.40	6.08E+03		1.89E+04
+		KR-85	513.99		0.43	6.87E+00	1.81E+02	1.81E+02
+		SR-85	513.99		99.27	2.04E+03	5.38E+04	5.38E+04

Analysis Report for 1707092-01

GAS-1402

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	*	93.40	1.05E+03	6.54E+02	1.33E+03
		1836.01	*	99.38	2.70E+02		6.54E+02
+	MO-93	263.06		56.72	6.31E-02	3.33E-01	9.30E-01
		684.67		99.68	-1.59E-01		9.34E-01
		1477.11		99.08	-2.35E-01		3.33E-01
+	NB-93M	16.57		9.43	-8.62E+03	8.50E+01	8.50E+01
+	NB-94	702.63		100.00	-1.58E-01	8.01E-01	8.01E-01
		871.10		100.00	3.48E-01		1.08E+00
+	NB-95	765.79		99.81	-6.01E+08	1.03E+09	1.03E+09
+	@ NB-95M	235.69		25.00	1.00E+26	1.00E+26	1.00E+26
+	ZR-95	724.18		43.70	8.26E+04	1.45E+05	1.80E+05
		756.72		55.30	-6.24E+03		1.45E+05
+	@ MO-99	181.06		6.20	1.00E+26	1.00E+26	1.00E+26
	@	739.58		12.80	1.00E+26		1.00E+26
	@	778.00		4.50	1.00E+26		1.00E+26
+	RU-103	497.08		89.00	3.16E+07	8.95E+07	8.95E+07
+	RU-106	621.84		9.80	1.41E+01	5.02E+01	5.02E+01
+	AG-108M	433.93		89.90	-2.41E-01	7.27E-01	7.27E-01
		614.37		90.40	-6.42E-02		7.43E-01
		722.95		90.50	5.51E-02		9.22E-01
+	CD-109	88.03	*	3.72	3.03E+03	9.41E+01	9.41E+01
+	AG-110M	657.75		93.14	1.26E-02	2.54E+01	4.56E+01
		677.61		10.53	3.45E+01		1.38E+02
		706.67		16.46	4.18E+01		9.23E+01
		763.93		21.98	-2.29E+01		7.23E+01
		884.67		71.63	-1.54E+01		2.87E+01
		1384.27		23.94	-1.25E+01		2.54E+01
+	CD-113M	263.70		0.02	1.85E+03	2.22E+03	2.22E+03
+	SN-113	255.12		1.93	2.48E+03	5.20E+02	1.35E+04
		391.69		64.90	1.57E+02		5.20E+02
+	TE123M	159.00		84.10	-2.39E+01	1.78E+02	1.78E+02
+	SB-124	602.71		97.87	-1.30E+04	1.20E+05	1.32E+05
		645.85		7.26	5.53E+05		1.85E+06
		722.78		11.10	8.65E+04		1.45E+06
		1691.02		49.00	-6.77E+04		1.20E+05
+	I-125	35.49		6.49	4.62E+05	2.25E+06	2.25E+06
+	SB-125	176.33		6.89	-9.51E-01	4.49E+00	1.04E+01
		427.89		29.33	1.22E+00		4.49E+00
		463.38		10.35	2.84E+00		1.43E+01
		600.56		17.80	1.68E+00		7.62E+00
		635.90		11.32	8.71E+00		1.29E+01
+	@ SB-126	414.70		83.30	1.00E+26	1.00E+26	1.00E+26
	@	666.33		99.60	1.00E+26		1.00E+26
	@	695.00		99.60	1.00E+26		1.00E+26
	@	720.50		53.80	1.00E+26		1.00E+26
+	SN-126	87.57	*	37.00	6.27E+01	1.95E+00	1.95E+00
+	@ SB-127	473.00		25.00	1.00E+26	1.00E+26	1.00E+26
	@	685.20		35.70	1.00E+26		1.00E+26

Analysis Report for 1707092-01

GAS-1402

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	@	SB-127	783.80		14.70	1.00E+26	1.00E+26	1.00E+26
+		I-129	29.78		57.00	-2.17E+01	1.99E+00	1.99E+00
			33.60		13.20	2.49E+00		6.49E+00
			39.58		7.52	-2.25E+01		8.64E+00
+	@	I-131	284.30		6.05	1.00E+26	1.00E+26	1.00E+26
	@		364.48		81.20	1.00E+26		1.00E+26
	@		636.97		7.26	1.00E+26		1.00E+26
	@		722.89		1.80	1.00E+26		1.00E+26
+	@	TE-132	49.72		13.10	1.00E+26	1.00E+26	1.00E+26
	@		228.16		88.00	1.00E+26		1.00E+26
+		BA-133	81.00		33.00	-5.19E-02	1.06E+00	1.46E+00
			302.84		17.80	1.39E+00		3.22E+00
			356.01		60.00	-5.70E-01		1.06E+00
+	@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	@	XE-133	81.00		38.00	1.00E+26	1.00E+26	1.00E+26
+		CS-134	563.23		8.38	-2.16E+00	1.80E+00	1.98E+01
			569.32		15.43	4.34E-01		1.10E+01
			604.70		97.60	-8.07E-01		1.80E+00
			795.84		85.40	7.18E-01		2.86E+00
			801.93		8.73	7.82E+00		2.81E+01
+		CS-135	268.24		16.00	-3.05E-01	2.79E+00	2.79E+00
+	@	I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@		1260.41		28.60	1.00E+26		1.00E+26
	@		1678.03		9.54	1.00E+26		1.00E+26
+	@	CS-136	153.22		7.46	1.00E+26	1.00E+26	1.00E+26
	@		163.89		4.61	1.00E+26		1.00E+26
	@		176.55		13.56	1.00E+26		1.00E+26
	@		273.65		12.66	1.00E+26		1.00E+26
	@		340.57		48.50	1.00E+26		1.00E+26
	@		818.50		99.70	1.00E+26		1.00E+26
	@		1048.07		79.60	1.00E+26		1.00E+26
	@		1235.34		19.70	1.00E+26		1.00E+26
+		CS-137	661.65	*	85.12	7.99E+01	1.61E+00	1.61E+00
+		LA-138	788.74		34.00	-6.73E-02	4.19E-01	2.68E+00
			1435.80		66.00	-6.55E-02		4.19E-01
+		CE-139	165.85	*	80.35	1.40E+02	1.09E+02	1.09E+02
+	@	BA-140	162.64		6.70	1.00E+26	1.00E+26	1.00E+26
	@		304.84		4.50	1.00E+26		1.00E+26
	@		423.70		3.20	1.00E+26		1.00E+26
	@		437.55		2.00	1.00E+26		1.00E+26
	@		537.32		25.00	1.00E+26		1.00E+26
+	@	LA-140	328.77		20.50	1.00E+26	1.00E+26	1.00E+26
	@		487.03		45.50	1.00E+26		1.00E+26
	@		815.85		23.50	1.00E+26		1.00E+26
	@		1596.49		95.49	1.00E+26		1.00E+26
+		CE-141	145.44		48.40	-1.58E+09	4.11E+09	4.11E+09
+	@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26
	@		293.26		42.00	1.00E+26		1.00E+26

Analysis Report for 1707092-01

GAS-1402

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	CE-143	664.55	5.20	1.00E+26	1.00E+26	1.00E+26
+	CE-144	133.54	10.80	3.41E+00	3.95E+01	3.95E+01
+	PM-144	476.78	42.00	1.23E+01	5.00E+00	1.24E+01
		618.01	98.60	-1.90E+00		5.00E+00
		696.49	99.49	2.59E+00		6.06E+00
+	PM-145	36.85	21.70	-3.06E+00	1.86E+00	3.48E+00
		37.36	39.70	-1.64E+00		1.86E+00
		42.30	15.10	-8.98E+00		4.68E+00
		72.40	2.31	-5.52E+00		2.02E+01
+	PM-146	453.90	39.94	-5.31E-01	2.49E+00	2.49E+00
		735.90	14.01	7.13E+00		8.48E+00
		747.13	13.10	6.66E+00		9.35E+00
+ @	ND-147	91.11	28.90	1.00E+26	1.00E+26	1.00E+26
@		531.02	13.10	1.00E+26		1.00E+26
+ @	PM-149	285.90	3.10	1.00E+26	1.00E+26	1.00E+26
+	EU-152	121.78	20.50	2.33E+01	2.36E+00	2.36E+00
		244.69	5.40	6.44E+00		9.49E+00
		344.27	19.13	-1.28E+00		3.11E+00
		778.89	9.20	-3.66E+00		1.13E+01
		964.01	10.40	-4.45E+00		1.39E+01
		1085.78	7.22	-4.50E+00		1.88E+01
		1112.02	9.60	1.20E+00		1.47E+01
		1407.95	14.94	-5.94E-01		2.41E+00
+	GD-153	97.43	31.30	-9.22E+00	1.90E+01	1.90E+01
		103.18	22.20	5.12E+00		2.71E+01
+	EU-154	123.07	40.50	1.28E+01	1.30E+00	1.30E+00
		723.30	19.70	2.43E+00		5.28E+00
		873.19	11.50	-4.99E+00		1.18E+01
		996.32	10.30	6.62E+00		1.42E+01
		1004.76	17.90	-7.21E+00		8.04E+00
		1274.45	35.50	1.72E-02		1.79E+00
+	EU-155	86.50	30.90	1.10E+02	2.10E+00	3.59E+00
		105.30	20.70	-1.43E-01		2.10E+00
+ @	EU-156	811.77	10.40	1.00E+26	1.00E+26	1.00E+26
@		1153.47	7.20	1.00E+26		1.00E+26
@		1230.71	8.90	1.00E+26		1.00E+26
+	HO-166M	184.41	72.60	9.15E-02	5.10E-01	5.10E-01
		280.45	29.60	6.34E-03		1.53E+00
		410.94	11.10	-3.56E-01		5.43E+00
		711.69	54.10	-6.11E-01		1.46E+00
+	TM-171	66.72	0.14	-5.90E+02	8.56E+02	8.56E+02
+	HF-172	67.35	5.31	-1.59E+01	8.89E+00	2.31E+01
		125.81	11.30	-1.79E+00		8.89E+00
+ @	LU-172	181.53	20.60	1.00E+26	1.00E+26	1.00E+26
@		900.72	29.81	1.00E+26		1.00E+26
@		1093.66	62.50	1.00E+26		1.00E+26
+	LU-173	100.72	5.24	1.66E-01	9.16E+00	2.39E+01
		272.11	21.20	4.19E+00		9.16E+00
+	HF-175	343.40	84.00	-8.92E+03	2.17E+04	2.17E+04

Analysis Report for 1707092-01

GAS-1402

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-176	88.34	13.30	1.67E+02	4.57E-01	5.50E+00
		201.83	86.00	6.35E-03		4.57E-01
		306.78	94.00	-1.77E-01		5.02E-01
+	HF-181	133.02	41.70	3.24E+06	2.49E+07	2.49E+07
		345.85	17.20	-2.19E+06		9.79E+07
		482.03	82.80	-2.20E+07		2.56E+07
+	TA-182	67.75	41.20	1.32E+03	6.27E+02	6.27E+02
		1121.30	34.90	-4.58E+02		1.86E+03
		1189.05	16.23	9.59E+02		2.89E+03
		1221.41	26.98	3.55E+01		1.47E+03
		1231.02	11.44	4.32E+02		3.32E+03
+	IR-192	308.46	29.68	3.58E+03	3.00E+04	3.23E+04
		468.07	48.10	1.24E+04		3.00E+04
+	HG-203	279.19	77.30	3.79E+05	4.00E+06	4.00E+06
+	TL-204	374.74	94.11	6.42E-01	1.02E+00	1.02E+00
		899.15	99.16	-2.75E-01		1.99E+00
		911.74	91.10	-7.74E-01		2.19E+00
+	BI-207	569.67	97.72	2.75E-02	6.96E-01	6.96E-01
		1063.62	74.90	1.16E-02		1.65E+00
+	TL-208	583.14	30.22	-1.02E+00	8.07E-01	2.13E+00
		860.37	4.48	6.46E+00		2.34E+01
		2614.66	35.85	4.89E-01		8.07E-01
+	BI-210M	262.00	45.00	-8.84E-01	9.67E-01	9.67E-01
		300.00	23.00	-9.42E-02		2.05E+00
+	PB-210	46.50	4.25	2.07E+00	2.02E+01	2.02E+01
+	PB-211	404.84	2.90	-9.74E+00	2.03E+01	2.03E+01
		831.96	2.90	-1.31E+01		3.37E+01
+	BI-212	727.17	11.80	-2.76E+00	6.89E+00	6.89E+00
		1620.62	2.75	-1.16E+00		1.02E+01
+	PB-212	238.63	44.60	4.24E-01	9.97E-01	9.97E-01
		300.09	3.41	-6.36E-01		1.38E+01
+	BI-214	609.31	46.30	6.96E-01	1.48E+00	1.48E+00
		1120.29	15.10	-1.31E+00		7.18E+00
		1764.49	15.80	6.47E-01		1.77E+00
		2204.22	4.98	1.06E+00		6.49E+00
+	PB-214	295.21	19.19	-1.12E-01	1.42E+00	2.44E+00
		351.92	37.19	1.31E-01		1.42E+00
+	RN-219	401.80	6.50	-9.98E-01	9.08E+00	9.08E+00
+	RA-223	323.87	3.88	-4.99E+00	1.26E+01	1.26E+01
+	RA-224	240.98	3.95	7.05E+00	1.14E+01	1.14E+01
+	@ RA-225	40.00	31.00	1.00E+26	1.00E+26	1.00E+26
+	RA-226	186.21	3.28	4.34E+00	1.15E+01	1.15E+01
+	TH-227	50.10	8.40	5.59E+01	3.81E+00	1.00E+01
		236.00	11.50	3.66E-01		3.81E+00
		256.20	6.30	-1.62E-01		6.99E+00
+	AC-228	338.32	11.40	8.72E-01	4.25E+00	4.54E+00
		911.07	27.70	-1.60E+00		4.25E+00
		969.11	16.60	-6.52E+00		7.07E+00

Analysis Report for 1707092-01

GAS-1402

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		TH-230	48.44		16.90	1.44E+01	4.71E+00	4.71E+00
			62.85		4.60	4.31E+02		2.08E+01
			67.67		0.37	2.43E+02		1.15E+02
+		PA-231	283.67		1.60	1.17E+01	2.05E+01	2.87E+01
			302.67		2.30	8.90E+00		2.05E+01
+		TH-231	25.64		14.70	-1.19E+02	8.12E+00	2.77E+01
			84.21		6.40	-2.24E+02		8.12E+00
+		PA-233	311.98		38.60	5.16E+11	7.93E+11	7.93E+11
+		PA-234	131.20		20.40	-2.93E-01	1.50E+00	1.50E+00
			733.99		8.80	-1.13E+00		9.29E+00
			946.00		12.00	-1.74E+00		1.07E+01
+		PA-234M	1001.03		0.92	4.84E+01	1.27E+02	1.27E+02
+		TH-234	63.29		3.80	5.20E+02	2.50E+01	2.50E+01
+		U-235	143.76		10.50	1.56E+00	3.00E+00	3.00E+00
			163.35		4.70	-9.52E-01		7.20E+00
			205.31		4.70	-3.28E+00		8.48E+00
+		NP-237	86.50		12.60	1.80E+02	5.88E+00	5.88E+00
+	@	NP-239	106.10		22.70	1.00E+26	1.00E+26	1.00E+26
	@		228.18		10.70	1.00E+26		1.00E+26
	@		277.60		14.10	1.00E+26		1.00E+26
+		AM-241	59.54	*	35.90	2.39E+02	3.40E+00	3.40E+00
+		AM-243	74.67		66.00	9.60E-02	6.22E-01	6.22E-01
+		CM-243	209.75		3.29	5.63E+00	3.43E+00	1.36E+01
			228.14		10.60	1.74E+00		4.43E+00
			277.60		14.00	-1.29E+00		3.43E+00

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Analysis Report for 1707092-01

GAS-1402

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	5.98E+06	5.98E+06	2.08E+06	2.95E+06
	NA-22	1274.54		99.94	1.09E+00	1.09E+00	1.05E-02	5.25E-01
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		0.00E+00	1.00E+20
	AL-26	1808.65		99.76	2.77E-01	2.77E-01	-1.22E-02	1.24E-01
	K-40	1460.81		10.67	3.06E+00	3.06E+00	9.45E-01	1.42E+00
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	4.64E-01	4.31E-01	9.80E-01	2.31E-01
		78.34		96.00	4.31E-01		5.89E-02	2.14E-01
	SC-46	889.25		99.98	6.92E+03	6.84E+03	-4.24E+03	3.41E+03
		1120.51		99.99	6.84E+03		-1.24E+03	3.36E+03
@	V-48	983.52		99.98	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1312.10		97.50	1.00E+26		1.00E+26	1.00E+20
	CR-51	320.08		9.83	1.55E+12	1.55E+12	-4.51E+11	7.66E+11
	MN-54	834.83		99.97	1.03E+01	1.03E+01	-2.36E+00	5.06E+00
	CO-56	846.75		99.96	1.13E+04	9.64E+03	-5.74E+02	5.57E+03
		1037.75		14.03	9.17E+04		3.63E+04	4.52E+04
		1238.25		67.00	9.92E+03		2.88E+03	4.79E+03
		1771.40		15.51	1.87E+04		-7.49E+03	8.35E+03
		2598.48		16.90	9.64E+03		2.08E+03	3.41E+03
+	CO-57	122.06	*	85.51	8.40E+00	8.40E+00	7.23E+01	4.18E+00
		136.48	*	10.60	5.68E+01		7.97E+01	2.82E+01
	CO-58	810.76		99.40	2.99E+04	2.99E+04	2.33E+02	1.47E+04
	FE-59	1099.22		56.50	2.94E+07	1.63E+07	-1.23E+07	1.45E+07
		1291.56		43.20	1.63E+07		-1.12E+06	7.80E+06
+	CO-60	1173.22	*	100.00	2.43E+00	1.35E+00	1.26E+02	1.20E+00
		1332.49	*	100.00	1.35E+00		1.24E+02	6.62E-01
	ZN-65	1115.52		50.75	4.69E+01	4.69E+01	4.39E+00	2.31E+01
@	GA-67	93.31		35.70	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		208.95		2.24	1.00E+26		1.00E+26	1.00E+20
@		300.22		16.00	1.00E+26		1.00E+26	1.00E+20
	SE-75	121.11		16.70	1.14E+03	2.51E+02	1.14E+04	5.69E+02
		136.00		59.20	2.51E+02		3.49E+02	1.25E+02
		264.65		59.80	3.37E+02		5.63E+01	1.67E+02
		279.53		25.20	8.21E+02		2.51E+02	4.06E+02
		400.65		11.40	2.37E+03		7.86E+02	1.17E+03
	RB-82	776.52		13.00	2.03E+13	2.03E+13	2.63E+12	1.00E+13
	RB-83	520.41		46.00	6.77E+03	6.77E+03	-2.28E+03	3.34E+03
		529.64		30.30	1.05E+04		9.82E+02	5.19E+03
		552.65		16.40	1.89E+04		6.08E+03	9.32E+03
	KR-85	513.99		0.43	1.81E+02	1.81E+02	6.87E+00	8.94E+01
	SR-85	513.99		99.27	5.38E+04	5.38E+04	2.04E+03	2.66E+04
+	Y-88	898.02	*	93.40	1.33E+03	6.54E+02	1.05E+03	6.57E+02
		1836.01	*	99.38	6.54E+02		2.70E+02	3.13E+02
	MO-93	263.06		56.72	9.30E-01	3.33E-01	6.31E-02	4.60E-01
		684.67		99.68	9.34E-01		-1.59E-01	4.60E-01
		1477.11		99.08	3.33E-01		-2.35E-01	1.52E-01
	NB-93M	16.57		9.43	8.50E+01	8.50E+01	-8.62E+03	4.23E+01
	NB-94	702.63		100.00	8.01E-01	8.01E-01	-1.58E-01	3.94E-01
		871.10		100.00	1.08E+00		3.48E-01	5.31E-01
	NB-95	765.79		99.81	1.03E+09	1.03E+09	-6.01E+08	5.09E+08
@	NB-95M	235.69		25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	ZR-95	724.18		43.70	1.80E+05	1.45E+05	8.26E+04	8.84E+04

Analysis Report for 1707092-01

GAS-1402

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	ZR-95	756.72		55.30	1.45E+05	1.45E+05	-6.24E+03	7.12E+04
@	MO-99	181.06		6.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		739.58		12.80	1.00E+26		1.00E+26	1.00E+20
@		778.00		4.50	1.00E+26		1.00E+26	1.00E+20
	RU-103	497.08		89.00	8.95E+07	8.95E+07	3.16E+07	4.42E+07
	RU-106	621.84		9.80	5.02E+01	5.02E+01	1.41E+01	2.47E+01
	AG-108M	433.93		89.90	7.27E-01	7.27E-01	-2.41E-01	3.59E-01
		614.37		90.40	7.43E-01		-6.42E-02	3.65E-01
		722.95		90.50	9.22E-01		5.51E-02	4.54E-01
+	CD-109	88.03	*	3.72	9.41E+01	9.41E+01	3.03E+03	4.69E+01
	AG-110M	657.75		93.14	4.56E+01	2.54E+01	1.26E-02	2.27E+01
		677.61		10.53	1.38E+02		3.45E+01	6.78E+01
		706.67		16.46	9.23E+01		4.18E+01	4.55E+01
		763.93		21.98	7.23E+01		-2.29E+01	3.56E+01
		884.67		71.63	2.87E+01		-1.54E+01	1.41E+01
		1384.27		23.94	2.54E+01		-1.25E+01	1.18E+01
	CD-113M	263.70		0.02	2.22E+03	2.22E+03	1.85E+03	1.10E+03
	SN-113	255.12		1.93	1.35E+04	5.20E+02	2.48E+03	6.66E+03
		391.69		64.90	5.20E+02		1.57E+02	2.57E+02
	TE123M	159.00		84.10	1.78E+02	1.78E+02	-2.39E+01	8.81E+01
	SB-124	602.71		97.87	1.32E+05	1.20E+05	-1.30E+04	6.51E+04
		645.85		7.26	1.85E+06		5.53E+05	9.11E+05
		722.78		11.10	1.45E+06		8.65E+04	7.14E+05
		1691.02		49.00	1.20E+05		-6.77E+04	5.47E+04
	I-125	35.49		6.49	2.25E+06	2.25E+06	4.62E+05	1.12E+06
	SB-125	176.33		6.89	1.04E+01	4.49E+00	-9.51E-01	5.16E+00
		427.89		29.33	4.49E+00		1.22E+00	2.22E+00
		463.38		10.35	1.43E+01		2.84E+00	7.05E+00
		600.56		17.80	7.62E+00		1.68E+00	3.75E+00
		635.90		11.32	1.29E+01		8.71E+00	6.33E+00
@	SB-126	414.70		83.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		666.33		99.60	1.00E+26		1.00E+26	1.00E+20
@		695.00		99.60	1.00E+26		1.00E+26	1.00E+20
@		720.50		53.80	1.00E+26		1.00E+26	1.00E+20
+	SN-126	87.57	*	37.00	1.95E+00	1.95E+00	6.27E+01	9.70E-01
@	SB-127	473.00		25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		685.20		35.70	1.00E+26		1.00E+26	1.00E+20
@		783.80		14.70	1.00E+26		1.00E+26	1.00E+20
	I-129	29.78		57.00	1.99E+00	1.99E+00	-2.17E+01	9.89E-01
		33.60		13.20	6.49E+00		2.49E+00	3.23E+00
		39.58		7.52	8.64E+00		-2.25E+01	4.29E+00
@	I-131	284.30		6.05	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		364.48		81.20	1.00E+26		1.00E+26	1.00E+20
@		636.97		7.26	1.00E+26		1.00E+26	1.00E+20
@		722.89		1.80	1.00E+26		1.00E+26	1.00E+20
@	TE-132	49.72		13.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		228.16		88.00	1.00E+26		1.00E+26	1.00E+20
	BA-133	81.00		33.00	1.46E+00	1.06E+00	-5.19E-02	7.25E-01
		302.84		17.80	3.22E+00		1.39E+00	1.59E+00
		356.01		60.00	1.06E+00		-5.70E-01	5.22E-01
@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	XE-133	81.00		38.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CS-134	563.23		8.38	1.98E+01	1.80E+00	-2.16E+00	9.76E+00

Analysis Report for 1707092-01

GAS-1402

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	CS-134	569.32		15.43	1.10E+01	1.80E+00	4.34E-01	5.41E+00
		604.70		97.60	1.80E+00		-8.07E-01	8.87E-01
		795.84		85.40	2.86E+00		7.18E-01	1.41E+00
		801.93		8.73	2.81E+01		7.82E+00	1.38E+01
	CS-135	268.24		16.00	2.79E+00	2.79E+00	-3.05E-01	1.38E+00
@	I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1260.41		28.60	1.00E+26		1.00E+26	1.00E+20
@		1678.03		9.54	1.00E+26		1.00E+26	1.00E+20
@	CS-136	153.22		7.46	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		163.89		4.61	1.00E+26		1.00E+26	1.00E+20
@		176.55		13.56	1.00E+26		1.00E+26	1.00E+20
@		273.65		12.66	1.00E+26		1.00E+26	1.00E+20
@		340.57		48.50	1.00E+26		1.00E+26	1.00E+20
@		818.50		99.70	1.00E+26		1.00E+26	1.00E+20
@		1048.07		79.60	1.00E+26		1.00E+26	1.00E+20
@		1235.34		19.70	1.00E+26		1.00E+26	1.00E+20
+	CS-137	661.65	*	85.12	1.61E+00	1.61E+00	7.99E+01	7.96E-01
	LA-138	788.74		34.00	2.68E+00	4.19E-01	-6.73E-02	1.32E+00
		1435.80		66.00	4.19E-01		-6.55E-02	1.92E-01
+	CE-139	165.85	*	80.35	1.09E+02	1.09E+02	1.40E+02	5.42E+01
@	BA-140	162.64		6.70	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		304.84		4.50	1.00E+26		1.00E+26	1.00E+20
@		423.70		3.20	1.00E+26		1.00E+26	1.00E+20
@		437.55		2.00	1.00E+26		1.00E+26	1.00E+20
@		537.32		25.00	1.00E+26		1.00E+26	1.00E+20
@	LA-140	328.77		20.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		487.03		45.50	1.00E+26		1.00E+26	1.00E+20
@		815.85		23.50	1.00E+26		1.00E+26	1.00E+20
@		1596.49		95.49	1.00E+26		1.00E+26	1.00E+20
	CE-141	145.44		48.40	4.11E+09	4.11E+09	-1.58E+09	2.04E+09
@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		293.26		42.00	1.00E+26		1.00E+26	1.00E+20
@		664.55		5.20	1.00E+26		1.00E+26	1.00E+20
	CE-144	133.54		10.80	3.95E+01	3.95E+01	3.41E+00	1.96E+01
	PM-144	476.78		42.00	1.24E+01	5.00E+00	1.23E+01	6.13E+00
		618.01		98.60	5.00E+00		-1.90E+00	2.46E+00
		696.49		99.49	6.06E+00		2.59E+00	2.99E+00
	PM-145	36.85		21.70	3.48E+00	1.86E+00	-3.06E+00	1.73E+00
		37.36		39.70	1.86E+00		-1.64E+00	9.23E-01
		42.30		15.10	4.68E+00		-8.98E+00	2.33E+00
		72.40		2.31	2.02E+01		-5.52E+00	1.00E+01
	PM-146	453.90		39.94	2.49E+00	2.49E+00	-5.31E-01	1.23E+00
		735.90		14.01	8.48E+00		7.13E+00	4.17E+00
		747.13		13.10	9.35E+00		6.66E+00	4.60E+00
@	ND-147	91.11		28.90	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		531.02		13.10	1.00E+26		1.00E+26	1.00E+20
@	PM-149	285.90		3.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	EU-152	121.78		20.50	2.36E+00	2.36E+00	2.33E+01	1.18E+00
		244.69		5.40	9.49E+00		6.44E+00	4.70E+00
		344.27		19.13	3.11E+00		-1.28E+00	1.54E+00
		778.89		9.20	1.13E+01		-3.66E+00	5.55E+00
		964.01		10.40	1.39E+01		-4.45E+00	6.86E+00
		1085.78		7.22	1.88E+01		-4.50E+00	9.27E+00

Analysis Report for 1707092-01

GAS-1402

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	1112.02	9.60	1.47E+01	2.36E+00	1.20E+00	7.25E+00
	1407.95	14.94	2.41E+00		-5.94E-01	1.12E+00
GD-153	97.43	31.30	1.90E+01	1.90E+01	-9.22E+00	9.40E+00
	103.18	22.20	2.71E+01		5.12E+00	1.34E+01
EU-154	123.07	40.50	1.30E+00	1.30E+00	1.28E+01	6.46E-01
	723.30	19.70	5.28E+00		2.43E+00	2.60E+00
	873.19	11.50	1.18E+01		-4.99E+00	5.82E+00
	996.32	10.30	1.42E+01		6.62E+00	6.98E+00
	1004.76	17.90	8.04E+00		-7.21E+00	3.96E+00
	1274.45	35.50	1.79E+00		1.72E-02	8.58E-01
EU-155	86.50	30.90	3.59E+00	2.10E+00	1.10E+02	1.79E+00
	105.30	20.70	2.10E+00		-1.43E-01	1.04E+00
@ EU-156	811.77	10.40	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1153.47	7.20	1.00E+26		1.00E+26	1.00E+20
@	1230.71	8.90	1.00E+26		1.00E+26	1.00E+20
HO-166M	184.41	72.60	5.10E-01	5.10E-01	9.15E-02	2.53E-01
	280.45	29.60	1.53E+00		6.34E-03	7.58E-01
	410.94	11.10	5.43E+00		-3.56E-01	2.68E+00
	711.69	54.10	1.46E+00		-6.11E-01	7.18E-01
TM-171	66.72	0.14	8.56E+02	8.56E+02	-5.90E+02	4.26E+02
HF-172	67.35	5.31	2.31E+01	8.89E+00	-1.59E+01	1.15E+01
	125.81	11.30	8.89E+00		-1.79E+00	4.41E+00
@ LU-172	181.53	20.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	900.72	29.81	1.00E+26		1.00E+26	1.00E+20
@	1093.66	62.50	1.00E+26		1.00E+26	1.00E+20
LU-173	100.72	5.24	2.39E+01	9.16E+00	1.66E-01	1.19E+01
	272.11	21.20	9.16E+00		4.19E+00	4.53E+00
HF-175	343.40	84.00	2.17E+04	2.17E+04	-8.92E+03	1.07E+04
LU-176	88.34	13.30	5.50E+00	4.57E-01	1.67E+02	2.74E+00
	201.83	86.00	4.57E-01		6.35E-03	2.26E-01
	306.78	94.00	5.02E-01		-1.77E-01	2.48E-01
HF-181	133.02	41.70	2.49E+07	2.49E+07	3.24E+06	1.24E+07
	345.85	17.20	9.79E+07		-2.19E+06	4.84E+07
	482.03	82.80	2.56E+07		-2.20E+07	1.26E+07
TA-182	67.75	41.20	6.27E+02	6.27E+02	1.32E+03	3.12E+02
	1121.30	34.90	1.86E+03		-4.58E+02	9.15E+02
	1189.05	16.23	2.89E+03		9.59E+02	1.41E+03
	1221.41	26.98	1.47E+03		3.55E+01	7.11E+02
	1231.02	11.44	3.32E+03		4.32E+02	1.61E+03
IR-192	308.46	29.68	3.23E+04	3.00E+04	3.58E+03	1.60E+04
	468.07	48.10	3.00E+04		1.24E+04	1.48E+04
HG-203	279.19	77.30	4.00E+06	4.00E+06	3.79E+05	1.98E+06
TL-204	374.74	94.11	1.02E+00	1.02E+00	6.42E-01	5.03E-01
	899.15	99.16	1.99E+00		-2.75E-01	9.84E-01
	911.74	91.10	2.19E+00		-7.74E-01	1.08E+00
BI-207	569.67	97.72	6.96E-01	6.96E-01	2.75E-02	3.43E-01
	1063.62	74.90	1.65E+00		1.16E-02	8.12E-01
TL-208	583.14	30.22	2.13E+00	8.07E-01	-1.02E+00	1.05E+00
	860.37	4.48	2.34E+01		6.46E+00	1.15E+01
	2614.66	35.85	8.07E-01		4.89E-01	3.43E-01
BI-210M	262.00	45.00	9.67E-01	9.67E-01	-8.84E-01	4.79E-01
	300.00	23.00	2.05E+00		-9.42E-02	1.01E+00
PB-210	46.50	4.25	2.02E+01	2.02E+01	2.07E+00	1.00E+01

Analysis Report for 1707092-01

GAS-1402

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PB-211	404.84		2.90	2.03E+01	2.03E+01	-9.74E+00	1.00E+01
		831.96		2.90	3.37E+01		-1.31E+01	1.66E+01
	BI-212	727.17		11.80	6.89E+00	6.89E+00	-2.76E+00	3.39E+00
		1620.62		2.75	1.02E+01		-1.16E+00	4.64E+00
	PB-212	238.63		44.60	9.97E-01	9.97E-01	4.24E-01	4.94E-01
		300.09		3.41	1.38E+01		-6.36E-01	6.83E+00
	BI-214	609.31		46.30	1.48E+00	1.48E+00	6.96E-01	7.28E-01
		1120.29		15.10	7.18E+00		-1.31E+00	3.53E+00
		1764.49		15.80	1.77E+00		6.47E-01	7.96E-01
		2204.22		4.98	6.49E+00		1.06E+00	2.89E+00
	PB-214	295.21		19.19	2.44E+00	1.42E+00	-1.12E-01	1.21E+00
		351.92		37.19	1.42E+00		1.31E-01	7.01E-01
	RN-219	401.80		6.50	9.08E+00	9.08E+00	-9.98E-01	4.49E+00
	RA-223	323.87		3.88	1.26E+01	1.26E+01	-4.99E+00	6.22E+00
	RA-224	240.98		3.95	1.14E+01	1.14E+01	7.05E+00	5.62E+00
@	RA-225	40.00		31.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	RA-226	186.21		3.28	1.15E+01	1.15E+01	4.34E+00	5.70E+00
	TH-227	50.10		8.40	1.00E+01	3.81E+00	5.59E+01	4.98E+00
		236.00		11.50	3.81E+00		3.66E-01	1.89E+00
		256.20		6.30	6.99E+00		-1.62E-01	3.46E+00
	AC-228	338.32		11.40	4.54E+00	4.25E+00	8.72E-01	2.24E+00
		911.07		27.70	4.25E+00		-1.60E+00	2.10E+00
		969.11		16.60	7.07E+00		-6.52E+00	3.49E+00
	TH-230	48.44		16.90	4.71E+00	4.71E+00	1.44E+01	2.34E+00
		62.85		4.60	2.08E+01		4.31E+02	1.04E+01
		67.67		0.37	1.15E+02		2.43E+02	5.71E+01
	PA-231	283.67		1.60	2.87E+01	2.05E+01	1.17E+01	1.42E+01
		302.67		2.30	2.05E+01		8.90E+00	1.02E+01
	TH-231	25.64		14.70	2.77E+01	8.12E+00	-1.19E+02	1.38E+01
		84.21		6.40	8.12E+00		-2.24E+02	4.04E+00
	PA-233	311.98		38.60	7.93E+11	7.93E+11	5.16E+11	3.92E+11
	PA-234	131.20		20.40	1.50E+00	1.50E+00	-2.93E-01	7.43E-01
		733.99		8.80	9.29E+00		-1.13E+00	4.58E+00
		946.00		12.00	1.07E+01		-1.74E+00	5.30E+00
	PA-234M	1001.03		0.92	1.27E+02	1.27E+02	4.84E+01	6.27E+01
	TH-234	63.29		3.80	2.50E+01	2.50E+01	5.20E+02	1.25E+01
	U-235	143.76		10.50	3.00E+00	3.00E+00	1.56E+00	1.49E+00
		163.35		4.70	7.20E+00		-9.52E-01	3.57E+00
		205.31		4.70	8.48E+00		-3.28E+00	4.20E+00
	NP-237	86.50		12.60	5.88E+00	5.88E+00	1.80E+02	2.93E+00
@	NP-239	106.10		22.70	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		228.18		10.70	1.00E+26		1.00E+26	1.00E+20
@		277.60		14.10	1.00E+26		1.00E+26	1.00E+20
+	AM-241	59.54	*	35.90	3.40E+00	3.40E+00	2.39E+02	1.70E+00
	AM-243	74.67		66.00	6.22E-01	6.22E-01	9.60E-02	3.09E-01
	CM-243	209.75		3.29	1.36E+01	3.43E+00	5.63E+00	6.72E+00
		228.14		10.60	4.43E+00		1.74E+00	2.20E+00
		277.60		14.00	3.43E+00		-1.29E+00	1.70E+00

Analysis Report for 1707092-01

GAS-1402

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: GAS-1402

Elapsed Live time: 1800
Elapsed Real Time: 1825

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	477	1953
17:	2020	1927	5587	22537	36888	22236	10943	11827
25:	6914	2039	882	723	822	1203	1592	1356
33:	897	871	1010	1097	990	1019	1021	1144
41:	1328	1478	1590	1668	1917	2278	3017	3749
49:	4037	4006	3858	3865	3856	4098	4354	4964
57:	11915	30415	29986	9860	1704	1076	1108	1234
65:	1358	1456	1548	1479	1357	1415	1430	1374
73:	1452	1485	1348	1458	1338	1337	1353	1319
81:	1322	1425	1506	1592	2301	7135	12217	7330
89:	1785	754	743	771	717	707	677	695
97:	730	709	674	691	733	751	730	692
105:	680	642	723	687	706	731	728	726
113:	754	732	749	675	741	769	912	1628
121:	2650	1856	883	686	706	688	639	663
129:	665	703	654	632	696	766	822	845
137:	682	654	653	645	655	625	632	637
145:	618	672	600	580	641	626	606	617
153:	615	660	638	635	636	548	587	566
161:	590	560	632	699	728	677	575	593
169:	529	577	576	564	561	582	561	597
177:	624	607	538	563	556	567	619	665
185:	684	620	619	659	657	664	678	640
193:	662	644	657	641	651	586	602	579
201:	624	585	606	620	591	589	594	628
209:	649	635	641	677	616	618	620	682
217:	625	631	606	654	687	638	642	622
225:	592	587	588	646	588	572	551	548
233:	542	558	551	552	600	600	584	535
241:	554	545	555	537	531	526	498	448
249:	491	532	521	526	498	498	427	527
257:	476	447	432	477	435	466	452	470
265:	479	479	425	433	466	434	457	462
273:	453	421	415	410	449	429	413	464
281:	418	444	387	460	422	425	425	401
289:	423	404	405	431	414	423	431	407
297:	384	410	423	405	385	422	384	399
305:	386	388	365	408	392	425	374	418
313:	350	420	367	381	390	355	384	366
321:	352	376	366	381	393	374	409	389
329:	374	351	353	409	387	387	379	366
337:	389	389	388	379	364	354	349	334
345:	372	382	375	358	352	355	409	366
353:	333	381	368	330	352	333	357	365
361:	362	359	368	345	334	329	361	343

369:	338	327	392	360	343	351	379	367

Sample Title: GAS-1402

Channel								
377:	368	357	349	367	331	331	344	352
385:	350	371	307	312	341	379	361	371
393:	334	355	332	351	380	350	362	331
401:	346	348	349	355	327	358	313	356
409:	377	329	329	343	369	365	337	355
417:	369	337	325	379	359	352	348	371
425:	360	344	342	385	359	341	366	328
433:	343	364	383	346	339	377	360	356
441:	357	352	369	339	367	335	338	401
449:	370	360	399	390	354	379	372	355
457:	379	373	384	374	372	382	383	394
465:	385	382	368	376	373	349	350	341
473:	355	367	359	310	356	302	302	276
481:	273	307	287	256	305	289	270	295
489:	281	280	260	261	242	258	267	292
497:	279	261	240	251	242	246	239	288
505:	246	232	273	280	287	302	263	250
513:	251	261	208	258	240	229	230	219
521:	207	239	249	238	251	238	249	242
529:	215	254	215	225	238	206	204	240
537:	257	224	217	237	216	212	192	222
545:	187	215	213	191	200	203	213	207
553:	201	181	214	198	180	221	196	188
561:	176	165	214	242	193	221	194	195
569:	199	191	210	190	212	181	173	178
577:	183	207	187	202	197	183	202	196
585:	179	203	219	196	200	186	180	180
593:	171	185	169	177	182	198	186	202
601:	189	184	188	192	194	189	202	218
609:	199	203	208	181	179	190	182	163
617:	181	172	177	176	198	184	200	186
625:	192	173	163	169	166	150	190	206
633:	197	202	171	205	204	182	185	184
641:	162	191	178	187	181	172	175	173
649:	169	175	194	178	181	200	194	190
657:	177	294	1449	4599	6102	3119	666	199
665:	171	136	176	147	134	153	148	168
673:	171	139	170	172	142	159	163	158
681:	168	153	153	147	170	159	161	167
689:	169	160	152	177	171	167	159	177
697:	163	160	161	144	160	151	183	158
705:	155	188	154	172	139	165	152	158
713:	148	148	140	156	150	147	176	186
721:	152	175	158	153	140	169	167	166
729:	153	128	155	167	157	170	149	145
737:	177	141	161	135	149	161	171	142
745:	156	155	173	173	168	172	159	151
753:	171	148	151	151	174	151	156	159
761:	145	158	141	164	150	139	170	149
769:	166	177	165	173	174	152	178	173
777:	143	186	159	185	162	164	169	178
785:	183	184	157	184	151	161	156	168
793:	177	167	172	163	165	176	190	160

801:	186	161	153	157	178	164	158	166

Sample Title: GAS-1402

Channel								
809:	183	137	186	166	197	186	160	189
817:	156	187	185	178	187	180	195	195
825:	190	188	191	163	185	191	155	173
833:	177	161	189	171	190	192	183	196
841:	197	175	209	191	185	194	178	178
849:	194	166	181	177	200	182	187	194
857:	169	196	195	185	179	209	206	184
865:	182	188	220	208	180	216	183	199
873:	192	191	184	208	230	194	210	194
881:	217	175	216	220	194	198	176	180
889:	218	209	207	186	208	202	208	218
897:	248	243	213	225	196	184	222	224
905:	216	244	214	205	225	218	210	204
913:	218	224	234	230	212	242	240	231
921:	221	211	225	219	249	241	236	247
929:	238	230	247	255	218	220	224	227
937:	247	227	229	235	231	228	245	235
945:	251	259	232	260	256	270	253	247
953:	269	272	257	251	253	259	245	261
961:	255	230	216	229	170	205	182	217
969:	203	187	179	174	214	201	166	180
977:	194	168	190	175	162	173	153	193
985:	179	157	165	194	170	150	188	147
993:	170	165	191	189	176	205	193	186
1001:	163	180	183	164	165	177	159	179
1009:	189	182	158	160	170	172	172	164
1017:	161	180	149	166	174	166	178	173
1025:	170	152	158	181	168	162	162	167
1033:	165	181	165	155	169	152	185	177
1041:	159	142	169	159	136	152	146	180
1049:	173	176	150	170	158	142	161	165
1057:	161	154	159	145	172	171	179	152
1065:	171	165	135	152	175	172	148	157
1073:	141	168	163	151	157	188	161	165
1081:	173	148	168	135	140	159	152	162
1089:	185	155	170	156	165	186	166	165
1097:	161	168	174	173	158	142	169	170
1105:	170	151	180	157	145	166	170	192
1113:	159	163	140	147	145	131	132	131
1121:	140	100	114	104	113	120	108	107
1129:	86	88	114	97	109	93	112	97
1137:	119	100	95	98	86	102	101	84
1145:	116	109	91	79	94	74	97	78
1153:	99	100	79	81	78	98	80	97
1161:	77	71	92	85	77	98	101	101
1169:	116	410	1787	4077	4088	1793	355	95
1177:	76	63	64	55	69	68	55	57
1185:	62	59	68	59	53	43	59	66
1193:	45	43	44	57	58	53	60	45
1201:	58	48	52	52	42	53	49	64
1209:	53	50	38	36	26	40	27	37
1217:	36	44	44	51	38	35	26	30
1225:	41	37	33	35	45	32	31	37

1233:	34	38	28	33	23	39	27	38

Sample Title: GAS-1402

Channel								
1241:	27	31	29	20	26	32	21	17
1249:	21	21	33	28	22	28	22	28
1257:	21	13	23	22	27	17	27	20
1265:	30	28	23	24	13	19	22	29
1273:	14	17	26	22	19	21	22	22
1281:	21	25	22	20	28	21	18	24
1289:	14	27	21	21	33	16	15	29
1297:	16	16	20	24	25	26	18	18
1305:	21	18	19	18	21	28	18	25
1313:	13	15	16	17	18	21	27	29
1321:	23	32	28	25	23	24	24	51
1329:	225	1000	2978	3813	2168	539	67	21
1337:	5	5	10	5	12	8	7	5
1345:	9	6	6	10	9	4	17	10
1353:	4	6	7	5	11	5	11	6
1361:	3	7	13	1	6	10	11	7
1369:	5	8	6	8	8	6	4	9
1377:	8	9	11	2	7	6	8	4
1385:	9	9	10	8	7	11	9	3
1393:	8	8	5	5	5	5	4	5
1401:	4	7	9	4	4	12	5	10
1409:	8	6	5	2	4	12	7	7
1417:	9	7	7	9	10	3	7	8
1425:	3	6	6	7	2	4	3	5
1433:	5	7	5	2	4	5	6	6
1441:	7	5	9	8	4	5	3	2
1449:	3	4	9	5	4	7	2	7
1457:	7	10	5	6	8	8	2	5
1465:	5	7	5	3	4	4	9	8
1473:	6	3	4	4	1	5	7	3
1481:	6	9	4	7	7	8	5	4
1489:	8	6	4	9	2	8	5	7
1497:	5	3	7	7	6	6	7	5
1505:	3	5	2	8	6	10	4	6
1513:	7	8	5	7	6	2	2	3
1521:	3	8	8	7	5	10	2	7
1529:	7	5	5	4	5	3	7	3
1537:	4	7	5	5	6	5	3	9
1545:	8	5	8	7	2	6	5	4
1553:	8	5	5	6	7	13	7	7
1561:	4	4	6	10	5	2	4	5
1569:	2	5	4	3	9	5	3	7
1577:	5	5	3	6	1	7	7	3
1585:	3	5	6	6	5	10	4	0
1593:	2	4	5	5	4	5	3	5
1601:	5	3	5	4	7	3	5	8
1609:	8	5	7	5	2	5	6	1
1617:	5	4	3	2	10	5	1	3
1625:	7	4	1	5	6	4	3	3
1633:	1	0	8	7	5	1	3	3
1641:	1	2	7	3	5	4	6	3
1649:	0	5	3	4	3	6	7	1
1657:	1	2	3	3	3	1	4	5

1665:	8	3	3	0	3	3	5	3

Sample Title: GAS-1402

Channel								
1673:	5	0	3	3	6	3	2	4
1681:	3	6	4	6	6	4	5	4
1689:	6	5	0	4	4	5	3	6
1697:	8	5	4	5	2	2	6	4
1705:	3	1	1	2	7	3	1	1
1713:	2	4	2	7	3	1	0	3
1721:	1	2	4	5	7	4	1	2
1729:	6	3	1	9	1	2	5	2
1737:	6	1	3	2	3	2	4	0
1745:	3	0	4	2	6	3	5	4
1753:	2	5	3	6	2	4	0	3
1761:	4	2	2	2	4	3	4	4
1769:	2	4	0	3	1	3	3	5
1777:	5	3	5	4	2	1	6	6
1785:	4	2	3	1	3	6	7	4
1793:	4	2	3	2	0	1	4	6
1801:	4	7	2	6	2	3	4	4
1809:	2	1	2	2	3	4	1	1
1817:	5	1	2	0	1	5	2	1
1825:	3	1	5	2	2	4	2	6
1833:	2	4	9	11	8	4	1	5
1841:	3	4	1	5	4	3	1	2
1849:	4	3	3	6	10	5	6	6
1857:	0	2	4	2	9	1	3	1
1865:	1	2	3	2	1	4	4	3
1873:	1	2	3	2	2	3	2	2
1881:	9	4	3	4	3	1	3	3
1889:	5	5	1	3	1	3	0	2
1897:	2	3	2	1	5	1	5	6
1905:	1	4	1	2	2	2	4	2
1913:	5	3	5	3	1	2	3	1
1921:	3	5	2	5	4	4	5	2
1929:	3	3	3	4	7	2	1	2
1937:	6	0	2	2	4	0	3	4
1945:	1	1	3	4	0	2	4	7
1953:	4	4	2	0	7	3	5	3
1961:	6	5	4	1	4	2	2	2
1969:	1	3	5	3	3	3	4	1
1977:	1	2	4	5	4	4	1	3
1985:	3	3	3	2	3	4	3	3
1993:	2	1	2	2	0	1	3	4
2001:	4	3	7	5	5	4	2	3
2009:	3	1	2	3	4	3	5	0
2017:	4	2	2	2	6	2	1	2
2025:	3	2	5	2	1	3	4	0
2033:	0	2	3	1	4	3	2	2
2041:	3	3	1	1	5	4	0	8
2049:	2	3	2	3	3	2	1	3
2057:	2	2	1	2	0	0	4	3
2065:	3	2	3	1	5	2	2	4
2073:	2	6	3	3	2	1	2	2
2081:	2	0	2	1	3	2	2	2
2089:	3	4	3	1	2	1	3	1

2097:	2	3	4	1	1	4	3	2

Sample Title: GAS-1402

Channel								
2105:	1	3	0	2	0	1	2	0
2113:	4	5	3	4	1	4	4	1
2121:	1	0	3	3	3	1	3	2
2129:	2	1	1	1	2	2	1	3
2137:	1	1	0	1	1	3	2	0
2145:	3	2	4	0	1	3	2	4
2153:	2	5	3	2	4	1	3	0
2161:	0	3	0	2	3	3	4	2
2169:	1	2	0	3	3	2	0	4
2177:	1	1	0	4	3	2	4	1
2185:	2	3	7	2	5	0	2	2
2193:	1	1	3	3	1	2	2	0
2201:	3	1	2	1	5	3	5	3
2209:	3	2	3	2	1	0	2	1
2217:	3	0	2	3	2	1	2	1
2225:	0	2	2	5	1	2	2	0
2233:	5	1	4	1	3	2	2	4
2241:	2	1	3	1	6	3	3	1
2249:	5	2	5	1	1	2	2	2
2257:	4	0	2	5	4	4	2	1
2265:	2	3	1	1	1	2	4	6
2273:	1	2	1	2	2	0	4	2
2281:	1	4	2	3	2	2	1	4
2289:	4	1	2	3	3	1	2	3
2297:	1	3	2	2	1	1	2	1
2305:	0	1	1	0	1	0	1	3
2313:	1	2	1	2	0	0	0	0
2321:	2	2	2	1	0	2	2	1
2329:	3	4	2	1	0	1	2	1
2337:	2	4	2	0	3	0	1	1
2345:	2	0	0	1	0	0	2	1
2353:	0	3	1	0	0	1	1	0
2361:	0	1	1	3	2	0	1	0
2369:	0	2	3	1	0	0	1	1
2377:	1	2	0	1	0	0	0	0
2385:	1	1	0	2	1	1	0	0
2393:	0	0	0	0	0	1	0	2
2401:	1	0	0	0	1	0	1	1
2409:	1	0	0	3	0	0	0	2
2417:	0	0	0	1	0	0	0	1
2425:	0	0	2	1	0	1	0	0
2433:	2	0	0	0	0	0	1	2
2441:	0	0	1	1	0	0	0	0
2449:	0	1	1	0	0	0	0	1
2457:	1	0	1	0	1	0	1	0
2465:	1	0	0	0	0	0	0	0
2473:	1	0	0	0	0	0	0	1
2481:	0	0	0	0	0	0	0	0
2489:	0	0	0	1	0	0	1	0
2497:	0	0	0	0	1	2	2	15
2505:	20	26	10	2	0	0	0	1
2513:	1	0	0	0	0	0	1	0
2521:	0	0	0	0	0	0	0	0

2529:	0	0	0	0	0	0	0	0

Sample Title: GAS-1402

Channel								
2537:	0	0	0	0	0	0	0	0
2545:	0	0	0	0	0	0	0	0
2553:	0	0	0	1	0	0	0	0
2561:	0	0	0	0	0	0	1	0
2569:	0	0	0	0	0	1	0	0
2577:	0	0	0	0	0	0	0	0
2585:	0	0	0	0	0	0	0	0
2593:	0	0	0	1	0	0	0	1
2601:	0	0	0	0	0	0	0	0
2609:	0	0	0	0	2	4	2	2
2617:	1	0	0	0	0	0	0	0
2625:	1	0	0	0	0	0	0	0
2633:	0	0	0	0	0	0	0	0
2641:	0	1	0	0	0	0	0	1
2649:	0	0	0	0	0	0	0	0
2657:	0	0	0	0	0	0	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	0	0	0	0	0	0	0
2681:	0	0	0	0	0	0	0	1
2689:	0	1	1	0	0	0	0	0
2697:	0	0	0	0	0	0	0	0
2705:	0	0	0	0	0	0	0	0
2713:	0	0	0	0	0	0	0	1
2721:	0	0	0	0	0	0	0	0
2729:	0	0	0	0	0	0	0	0
2737:	1	0	0	1	0	0	0	0
2745:	0	0	0	0	0	0	0	0
2753:	0	0	0	0	0	0	0	1
2761:	0	0	1	0	0	0	0	1
2769:	0	0	0	1	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	2	0	0	0	0	0
2793:	0	0	0	0	0	1	0	1
2801:	1	0	0	0	0	0	0	0
2809:	0	0	0	0	1	0	0	0
2817:	0	1	0	0	0	0	0	0
2825:	0	0	0	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	0	0	0	0	0
2849:	0	0	0	0	0	0	0	1
2857:	0	0	0	0	0	0	0	0
2865:	0	0	0	0	0	0	0	0
2873:	0	1	0	0	0	0	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	0	0	0	0	1
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	0	0	1	0	0
2913:	0	0	0	0	0	0	0	1
2921:	0	0	0	0	0	0	0	0
2929:	0	0	1	0	0	1	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	1	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	0

2961:	0	0	0	0	0	0	0	0

Sample Title: GAS-1402

Channel								
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	0	0	0	0	0
2985:	0	0	0	0	0	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	0	0	0	0	0	1	0	0
3009:	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	0	2	0
3025:	1	0	0	0	0	1	1	0
3033:	0	0	0	0	0	0	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	0	0	1
3065:	0	0	0	0	0	0	0	0
3073:	0	0	0	0	0	0	0	0
3081:	0	0	0	0	0	1	0	0
3089:	1	0	0	0	0	0	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	0	0	0	1	0	0
3113:	0	0	0	0	0	0	0	0
3121:	0	0	0	0	0	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	1	1	0	0	0	1
3145:	0	0	0	0	0	0	0	0
3153:	0	0	1	0	0	0	0	0
3161:	0	1	0	0	0	0	1	0
3169:	1	1	0	0	0	1	0	0
3177:	0	1	0	0	1	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	0	0	0	0	0
3201:	0	0	0	0	0	0	0	1
3209:	0	0	0	0	0	0	1	0
3217:	0	0	0	1	0	0	0	0
3225:	0	0	1	0	1	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	1	0	0	0	0	0	0	1
3249:	0	0	0	0	0	0	0	0
3257:	0	0	0	0	0	0	0	1
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	1	0	0	0
3297:	0	0	0	0	1	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	0
3321:	0	0	2	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	1	0	0	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	0	0

3393:	0	0	0	0	0	0	0	0

Sample Title: GAS-1402

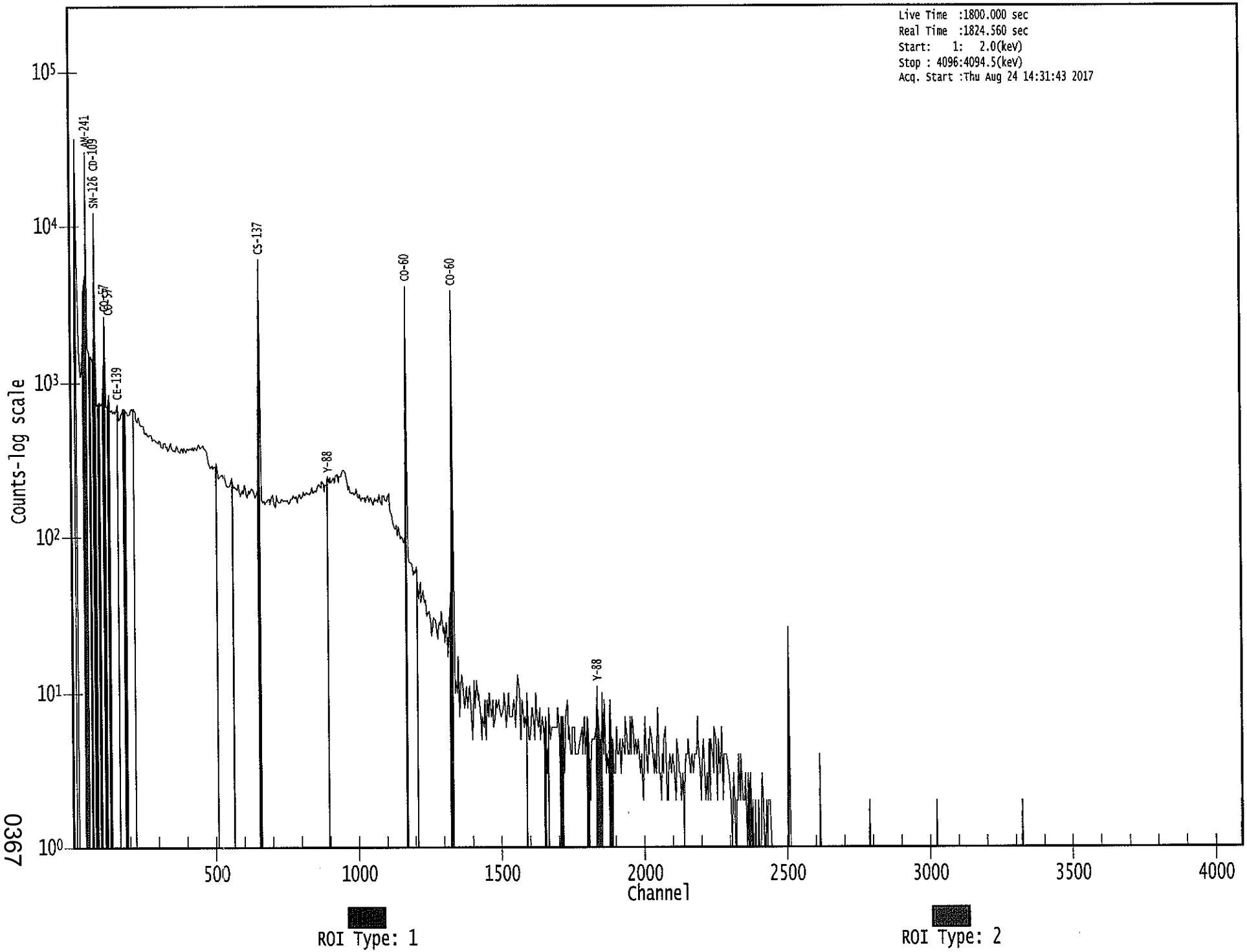
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	1	0	0	0	0	0
3417:	0	0	0	0	0	0	1	0
3425:	0	0	0	0	0	1	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	1	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	1	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	1	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	1	0	0	0	0	0	0	0
3681:	0	0	0	0	1	0	0	0
3689:	0	1	0	0	0	0	0	0
3697:	0	1	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	1	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	1	0	0	0	1	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: GAS-1402

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	1	0	0	0	0	0
3881:	0	0	0	0	1	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	1	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	1	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	1	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	1	0	0	0	0	0	0
3969:	0	1	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	1	1	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	1	0	0	0	0	1	0
4041:	0	0	0	0	0	0	0	0
4049:	1	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	2	0	0	0	1	0	0	0

0000055915.CNF



0367

Apex-Gamma

Analysis Report for 1707092-02
BLANK

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-02
Sample Description	: BLANK
Sample Type	: SOIL
Sample Size	: 7.834E+02 grams
Facility	: Countroom
Sample Taken On	: 8/24/2017 7:37:41AM
Acquisition Started	: 8/24/2017 1:30:50PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3607.5 seconds
Dead Time	: 0.21 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 15 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55910

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-02

BLANK

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 2:30:59PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	299.35	298.47	0.0000	0.00
2	302.95	302.08	0.0000	0.00
3	311.21	310.34	0.0000	0.00
4	323.85	322.99	0.0000	0.00
5	518.65	517.86	0.0000	0.00
6	569.07	568.29	0.0000	0.00
7	573.71	572.93	0.0000	0.00
8	598.78	598.02	0.0000	0.00
9	671.28	670.54	0.0000	0.00
10	811.62	810.94	0.0000	0.00
11	861.45	860.79	0.0000	0.00
12	867.08	866.42	0.0000	0.00
13	988.87	988.27	0.0000	0.00
14	1011.38	1010.79	0.0000	0.00
15	1181.77	1181.25	0.0000	0.00
16	1452.71	1452.33	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-02

BLANK

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 2:30:59PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	299.35	297 -	307	298.47	1.53E+01	9.70	1.01E+01	1.72
m	2	302.95	297 -	307	302.08	1.47E+01	18.71	3.61E+01	3.82
	3	311.21	308 -	313	310.34	1.54E+01	15.62	3.72E+01	1.64
	4	323.85	319 -	327	322.99	2.41E+01	24.34	7.58E+01	2.43
m	5	518.65	505 -	520	517.86	8.05E+00	11.92	1.97E+01	2.75
M	6	569.07	567 -	577	568.29	7.66E+00	6.61	6.98E+00	2.91
m	7	573.71	567 -	577	572.93	1.78E+01	18.52	3.63E+01	3.37
	8	598.78	593 -	603	598.02	2.51E+01	14.92	1.58E+01	5.95
	9	671.28	667 -	673	670.54	1.54E+01	10.81	9.30E+00	3.73
	10	811.62	808 -	813	810.94	7.00E+00	7.62	6.00E+00	2.39
	11	861.45	856 -	863	860.79	5.75E+00	6.93	4.50E+00	2.55
	12	867.08	864 -	869	866.42	9.54E+00	8.37	6.92E+00	3.54
	13	988.87	984 -	992	988.27	9.50E+00	9.82	9.00E+00	5.45
	14	1011.38	1006 -	1015	1010.79	1.40E+01	7.48	0.00E+00	6.65
	15	1181.77	1177 -	1184	1181.25	7.00E+00	7.21	4.00E+00	2.48
	16	1452.71	1449 -	1454	1452.33	6.00E+00	4.90	0.00E+00	1.00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 2:30:59PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Analysis Report for 1707092-02

BLANK

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	1	299.35	297 -	307	1.53E+01	9.70	1.01E+01	5.24E+00
m	2	302.95	297 -	307	1.47E+01	18.71	3.61E+01	9.88E+00
	3	311.21	308 -	313	1.54E+01	15.62	3.72E+01	1.11E+01
	4	323.85	319 -	327	2.41E+01	24.34	7.58E+01	1.83E+01
m	5	518.65	505 -	520	8.05E+00	11.92	1.97E+01	7.30E+00
M	6	569.07	567 -	577	7.66E+00	6.61	6.98E+00	4.34E+00
m	7	573.71	567 -	577	1.78E+01	18.52	3.63E+01	9.90E+00
	8	598.78	593 -	603	2.51E+01	14.92	1.58E+01	9.09E+00
	9	671.28	667 -	673	1.54E+01	10.81	9.30E+00	6.12E+00
	10	811.62	808 -	813	7.00E+00	7.62	6.00E+00	4.50E+00
	11	861.45	856 -	863	5.75E+00	6.93	4.50E+00	4.11E+00
	12	867.08	864 -	869	9.54E+00	8.37	6.92E+00	4.64E+00
	13	988.87	984 -	992	9.50E+00	9.82	9.00E+00	6.29E+00
	14	1011.38	1006 -	1015	1.40E+01	7.48	0.00E+00	0.00E+00
	15	1181.77	1177 -	1184	7.00E+00	7.21	4.00E+00	4.03E+00
	16	1452.71	1449 -	1454	6.00E+00	4.90	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 2:30:59PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	1	299.35	297 -	307	298.47	1.53E+01	9.70	1.01E+01	BI-210M PB-212 GA-67
m	2	302.95	297 -	307	302.08	1.47E+01	18.71	3.61E+01	BA-133 PA-231
	3	311.21	308 -	313	310.34	1.54E+01	15.62	3.72E+01	PA-233
	4	323.85	319 -	327	322.99	2.41E+01	24.34	7.58E+01	RA-223
m	5	518.65	505 -	520	517.86	8.05E+00	11.92	1.97E+01	.....
M	6	569.07	567 -	577	568.29	7.66E+00	6.61	6.98E+00	CS-134

Analysis Report for 1707092-02

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	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									BI-207
m	7	573.71	567 -	577	572.93	1.78E+01	18.52	3.63E+01	.....
	8	598.78	593 -	603	598.02	2.51E+01	14.92	1.58E+01	.....
	9	671.28	667 -	673	670.54	1.54E+01	10.81	9.30E+00	.....
	10	811.62	808 -	813	810.94	7.00E+00	7.62	6.00E+00	EU-156
									CO-58
	11	861.45	856 -	863	860.79	5.75E+00	6.93	4.50E+00	.....
	12	867.08	864 -	869	866.42	9.54E+00	8.37	6.92E+00	.....
	13	988.87	984 -	992	988.27	9.50E+00	9.82	9.00E+00	.....
	14	1011.38	1006 -	1015	1010.79	1.40E+01	7.48	0.00E+00	.....
	15	1181.77	1177 -	1184	1181.25	7.00E+00	7.21	4.00E+00	.....
	16	1452.71	1449 -	1454	1452.33	6.00E+00	4.90	0.00E+00	.....

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 2:30:59PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	1	299.35	1.53E+01	9.70	1.09E-02	9.05E-04
m	2	302.95	1.47E+01	18.71	1.07E-02	8.97E-04
	3	311.21	1.54E+01	15.62	1.05E-02	8.80E-04
	4	323.85	2.41E+01	24.34	1.00E-02	8.53E-04
m	5	518.65	8.05E+00	11.92	6.19E-03	6.58E-04
M	6	569.07	7.66E+00	6.61	5.64E-03	6.37E-04
m	7	573.71	1.78E+01	18.52	5.59E-03	6.35E-04
	8	598.78	2.51E+01	14.92	5.36E-03	6.25E-04
	9	671.28	1.54E+01	10.81	4.80E-03	5.87E-04
	10	811.62	7.00E+00	7.62	4.02E-03	4.10E-04
	11	861.45	5.75E+00	6.93	3.81E-03	3.48E-04
	12	867.08	9.54E+00	8.37	3.78E-03	3.41E-04
	13	988.87	9.50E+00	9.82	3.36E-03	2.81E-04
	14	1011.38	1.40E+01	7.48	3.30E-03	2.75E-04
	15	1181.77	7.00E+00	7.21	2.88E-03	2.37E-04
	16	1452.71	6.00E+00	4.90	2.40E-03	2.09E-04

Analysis Report for 1707092-02

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M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 2:30:59PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	299.35	1.53E+01	9.70			1.53E+01	9.70E+00
m	2	302.95	1.47E+01	18.71			1.47E+01	1.87E+01
	3	311.21	1.54E+01	15.62			1.54E+01	1.56E+01
	4	323.85	2.41E+01	24.34			2.41E+01	2.43E+01
m	5	518.65	8.05E+00	11.92			8.05E+00	1.19E+01
M	6	569.07	7.66E+00	6.61			7.66E+00	6.61E+00
m	7	573.71	1.78E+01	18.52			1.78E+01	1.85E+01
	8	598.78	2.51E+01	14.92			2.51E+01	1.49E+01
	9	671.28	1.54E+01	10.81			1.54E+01	1.08E+01
	10	811.62	7.00E+00	7.62			7.00E+00	7.62E+00
	11	861.45	5.75E+00	6.93			5.75E+00	6.93E+00
	12	867.08	9.54E+00	8.37			9.54E+00	8.37E+00
	13	988.87	9.50E+00	9.82			9.50E+00	9.82E+00
	14	1011.38	1.40E+01	7.48			1.40E+01	7.48E+00
	15	1181.77	7.00E+00	7.21			7.00E+00	7.21E+00
	16	1452.71	6.00E+00	4.90			6.00E+00	4.90E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-02

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AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 2:30:59PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	1	299.35	1.53E+01	9.70			1.53E+01	9.70E+00
m	2	302.95	1.47E+01	18.71			1.47E+01	1.87E+01
	3	311.21	1.54E+01	15.62			1.54E+01	1.56E+01
	4	323.85	2.41E+01	24.34			2.41E+01	2.43E+01
m	5	518.65	8.05E+00	11.92			8.05E+00	1.19E+01
M	6	569.07	7.66E+00	6.61			7.66E+00	6.61E+00
m	7	573.71	1.78E+01	18.52			1.78E+01	1.85E+01
	8	598.78	2.51E+01	14.92			2.51E+01	1.49E+01
	9	671.28	1.54E+01	10.81			1.54E+01	1.08E+01
	10	811.62	7.00E+00	7.62			7.00E+00	7.62E+00
	11	861.45	5.75E+00	6.93			5.75E+00	6.93E+00
	12	867.08	9.54E+00	8.37			9.54E+00	8.37E+00
	13	988.87	9.50E+00	9.82			9.50E+00	9.82E+00
	14	1011.38	1.40E+01	7.48			1.40E+01	7.48E+00
	15	1181.77	7.00E+00	7.21			7.00E+00	7.21E+00
	16	1452.71	6.00E+00	4.90			6.00E+00	4.90E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CO-58	0.889	810.76	*	99.40	1.68E-02	1.84E-02
BI-207	0.385	569.67	*	97.72	1.33E-02	1.16E-02

Analysis Report for 1707092-02

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Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-207	0.385	1063.62		74.90		
RA-223	1.000	323.87	*	3.88	5.93E-01	6.01E-01
PA-231	0.323	283.67		1.60		
		302.67	*	2.30	5.71E-01	7.27E-01
PA-233	0.909	311.98	*	38.60	3.68E-02	3.82E-02

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 2:30:59PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	1	299.35	4.26052E-03	31.61	Tol.	GA-67 BI-210M PB-212
m	5	518.65	2.23486E-03	74.06		
m	7	573.71	4.95687E-03	51.89		
	8	598.78	6.97812E-03	29.71		
	9	671.28	4.26389E-03	35.20		
	11	861.45	1.59722E-03	60.25		
	12	867.08	2.64957E-03	43.86		
	13	988.87	2.63889E-03	51.70		
	14	1011.38	3.88889E-03	26.73		
	15	1181.77	1.94444E-03	51.51		
	16	1452.71	1.66667E-03	40.82		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-02

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NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CO-58	0.88	810.76	*	99.40	1.68E-02	1.84E-02
BI-207	0.38	569.67	*	97.72	1.33E-02	1.16E-02
		1063.62		74.90		
RA-223	1.00	323.87	*	3.88	5.93E-01	6.01E-01
PA-231	0.32	283.67		1.60		
		302.67	*	2.30	5.71E-01	7.27E-01
PA-233	0.90	311.98	*	38.60	3.68E-02	3.82E-02

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
CO-58	0.889	1.68E-02	1.84E-02	
BI-207	0.385	1.33E-02	1.16E-02	
RA-223	1.000	5.93E-01	6.01E-01	
PA-231	0.323	5.71E-01	7.27E-01	
PA-233	0.909	3.68E-02	3.82E-02	

Analysis Report for 1707092-02

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? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-02
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UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 2:30:59PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	1	299.35	4.26052E-03	31.61	Tol.	GA-67 BI-210M PB-212
m	5	518.65	2.23486E-03	74.06		
m	7	573.71	4.95687E-03	51.89		
	8	598.78	6.97812E-03	29.71		
	9	671.28	4.26389E-03	35.20		
	11	861.45	1.59722E-03	60.25		
	12	867.08	2.64957E-03	43.86		
	13	988.87	2.63889E-03	51.70		
	14	1011.38	3.88889E-03	26.73		
	15	1181.77	1.94444E-03	51.51		
	16	1452.71	1.66667E-03	40.82		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	4.12E-02	3.00E-01	3.00E-01
+	NA-22	1274.54	99.94	5.81E-03	5.94E-02	5.94E-02
+	NA-24	1368.53	99.99	-8.49E-03	5.48E-02	5.48E-02
		2754.09	99.86	1.26E-02		1.01E-01

Analysis Report for 1707092-02

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	AL-26	1808.65		99.76	-4.92E-03	5.92E-02	5.92E-02
+	K-40	1460.81		10.67	-2.26E-01	5.31E-01	5.31E-01
+	AR-41	1293.64		99.16	-1.24E-01	6.12E-01	6.12E-01
+	TI-44	67.88		94.40	-1.62E-02	2.12E-02	2.36E-02
		78.34		96.00	2.97E-03		2.12E-02
+	SC-46	889.25		99.98	1.95E-02	4.89E-02	4.89E-02
		1120.51		99.99	2.54E-02		5.31E-02
+	V-48	983.52		99.98	-9.56E-04	4.31E-02	4.31E-02
		1312.10		97.50	-2.27E-02		4.55E-02
+	CR-51	320.08		9.83	-2.11E-02	3.14E-01	3.14E-01
+	MN-54	834.83		99.97	1.09E-03	5.50E-02	5.50E-02
+	CO-56	846.75		99.96	-5.18E-03	4.68E-02	4.68E-02
		1037.75		14.03	-8.65E-02		3.19E-01
		1238.25		67.00	-1.64E-02		8.24E-02
		1771.40		15.51	4.15E-02		3.74E-01
		2598.48		16.90	0.00E+00		1.19E-01
+	CO-57	122.06		85.51	6.16E-03	2.13E-02	2.13E-02
		136.48		10.60	1.94E-02		1.67E-01
+	CO-58	810.76	*	99.40	1.68E-02	2.82E-02	2.82E-02
+	FE-59	1099.22		56.50	-4.84E-02	8.34E-02	8.34E-02
		1291.56		43.20	-1.44E-02		1.18E-01
+	CO-60	1173.22		100.00	8.83E-03	5.22E-02	5.25E-02
		1332.49		100.00	1.32E-02		5.22E-02
+	ZN-65	1115.52		50.75	3.94E-02	1.13E-01	1.13E-01
+	GA-67	93.31		35.70	7.27E-02	6.99E-02	6.99E-02
		208.95		2.24	-3.46E-01		1.05E+00
		300.22		16.00	4.84E-02		1.83E-01
+	SE-75	121.11		16.70	4.91E-02	2.97E-02	1.09E-01
		136.00		59.20	6.88E-04		2.97E-02
		264.65		59.80	-1.50E-02		4.19E-02
		279.53		25.20	2.66E-02		1.05E-01
		400.65		11.40	-1.53E-01		2.51E-01
+	RB-82	776.52		13.00	7.09E-02	3.46E-01	3.46E-01
+	RB-83	520.41		46.00	3.39E-03	7.41E-02	7.41E-02
		529.64		30.30	-1.26E-02		1.17E-01
		552.65		16.40	-1.01E-02		1.96E-01
+	KR-85	513.99		0.43	4.65E+00	1.20E+01	1.20E+01
+	SR-85	513.99		99.27	2.04E-02	5.26E-02	5.26E-02
+	Y-88	898.02		93.40	-2.93E-03	4.67E-02	5.08E-02
		1836.01		99.38	-1.26E-02		4.67E-02
+	MO-93	263.06		56.72	-1.41E-03	3.01E-02	4.49E-02
		684.67		99.68	2.40E-02		5.11E-02
		1477.11		99.08	-1.91E-02		3.01E-02
+	NB-93M	16.57		9.43	5.55E+00	4.02E+00	4.02E+00
+	NB-94	702.63		100.00	1.06E-02	4.90E-02	4.90E-02
		871.10		100.00	-8.05E-03		5.85E-02
+	NB-95	765.79		99.81	1.19E-02	4.85E-02	4.85E-02

Analysis Report for 1707092-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-95M	235.69	25.00	-5.68E-02	1.01E-01	1.01E-01
+	ZR-95	724.18	43.70	-1.17E-02	9.10E-02	1.05E-01
		756.72	55.30	-1.00E-02		9.10E-02
+	MO-99	181.06	6.20	-6.72E-02	3.90E-01	4.08E-01
		739.58	12.80	4.57E-02		3.90E-01
		778.00	4.50	-9.54E-02		1.03E+00
+	RU-103	497.08	89.00	2.34E-03	3.94E-02	3.94E-02
+	RU-106	621.84	9.80	-7.76E-02	3.30E-01	3.30E-01
+	AG-108M	433.93	89.90	8.26E-03	3.22E-02	3.22E-02
		614.37	90.40	-4.50E-03		4.55E-02
		722.95	90.50	2.62E-02		5.69E-02
+	CD-109	88.03	3.72	-6.81E-01	5.43E-01	5.43E-01
+	AG-110M	657.75	93.14	-2.09E-02	3.81E-02	3.81E-02
		677.61	10.53	-2.11E-01		3.73E-01
		706.67	16.46	-2.60E-02		2.48E-01
		763.93	21.98	-3.50E-02		2.19E-01
		884.67	71.63	-2.99E-02		5.41E-02
		1384.27	23.94	-2.13E-02		1.92E-01
+	CD-113M	263.70	0.02	-6.52E+00	1.12E+02	1.12E+02
+	SN-113	255.12	1.93	-2.34E-01	5.42E-02	1.30E+00
		391.69	64.90	6.27E-03		5.42E-02
+	TE123M	159.00	84.10	-1.35E-02	2.38E-02	2.38E-02
+	SB-124	602.71	97.87	-8.75E-03	3.59E-02	3.59E-02
		645.85	7.26	-2.43E-01		4.82E-01
		722.78	11.10	2.14E-01		4.65E-01
		1691.02	49.00	5.65E-02		1.33E-01
+	I-125	35.49	6.49	-1.11E-02	6.70E-01	6.70E-01
+	SB-125	176.33	6.89	-1.04E-01	9.25E-02	2.83E-01
		427.89	29.33	-3.20E-02		9.25E-02
		463.38	10.35	-9.29E-02		3.40E-01
		600.56	17.80	6.21E-02		2.42E-01
		635.90	11.32	-1.34E-01		3.47E-01
+	SB-126	414.70	83.30	1.50E-03	3.68E-02	3.68E-02
		666.33	99.60	7.17E-03		4.85E-02
		695.00	99.60	-2.26E-02		5.16E-02
		720.50	53.80	1.98E-02		9.68E-02
+	SN-126	87.57	37.00	-6.84E-02	5.46E-02	5.46E-02
+	SB-127	473.00	25.00	-3.22E-02	1.30E-01	1.30E-01
		685.20	35.70	7.03E-02		1.50E-01
		783.80	14.70	1.22E-01		3.51E-01
+	I-129	29.78	57.00	-2.86E-02	1.09E-01	1.09E-01
		33.60	13.20	-3.94E-02		3.58E-01
		39.58	7.52	2.89E-02		4.66E-01
+	I-131	284.30	6.05	1.84E-01	4.05E-02	4.75E-01
		364.48	81.20	1.09E-02		4.05E-02
		636.97	7.26	5.13E-02		6.00E-01
		722.89	1.80	1.35E+00		2.92E+00
+	TE-132	49.72	13.10	-4.32E-02	2.97E-02	2.06E-01

Analysis Report for 1707092-02

BLANK

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TE-132	228.16	88.00	5.29E-03	2.97E-02	2.97E-02
+	BA-133	81.00	33.00	1.61E-02	5.37E-02	6.14E-02
		302.84	17.80	3.12E-02		1.53E-01
		356.01	60.00	3.90E-03		5.37E-02
+	I-133	529.87	86.30	-5.48E-03	5.09E-02	5.09E-02
+	XE-133	81.00	38.00	1.45E-02	5.52E-02	5.52E-02
+	CS-134	563.23	8.38	7.15E-02	4.05E-02	4.28E-01
		569.32	15.43	-2.29E-01		2.47E-01
		604.70	97.60	-1.39E-03		4.05E-02
		795.84	85.40	3.13E-02		6.45E-02
		801.93	8.73	1.08E-01		5.43E-01
+	CS-135	268.24	16.00	7.40E-02	1.76E-01	1.76E-01
+	I-135	1131.51	22.50	1.13E-01	4.18E-01	4.18E-01
		1260.41	28.60	1.44E-01		4.53E-01
		1678.03	9.54	9.35E-02		1.12E+00
+	CS-136	153.22	7.46	9.01E-02	4.92E-02	2.78E-01
		163.89	4.61	1.91E-01		4.92E-01
		176.55	13.56	-2.15E-02		1.49E-01
		273.65	12.66	-5.14E-02		1.92E-01
		340.57	48.50	7.36E-03		6.75E-02
		818.50	99.70	4.02E-03		4.92E-02
		1048.07	79.60	-3.76E-02		6.37E-02
		1235.34	19.70	6.06E-02		3.11E-01
+	CS-137	661.65	85.12	3.47E-03	4.79E-02	4.79E-02
+	LA-138	788.74	34.00	0.00E+00	8.45E-02	1.53E-01
		1435.80	66.00	1.37E-02		8.45E-02
+	CE-139	165.85	80.35	5.67E-03	2.76E-02	2.76E-02
+	BA-140	162.64	6.70	1.04E-01	1.43E-01	3.39E-01
		304.84	4.50	-4.37E-02		5.79E-01
		423.70	3.20	-3.99E-02		1.07E+00
		437.55	2.00	-3.49E-02		1.48E+00
		537.32	25.00	1.05E-02		1.43E-01
+	LA-140	328.77	20.50	4.69E-02	5.56E-02	1.58E-01
		487.03	45.50	2.31E-03		7.78E-02
		815.85	23.50	2.73E-02		2.32E-01
		1596.49	95.49	7.33E-03		5.56E-02
+	CE-141	145.44	48.40	1.81E-02	4.24E-02	4.24E-02
+	CE-143	57.36	11.80	2.29E-02	6.72E-02	2.03E-01
		293.26	42.00	3.15E-02		6.72E-02
		664.55	5.20	2.17E-01		9.01E-01
+	CE-144	133.54	10.80	1.29E-02	1.62E-01	1.62E-01
+	PM-144	476.78	42.00	3.45E-02	3.88E-02	7.96E-02
		618.01	98.60	-8.73E-04		3.88E-02
		696.49	99.49	7.28E-03		5.49E-02
+	PM-145	36.85	21.70	1.54E-01	1.04E-01	1.95E-01
		37.36	39.70	8.25E-02		1.04E-01
		42.30	15.10	-2.80E-01		2.00E-01
		72.40	2.31	2.50E-01		9.29E-01
+	PM-146	453.90	39.94	-1.52E-02	7.96E-02	7.96E-02

Analysis Report for 1707092-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-146	735.90	14.01	9.74E-02	7.96E-02	3.03E-01
		747.13	13.10	1.28E-01		4.14E-01
+	ND-147	91.11	28.90	7.98E-02	8.47E-02	8.47E-02
		531.02	13.10	-3.01E-02		2.83E-01
+	PM-149	285.90	3.10	-1.13E-03	9.37E-01	9.37E-01
+	EU-152	121.78	20.50	2.57E-02	8.86E-02	8.86E-02
		244.69	5.40	-5.27E-02		4.81E-01
		344.27	19.13	2.08E-02		1.56E-01
		778.89	9.20	-4.31E-02		4.53E-01
		964.01	10.40	-1.03E-02		5.22E-01
		1085.78	7.22	2.17E-01		6.43E-01
		1112.02	9.60	-2.74E-01		4.64E-01
		1407.95	14.94	1.30E-01		4.13E-01
+	GD-153	97.43	31.30	-3.96E-02	5.77E-02	5.77E-02
		103.18	22.20	-3.00E-02		7.24E-02
+	EU-154	123.07	40.50	1.97E-03	4.38E-02	4.38E-02
		723.30	19.70	-2.58E-02		2.32E-01
		873.19	11.50	1.39E-01		4.72E-01
		996.32	10.30	1.35E-01		4.18E-01
		1004.76	17.90	0.00E+00		1.74E-01
		1274.45	35.50	1.63E-02		1.67E-01
+	EU-155	86.50	30.90	-4.03E-02	6.54E-02	6.54E-02
		105.30	20.70	-1.26E-02		8.19E-02
+	EU-156	811.77	10.40	1.28E-01	4.67E-01	4.67E-01
		1153.47	7.20	1.44E-01		7.99E-01
		1230.71	8.90	1.18E-01		7.12E-01
+	HO-166M	184.41	72.60	2.93E-02	3.78E-02	3.78E-02
		280.45	29.60	1.38E-02		9.06E-02
		410.94	11.10	-1.27E-01		2.41E-01
		711.69	54.10	5.70E-03		7.60E-02
+	TM-171	66.72	0.14	-1.04E+01	1.63E+01	1.63E+01
+	HF-172	67.35	5.31	-2.72E-01	1.53E-01	4.27E-01
		125.81	11.30	-1.75E-02		1.53E-01
+	LU-172	181.53	20.60	-3.98E-02	7.22E-02	1.23E-01
		900.72	29.81	1.11E-02		1.64E-01
		1093.66	62.50	7.68E-03		7.22E-02
+	LU-173	100.72	5.24	-5.38E-02	1.26E-01	3.05E-01
		272.11	21.20	5.18E-02		1.26E-01
+	HF-175	343.40	84.00	4.73E-03	3.56E-02	3.56E-02
+	LU-176	88.34	13.30	-1.90E-01	2.54E-02	1.52E-01
		201.83	86.00	-1.10E-02		2.69E-02
		306.78	94.00	-2.82E-02		2.54E-02
+	HF-181	133.02	41.70	4.94E-03	4.01E-02	4.28E-02
		345.85	17.20	-3.75E-02		1.63E-01
		482.03	82.80	5.83E-03		4.01E-02
+	TA-182	67.75	41.20	-3.72E-02	5.43E-02	5.43E-02
		1121.30	34.90	3.04E-02		1.37E-01
		1189.05	16.23	2.36E-02		3.10E-01
		1221.41	26.98	-7.64E-02		1.37E-01

Analysis Report for 1707092-02

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TA-182	1231.02		11.44	1.51E-01	5.43E-02	5.48E-01
+	IR-192	308.46		29.68	1.56E-02	6.99E-02	9.27E-02
		468.07		48.10	-6.92E-05		6.99E-02
+	HG-203	279.19		77.30	2.93E-03	3.27E-02	3.27E-02
+	TL-204	374.74		94.11	-9.74E-03	2.71E-02	2.71E-02
		899.15		99.16	-1.38E-02		4.40E-02
		911.74		91.10	-2.24E-02		5.07E-02
+	BI-207	569.67	*	97.72	1.33E-02	4.77E-02	4.77E-02
		1063.62		74.90	8.79E-03		7.63E-02
+	TL-208	583.14		30.22	5.00E-02	1.41E-01	1.41E-01
		860.37		4.48	-3.09E-01		8.91E-01
		2614.66		35.85	9.05E-02		2.95E-01
+	BI-210M	262.00		45.00	4.44E-03	5.76E-02	5.76E-02
		300.00		23.00	3.18E-02		1.20E-01
+	PB-210	46.50		4.25	6.10E-01	7.03E-01	7.03E-01
+	PB-211	404.84		2.90	3.35E-01	1.11E+00	1.11E+00
		831.96		2.90	-1.01E-01		1.74E+00
+	BI-212	727.17		11.80	1.16E-01	3.67E-01	3.67E-01
		1620.62		2.75	-1.79E-01		1.73E+00
+	PB-212	238.63		44.60	8.70E-03	5.68E-02	5.68E-02
		300.09		3.41	2.14E-01		8.13E-01
+	BI-214	609.31		46.30	6.21E-02	1.06E-01	1.06E-01
		1120.29		15.10	1.68E-01		3.51E-01
		1764.49		15.80	-5.06E-02		3.27E-01
		2204.22		4.98	3.11E-01		1.31E+00
+	PB-214	295.21		19.19	-4.04E-02	8.56E-02	1.15E-01
		351.92		37.19	2.57E-02		8.56E-02
+	RN-219	401.80		6.50	6.42E-02	5.01E-01	5.01E-01
+	RA-223	323.87	*	3.88	5.93E-01	9.68E-01	9.68E-01
+	RA-224	240.98		3.95	-5.14E-02	6.47E-01	6.47E-01
+	RA-225	40.00		31.00	6.99E-03	1.13E-01	1.13E-01
+	RA-226	186.21		3.28	6.80E-01	8.42E-01	8.42E-01
+	TH-227	50.10		8.40	-6.32E-02	2.08E-01	3.01E-01
		236.00		11.50	-1.18E-01		2.08E-01
		256.20		6.30	3.58E-02		4.15E-01
+	AC-228	338.32		11.40	1.86E-01	1.73E-01	3.09E-01
		911.07		27.70	-4.91E-02		1.73E-01
		969.11		16.60	1.90E-01		3.69E-01
+	TH-230	48.44		16.90	1.72E-01	1.72E-01	1.72E-01
		62.85		4.60	2.22E-01		5.25E-01
		67.67		0.37	-4.13E+00		6.04E+00
+	PA-231	283.67		1.60	6.78E-01	1.24E+00	1.75E+00
		302.67	*	2.30	5.71E-01		1.24E+00
+	TH-231	25.64		14.70	1.45E-01	3.06E-01	6.76E-01
		84.21		6.40	-2.01E-02		3.06E-01
+	PA-233	311.98	*	38.60	3.68E-02	5.96E-02	5.96E-02
+	PA-234	131.20		20.40	1.54E-02	8.71E-02	8.71E-02
		733.99		8.80	8.02E-02		4.65E-01

Analysis Report for 1707092-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	946.00	12.00	-3.23E-01	8.71E-02	3.22E-01
+	PA-234M	1001.03	0.92	6.26E-01	3.37E+00	3.37E+00
+	TH-234	63.29	3.80	2.68E-01	6.33E-01	6.33E-01
+	U-235	143.76	10.50	7.80E-02	1.93E-01	1.93E-01
		163.35	4.70	1.46E-01		4.78E-01
		205.31	4.70	2.64E-02		4.87E-01
+	NP-237	86.50	12.60	-9.89E-02	1.60E-01	1.60E-01
+	NP-239	106.10	22.70	-3.75E-02	8.21E-02	8.21E-02
		228.18	10.70	4.44E-02		2.50E-01
		277.60	14.10	-1.01E-01		1.77E-01
+	AM-241	59.54	35.90	4.27E-03	6.46E-02	6.46E-02
+	AM-243	74.67	66.00	-5.41E-03	3.11E-02	3.11E-02
+	CM-243	209.75	3.29	-3.78E-02	1.64E-01	7.15E-01
		228.14	10.60	4.15E-02		2.33E-01
		277.60	14.00	-9.39E-02		1.64E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	3.00E-01	3.00E-01	4.12E-02	1.32E-01
NA-22	1274.54	99.94	5.94E-02	5.94E-02	5.81E-03	2.49E-02
NA-24	1368.53	99.99	5.48E-02	5.48E-02	-8.49E-03	2.05E-02
	2754.09	99.86	1.01E-01		1.26E-02	3.56E-02
AL-26	1808.65	99.76	5.92E-02	5.92E-02	-4.92E-03	2.29E-02
K-40	1460.81	10.67	5.31E-01	5.31E-01	-2.26E-01	2.15E-01
AR-41	1293.64	99.16	6.12E-01	6.12E-01	-1.24E-01	2.51E-01

Analysis Report for 1707092-02

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TI-44	67.88		94.40	2.36E-02	2.12E-02	-1.62E-02	1.12E-02
		78.34		96.00	2.12E-02		2.97E-03	1.00E-02
	SC-46	889.25		99.98	4.89E-02	4.89E-02	1.95E-02	2.09E-02
		1120.51		99.99	5.31E-02		2.54E-02	2.22E-02
	V-48	983.52		99.98	4.31E-02	4.31E-02	-9.56E-04	1.77E-02
		1312.10		97.50	4.55E-02		-2.27E-02	1.76E-02
	CR-51	320.08		9.83	3.14E-01	3.14E-01	-2.11E-02	1.44E-01
	MN-54	834.83		99.97	5.50E-02	5.50E-02	1.09E-03	2.42E-02
	CO-56	846.75		99.96	4.68E-02	4.68E-02	-5.18E-03	2.00E-02
		1037.75		14.03	3.19E-01		-8.65E-02	1.31E-01
		1238.25		67.00	8.24E-02		-1.64E-02	3.42E-02
		1771.40		15.51	3.74E-01		4.15E-02	1.45E-01
		2598.48		16.90	1.19E-01		0.00E+00	0.00E+00
	CO-57	122.06		85.51	2.13E-02	2.13E-02	6.16E-03	9.95E-03
		136.48		10.60	1.67E-01		1.94E-02	7.79E-02
+	CO-58	810.76	*	99.40	2.82E-02	2.82E-02	1.68E-02	1.08E-02
	FE-59	1099.22		56.50	8.34E-02	8.34E-02	-4.84E-02	3.42E-02
		1291.56		43.20	1.18E-01		-1.44E-02	4.77E-02
	CO-60	1173.22		100.00	5.25E-02	5.22E-02	8.83E-03	2.18E-02
		1332.49		100.00	5.22E-02		1.32E-02	2.11E-02
	ZN-65	1115.52		50.75	1.13E-01	1.13E-01	3.94E-02	4.82E-02
	GA-67	93.31		35.70	6.99E-02	6.99E-02	7.27E-02	3.33E-02
		208.95		2.24	1.05E+00		-3.46E-01	4.85E-01
		300.22		16.00	1.83E-01		4.84E-02	8.38E-02
	SE-75	121.11		16.70	1.09E-01	2.97E-02	4.91E-02	5.08E-02
		136.00		59.20	2.97E-02		6.88E-04	1.38E-02
		264.65		59.80	4.19E-02		-1.50E-02	1.92E-02
		279.53		25.20	1.05E-01		2.66E-02	4.81E-02
		400.65		11.40	2.51E-01		-1.53E-01	1.11E-01
	RB-82	776.52		13.00	3.46E-01	3.46E-01	7.09E-02	1.49E-01
	RB-83	520.41		46.00	7.41E-02	7.41E-02	3.39E-03	3.25E-02
		529.64		30.30	1.17E-01		-1.26E-02	5.16E-02
		552.65		16.40	1.96E-01		-1.01E-02	8.46E-02
	KR-85	513.99		0.43	1.20E+01	1.20E+01	4.65E+00	5.52E+00
	SR-85	513.99		99.27	5.26E-02	5.26E-02	2.04E-02	2.42E-02
	Y-88	898.02		93.40	5.08E-02	4.67E-02	-2.93E-03	2.16E-02
		1836.01		99.38	4.67E-02		-1.26E-02	1.65E-02
	MO-93	263.06		56.72	4.49E-02	3.01E-02	-1.41E-03	2.06E-02
		684.67		99.68	5.11E-02		2.40E-02	2.28E-02
		1477.11		99.08	3.01E-02		-1.91E-02	9.53E-03
	NB-93M	16.57		9.43	4.02E+00	4.02E+00	5.55E+00	1.92E+00
	NB-94	702.63		100.00	4.90E-02	4.90E-02	1.06E-02	2.17E-02
		871.10		100.00	5.85E-02		-8.05E-03	2.58E-02
	NB-95	765.79		99.81	4.85E-02	4.85E-02	1.19E-02	2.12E-02
	NB-95M	235.69		25.00	1.01E-01	1.01E-01	-5.68E-02	4.63E-02
	ZR-95	724.18		43.70	1.05E-01	9.10E-02	-1.17E-02	4.58E-02
		756.72		55.30	9.10E-02		-1.00E-02	4.00E-02
	MO-99	181.06		6.20	4.08E-01	3.90E-01	-6.72E-02	1.91E-01
		739.58		12.80	3.90E-01		4.57E-02	1.70E-01
		778.00		4.50	1.03E+00		-9.54E-02	4.39E-01
	RU-103	497.08		89.00	3.94E-02	3.94E-02	2.34E-03	1.74E-02
	RU-106	621.84		9.80	3.30E-01	3.30E-01	-7.76E-02	1.39E-01
	AG-108M	433.93		89.90	3.22E-02	3.22E-02	8.26E-03	1.42E-02

Analysis Report for 1707092-02

BLANK

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AG-108M	614.37	90.40	4.55E-02	3.22E-02	-4.50E-03	2.00E-02
	722.95	90.50	5.69E-02		2.62E-02	2.52E-02
CD-109	88.03	3.72	5.43E-01	5.43E-01	-6.81E-01	2.57E-01
AG-110M	657.75	93.14	3.81E-02	3.81E-02	-2.09E-02	1.62E-02
	677.61	10.53	3.73E-01		-2.11E-01	1.61E-01
	706.67	16.46	2.48E-01		-2.60E-02	1.07E-01
	763.93	21.98	2.19E-01		-3.50E-02	9.55E-02
	884.67	71.63	5.41E-02		-2.99E-02	2.22E-02
	1384.27	23.94	1.92E-01		-2.13E-02	7.45E-02
CD-113M	263.70	0.02	1.12E+02	1.12E+02	-6.52E+00	5.15E+01
SN-113	255.12	1.93	1.30E+00	5.42E-02	-2.34E-01	5.95E-01
	391.69	64.90	5.42E-02		6.27E-03	2.47E-02
TE123M	159.00	84.10	2.38E-02	2.38E-02	-1.35E-02	1.11E-02
SB-124	602.71	97.87	3.59E-02	3.59E-02	-8.75E-03	1.55E-02
	645.85	7.26	4.82E-01		-2.43E-01	2.05E-01
	722.78	11.10	4.65E-01		2.14E-01	2.06E-01
	1691.02	49.00	1.33E-01		5.65E-02	5.37E-02
I-125	35.49	6.49	6.70E-01	6.70E-01	-1.11E-02	3.17E-01
SB-125	176.33	6.89	2.83E-01	9.25E-02	-1.04E-01	1.31E-01
	427.89	29.33	9.25E-02		-3.20E-02	4.04E-02
	463.38	10.35	3.40E-01		-9.29E-02	1.52E-01
	600.56	17.80	2.42E-01		6.21E-02	1.07E-01
	635.90	11.32	3.47E-01		-1.34E-01	1.51E-01
SB-126	414.70	83.30	3.68E-02	3.68E-02	1.50E-03	1.64E-02
	666.33	99.60	4.85E-02		7.17E-03	2.15E-02
	695.00	99.60	5.16E-02		-2.26E-02	2.29E-02
	720.50	53.80	9.68E-02		1.98E-02	4.29E-02
SN-126	87.57	37.00	5.46E-02	5.46E-02	-6.84E-02	2.58E-02
SB-127	473.00	25.00	1.30E-01	1.30E-01	-3.22E-02	5.68E-02
	685.20	35.70	1.50E-01		7.03E-02	6.67E-02
	783.80	14.70	3.51E-01		1.22E-01	1.53E-01
I-129	29.78	57.00	1.09E-01	1.09E-01	-2.86E-02	5.17E-02
	33.60	13.20	3.58E-01		-3.94E-02	1.69E-01
	39.58	7.52	4.66E-01		2.89E-02	2.20E-01
I-131	284.30	6.05	4.75E-01	4.05E-02	1.84E-01	2.18E-01
	364.48	81.20	4.05E-02		1.09E-02	1.84E-02
	636.97	7.26	6.00E-01		5.13E-02	2.64E-01
	722.89	1.80	2.92E+00		1.35E+00	1.30E+00
TE-132	49.72	13.10	2.06E-01	2.97E-02	-4.32E-02	9.69E-02
	228.16	88.00	2.97E-02		5.29E-03	1.38E-02
BA-133	81.00	33.00	6.14E-02	5.37E-02	1.61E-02	2.90E-02
	302.84	17.80	1.53E-01		3.12E-02	6.99E-02
	356.01	60.00	5.37E-02		3.90E-03	2.45E-02
I-133	529.87	86.30	5.09E-02	5.09E-02	-5.48E-03	2.24E-02
XE-133	81.00	38.00	5.52E-02	5.52E-02	1.45E-02	2.61E-02
CS-134	563.23	8.38	4.28E-01	4.05E-02	7.15E-02	1.87E-01
	569.32	15.43	2.47E-01		-2.29E-01	1.09E-01
	604.70	97.60	4.05E-02		-1.39E-03	1.77E-02
	795.84	85.40	6.45E-02		3.13E-02	2.85E-02
	801.93	8.73	5.43E-01		1.08E-01	2.35E-01
CS-135	268.24	16.00	1.76E-01	1.76E-01	7.40E-02	8.12E-02
I-135	1131.51	22.50	4.18E-01	4.18E-01	1.13E-01	1.71E-01
	1260.41	28.60	4.53E-01		1.44E-01	1.94E-01

Analysis Report for 1707092-02

BLANK

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-135	1678.03	9.54	1.12E+00	4.18E-01	9.35E-02	4.35E-01
CS-136	153.22	7.46	2.78E-01	4.92E-02	9.01E-02	1.30E-01
	163.89	4.61	4.92E-01		1.91E-01	2.31E-01
	176.55	13.56	1.49E-01		-2.15E-02	6.88E-02
	273.65	12.66	1.92E-01		-5.14E-02	8.75E-02
	340.57	48.50	6.75E-02		7.36E-03	3.09E-02
	818.50	99.70	4.92E-02		4.02E-03	2.13E-02
	1048.07	79.60	6.37E-02		-3.76E-02	2.67E-02
	1235.34	19.70	3.11E-01		6.06E-02	1.31E-01
CS-137	661.65	85.12	4.79E-02	4.79E-02	3.47E-03	2.08E-02
LA-138	788.74	34.00	1.53E-01	8.45E-02	0.00E+00	6.74E-02
	1435.80	66.00	8.45E-02		1.37E-02	3.42E-02
CE-139	165.85	80.35	2.76E-02	2.76E-02	5.67E-03	1.29E-02
BA-140	162.64	6.70	3.39E-01	1.43E-01	1.04E-01	1.59E-01
	304.84	4.50	5.79E-01		-4.37E-02	2.62E-01
	423.70	3.20	1.07E+00		-3.99E-02	4.83E-01
	437.55	2.00	1.48E+00		-3.49E-02	6.52E-01
	537.32	25.00	1.43E-01		1.05E-02	6.25E-02
LA-140	328.77	20.50	1.58E-01	5.56E-02	4.69E-02	7.23E-02
	487.03	45.50	7.78E-02		2.31E-03	3.45E-02
	815.85	23.50	2.32E-01		2.73E-02	1.02E-01
	1596.49	95.49	5.56E-02		7.33E-03	2.15E-02
CE-141	145.44	48.40	4.24E-02	4.24E-02	1.81E-02	1.99E-02
CE-143	57.36	11.80	2.03E-01	6.72E-02	2.29E-02	9.52E-02
	293.26	42.00	6.72E-02		3.15E-02	3.04E-02
	664.55	5.20	9.01E-01		2.17E-01	3.92E-01
CE-144	133.54	10.80	1.62E-01	1.62E-01	1.29E-02	7.56E-02
PM-144	476.78	42.00	7.96E-02	3.88E-02	3.45E-02	3.52E-02
	618.01	98.60	3.88E-02		-8.73E-04	1.68E-02
	696.49	99.49	5.49E-02		7.28E-03	2.47E-02
PM-145	36.85	21.70	1.95E-01	1.04E-01	1.54E-01	9.23E-02
	37.36	39.70	1.04E-01		8.25E-02	4.93E-02
	42.30	15.10	2.00E-01		-2.80E-01	9.40E-02
	72.40	2.31	9.29E-01		2.50E-01	4.40E-01
PM-146	453.90	39.94	7.96E-02	7.96E-02	-1.52E-02	3.52E-02
	735.90	14.01	3.03E-01		9.74E-02	1.30E-01
	747.13	13.10	4.14E-01		1.28E-01	1.84E-01
ND-147	91.11	28.90	8.47E-02	8.47E-02	7.98E-02	4.04E-02
	531.02	13.10	2.83E-01		-3.01E-02	1.25E-01
PM-149	285.90	3.10	9.37E-01	9.37E-01	-1.13E-03	4.28E-01
EU-152	121.78	20.50	8.86E-02	8.86E-02	2.57E-02	4.14E-02
	244.69	5.40	4.81E-01		-5.27E-02	2.22E-01
	344.27	19.13	1.56E-01		2.08E-02	7.10E-02
	778.89	9.20	4.53E-01		-4.31E-02	1.93E-01
	964.01	10.40	5.22E-01		-1.03E-02	2.25E-01
	1085.78	7.22	6.43E-01		2.17E-01	2.64E-01
	1112.02	9.60	4.64E-01		-2.74E-01	1.87E-01
	1407.95	14.94	4.13E-01		1.30E-01	1.71E-01
GD-153	97.43	31.30	5.77E-02	5.77E-02	-3.96E-02	2.71E-02
	103.18	22.20	7.24E-02		-3.00E-02	3.37E-02
EU-154	123.07	40.50	4.38E-02	4.38E-02	1.97E-03	2.05E-02
	723.30	19.70	2.32E-01		-2.58E-02	1.01E-01
	873.19	11.50	4.72E-01		1.39E-01	2.06E-01

Analysis Report for 1707092-02

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-154	996.32		10.30	4.18E-01	4.38E-02	1.35E-01	1.71E-01
		1004.76		17.90	1.74E-01		0.00E+00	6.50E-02
		1274.45		35.50	1.67E-01		1.63E-02	7.00E-02
	EU-155	86.50		30.90	6.54E-02	6.54E-02	-4.03E-02	3.09E-02
		105.30		20.70	8.19E-02		-1.26E-02	3.83E-02
	EU-156	811.77		10.40	4.67E-01	4.67E-01	1.28E-01	2.02E-01
		1153.47		7.20	7.99E-01		1.44E-01	3.37E-01
		1230.71		8.90	7.12E-01		1.18E-01	3.03E-01
	HO-166M	184.41		72.60	3.78E-02	3.78E-02	2.93E-02	1.78E-02
		280.45		29.60	9.06E-02		1.38E-02	4.15E-02
		410.94		11.10	2.41E-01		-1.27E-01	1.05E-01
		711.69		54.10	7.60E-02		5.70E-03	3.27E-02
	TM-171	66.72		0.14	1.63E+01	1.63E+01	-1.04E+01	7.71E+00
	HF-172	67.35		5.31	4.27E-01	1.53E-01	-2.72E-01	2.02E-01
		125.81		11.30	1.53E-01		-1.75E-02	7.13E-02
	LU-172	181.53		20.60	1.23E-01	7.22E-02	-3.98E-02	5.76E-02
		900.72		29.81	1.64E-01		1.11E-02	6.97E-02
		1093.66		62.50	7.22E-02		7.68E-03	2.92E-02
	LU-173	100.72		5.24	3.05E-01	1.26E-01	-5.38E-02	1.42E-01
		272.11		21.20	1.26E-01		5.18E-02	5.76E-02
	HF-175	343.40		84.00	3.56E-02	3.56E-02	4.73E-03	1.62E-02
	LU-176	88.34		13.30	1.52E-01	2.54E-02	-1.90E-01	7.18E-02
		201.83		86.00	2.69E-02		-1.10E-02	1.25E-02
		306.78		94.00	2.54E-02		-2.82E-02	1.14E-02
	HF-181	133.02		41.70	4.28E-02	4.01E-02	4.94E-03	1.99E-02
		345.85		17.20	1.63E-01		-3.75E-02	7.34E-02
		482.03		82.80	4.01E-02		5.83E-03	1.77E-02
	TA-182	67.75		41.20	5.43E-02	5.43E-02	-3.72E-02	2.57E-02
		1121.30		34.90	1.37E-01		3.04E-02	5.62E-02
		1189.05		16.23	3.10E-01		2.36E-02	1.27E-01
		1221.41		26.98	1.37E-01		-7.64E-02	5.13E-02
		1231.02		11.44	5.48E-01		1.51E-01	2.33E-01
	IR-192	308.46		29.68	9.27E-02	6.99E-02	1.56E-02	4.22E-02
		468.07		48.10	6.99E-02		-6.92E-05	3.10E-02
	HG-203	279.19		77.30	3.27E-02	3.27E-02	2.93E-03	1.49E-02
	TL-204	374.74		94.11	2.71E-02	2.71E-02	-9.74E-03	1.20E-02
		899.15		99.16	4.40E-02		-1.38E-02	1.84E-02
		911.74		91.10	5.07E-02		-2.24E-02	2.14E-02
+	BI-207	569.67	*	97.72	4.77E-02	4.77E-02	1.33E-02	2.15E-02
		1063.62		74.90	7.63E-02		8.79E-03	3.27E-02
	TL-208	583.14		30.22	1.41E-01	1.41E-01	5.00E-02	6.29E-02
		860.37		4.48	8.91E-01		-3.09E-01	3.69E-01
		2614.66		35.85	2.95E-01		9.05E-02	1.19E-01
	BI-210M	262.00		45.00	5.76E-02	5.76E-02	4.44E-03	2.65E-02
		300.00		23.00	1.20E-01		3.18E-02	5.51E-02
	PB-210	46.50		4.25	7.03E-01	7.03E-01	6.10E-01	3.33E-01
	PB-211	404.84		2.90	1.11E+00	1.11E+00	3.35E-01	5.01E-01
		831.96		2.90	1.74E+00		-1.01E-01	7.58E-01
	BI-212	727.17		11.80	3.67E-01	3.67E-01	1.16E-01	1.59E-01
		1620.62		2.75	1.73E+00		-1.79E-01	6.48E-01
	PB-212	238.63		44.60	5.68E-02	5.68E-02	8.70E-03	2.63E-02
		300.09		3.41	8.13E-01		2.14E-01	3.71E-01
	BI-214	609.31		46.30	1.06E-01	1.06E-01	6.21E-02	4.74E-02

Analysis Report for 1707092-02

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-214	1120.29		15.10	3.51E-01	1.06E-01	1.68E-01	1.47E-01
		1764.49		15.80	3.27E-01		-5.06E-02	1.22E-01
		2204.22		4.98	1.31E+00		3.11E-01	4.90E-01
	PB-214	295.21		19.19	1.15E-01	8.56E-02	-4.04E-02	5.16E-02
		351.92		37.19	8.56E-02		2.57E-02	3.90E-02
	RN-219	401.80		6.50	5.01E-01	5.01E-01	6.42E-02	2.26E-01
+	RA-223	323.87	*	3.88	9.68E-01	9.68E-01	5.93E-01	4.51E-01
	RA-224	240.98		3.95	6.47E-01	6.47E-01	-5.14E-02	2.99E-01
	RA-225	40.00		31.00	1.13E-01	1.13E-01	6.99E-03	5.31E-02
	RA-226	186.21		3.28	8.42E-01	8.42E-01	6.80E-01	3.98E-01
	TH-227	50.10		8.40	3.01E-01	2.08E-01	-6.32E-02	1.42E-01
		236.00		11.50	2.08E-01		-1.18E-01	9.57E-02
		256.20		6.30	4.15E-01		3.58E-02	1.91E-01
	AC-228	338.32		11.40	3.09E-01	1.73E-01	1.86E-01	1.43E-01
		911.07		27.70	1.73E-01		-4.91E-02	7.38E-02
		969.11		16.60	3.69E-01		1.90E-01	1.62E-01
	TH-230	48.44		16.90	1.72E-01	1.72E-01	1.72E-01	8.14E-02
		62.85		4.60	5.25E-01		2.22E-01	2.50E-01
		67.67		0.37	6.04E+00		-4.13E+00	2.86E+00
+	PA-231	283.67		1.60	1.75E+00	1.24E+00	6.78E-01	8.05E-01
		302.67	*	2.30	1.24E+00		5.71E-01	5.65E-01
	TH-231	25.64		14.70	6.76E-01	3.06E-01	1.45E-01	3.22E-01
		84.21		6.40	3.06E-01		-2.01E-02	1.44E-01
+	PA-233	311.98	*	38.60	5.96E-02	5.96E-02	3.68E-02	2.66E-02
	PA-234	131.20		20.40	8.71E-02	8.71E-02	1.54E-02	4.06E-02
		733.99		8.80	4.65E-01		8.02E-02	1.99E-01
		946.00		12.00	3.22E-01		-3.23E-01	1.30E-01
	PA-234M	1001.03		0.92	3.37E+00	3.37E+00	6.26E-01	1.26E+00
	TH-234	63.29		3.80	6.33E-01	6.33E-01	2.68E-01	3.01E-01
	U-235	143.76		10.50	1.93E-01	1.93E-01	7.80E-02	9.05E-02
		163.35		4.70	4.78E-01		1.46E-01	2.24E-01
		205.31		4.70	4.87E-01		2.64E-02	2.26E-01
	NP-237	86.50		12.60	1.60E-01	1.60E-01	-9.89E-02	7.59E-02
	NP-239	106.10		22.70	8.21E-02	8.21E-02	-3.75E-02	3.84E-02
		228.18		10.70	2.50E-01		4.44E-02	1.16E-01
		277.60		14.10	1.77E-01		-1.01E-01	7.98E-02
	AM-241	59.54		35.90	6.46E-02	6.46E-02	4.27E-03	3.06E-02
	AM-243	74.67		66.00	3.11E-02	3.11E-02	-5.41E-03	1.47E-02
	CM-243	209.75		3.29	7.15E-01	1.64E-01	-3.78E-02	3.32E-01
		228.14		10.60	2.33E-01		4.15E-02	1.08E-01
		277.60		14.00	1.64E-01		-9.39E-02	7.43E-02

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

Analysis Report for 1707092-02
BLANK

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: BLANK

Elapsed Live time: 3600
Elapsed Real Time: 3607

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	6	54
17:	28	29	30	31	15	24	23	22
25:	13	23	16	16	13	16	12	11
33:	12	22	12	15	17	14	20	11
41:	7	12	6	16	23	27	15	10
49:	12	10	8	9	14	10	13	9
57:	13	10	10	6	18	38	21	15
65:	14	20	13	17	15	18	15	14
73:	12	18	11	12	19	13	17	12
81:	17	11	13	10	17	16	14	13
89:	20	13	34	32	23	10	10	7
97:	14	7	9	7	6	7	11	9
105:	12	15	8	8	18	17	7	13
113:	10	12	6	10	8	10	13	10
121:	9	10	11	8	6	10	9	8
129:	10	9	7	10	10	8	8	8
137:	8	7	11	6	9	4	20	10
145:	16	10	8	7	11	6	11	14
153:	8	12	8	8	9	10	10	8
161:	10	10	18	13	9	9	9	6
169:	10	9	7	8	8	9	4	6
177:	9	7	10	10	8	13	17	15
185:	21	18	6	8	7	9	9	7
193:	8	11	10	11	13	9	8	12
201:	6	9	6	8	5	14	7	4
209:	7	8	5	11	9	10	6	8
217:	9	10	13	11	8	10	5	9
225:	10	7	3	6	6	12	5	7
233:	2	11	5	8	7	6	10	10
241:	5	10	3	10	7	5	11	5
249:	7	7	5	9	6	4	9	5
257:	5	9	5	8	6	5	5	6
265:	7	6	5	7	9	10	4	6
273:	4	3	3	4	6	4	6	4
281:	9	7	5	7	6	6	4	4
289:	3	7	5	4	4	5	3	2
297:	1	10	8	4	4	9	1	8
305:	2	5	2	3	5	11	7	6
313:	2	5	5	5	8	3	6	7
321:	6	6	11	11	7	6	2	6
329:	8	5	8	5	4	6	7	6
337:	8	6	6	10	1	6	3	2
345:	7	4	2	4	4	5	7	8
353:	2	6	7	2	5	6	5	3
361:	7	5	1	5	5	7	4	5

369:	2	2	4	4	1	2	4	3

Sample Title: BLANK

Channel								
377:	1	6	4	6	3	5	4	2
385:	3	3	6	3	4	8	6	5
393:	6	3	4	5	2	4	4	4
401:	2	3	2	9	2	5	4	2
409:	1	3	1	3	3	3	6	1
417:	5	5	3	8	4	1	9	2
425:	0	3	5	3	1	2	3	1
433:	1	4	3	4	1	2	3	1
441:	4	3	2	2	5	7	2	6
449:	1	2	3	4	5	3	1	2
457:	4	3	7	2	4	4	5	4
465:	2	3	4	4	1	3	4	0
473:	4	1	4	4	1	5	1	1
481:	1	3	3	5	1	3	4	3
489:	2	5	2	4	5	4	3	2
497:	4	0	2	1	4	2	2	5
505:	2	2	3	9	13	18	11	8
513:	3	2	1	2	1	5	3	1
521:	2	2	3	2	2	3	2	3
529:	3	4	2	1	4	3	4	1
537:	2	3	1	3	2	2	1	4
545:	1	4	1	3	0	3	0	2
553:	1	2	5	2	2	3	1	1
561:	2	3	4	2	3	1	1	5
569:	1	2	3	5	9	9	2	4
577:	2	3	2	4	4	5	2	3
585:	2	1	2	4	3	0	3	1
593:	1	2	3	6	3	7	3	1
601:	4	3	0	1	1	4	4	5
609:	3	5	3	3	2	2	2	1
617:	5	1	3	1	2	2	1	0
625:	2	1	1	2	6	2	2	3
633:	0	4	0	1	3	4	6	3
641:	1	1	1	3	2	1	3	0
649:	6	1	3	4	1	1	2	1
657:	3	0	1	1	1	1	2	3
665:	3	1	2	1	5	3	3	6
673:	0	0	1	1	5	0	3	2
681:	1	2	4	4	1	3	1	5
689:	0	2	3	2	3	5	1	0
697:	4	2	6	3	1	4	1	2
705:	0	1	2	1	1	1	1	2
713:	2	0	3	2	2	5	2	2
721:	1	3	1	3	0	4	0	1
729:	1	1	1	0	0	4	2	2
737:	1	2	1	0	1	4	3	1
745:	1	0	4	4	3	2	2	3
753:	1	2	1	2	3	3	0	3
761:	1	4	1	2	3	2	0	2
769:	1	2	0	1	3	1	2	2
777:	1	0	2	1	0	2	2	0
785:	4	1	4	1	2	1	2	3
793:	1	3	3	2	0	2	4	1

801:	0	2	3	1	1	0	0	0

Sample Title: BLANK

Channel								
809:	1	2	3	4	0	2	2	2
817:	1	3	1	1	1	1	1	1
825:	2	3	1	2	1	2	0	0
833:	3	4	2	0	2	5	4	1
841:	1	1	1	2	2	0	3	1
849:	1	1	2	2	2	0	0	1
857:	0	0	0	2	2	3	0	0
865:	3	3	4	3	0	2	3	0
873:	2	2	5	1	1	1	1	2
881:	1	1	1	0	0	1	1	0
889:	3	1	2	3	1	1	0	1
897:	1	3	0	2	2	0	0	2
905:	2	1	0	1	0	2	0	4
913:	0	3	0	3	2	1	0	1
921:	1	2	1	2	1	3	1	1
929:	2	0	3	1	3	3	1	2
937:	0	1	3	5	1	2	0	0
945:	2	0	1	0	0	2	1	0
953:	3	1	2	2	1	1	2	0
961:	2	0	0	4	1	2	2	2
969:	2	1	3	0	0	2	0	0
977:	0	0	0	1	2	0	0	0
985:	2	1	1	1	4	3	2	0
993:	2	1	1	1	1	1	0	0
1001:	0	0	0	0	0	0	2	1
1009:	0	2	3	3	2	1	0	0
1017:	1	3	2	0	3	1	1	1
1025:	0	2	1	1	0	0	1	2
1033:	1	0	1	2	0	0	1	1
1041:	1	2	0	1	2	2	1	1
1049:	1	1	0	2	3	0	1	0
1057:	0	1	2	1	2	1	1	1
1065:	2	1	1	2	1	0	1	1
1073:	1	1	0	1	1	1	1	0
1081:	0	1	1	2	0	2	0	0
1089:	1	0	0	0	0	4	0	1
1097:	0	1	1	1	3	0	0	0
1105:	3	0	1	1	0	1	0	1
1113:	1	1	0	2	4	0	2	1
1121:	0	0	0	0	0	0	0	1
1129:	0	1	1	2	0	2	0	0
1137:	0	2	0	1	2	1	0	0
1145:	0	2	2	1	2	2	2	0
1153:	0	2	1	1	0	1	0	0
1161:	1	1	2	1	0	1	0	1
1169:	1	1	0	2	1	0	2	1
1177:	0	1	1	0	4	1	2	0
1185:	0	0	1	1	1	3	1	0
1193:	0	1	0	0	0	0	0	1
1201:	1	2	3	1	1	3	0	1
1209:	0	0	0	5	0	1	0	2
1217:	0	0	1	0	0	1	1	0
1225:	0	2	0	1	3	0	1	2

1233:	0	2	2	0	2	0	1	0

Sample Title: BLANK

Channel								
1241:	1	0	1	2	1	0	0	1
1249:	1	0	1	0	0	2	0	1
1257:	2	2	2	0	2	2	1	0
1265:	1	0	1	1	0	0	0	2
1273:	1	1	2	0	1	2	1	1
1281:	1	1	0	0	2	1	0	0
1289:	2	0	0	1	1	0	2	1
1297:	0	1	0	4	1	0	1	3
1305:	1	1	0	0	1	1	1	0
1313:	0	1	0	0	0	2	2	0
1321:	0	2	0	1	0	2	0	1
1329:	0	1	1	1	0	1	1	0
1337:	0	0	0	0	0	1	1	0
1345:	0	1	0	1	1	2	0	1
1353:	1	0	0	1	1	0	2	1
1361:	1	0	1	0	0	0	0	2
1369:	0	0	1	0	1	0	0	2
1377:	0	1	2	0	1	1	1	0
1385:	0	0	0	1	1	0	0	0
1393:	0	0	1	3	1	0	0	2
1401:	1	0	0	0	0	1	3	1
1409:	0	2	1	0	0	0	1	1
1417:	0	1	3	0	1	0	0	0
1425:	2	0	0	1	0	1	0	3
1433:	2	0	0	0	1	0	0	1
1441:	0	0	1	0	0	0	0	0
1449:	0	0	2	0	4	0	0	0
1457:	0	2	2	1	1	0	0	0
1465:	2	0	2	1	0	2	1	0
1473:	0	0	0	0	1	0	0	0
1481:	0	0	1	0	2	0	0	0
1489:	0	1	1	0	0	0	1	0
1497:	0	0	1	1	0	0	0	0
1505:	1	2	0	1	0	0	0	0
1513:	0	2	0	0	0	3	0	1
1521:	0	1	0	1	0	0	2	0
1529:	0	1	0	0	0	1	1	1
1537:	1	0	0	0	1	1	2	0
1545:	0	1	1	0	1	0	0	0
1553:	1	0	0	1	2	1	0	1
1561:	2	0	0	2	0	1	1	1
1569:	0	1	0	0	0	2	0	1
1577:	0	0	0	2	0	0	1	1
1585:	0	0	1	0	0	0	0	0
1593:	3	0	0	1	0	0	0	0
1601:	0	0	1	0	1	0	0	3
1609:	1	0	0	0	0	1	1	0
1617:	1	1	0	0	0	0	1	0
1625:	0	1	0	1	0	1	0	1
1633:	2	0	1	1	0	0	0	0
1641:	0	0	0	0	0	1	1	0
1649:	0	0	1	0	1	0	0	0
1657:	1	0	1	0	0	0	1	0

1665:	2	0	0	0	0	0	0	0

Sample Title: BLANK

Channel								
1673:	1	0	0	1	2	0	0	0
1681:	0	1	1	0	0	0	0	2
1689:	0	1	1	1	0	0	1	0
1697:	0	0	0	1	0	0	0	0
1705:	1	0	0	0	0	0	0	0
1713:	1	1	0	0	0	0	0	0
1721:	2	2	0	0	0	1	0	0
1729:	0	0	1	0	2	0	0	1
1737:	0	0	1	0	1	0	0	0
1745:	0	0	2	1	2	0	0	1
1753:	0	0	0	0	0	0	0	0
1761:	0	1	0	0	1	1	0	0
1769:	1	1	1	0	0	1	0	0
1777:	0	0	0	0	1	0	0	2
1785:	1	0	0	0	0	0	0	1
1793:	0	0	0	0	1	1	0	0
1801:	1	0	1	0	0	0	0	1
1809:	1	0	1	1	0	0	1	0
1817:	1	1	0	1	0	0	0	0
1825:	0	0	0	0	0	2	0	0
1833:	0	1	0	0	0	0	1	0
1841:	0	1	0	0	0	0	0	0
1849:	1	1	0	0	0	0	0	0
1857:	0	0	1	0	0	0	0	0
1865:	0	1	0	0	1	1	1	0
1873:	1	0	0	0	0	1	0	1
1881:	0	2	1	0	0	0	0	0
1889:	0	0	0	1	0	0	0	0
1897:	0	1	0	0	0	1	0	0
1905:	1	0	0	0	0	1	1	1
1913:	0	0	1	0	0	0	0	0
1921:	0	0	0	0	0	1	0	0
1929:	0	0	1	0	0	0	0	0
1937:	1	3	0	0	3	0	0	0
1945:	1	0	0	0	2	0	0	0
1953:	0	0	0	0	0	0	0	0
1961:	1	0	0	0	0	0	0	0
1969:	0	0	0	1	0	0	1	1
1977:	1	0	1	0	0	2	0	0
1985:	0	0	0	0	0	0	0	0
1993:	0	0	0	1	0	0	2	0
2001:	0	1	0	0	1	0	0	0
2009:	0	1	1	0	0	0	0	0
2017:	0	1	0	0	0	0	0	0
2025:	0	1	0	0	1	0	0	0
2033:	1	0	1	0	0	0	0	1
2041:	0	0	1	1	0	0	0	0
2049:	0	2	0	0	0	1	0	1
2057:	0	0	0	0	0	0	0	0
2065:	0	0	0	0	0	1	0	0
2073:	0	0	0	0	2	0	1	0
2081:	0	0	0	0	0	0	1	1
2089:	0	0	0	1	0	0	0	0

2097:	0	0	1	0	2	0	1	0

Sample Title: BLANK

Channel								
2105:	0	0	1	1	0	1	0	0
2113:	0	2	1	0	0	0	0	0
2121:	1	1	0	0	0	0	0	1
2129:	0	0	0	0	0	2	0	0
2137:	0	0	0	0	1	0	0	0
2145:	0	0	0	0	0	0	0	0
2153:	1	0	0	0	0	1	0	1
2161:	0	0	0	0	0	0	0	0
2169:	0	0	0	1	0	0	0	0
2177:	0	0	0	1	0	1	0	0
2185:	1	0	0	1	0	0	0	0
2193:	1	0	1	0	0	0	1	1
2201:	1	0	1	0	0	0	0	0
2209:	0	0	0	0	0	0	0	0
2217:	0	0	0	0	2	0	0	0
2225:	0	0	1	0	0	0	0	0
2233:	0	0	0	1	0	1	0	0
2241:	0	0	0	1	0	0	0	0
2249:	0	0	0	0	0	0	0	0
2257:	0	0	0	0	0	0	0	1
2265:	0	0	0	0	1	1	0	0
2273:	0	1	0	1	0	0	0	0
2281:	0	0	0	0	0	0	0	1
2289:	1	0	0	0	0	1	0	1
2297:	1	0	0	0	1	0	0	0
2305:	0	0	1	0	0	0	0	2
2313:	1	0	0	0	0	0	0	0
2321:	0	1	0	0	0	0	0	0
2329:	0	0	0	0	0	0	0	0
2337:	1	0	1	0	0	1	0	1
2345:	0	0	0	0	1	0	0	0
2353:	1	1	2	0	0	0	0	0
2361:	1	0	0	0	2	0	0	0
2369:	0	0	1	0	0	0	0	1
2377:	1	0	1	0	0	0	0	0
2385:	1	1	0	0	1	1	0	0
2393:	1	0	0	1	0	0	0	0
2401:	1	0	0	0	0	0	0	1
2409:	0	0	0	0	0	0	0	0
2417:	0	0	0	0	0	1	0	1
2425:	0	0	0	0	0	0	0	1
2433:	0	0	0	0	0	0	0	1
2441:	0	0	2	0	1	1	0	0
2449:	0	0	0	0	1	1	0	0
2457:	1	0	0	0	0	0	0	1
2465:	0	0	1	0	0	0	1	0
2473:	0	0	0	0	0	0	0	0
2481:	0	1	0	0	0	0	0	0
2489:	0	0	0	0	1	1	0	0
2497:	1	1	1	0	0	0	0	0
2505:	0	1	0	1	0	0	0	0
2513:	0	1	0	0	0	0	1	0
2521:	0	1	1	0	0	0	0	0

2529:	0	0	0	0	0	0	1	0

Sample Title: BLANK

Channel								
2537:	1	0	0	0	0	0	0	1
2545:	0	0	0	0	0	0	0	0
2553:	1	2	1	0	0	0	0	0
2561:	0	1	0	0	0	0	0	0
2569:	0	0	0	0	1	0	0	0
2577:	0	0	0	0	1	0	1	1
2585:	0	0	0	0	0	0	0	0
2593:	0	0	0	0	0	0	0	0
2601:	0	0	0	0	0	0	1	0
2609:	0	0	0	1	0	2	0	2
2617:	0	1	0	0	0	1	0	0
2625:	1	0	1	0	1	0	0	0
2633:	0	0	0	0	0	0	1	0
2641:	0	0	0	0	0	0	0	0
2649:	0	1	0	1	0	0	1	1
2657:	0	0	0	1	0	1	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	0	0	0	1	0	0	0
2681:	0	0	0	0	0	0	0	0
2689:	0	0	1	0	0	0	0	0
2697:	0	0	0	0	0	2	0	0
2705:	0	0	0	0	0	0	0	0
2713:	0	0	0	0	0	0	2	0
2721:	1	0	0	0	0	0	0	1
2729:	0	0	2	0	0	0	0	0
2737:	0	0	1	0	0	0	0	0
2745:	0	0	0	1	0	0	0	1
2753:	0	0	1	0	0	0	0	0
2761:	0	0	0	0	0	0	1	0
2769:	0	0	0	0	0	0	0	0
2777:	0	0	2	0	0	0	0	0
2785:	0	0	0	0	0	0	0	0
2793:	0	1	0	0	0	0	0	0
2801:	0	1	1	0	0	0	0	0
2809:	0	0	0	1	0	0	0	0
2817:	1	0	0	0	0	0	0	0
2825:	0	0	0	0	0	0	0	1
2833:	0	1	0	0	1	1	0	0
2841:	0	0	0	0	0	0	0	0
2849:	1	0	0	1	0	0	1	0
2857:	0	0	0	0	0	0	0	1
2865:	0	0	0	0	0	0	2	0
2873:	0	1	0	0	0	0	0	0
2881:	0	0	0	0	0	1	1	0
2889:	0	0	1	0	0	0	0	0
2897:	0	0	0	0	1	0	0	0
2905:	0	0	0	0	1	0	1	1
2913:	0	0	1	0	0	0	0	0
2921:	0	1	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	1
2937:	0	0	0	0	0	0	0	0
2945:	1	1	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	0

2961:	0	0	0	0	0	1	0	0

Sample Title: BLANK

Channel								
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	0	0	0	0	0
2985:	0	0	0	1	0	0	0	0
2993:	1	0	0	0	0	0	0	0
3001:	0	0	0	0	0	0	0	1
3009:	1	0	0	0	0	0	0	1
3017:	1	0	0	0	0	0	0	0
3025:	0	0	0	0	0	1	0	0
3033:	1	1	0	0	2	0	1	0
3041:	0	0	1	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	0	1	0	0	1
3073:	0	0	0	0	1	0	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	0	0	0	0	1
3097:	0	0	0	0	0	0	0	0
3105:	0	1	0	1	0	0	0	0
3113:	0	0	0	0	0	0	0	1
3121:	0	1	0	0	0	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	1	0	0	1	0	0
3161:	0	0	1	0	0	0	0	1
3169:	0	1	0	0	0	0	0	0
3177:	0	0	0	0	0	0	1	0
3185:	1	0	0	0	0	0	0	0
3193:	0	0	0	0	0	0	0	0
3201:	0	0	0	0	0	0	0	0
3209:	0	0	0	0	1	0	0	1
3217:	0	0	0	0	0	0	0	0
3225:	0	0	0	1	0	0	0	0
3233:	0	1	0	0	0	0	0	1
3241:	0	0	0	0	0	1	0	0
3249:	0	0	0	0	0	0	0	0
3257:	1	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	1
3273:	0	0	0	0	0	0	0	0
3281:	0	1	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	1
3297:	0	0	1	0	0	0	0	0
3305:	0	0	1	0	0	0	0	0
3313:	0	0	0	0	0	0	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	1	0	0	0
3337:	0	0	0	0	0	0	1	0
3345:	0	1	0	1	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	1	0	0	0	0	0
3369:	1	0	0	0	0	0	0	1
3377:	0	0	0	0	0	0	0	0
3385:	1	0	0	0	0	0	0	0

3393:	0	0	0	1	0	0	1	2

Sample Title: BLANK

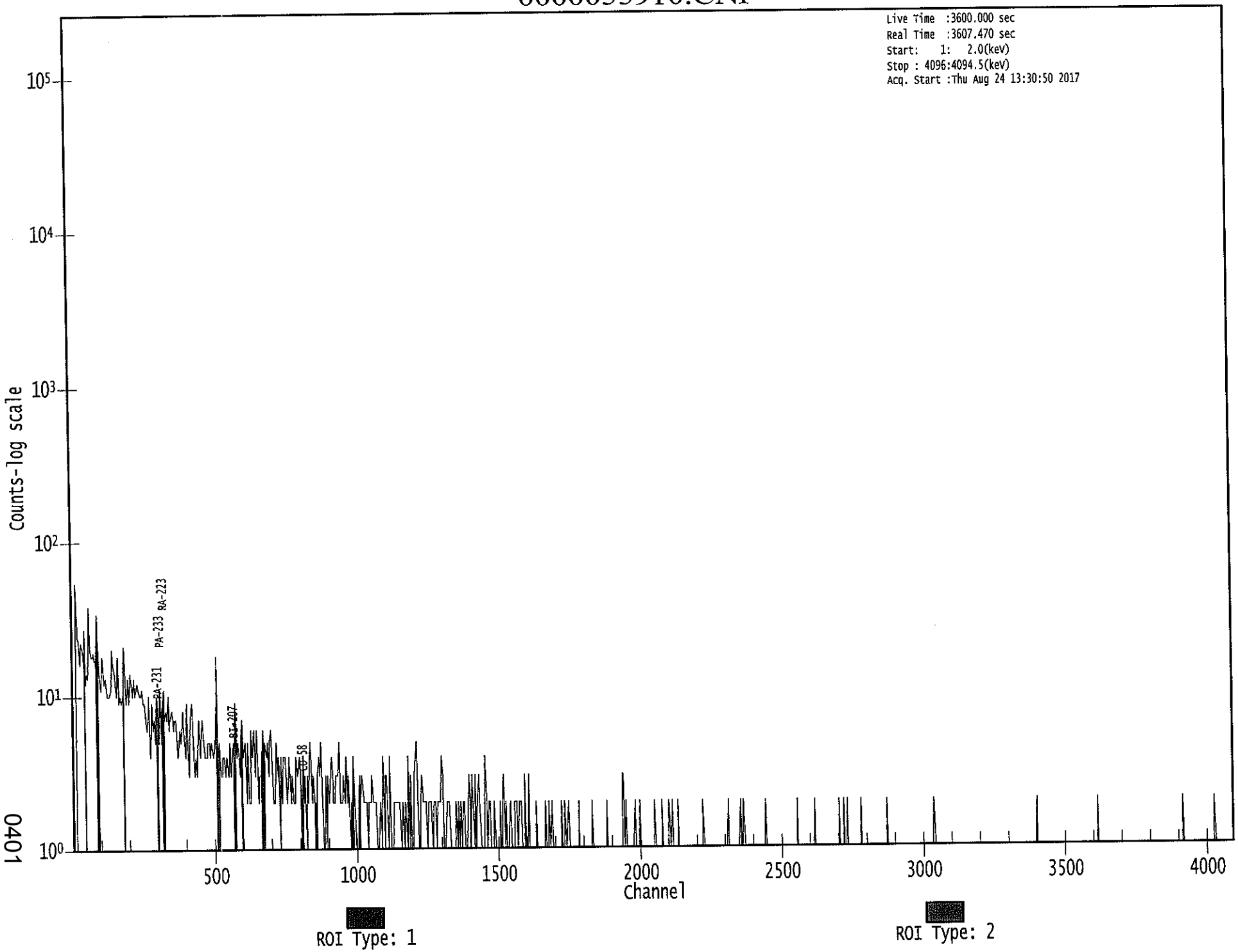
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	1	0
3417:	0	0	0	0	0	0	0	0
3425:	1	1	0	0	1	0	0	0
3433:	0	0	0	0	0	0	1	0
3441:	0	0	0	1	1	0	0	0
3449:	0	0	0	0	1	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	1	0	0	0	1	0	0
3473:	0	1	0	0	1	0	0	0
3481:	0	0	0	0	0	1	0	0
3489:	0	0	0	0	0	0	0	0
3497:	1	0	0	0	0	0	0	0
3505:	0	0	0	1	0	1	0	0
3513:	0	0	0	0	0	0	1	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	1	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	1	1	0	0
3561:	0	0	0	1	0	0	0	1
3569:	0	1	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	1	0	0
3593:	0	0	1	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	2	0
3617:	0	0	0	0	0	0	0	0
3625:	0	1	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	1	0	0	0
3657:	0	0	0	1	0	0	0	0
3665:	0	1	0	1	0	1	0	1
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	1	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	1	0	1	0	0
3721:	0	0	0	0	0	0	1	0
3729:	0	0	0	0	0	0	0	1
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	1	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	1
3777:	0	0	0	0	0	0	0	0
3785:	1	0	0	0	0	0	0	0
3793:	0	0	1	0	0	0	0	0
3801:	0	0	0	0	1	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	1	0	0	0	0	0

3825:	0	0	0	1	0	0	0	0

Sample Title: BLANK

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	1	0	0	0	0	0	0	0
3849:	0	1	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	1	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	2	0	0	0	1	0
3921:	0	0	0	0	0	0	0	1
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	1
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	1	1	0	0
3985:	0	0	0	1	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	2	0	0	0	0	0	1
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	1	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	1	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	1	0	0	0	0	0	0	1
4089:	0	0	0	0	0	0	0	0

0000055910.CNF



0401

KB 8/24/17

Apex-Gamma

Analysis Report for 1707092-03
HTC-A08-S001-0006-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-03
Sample Description	: HTC-A08-S001-0006-01
Sample Type	: SOIL
Sample Size	: 6.486E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 7:38:03AM
Acquisition Started	: 8/24/2017 2:16:31PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.4 seconds
Dead Time	: 0.04 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 19 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55912

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 3:16:36PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.25	46.87	0.0000	0.00
2	63.33	63.94	0.0000	0.00
3	74.72	75.31	0.0000	0.00
4	77.09	77.69	0.0000	0.00
5	87.57	88.15	0.0000	0.00
6	128.69	129.23	0.0000	0.00
7	185.82	186.30	0.0000	0.00
8	189.86	190.34	0.0000	0.00
9	209.14	209.59	0.0000	0.00
10	238.55	238.97	0.0000	0.00
11	241.74	242.16	0.0000	0.00
12	267.77	268.17	0.0000	0.00
13	283.45	283.83	0.0000	0.00
14	295.28	295.64	0.0000	0.00
15	299.84	300.20	0.0000	0.00
16	320.47	320.81	0.0000	0.00
17	327.32	327.65	0.0000	0.00
18	338.54	338.86	0.0000	0.00
19	348.77	349.08	0.0000	0.00
20	352.01	352.32	0.0000	0.00
21	439.42	439.64	0.0000	0.00
22	465.42	465.62	0.0000	0.00
23	510.82	510.97	0.0000	0.00
24	568.80	568.89	0.0000	0.00
25	583.38	583.46	0.0000	0.00
26	609.29	609.34	0.0000	0.00
27	662.67	662.67	0.0000	0.00
28	710.81	710.76	0.0000	0.00
29	726.86	726.80	0.0000	0.00
30	782.80	782.67	0.0000	0.00
31	786.77	786.64	0.0000	0.00
32	813.29	813.14	0.0000	0.00
33	839.55	839.37	0.0000	0.00
34	848.24	848.05	0.0000	0.00
35	860.84	860.64	0.0000	0.00
36	911.45	911.20	0.0000	0.00
37	932.76	932.49	0.0000	0.00
38	965.10	964.80	0.0000	0.00
39	969.44	969.13	0.0000	0.00
40	1096.34	1095.90	0.0000	0.00
41	1116.84	1116.38	0.0000	0.00
42	1120.47	1120.01	0.0000	0.00

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1215.86	1215.30	0.0000	0.00
44	1237.46	1236.89	0.0000	0.00
45	1378.05	1377.34	0.0000	0.00
46	1461.43	1460.63	0.0000	0.00
47	1465.78	1464.98	0.0000	0.00
48	1498.53	1497.69	0.0000	0.00
49	1557.91	1557.02	0.0000	0.00
50	1589.13	1588.21	0.0000	0.00
51	1593.64	1592.72	0.0000	0.00
52	1730.06	1729.00	0.0000	0.00
53	1736.59	1735.52	0.0000	0.00
54	1765.35	1764.26	0.0000	0.00
55	1861.01	1859.83	0.0000	0.00
56	1870.96	1869.77	0.0000	0.00
57	1917.39	1916.15	0.0000	0.00
58	1976.72	1975.42	0.0000	0.00
59	2011.63	2010.30	0.0000	0.00
60	2020.23	2018.89	0.0000	0.00
61	2035.79	2034.44	0.0000	0.00
62	2098.93	2097.51	0.0000	0.00
63	2101.92	2100.50	0.0000	0.00
64	2105.32	2103.89	0.0000	0.00
65	2118.28	2116.85	0.0000	0.00
66	2183.99	2182.49	0.0000	0.00
67	2205.43	2203.91	0.0000	0.00
68	2268.75	2267.17	0.0000	0.00
69	2486.59	2484.80	0.0000	0.00
70	2615.32	2613.41	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 3:16:36PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	46.25	45 -	50	46.87	1.29E+02	72.79	9.73E+02	1.36
	2	63.33	60 -	67	63.94	1.85E+02	113.93	2.04E+03	1.56
M	3	74.72	72 -	81	75.31	4.25E+02	95.17	1.35E+03	1.81
m	4	77.09	72 -	81	77.69	7.06E+02	101.37	1.30E+03	1.82
m	5	87.57	82 -	101	88.15	2.24E+02	76.44	1.09E+03	1.67
	6	128.69	125 -	133	129.23	9.78E+01	93.79	1.29E+03	4.22
M	7	185.82	183 -	193	186.30	2.38E+02	65.86	6.89E+02	1.87
m	8	189.86	183 -	193	190.34	4.69E+01	62.43	6.52E+02	1.96
	9	209.14	206 -	212	209.59	1.03E+02	68.35	7.75E+02	1.97
M	10	238.55	235 -	246	238.97	9.31E+02	76.02	4.75E+02	1.73
m	11	241.74	235 -	246	242.16	2.37E+02	76.78	4.62E+02	1.82
M	12	267.77	267 -	286	268.17	3.39E+01	19.77	1.17E+02	1.84
m	13	283.45	267 -	286	283.83	4.88E+01	43.16	3.16E+02	1.86
M	14	295.28	291 -	304	295.64	3.60E+02	56.19	3.55E+02	1.86
m	15	299.84	291 -	304	300.20	9.04E+01	47.38	3.31E+02	2.06
	16	320.47	318 -	323	320.81	4.07E+01	37.13	2.35E+02	2.66
	17	327.32	324 -	331	327.65	6.57E+01	47.83	3.41E+02	4.84
	18	338.54	335 -	343	338.86	1.89E+02	64.07	5.20E+02	2.02
M	19	348.77	347 -	357	349.08	2.71E+01	29.80	1.88E+02	2.06
m	20	352.01	347 -	357	352.32	5.60E+02	58.09	2.63E+02	1.79
	21	439.42	436 -	442	439.64	3.73E+01	37.90	2.33E+02	3.03
	22	465.42	459 -	473	465.62	9.45E+01	65.56	4.13E+02	4.37
	23	510.82	506 -	515	510.97	1.83E+02	55.19	3.31E+02	2.34
	24	568.80	566 -	571	568.89	2.42E+01	26.63	1.22E+02	2.08
	25	583.38	579 -	589	583.46	2.46E+02	59.88	3.47E+02	2.00
	26	609.29	598 -	622	609.34	4.72E+02	91.74	4.53E+02	2.14
	27	662.67	657 -	668	662.67	1.58E+02	50.40	2.34E+02	2.00
	28	710.81	708 -	714	710.76	2.15E+01	27.21	1.19E+02	3.17
	29	726.86	722 -	731	726.80	6.16E+01	41.45	2.11E+02	2.07
M	30	782.80	781 -	808	782.67	1.27E+01	13.38	4.72E+01	3.08
m	31	786.77	781 -	808	786.64	2.49E+01	27.64	1.21E+02	2.59
	32	813.29	809 -	819	813.14	3.92E+01	33.22	1.26E+02	4.73
	33	839.55	837 -	842	839.37	1.79E+01	21.61	7.61E+01	2.72
	34	848.24	846 -	850	848.05	1.72E+01	18.28	5.77E+01	2.80
	35	860.84	858 -	864	860.64	4.20E+01	28.00	1.12E+02	1.35
	36	911.45	906 -	916	911.20	2.00E+02	46.95	1.88E+02	1.90
	37	932.76	921 -	939	932.49	5.75E+01	50.03	1.89E+02	12.46
M	38	965.10	957 -	983	964.80	4.71E+01	28.05	1.03E+02	2.18
m	39	969.44	957 -	983	969.13	1.13E+02	31.86	9.34E+01	2.22
	40	1096.34	1090 -	1101	1095.90	3.95E+01	36.17	1.43E+02	4.88

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	41	1116.84	1115	1125	1116.38	1.09E+01	10.44	2.69E+01	2.16
m	42	1120.47	1115	1125	1120.01	7.40E+01	30.99	1.11E+02	2.50
	43	1215.86	1210	1219	1215.30	3.20E+01	32.22	1.30E+02	6.14
	44	1237.46	1233	1242	1236.89	5.07E+01	35.47	1.53E+02	5.43
	45	1378.05	1372	1380	1377.34	2.79E+01	22.16	5.82E+01	1.86
M	46	1461.43	1455	1469	1460.63	9.53E+02	63.13	2.05E+01	2.28
m	47	1465.78	1455	1469	1464.98	2.69E+01	49.72	3.13E+01	2.65
	48	1498.53	1491	1502	1497.69	2.03E+01	17.89	2.95E+01	5.46
	49	1557.91	1554	1559	1557.02	7.58E+00	8.66	8.83E+00	2.85
M	50	1589.13	1585	1595	1588.21	2.00E+01	14.62	2.82E+01	2.95
m	51	1593.64	1585	1595	1592.72	1.86E+01	12.77	1.54E+01	2.66
	52	1730.06	1725	1732	1729.00	1.81E+01	12.00	1.18E+01	2.98
	53	1736.59	1733	1738	1735.52	1.18E+01	7.81	2.38E+00	3.22
	54	1765.35	1759	1769	1764.26	8.03E+01	20.11	1.13E+01	2.31
	55	1861.01	1855	1864	1859.83	7.75E+00	9.90	8.50E+00	2.58
	56	1870.96	1866	1873	1869.77	1.30E+01	7.21	0.00E+00	2.59
	57	1917.39	1913	1919	1916.15	7.50E+00	6.95	3.00E+00	2.78
	58	1976.72	1972	1978	1975.42	8.25E+00	7.23	3.50E+00	2.05
	59	2011.63	2005	2014	2010.30	1.26E+01	9.22	4.87E+00	6.56
	60	2020.23	2016	2021	2018.89	9.00E+00	6.00	0.00E+00	2.81
	61	2035.79	2030	2039	2034.44	1.59E+01	9.85	4.28E+00	3.91
M	62	2098.93	2095	2106	2097.51	7.36E+00	6.54	1.40E+00	4.48
m	63	2101.92	2095	2106	2100.50	1.26E+01	13.14	1.06E+01	2.86
m	64	2105.32	2095	2106	2103.89	8.74E+00	8.87	1.28E+01	3.55
	65	2118.28	2113	2120	2116.85	7.45E+00	8.72	7.09E+00	3.69
	66	2183.99	2179	2187	2182.49	7.90E+00	10.99	1.42E+01	3.75
	67	2205.43	2199	2209	2203.91	3.25E+01	14.58	1.10E+01	2.12
	68	2268.75	2264	2269	2267.17	6.22E+00	7.35	5.56E+00	2.40
	69	2486.59	2482	2487	2484.80	5.00E+00	4.47	0.00E+00	2.41
	70	2615.32	2609	2619	2613.41	1.13E+02	22.14	4.38E+00	3.77

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 3:16:36PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.25	45 -	50	1.29E+02	72.79	9.73E+02	5.68E+01
	2	63.33	60 -	67	1.85E+02	113.93	2.04E+03	9.09E+01
M	3	74.72	72 -	81	4.25E+02	95.17	1.35E+03	6.05E+01
m	4	77.09	72 -	81	7.06E+02	101.37	1.30E+03	5.93E+01
m	5	87.57	82 -	101	2.24E+02	76.44	1.09E+03	5.43E+01
	6	128.69	125 -	133	9.78E+01	93.79	1.29E+03	7.54E+01
M	7	185.82	183 -	193	2.38E+02	65.86	6.89E+02	4.32E+01
m	8	189.86	183 -	193	4.69E+01	62.43	6.52E+02	4.20E+01
	9	209.14	206 -	212	1.03E+02	68.35	7.75E+02	5.36E+01
M	10	238.55	235 -	246	9.31E+02	76.02	4.75E+02	3.58E+01
m	11	241.74	235 -	246	2.37E+02	76.78	4.62E+02	3.53E+01
M	12	267.77	267 -	286	3.39E+01	19.77	1.17E+02	1.78E+01
m	13	283.45	267 -	286	4.88E+01	43.16	3.16E+02	2.92E+01
M	14	295.28	291 -	304	3.60E+02	56.19	3.55E+02	3.10E+01
m	15	299.84	291 -	304	9.04E+01	47.38	3.31E+02	2.99E+01
	16	320.47	318 -	323	4.07E+01	37.13	2.35E+02	2.87E+01
	17	327.32	324 -	331	6.57E+01	47.83	3.41E+02	3.70E+01
	18	338.54	335 -	343	1.89E+02	64.07	5.20E+02	4.76E+01
M	19	348.77	347 -	357	2.71E+01	29.80	1.88E+02	2.25E+01
m	20	352.01	347 -	357	5.60E+02	58.09	2.63E+02	2.66E+01
	21	439.42	436 -	442	3.73E+01	37.90	2.33E+02	2.95E+01
	22	465.42	459 -	473	9.45E+01	65.56	4.13E+02	5.15E+01
	23	510.82	506 -	515	1.83E+02	55.19	3.31E+02	3.95E+01
	24	568.80	566 -	571	2.42E+01	26.63	1.22E+02	2.03E+01
	25	583.38	579 -	589	2.46E+02	59.88	3.47E+02	4.19E+01
	26	609.29	598 -	622	4.72E+02	91.74	4.53E+02	1.71E+01
	27	662.67	657 -	668	1.58E+02	50.40	2.34E+02	3.59E+01
	28	710.81	708 -	714	2.15E+01	27.21	1.19E+02	2.10E+01
	29	726.86	722 -	731	6.16E+01	41.45	2.11E+02	3.15E+01
M	30	782.80	781 -	808	1.27E+01	13.38	4.72E+01	1.13E+01
m	31	786.77	781 -	808	2.49E+01	27.64	1.21E+02	1.81E+01
	32	813.29	809 -	819	3.92E+01	33.22	1.26E+02	2.53E+01
	33	839.55	837 -	842	1.79E+01	21.61	7.61E+01	1.63E+01
	34	848.24	846 -	850	1.72E+01	18.28	5.77E+01	1.34E+01
	35	860.84	858 -	864	4.20E+01	28.00	1.12E+02	2.04E+01
	36	911.45	906 -	916	2.00E+02	46.95	1.88E+02	3.08E+01
	37	932.76	921 -	939	5.75E+01	50.03	1.89E+02	1.66E+01
M	38	965.10	957 -	983	4.71E+01	28.05	1.03E+02	1.67E+01
m	39	969.44	957 -	983	1.13E+02	31.86	9.34E+01	1.59E+01
	40	1096.34	1090 -	1101	3.95E+01	36.17	1.43E+02	2.79E+01
M	41	1116.84	1115 -	1125	1.09E+01	10.44	2.69E+01	8.53E+00
m	42	1120.47	1115 -	1125	7.40E+01	30.99	1.11E+02	1.74E+01
	43	1215.86	1210 -	1219	3.20E+01	32.22	1.30E+02	2.48E+01
	44	1237.46	1233 -	1242	5.07E+01	35.47	1.53E+02	2.67E+01
	45	1378.05	1372 -	1380	2.79E+01	22.16	5.82E+01	1.60E+01
M	46	1461.43	1455 -	1469	9.53E+02	63.13	2.05E+01	7.45E+00
m	47	1465.78	1455 -	1469	2.69E+01	49.72	3.13E+01	9.19E+00
	48	1498.53	1491 -	1502	2.03E+01	17.89	2.95E+01	1.27E+01
	49	1557.91	1554 -	1559	7.58E+00	8.66	8.83E+00	5.49E+00
M	50	1589.13	1585 -	1595	2.00E+01	14.62	2.82E+01	8.74E+00
m	51	1593.64	1585 -	1595	1.86E+01	12.77	1.54E+01	6.44E+00

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	52	1730.06	1725 -	1732	1.81E+01	12.00	1.18E+01	6.95E+00
	53	1736.59	1733 -	1738	1.18E+01	7.81	2.38E+00	3.05E+00
	54	1765.35	1759 -	1769	8.03E+01	20.11	1.13E+01	7.49E+00
	55	1861.01	1855 -	1864	7.75E+00	9.90	8.50E+00	6.73E+00
	56	1870.96	1866 -	1873	1.30E+01	7.21	0.00E+00	0.00E+00
	57	1917.39	1913 -	1919	7.50E+00	6.95	3.00E+00	3.51E+00
	58	1976.72	1972 -	1978	8.25E+00	7.23	3.50E+00	3.61E+00
	59	2011.63	2005 -	2014	1.26E+01	9.22	4.87E+00	4.84E+00
	60	2020.23	2016 -	2021	9.00E+00	6.00	0.00E+00	0.00E+00
	61	2035.79	2030 -	2039	1.59E+01	9.85	4.28E+00	4.76E+00
M	62	2098.93	2095 -	2106	7.36E+00	6.54	1.40E+00	1.95E+00
m	63	2101.92	2095 -	2106	1.26E+01	13.14	1.06E+01	5.35E+00
m	64	2105.32	2095 -	2106	8.74E+00	8.87	1.28E+01	5.88E+00
	65	2118.28	2113 -	2120	7.45E+00	8.72	7.09E+00	5.59E+00
	66	2183.99	2179 -	2187	7.90E+00	10.99	1.42E+01	7.76E+00
	67	2205.43	2199 -	2209	3.25E+01	14.58	1.10E+01	7.47E+00
	68	2268.75	2264 -	2269	6.22E+00	7.35	5.56E+00	4.44E+00
	69	2486.59	2482 -	2487	5.00E+00	4.47	0.00E+00	0.00E+00
	70	2615.32	2609 -	2619	1.13E+02	22.14	4.38E+00	5.13E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 3:16:36PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	46.25	45 -	50	46.87	1.29E+02	72.79	9.73E+02	PB-210
	2	63.33	60 -	67	63.94	1.85E+02	113.93	2.04E+03	TH-234 TH-230
M	3	74.72	72 -	81	75.31	4.25E+02	95.17	1.35E+03	AM-243
m	4	77.09	72 -	81	77.69	7.06E+02	101.37	1.30E+03	.....
m	5	87.57	82 -	101	88.15	2.24E+02	76.44	1.09E+03	SN-126

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									CD-109
									LU-176
	6	128.69	125 -	133	129.23	9.78E+01	93.79	1.29E+03	.....
M	7	185.82	183 -	193	186.30	2.38E+02	65.86	6.89E+02	RA-226
m	8	189.86	183 -	193	190.34	4.69E+01	62.43	6.52E+02	.....
	9	209.14	206 -	212	209.59	1.03E+02	68.35	7.75E+02	GA-67
									CM-243
M	10	238.55	235 -	246	238.97	9.31E+02	76.02	4.75E+02	PB-212
m	11	241.74	235 -	246	242.16	2.37E+02	76.78	4.62E+02	RA-224
M	12	267.77	267 -	286	268.17	3.39E+01	19.77	1.17E+02	CS-135
m	13	283.45	267 -	286	283.83	4.88E+01	43.16	3.16E+02	PA-231
									I-131
M	14	295.28	291 -	304	295.64	3.60E+02	56.19	3.55E+02	PB-214
m	15	299.84	291 -	304	300.20	9.04E+01	47.38	3.31E+02	BI-210M
									PB-212
									GA-67
	16	320.47	318 -	323	320.81	4.07E+01	37.13	2.35E+02	CR-51
	17	327.32	324 -	331	327.65	6.57E+01	47.83	3.41E+02	.....
	18	338.54	335 -	343	338.86	1.89E+02	64.07	5.20E+02	AC-228
M	19	348.77	347 -	357	349.08	2.71E+01	29.80	1.88E+02	.....
m	20	352.01	347 -	357	352.32	5.60E+02	58.09	2.63E+02	PB-214
	21	439.42	436 -	442	439.64	3.73E+01	37.90	2.33E+02	.....
	22	465.42	459 -	473	465.62	9.45E+01	65.56	4.13E+02	.....
	23	510.82	506 -	515	510.97	1.83E+02	55.19	3.31E+02	.....
	24	568.80	566 -	571	568.89	2.42E+01	26.63	1.22E+02	CS-134
									BI-207
	25	583.38	579 -	589	583.46	2.46E+02	59.88	3.47E+02	TL-208
	26	609.29	598 -	622	609.34	4.72E+02	91.74	4.53E+02	BI-214
	27	662.67	657 -	668	662.67	1.58E+02	50.40	2.34E+02	.....
	28	710.81	708 -	714	710.76	2.15E+01	27.21	1.19E+02	HO-166M
	29	726.86	722 -	731	726.80	6.16E+01	41.45	2.11E+02	BI-212
M	30	782.80	781 -	808	782.67	1.27E+01	13.38	4.72E+01	.....
m	31	786.77	781 -	808	786.64	2.49E+01	27.64	1.21E+02	.....
	32	813.29	809 -	819	813.14	3.92E+01	33.22	1.26E+02	.....
	33	839.55	837 -	842	839.37	1.79E+01	21.61	7.61E+01	.....
	34	848.24	846 -	850	848.05	1.72E+01	18.28	5.77E+01	.....
	35	860.84	858 -	864	860.64	4.20E+01	28.00	1.12E+02	TL-208
	36	911.45	906 -	916	911.20	2.00E+02	46.95	1.88E+02	TL-204
									AC-228
	37	932.76	921 -	939	932.49	5.75E+01	50.03	1.89E+02	.....
M	38	965.10	957 -	983	964.80	4.71E+01	28.05	1.03E+02	.....
m	39	969.44	957 -	983	969.13	1.13E+02	31.86	9.34E+01	AC-228
	40	1096.34	1090 -	1101	1095.90	3.95E+01	36.17	1.43E+02	.....
M	41	1116.84	1115 -	1125	1116.38	1.09E+01	10.44	2.69E+01	.....
m	42	1120.47	1115 -	1125	1120.01	7.40E+01	30.99	1.11E+02	SC-46
									BI-214
									TA-182
	43	1215.86	1210 -	1219	1215.30	3.20E+01	32.22	1.30E+02	.....
	44	1237.46	1233 -	1242	1236.89	5.07E+01	35.47	1.53E+02	CO-56
	45	1378.05	1372 -	1380	1377.34	2.79E+01	22.16	5.82E+01	.....
M	46	1461.43	1455 -	1469	1460.63	9.53E+02	63.13	2.05E+01	K-40
m	47	1465.78	1455 -	1469	1464.98	2.69E+01	49.72	3.13E+01	.....
	48	1498.53	1491 -	1502	1497.69	2.03E+01	17.89	2.95E+01	.....
	49	1557.91	1554 -	1559	1557.02	7.58E+00	8.66	8.83E+00	.....

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	50	1589.13	1585 -	1595	1588.21	2.00E+01	14.62	2.82E+01	.....
m	51	1593.64	1585 -	1595	1592.72	1.86E+01	12.77	1.54E+01	.....
	52	1730.06	1725 -	1732	1729.00	1.81E+01	12.00	1.18E+01	.....
	53	1736.59	1733 -	1738	1735.52	1.18E+01	7.81	2.38E+00	.....
	54	1765.35	1759 -	1769	1764.26	8.03E+01	20.11	1.13E+01	BI-214
	55	1861.01	1855 -	1864	1859.83	7.75E+00	9.90	8.50E+00	.....
	56	1870.96	1866 -	1873	1869.77	1.30E+01	7.21	0.00E+00	.....
	57	1917.39	1913 -	1919	1916.15	7.50E+00	6.95	3.00E+00	.....
	58	1976.72	1972 -	1978	1975.42	8.25E+00	7.23	3.50E+00	.....
	59	2011.63	2005 -	2014	2010.30	1.26E+01	9.22	4.87E+00	.....
	60	2020.23	2016 -	2021	2018.89	9.00E+00	6.00	0.00E+00	.....
	61	2035.79	2030 -	2039	2034.44	1.59E+01	9.85	4.28E+00	.....
M	62	2098.93	2095 -	2106	2097.51	7.36E+00	6.54	1.40E+00	.....
m	63	2101.92	2095 -	2106	2100.50	1.26E+01	13.14	1.06E+01	.....
m	64	2105.32	2095 -	2106	2103.89	8.74E+00	8.87	1.28E+01	.....
	65	2118.28	2113 -	2120	2116.85	7.45E+00	8.72	7.09E+00	.....
	66	2183.99	2179 -	2187	2182.49	7.90E+00	10.99	1.42E+01	.....
	67	2205.43	2199 -	2209	2203.91	3.25E+01	14.58	1.10E+01	.....
	68	2268.75	2264 -	2269	2267.17	6.22E+00	7.35	5.56E+00	.....
	69	2486.59	2482 -	2487	2484.80	5.00E+00	4.47	0.00E+00	.....
	70	2615.32	2609 -	2619	2613.41	1.13E+02	22.14	4.38E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 3:16:36PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.25	1.29E+02	72.79	2.46E-02	2.22E-03
	2	63.33	1.85E+02	113.93	2.70E-02	2.26E-03
M	3	74.72	4.25E+02	95.17	2.75E-02	2.38E-03
m	4	77.09	7.06E+02	101.37	2.75E-02	2.40E-03
m	5	87.57	2.24E+02	76.44	2.74E-02	2.52E-03
	6	128.69	9.78E+01	93.79	2.54E-02	1.94E-03
M	7	185.82	2.38E+02	65.86	2.17E-02	1.68E-03
m	8	189.86	4.69E+01	62.43	2.15E-02	1.67E-03
	9	209.14	1.03E+02	68.35	2.04E-02	1.61E-03

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	10	238.55	9.31E+02	76.02	1.89E-02	1.53E-03
m	11	241.74	2.37E+02	76.78	1.87E-02	1.52E-03
M	12	267.77	3.39E+01	19.77	1.75E-02	1.44E-03
m	13	283.45	4.88E+01	43.16	1.69E-02	1.40E-03
M	14	295.28	3.60E+02	56.19	1.64E-02	1.37E-03
m	15	299.84	9.04E+01	47.38	1.63E-02	1.36E-03
	16	320.47	4.07E+01	37.13	1.55E-02	1.31E-03
	17	327.32	6.57E+01	47.83	1.53E-02	1.30E-03
	18	338.54	1.89E+02	64.07	1.49E-02	1.27E-03
M	19	348.77	2.71E+01	29.80	1.46E-02	1.25E-03
m	20	352.01	5.60E+02	58.09	1.45E-02	1.24E-03
	21	439.42	3.73E+01	37.90	1.24E-02	1.11E-03
	22	465.42	9.45E+01	65.56	1.18E-02	1.10E-03
	23	510.82	1.83E+02	55.19	1.10E-02	1.07E-03
	24	568.80	2.42E+01	26.63	1.02E-02	1.03E-03
	25	583.38	2.46E+02	59.88	9.96E-03	1.02E-03
	26	609.29	4.72E+02	91.74	9.63E-03	1.01E-03
	27	662.67	1.58E+02	50.40	9.03E-03	9.70E-04
	28	710.81	2.15E+01	27.21	8.56E-03	8.94E-04
	29	726.86	6.16E+01	41.45	8.41E-03	8.68E-04
M	30	782.80	1.27E+01	13.38	7.95E-03	7.80E-04
m	31	786.77	2.49E+01	27.64	7.92E-03	7.73E-04
	32	813.29	3.92E+01	33.22	7.72E-03	7.31E-04
	33	839.55	1.79E+01	21.61	7.54E-03	6.89E-04
	34	848.24	1.72E+01	18.28	7.48E-03	6.76E-04
	35	860.84	4.20E+01	28.00	7.40E-03	6.56E-04
	36	911.45	2.00E+02	46.95	7.08E-03	5.91E-04
	37	932.76	5.75E+01	50.03	6.96E-03	5.83E-04
M	38	965.10	4.71E+01	28.05	6.79E-03	5.71E-04
m	39	969.44	1.13E+02	31.86	6.76E-03	5.69E-04
	40	1096.34	3.95E+01	36.17	6.17E-03	5.20E-04
M	41	1116.84	1.09E+01	10.44	6.09E-03	5.13E-04
m	42	1120.47	7.40E+01	30.99	6.07E-03	5.11E-04
	43	1215.86	3.20E+01	32.22	5.72E-03	4.81E-04
	44	1237.46	5.07E+01	35.47	5.65E-03	4.76E-04
	45	1378.05	2.79E+01	22.16	5.22E-03	4.44E-04
M	46	1461.43	9.53E+02	63.13	5.00E-03	4.25E-04
m	47	1465.78	2.69E+01	49.72	4.99E-03	4.24E-04
	48	1498.53	2.03E+01	17.89	4.92E-03	4.16E-04
	49	1557.91	7.58E+00	8.66	4.78E-03	4.02E-04
M	50	1589.13	2.00E+01	14.62	4.71E-03	3.95E-04
m	51	1593.64	1.86E+01	12.77	4.70E-03	3.94E-04
	52	1730.06	1.81E+01	12.00	4.44E-03	3.62E-04
	53	1736.59	1.18E+01	7.81	4.42E-03	3.61E-04
	54	1765.35	8.03E+01	20.11	4.37E-03	3.54E-04
	55	1861.01	7.75E+00	9.90	4.21E-03	3.38E-04
	56	1870.96	1.30E+01	7.21	4.20E-03	3.38E-04
	57	1917.39	7.50E+00	6.95	4.12E-03	3.38E-04
	58	1976.72	8.25E+00	7.23	4.04E-03	3.38E-04
	59	2011.63	1.26E+01	9.22	3.99E-03	3.38E-04
	60	2020.23	9.00E+00	6.00	3.97E-03	3.38E-04
	61	2035.79	1.59E+01	9.85	3.95E-03	3.38E-04
M	62	2098.93	7.36E+00	6.54	3.87E-03	3.38E-04

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	63	2101.92	1.26E+01	13.14	3.86E-03	3.38E-04
m	64	2105.32	8.74E+00	8.87	3.86E-03	3.38E-04
	65	2118.28	7.45E+00	8.72	3.84E-03	3.38E-04
	66	2183.99	7.90E+00	10.99	3.76E-03	3.38E-04
	67	2205.43	3.25E+01	14.58	3.73E-03	3.38E-04
	68	2268.75	6.22E+00	7.35	3.66E-03	3.38E-04
	69	2486.59	5.00E+00	4.47	3.43E-03	3.38E-04
	70	2615.32	1.13E+02	22.14	3.31E-03	3.38E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 3:16:36PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.25	1.29E+02	72.79	3.67E+01	8.40E+00	9.26E+01	7.33E+01
	2	63.33	1.85E+02	113.93	8.94E+01	1.41E+01	9.60E+01	1.15E+02
M	3	74.72	4.25E+02	95.17			4.25E+02	9.52E+01
m	4	77.09	7.06E+02	101.37	7.20E+00	1.47E+00	6.98E+02	1.01E+02
m	5	87.57	2.24E+02	76.44			2.24E+02	7.64E+01
	6	128.69	9.78E+01	93.79			9.78E+01	9.38E+01
M	7	185.82	2.38E+02	65.86	5.22E+01	7.59E+00	1.86E+02	6.63E+01
m	8	189.86	4.69E+01	62.43			4.69E+01	6.24E+01
	9	209.14	1.03E+02	68.35			1.03E+02	6.83E+01
M	10	238.55	9.31E+02	76.02	2.13E+01	6.33E+00	9.10E+02	7.63E+01
m	11	241.74	2.37E+02	76.78			2.37E+02	7.68E+01
M	12	267.77	3.39E+01	19.77			3.39E+01	1.98E+01
m	13	283.45	4.88E+01	43.16			4.88E+01	4.32E+01
M	14	295.28	3.60E+02	56.19			3.60E+02	5.62E+01
m	15	299.84	9.04E+01	47.38			9.04E+01	4.74E+01
	16	320.47	4.07E+01	37.13			4.07E+01	3.71E+01
	17	327.32	6.57E+01	47.83			6.57E+01	4.78E+01
	18	338.54	1.89E+02	64.07			1.89E+02	6.41E+01
M	19	348.77	2.71E+01	29.80			2.71E+01	2.98E+01
m	20	352.01	5.60E+02	58.09	5.79E+00	4.49E+00	5.54E+02	5.83E+01
	21	439.42	3.73E+01	37.90			3.73E+01	3.79E+01
	22	465.42	9.45E+01	65.56			9.45E+01	6.56E+01

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	23	510.82	1.83E+02	55.19	7.28E+01	5.30E+00	1.11E+02	5.54E+01
	24	568.80	2.42E+01	26.63	0.00E+00	0.00E+00	2.42E+01	2.66E+01
	25	583.38	2.46E+02	59.88	2.72E+00	3.05E+00	2.44E+02	6.00E+01
	26	609.29	4.72E+02	91.74	6.35E+00	4.02E+00	4.65E+02	9.18E+01
	27	662.67	1.58E+02	50.40			1.58E+02	5.04E+01
	28	710.81	2.15E+01	27.21			2.15E+01	2.72E+01
	29	726.86	6.16E+01	41.45			6.16E+01	4.14E+01
M	30	782.80	1.27E+01	13.38			1.27E+01	1.34E+01
m	31	786.77	2.49E+01	27.64			2.49E+01	2.76E+01
	32	813.29	3.92E+01	33.22			3.92E+01	3.32E+01
	33	839.55	1.79E+01	21.61			1.79E+01	2.16E+01
	34	848.24	1.72E+01	18.28			1.72E+01	1.83E+01
	35	860.84	4.20E+01	28.00			4.20E+01	2.80E+01
	36	911.45	2.00E+02	46.95	5.31E+00	3.00E+00	1.95E+02	4.70E+01
	37	932.76	5.75E+01	50.03			5.75E+01	5.00E+01
M	38	965.10	4.71E+01	28.05			4.71E+01	2.80E+01
m	39	969.44	1.13E+02	31.86			1.13E+02	3.19E+01
	40	1096.34	3.95E+01	36.17			3.95E+01	3.62E+01
M	41	1116.84	1.09E+01	10.44			1.09E+01	1.04E+01
m	42	1120.47	7.40E+01	30.99			7.40E+01	3.10E+01
	43	1215.86	3.20E+01	32.22			3.20E+01	3.22E+01
	44	1237.46	5.07E+01	35.47			5.07E+01	3.55E+01
	45	1378.05	2.79E+01	22.16			2.79E+01	2.22E+01
M	46	1461.43	9.53E+02	63.13	8.09E+00	2.23E+00	9.45E+02	6.32E+01
m	47	1465.78	2.69E+01	49.72			2.69E+01	4.97E+01
	48	1498.53	2.03E+01	17.89			2.03E+01	1.79E+01
	49	1557.91	7.58E+00	8.66			7.58E+00	8.66E+00
M	50	1589.13	2.00E+01	14.62			2.00E+01	1.46E+01
m	51	1593.64	1.86E+01	12.77			1.86E+01	1.28E+01
	52	1730.06	1.81E+01	12.00			1.81E+01	1.20E+01
	53	1736.59	1.18E+01	7.81			1.18E+01	7.81E+00
	54	1765.35	8.03E+01	20.11			8.03E+01	2.01E+01
	55	1861.01	7.75E+00	9.90			7.75E+00	9.90E+00
	56	1870.96	1.30E+01	7.21			1.30E+01	7.21E+00
	57	1917.39	7.50E+00	6.95			7.50E+00	6.95E+00
	58	1976.72	8.25E+00	7.23			8.25E+00	7.23E+00
	59	2011.63	1.26E+01	9.22			1.26E+01	9.22E+00
	60	2020.23	9.00E+00	6.00			9.00E+00	6.00E+00
	61	2035.79	1.59E+01	9.85			1.59E+01	9.85E+00
M	62	2098.93	7.36E+00	6.54			7.36E+00	6.54E+00
m	63	2101.92	1.26E+01	13.14			1.26E+01	1.31E+01
m	64	2105.32	8.74E+00	8.87			8.74E+00	8.87E+00
	65	2118.28	7.45E+00	8.72			7.45E+00	8.72E+00
	66	2183.99	7.90E+00	10.99			7.90E+00	1.10E+01
	67	2205.43	3.25E+01	14.58			3.25E+01	1.46E+01
	68	2268.75	6.22E+00	7.35			6.22E+00	7.35E+00
	69	2486.59	5.00E+00	4.47			5.00E+00	4.47E+00
	70	2615.32	1.13E+02	22.14	5.63E+00	1.38E+00	1.07E+02	2.22E+01

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 3:16:36PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	46.25	1.29E+02	72.79	3.67E+01	8.40E+00	9.26E+01	7.33E+01
	2	63.33	1.85E+02	113.93	8.94E+01	1.41E+01	9.60E+01	1.15E+02
M	3	74.72	4.25E+02	95.17			4.25E+02	9.52E+01
m	4	77.09	7.06E+02	101.37	7.20E+00	1.47E+00	6.98E+02	1.01E+02
m	5	87.57	2.24E+02	76.44			2.24E+02	7.64E+01
	6	128.69	9.78E+01	93.79			9.78E+01	9.38E+01
M	7	185.82	2.38E+02	65.86	5.22E+01	7.59E+00	1.86E+02	6.63E+01
m	8	189.86	4.69E+01	62.43			4.69E+01	6.24E+01
	9	209.14	1.03E+02	68.35			1.03E+02	6.83E+01
M	10	238.55	9.31E+02	76.02	2.13E+01	6.33E+00	9.10E+02	7.63E+01
m	11	241.74	2.37E+02	76.78			2.37E+02	7.68E+01
M	12	267.77	3.39E+01	19.77			3.39E+01	1.98E+01
m	13	283.45	4.88E+01	43.16			4.88E+01	4.32E+01
M	14	295.28	3.60E+02	56.19			3.60E+02	5.62E+01
m	15	299.84	9.04E+01	47.38			9.04E+01	4.74E+01
	16	320.47	4.07E+01	37.13			4.07E+01	3.71E+01
	17	327.32	6.57E+01	47.83			6.57E+01	4.78E+01
	18	338.54	1.89E+02	64.07			1.89E+02	6.41E+01
M	19	348.77	2.71E+01	29.80			2.71E+01	2.98E+01
m	20	352.01	5.60E+02	58.09	5.79E+00	4.49E+00	5.54E+02	5.83E+01
	21	439.42	3.73E+01	37.90			3.73E+01	3.79E+01
	22	465.42	9.45E+01	65.56			9.45E+01	6.56E+01
	23	510.82	1.83E+02	55.19	7.28E+01	5.30E+00	1.11E+02	5.54E+01
	24	568.80	2.42E+01	26.63	0.00E+00	0.00E+00	2.42E+01	2.66E+01
	25	583.38	2.46E+02	59.88	2.72E+00	3.05E+00	2.44E+02	6.00E+01
	26	609.29	4.72E+02	91.74	6.35E+00	4.02E+00	4.65E+02	9.18E+01
	27	662.67	1.58E+02	50.40			1.58E+02	5.04E+01
	28	710.81	2.15E+01	27.21			2.15E+01	2.72E+01
	29	726.86	6.16E+01	41.45			6.16E+01	4.14E+01
M	30	782.80	1.27E+01	13.38			1.27E+01	1.34E+01
m	31	786.77	2.49E+01	27.64			2.49E+01	2.76E+01
	32	813.29	3.92E+01	33.22			3.92E+01	3.32E+01

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	33	839.55	1.79E+01	21.61			1.79E+01	2.16E+01
	34	848.24	1.72E+01	18.28			1.72E+01	1.83E+01
	35	860.84	4.20E+01	28.00			4.20E+01	2.80E+01
	36	911.45	2.00E+02	46.95	5.31E+00	3.00E+00	1.95E+02	4.70E+01
	37	932.76	5.75E+01	50.03			5.75E+01	5.00E+01
M	38	965.10	4.71E+01	28.05			4.71E+01	2.80E+01
m	39	969.44	1.13E+02	31.86			1.13E+02	3.19E+01
	40	1096.34	3.95E+01	36.17			3.95E+01	3.62E+01
M	41	1116.84	1.09E+01	10.44			1.09E+01	1.04E+01
m	42	1120.47	7.40E+01	30.99			7.40E+01	3.10E+01
	43	1215.86	3.20E+01	32.22			3.20E+01	3.22E+01
	44	1237.46	5.07E+01	35.47			5.07E+01	3.55E+01
	45	1378.05	2.79E+01	22.16			2.79E+01	2.22E+01
M	46	1461.43	9.53E+02	63.13	8.09E+00	2.23E+00	9.45E+02	6.32E+01
m	47	1465.78	2.69E+01	49.72			2.69E+01	4.97E+01
	48	1498.53	2.03E+01	17.89			2.03E+01	1.79E+01
	49	1557.91	7.58E+00	8.66			7.58E+00	8.66E+00
M	50	1589.13	2.00E+01	14.62			2.00E+01	1.46E+01
m	51	1593.64	1.86E+01	12.77			1.86E+01	1.28E+01
	52	1730.06	1.81E+01	12.00			1.81E+01	1.20E+01
	53	1736.59	1.18E+01	7.81			1.18E+01	7.81E+00
	54	1765.35	8.03E+01	20.11			8.03E+01	2.01E+01
	55	1861.01	7.75E+00	9.90			7.75E+00	9.90E+00
	56	1870.96	1.30E+01	7.21			1.30E+01	7.21E+00
	57	1917.39	7.50E+00	6.95			7.50E+00	6.95E+00
	58	1976.72	8.25E+00	7.23			8.25E+00	7.23E+00
	59	2011.63	1.26E+01	9.22			1.26E+01	9.22E+00
	60	2020.23	9.00E+00	6.00			9.00E+00	6.00E+00
	61	2035.79	1.59E+01	9.85			1.59E+01	9.85E+00
M	62	2098.93	7.36E+00	6.54			7.36E+00	6.54E+00
m	63	2101.92	1.26E+01	13.14			1.26E+01	1.31E+01
m	64	2105.32	8.74E+00	8.87			8.74E+00	8.87E+00
	65	2118.28	7.45E+00	8.72			7.45E+00	8.72E+00
	66	2183.99	7.90E+00	10.99			7.90E+00	1.10E+01
	67	2205.43	3.25E+01	14.58			3.25E+01	1.46E+01
	68	2268.75	6.22E+00	7.35			6.22E+00	7.35E+00
	69	2486.59	5.00E+00	4.47			5.00E+00	4.47E+00
	70	2615.32	1.13E+02	22.14	5.63E+00	1.38E+00	1.07E+02	2.22E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.941	1460.81	*	10.67	2.05E+01	2.25E+00
CR-51	0.914	320.08	*	9.83	3.79E+00	3.48E+00
CD-109	0.966	88.03	*	3.72	2.95E+00	1.06E+00
SN-126	1.000	87.57	*	37.00	2.55E-01	9.03E-02
CS-135	0.966	268.24	*	16.00	1.40E-01	8.24E-02
BI-207	0.330	569.67	*	97.72	2.84E-02	3.14E-02
		1063.62		74.90		
TL-208	0.959	583.14	*	30.22	9.37E-01	2.50E-01
		860.37	*	4.48	1.47E+00	9.87E-01
		2614.66	*	35.85	1.05E+00	2.42E-01
PB-210	0.990	46.50	*	4.25	1.03E+00	8.23E-01
BI-212	0.752	727.17	*	11.80	7.18E-01	4.89E-01
		1620.62		2.75		
PB-212	0.998	238.63	*	44.60	1.25E+00	1.46E-01
		300.09	*	3.41	1.89E+00	1.00E+00
BI-214	0.908	609.31	*	46.30	1.21E+00	2.70E-01
		1120.29	*	15.10	9.34E-01	3.99E-01
		1764.49	*	15.80	1.35E+00	3.54E-01
		2204.22		4.98		
PB-214	0.999	295.21	*	19.19	1.32E+00	2.34E-01
		351.92	*	37.19	1.19E+00	1.60E-01
RA-224	0.913	240.98	*	3.95	3.72E+00	1.24E+00
RA-226	0.976	186.21	*	3.28	3.02E+00	5.63E+00
AC-228	0.982	338.32	*	11.40	1.29E+00	4.49E-01
		911.07	*	27.70	1.15E+00	2.94E-01
		969.11	*	16.60	1.17E+00	3.43E-01
TH-234	1.000	63.29	*	3.80	1.08E+00	1.30E+00
AM-243	1.000	74.67	*	66.00	2.71E-01	6.51E-02

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 3:16:36PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	4	77.09	1.94000E-01	7.26		
	6	128.69	2.71784E-02	47.93		
m	8	189.86	1.30181E-02	66.60		
	9	209.14	2.86946E-02	33.08	Tol.	CM-243
m	13	283.45	1.35421E-02	44.27	Tol.	I-131 PA-231
	17	327.32	1.82533E-02	36.40		
M	19	348.77	7.51823E-03	55.05		
	21	439.42	1.03680E-02	50.78	D-Esc	
	22	465.42	2.62509E-02	34.69		
	23	510.82	3.07543E-02	25.04		
	27	662.67	4.39141E-02	15.94		
	28	710.81	5.97222E-03	63.28	Tol.	HO-166M
M	30	782.80	3.53587E-03	52.55		
m	31	786.77	6.91782E-03	55.49		
	32	813.29	1.08824E-02	42.40		
	33	839.55	4.98264E-03	60.24		
	34	848.24	4.77053E-03	53.21	Sum	
	37	932.76	1.59667E-02	43.52		
M	38	965.10	1.30735E-02	29.80	Sum	
	40	1096.34	1.09735E-02	45.77	Sum	
M	41	1116.84	3.02887E-03	47.87		
	43	1215.86	8.88889E-03	50.34		
	44	1237.46	1.40814E-02	34.98	Sum	
	45	1378.05	7.75097E-03	39.72		
m	47	1465.78	7.47063E-03	92.43		
	48	1498.53	5.62698E-03	44.15		
	49	1557.91	2.10648E-03	57.10		
M	50	1589.13	5.55746E-03	36.54		
m	51	1593.64	5.15687E-03	34.39	D-Esc	
	52	1730.06	5.02894E-03	33.14	Sum	
	53	1736.59	3.27991E-03	33.07		
	55	1861.01	2.15278E-03	63.87		
	56	1870.96	3.61111E-03	27.74		
	57	1917.39	2.08333E-03	46.31		
	58	1976.72	2.29167E-03	43.81		
	59	2011.63	3.49074E-03	36.68		
	60	2020.23	2.50000E-03	33.33		
	61	2035.79	4.40586E-03	31.05		
M	62	2098.93	2.04504E-03	44.41		
m	63	2101.92	3.51289E-03	51.97		
m	64	2105.32	2.42808E-03	50.76	S-Esc	
	65	2118.28	2.07071E-03	58.47	Sum	
	66	2183.99	2.19444E-03	69.55		
	67	2205.43	9.02778E-03	22.43		
	68	2268.75	1.72840E-03	59.05		
	69	2486.59	1.38889E-03	44.72		

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.94	1460.81	*	10.67	2.05E+01	2.25E+00
CR-51	0.91	320.08	*	9.83	3.79E+00	3.48E+00
CD-109	0.96	88.03	*	3.72	2.95E+00	1.06E+00
SN-126	1.00	87.57	*	37.00	2.55E-01	9.03E-02
CS-135	0.96	268.24	*	16.00	1.40E-01	8.24E-02
BI-207	0.33	569.67	*	97.72	2.84E-02	3.14E-02
		1063.62		74.90		
TL-208	0.95	583.14	*	30.22	9.37E-01	2.50E-01
		860.37	*	4.48	1.47E+00	9.87E-01
		2614.66	*	35.85	1.05E+00	2.42E-01
PB-210	0.99	46.50	*	4.25	1.03E+00	8.23E-01
BI-212	0.75	727.17	*	11.80	7.18E-01	4.89E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	1.25E+00	1.46E-01
		300.09	*	3.41	1.89E+00	1.00E+00
BI-214	0.90	609.31	*	46.30	1.21E+00	2.70E-01
		1120.29	*	15.10	9.34E-01	3.99E-01
		1764.49	*	15.80	1.35E+00	3.54E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	1.32E+00	2.34E-01
		351.92	*	37.19	1.19E+00	1.60E-01
RA-224	0.91	240.98	*	3.95	3.72E+00	1.24E+00
RA-226	0.97	186.21	*	3.28	3.02E+00	5.63E+00
AC-228	0.98	338.32	*	11.40	1.29E+00	4.49E-01
		911.07	*	27.70	1.15E+00	2.94E-01
		969.11	*	16.60	1.17E+00	3.43E-01
TH-234	1.00	63.29	*	3.80	1.08E+00	1.30E+00
AM-243	1.00	74.67	*	66.00	2.71E-01	6.51E-02

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.941	2.05E+01	2.25E+00	
	CR-51	0.914	3.79E+00	3.48E+00	
?	CD-109	0.966	2.95E+00	1.06E+00	
?	SN-126	1.000	2.55E-01	9.03E-02	
	CS-135	0.966	1.40E-01	8.24E-02	
	BI-207	0.330	2.84E-02	3.14E-02	
	TL-208	0.959	1.01E+00	1.71E-01	
	PB-210	0.990	1.03E+00	8.23E-01	
	BI-212	0.752	7.18E-01	4.89E-01	
	PB-212	0.998	1.26E+00	1.44E-01	
	BI-214	0.908	1.19E+00	1.89E-01	
	PB-214	0.999	1.23E+00	1.32E-01	
	RA-224	0.913	3.72E+00	1.24E+00	
	RA-226	0.976	3.02E+00	5.63E+00	
	AC-228	0.982	1.18E+00	2.00E-01	
	TH-234	1.000	1.08E+00	1.30E+00	
	AM-243	1.000	2.71E-01	6.51E-02	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 3:16:36PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	4	77.09	1.94000E-01	7.26		
	6	128.69	2.71784E-02	47.93		
m	8	189.86	1.30181E-02	66.60		
	9	209.14	2.86946E-02	33.08	Tol.	CM-243
m	13	283.45	1.35421E-02	44.27	Tol.	I-131 PA-231
	17	327.32	1.82533E-02	36.40		
M	19	348.77	7.51823E-03	55.05		
	21	439.42	1.03680E-02	50.78	D-Esc	
	22	465.42	2.62509E-02	34.69		
	23	510.82	3.07543E-02	25.04		
	27	662.67	4.39141E-02	15.94		
	28	710.81	5.97222E-03	63.28	Tol.	HO-166M
M	30	782.80	3.53587E-03	52.55		
m	31	786.77	6.91782E-03	55.49		
	32	813.29	1.08824E-02	42.40		
	33	839.55	4.98264E-03	60.24		
	34	848.24	4.77053E-03	53.21	Sum	
	37	932.76	1.59667E-02	43.52		
M	38	965.10	1.30735E-02	29.80	Sum	
	40	1096.34	1.09735E-02	45.77	Sum	
M	41	1116.84	3.02887E-03	47.87		
	43	1215.86	8.88889E-03	50.34		
	44	1237.46	1.40814E-02	34.98	Sum	
	45	1378.05	7.75097E-03	39.72		
m	47	1465.78	7.47063E-03	92.43		
	48	1498.53	5.62698E-03	44.15		
	49	1557.91	2.10648E-03	57.10		
M	50	1589.13	5.55746E-03	36.54		
m	51	1593.64	5.15687E-03	34.39	D-Esc	
	52	1730.06	5.02894E-03	33.14	Sum	
	53	1736.59	3.27991E-03	33.07		
	55	1861.01	2.15278E-03	63.87		
	56	1870.96	3.61111E-03	27.74		

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	57	1917.39	2.08333E-03	46.31		
	58	1976.72	2.29167E-03	43.81		
	59	2011.63	3.49074E-03	36.68		
	60	2020.23	2.50000E-03	33.33		
	61	2035.79	4.40586E-03	31.05		
M	62	2098.93	2.04504E-03	44.41		
m	63	2101.92	3.51289E-03	51.97		
m	64	2105.32	2.42808E-03	50.76	S-Esc	
	65	2118.28	2.07071E-03	58.47	Sum	
	66	2183.99	2.19444E-03	69.55		
	67	2205.43	9.02778E-03	22.43		
	68	2268.75	1.72840E-03	59.05		
	69	2486.59	1.38889E-03	44.72		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	5.22E-01	1.94E+00	1.94E+00
+	NA-22	1274.54		99.94	9.70E-03	7.25E-02	7.25E-02
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	-1.14E-02	4.50E-02	4.50E-02
+	K-40	1460.81	*	10.67	2.05E+01	7.86E-01	7.86E-01
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-8.81E-03	5.65E-02	5.65E-02
		78.34		96.00	1.91E-01		7.55E-02
+	SC-46	889.25		99.98	3.18E-02	1.41E-01	1.41E-01
		1120.51		99.99	2.57E-01		2.46E-01
+	V-48	983.52		99.98	-8.74E-01	4.18E+00	4.42E+00
		1312.10		97.50	-1.20E+00		4.18E+00
+	CR-51	320.08	*	9.83	3.79E+00	5.60E+00	5.60E+00
+	MN-54	834.83		99.97	-3.56E-04	7.95E-02	7.95E-02

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-56	846.75		99.96	3.74E-03	1.49E-01	1.49E-01
		1037.75		14.03	-1.83E-01		1.10E+00
		1238.25		67.00	2.69E-01		3.64E-01
		1771.40		15.51	-2.07E-02		7.78E-01
		2598.48		16.90	1.05E-01		6.54E-01
+	CO-57	122.06		85.51	-7.60E-03	6.40E-02	6.40E-02
		136.48		10.60	6.32E-02		5.26E-01
+	CO-58	810.76		99.40	-3.41E-02	1.62E-01	1.62E-01
+	FE-59	1099.22		56.50	1.65E-01	6.75E-01	6.83E-01
		1291.56		43.20	-1.86E-01		6.75E-01
+	CO-60	1173.22		100.00	2.35E-02	6.13E-02	8.16E-02
		1332.49		100.00	-1.21E-02		6.13E-02
+	ZN-65	1115.52		50.75	2.49E-02	2.03E-01	2.03E-01
+	GA-67	93.31		35.70	4.63E+08	2.97E+08	2.97E+08
		208.95		2.24	4.92E+09		4.32E+09
		300.22		16.00	-1.53E+09		6.58E+08
+	SE-75	121.11		16.70	-1.27E-01	1.30E-01	4.47E-01
		136.00		59.20	1.56E-02		1.30E-01
		264.65		59.80	-6.75E-03		1.50E-01
		279.53		25.20	8.20E-02		3.91E-01
		400.65		11.40	2.34E-01		8.51E-01
+	RB-82	776.52		13.00	2.67E+00	7.50E+00	7.50E+00
+	RB-83	520.41		46.00	-1.57E-01	2.62E-01	2.62E-01
		529.64		30.30	-2.15E-01		3.78E-01
		552.65		16.40	-7.01E-02		6.87E-01
+	KR-85	513.99		0.43	3.46E+00	1.95E+01	1.95E+01
+	SR-85	513.99		99.27	4.35E-02	2.44E-01	2.44E-01
+	Y-88	898.02		93.40	4.36E-02	9.53E-02	1.30E-01
		1836.01		99.38	1.41E-02		9.53E-02
+	MO-93	263.06		56.72	-1.35E-03	4.34E-02	9.12E-02
		684.67		99.68	-2.01E-03		5.66E-02
		1477.11		99.08	-3.51E-02		4.34E-02
+	NB-93M	16.57		9.43	-3.35E-01	4.81E-01	4.81E-01
+	NB-94	702.63		100.00	2.62E-02	5.52E-02	6.41E-02
		871.10		100.00	-6.18E-02		5.52E-02
+	NB-95	765.79		99.81	1.50E-01	5.23E-01	5.23E-01
+	NB-95M	235.69		25.00	-3.38E+08	5.63E+07	5.63E+07
+	ZR-95	724.18		43.70	-2.58E-03	3.27E-01	4.75E-01
		756.72		55.30	-4.38E-02		3.27E-01
+	MO-99	181.06		6.20	2.27E+10	4.32E+10	6.92E+10
		739.58		12.80	3.76E+09		4.32E+10
		778.00		4.50	-5.02E+10		1.24E+11
+	RU-103	497.08		89.00	9.85E-02	3.59E-01	3.59E-01
+	RU-106	621.84		9.80	-8.58E-02	6.47E-01	6.47E-01
+	AG-108M	433.93		89.90	-3.49E-03	5.83E-02	5.83E-02
		614.37		90.40	-4.15E-01		7.55E-02
		722.95		90.50	1.06E-02		6.84E-02
+	CD-109	88.03	*	3.72	2.95E+00	4.55E+00	4.55E+00

Analysis Report for 1707092-03

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	AG-110M	657.75		93.14	1.63E-02	9.74E-02	9.74E-02
		677.61		10.53	4.70E-02		7.25E-01
		706.67		16.46	-4.66E-03		4.98E-01
		763.93		21.98	-3.72E-01		3.92E-01
		884.67		71.63	-4.39E-02		1.03E-01
		1384.27		23.94	1.13E-01		3.19E-01
+	CD-113M	263.70		0.02	-1.32E+01	2.19E+02	2.19E+02
+	SN-113	255.12		1.93	-5.46E-01	1.48E-01	4.27E+00
		391.69		64.90	-1.94E-02		1.48E-01
+	TE123M	159.00		84.10	-3.41E-02	8.98E-02	8.98E-02
+	SB-124	602.71		97.87	-2.03E-01	1.81E-01	1.81E-01
		645.85		7.26	1.26E+00		2.57E+00
		722.78		11.10	2.74E-01		1.77E+00
		1691.02		49.00	-3.05E-02		2.77E-01
+	I-125	35.49		6.49	-5.25E-01	2.38E+00	2.38E+00
+	SB-125	176.33		6.89	-2.02E-01	1.96E-01	6.90E-01
		427.89		29.33	2.12E-02		1.96E-01
		463.38		10.35	1.50E-01		6.08E-01
		600.56		17.80	0.00E+00		3.24E-01
		635.90		11.32	-1.27E-01		5.08E-01
+	SB-126	414.70		83.30	-5.02E+00	1.76E+01	1.81E+01
		666.33		99.60	-1.56E+01		1.92E+01
		695.00		99.60	8.31E+00		1.76E+01
		720.50		53.80	9.65E+00		2.86E+01
+	SN-126	87.57	*	37.00	2.55E-01	3.94E-01	3.94E-01
+	SB-127	473.00		25.00	-4.68E+06	1.08E+07	1.41E+07
		685.20		35.70	-3.84E+05		1.08E+07
		783.80		14.70	1.45E+07		3.06E+07
+	I-129	29.78		57.00	-5.35E-02	9.48E-02	9.48E-02
		33.60		13.20	1.19E-01		3.94E-01
		39.58		7.52	-1.91E-01		6.10E-01
+	I-131	284.30		6.05	2.38E+02	3.60E+02	4.90E+03
		364.48		81.20	1.89E+02		3.60E+02
		636.97		7.26	-1.44E+02		4.32E+03
		722.89		1.80	3.03E+03		1.95E+04
+	TE-132	49.72		13.10	9.31E+07	9.61E+07	6.68E+08
		228.16		88.00	-1.44E+07		9.61E+07
+	BA-133	81.00		33.00	-5.60E-01	1.29E-01	1.56E-01
		302.84		17.80	6.66E-02		3.29E-01
		356.01		60.00	1.39E-02		1.29E-01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-2.74E+05	7.63E+04	7.63E+04
+	CS-134	563.23		8.38	4.30E-03	6.91E-02	6.79E-01
		569.32		15.43	2.11E-01		3.91E-01
		604.70		97.60	-6.46E-01		6.91E-02
		795.84		85.40	7.84E-02		9.01E-02
		801.93		8.73	-1.40E-02		8.16E-01
+	CS-135	268.24	*	16.00	1.40E-01	7.34E-01	7.34E-01
+	@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

		Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	@	I-135	1260.41	28.60	1.00E+26	1.00E+26	1.00E+26
	@		1678.03	9.54	1.00E+26		1.00E+26
+		CS-136	153.22	7.46	3.95E+01	1.12E+01	1.24E+02
			163.89	4.61	-7.88E+01		1.83E+02
			176.55	13.56	-1.89E+01		6.45E+01
			273.65	12.66	-3.08E+01		8.60E+01
			340.57	48.50	6.28E+01		3.00E+01
			818.50	99.70	5.95E-02		1.12E+01
			1048.07	79.60	-2.24E+00		1.75E+01
			1235.34	19.70	2.38E+00		9.69E+01
+		CS-137	661.65	85.12	1.82E-01	1.08E-01	1.08E-01
+		LA-138	788.74	34.00	1.01E-02	7.57E-02	1.78E-01
			1435.80	66.00	1.63E-03		7.57E-02
+		CE-139	165.85	80.35	7.01E-02	9.38E-02	9.38E-02
+		BA-140	162.64	6.70	-4.10E+01	5.11E+01	1.46E+02
			304.84	4.50	-4.41E+01		2.49E+02
			423.70	3.20	-1.18E+02		3.59E+02
			437.55	2.00	3.41E+02		6.48E+02
			537.32	25.00	2.44E+01		5.11E+01
+		LA-140	328.77	20.50	3.11E+01	1.36E+01	6.09E+01
			487.03	45.50	-3.11E+00		2.76E+01
			815.85	23.50	-1.72E+01		5.68E+01
			1596.49	95.49	-6.29E-01		1.36E+01
+		CE-141	145.44	48.40	-2.90E-02	8.12E-01	8.12E-01
+	@	CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@		293.26	42.00	1.00E+26		1.00E+26
	@		664.55	5.20	1.00E+26		1.00E+26
+		CE-144	133.54	10.80	-3.66E-02	5.09E-01	5.09E-01
+		PM-144	476.78	42.00	-5.09E-02	6.95E-02	1.50E-01
			618.01	98.60	-9.22E-05		6.95E-02
			696.49	99.49	1.35E-02		7.63E-02
+		PM-145	36.85	21.70	8.24E-02	1.21E-01	2.25E-01
			37.36	39.70	-4.87E-02		1.21E-01
			42.30	15.10	2.02E-01		3.01E-01
			72.40	2.31	-5.03E+00		2.71E+00
+		PM-146	453.90	39.94	8.96E-02	1.45E-01	1.45E-01
			735.90	14.01	-5.34E-02		4.38E-01
			747.13	13.10	1.46E-01		4.86E-01
+		ND-147	91.11	28.90	2.10E+02	1.21E+02	1.21E+02
			531.02	13.10	-1.45E+02		2.18E+02
+		PM-149	285.90	3.10	8.71E+12	7.51E+13	7.51E+13
+		EU-152	121.78	20.50	-5.86E-02	2.07E-01	2.07E-01
			244.69	5.40	-9.90E-01		9.41E-01
			344.27	19.13	1.41E-02		2.85E-01
			778.89	9.20	-1.04E-01		6.79E-01
			964.01	10.40	-1.59E+00		7.58E-01
			1085.78	7.22	3.44E-01		9.48E-01
			1112.02	9.60	1.17E-01		7.94E-01
			1407.95	14.94	4.58E-03		3.97E-01

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	GD-153	97.43		31.30	-1.58E-01	1.95E-01	1.95E-01
		103.18		22.20	-8.10E-02		2.61E-01
+	EU-154	123.07		40.50	-8.46E-03	1.09E-01	1.09E-01
		723.30		19.70	4.98E-02		3.21E-01
		873.19		11.50	2.39E-01		5.40E-01
		996.32		10.30	-4.89E-01		5.76E-01
		1004.76		17.90	-1.68E-01		3.64E-01
		1274.45		35.50	2.59E-02		1.94E-01
+	EU-155	86.50		30.90	6.28E-02	1.91E-01	1.91E-01
		105.30		20.70	1.60E-02		2.23E-01
+	EU-156	811.77		10.40	3.23E+01	5.94E+01	5.94E+01
		1153.47		7.20	-8.62E+00		1.04E+02
		1230.71		8.90	1.47E+01		9.03E+01
+	HO-166M	184.41		72.60	1.39E-01	7.89E-02	7.89E-02
		280.45		29.60	1.41E-01		1.89E-01
		410.94		11.10	3.41E-01		5.34E-01
		711.69		54.10	3.98E-02		1.12E-01
+	TM-171	66.72		0.14	5.37E+00	4.21E+01	4.21E+01
+	HF-172	67.35		5.31	-1.73E-01	4.28E-01	1.11E+00
		125.81		11.30	-1.71E-01		4.28E-01
+	LU-172	181.53		20.60	2.32E+03	3.67E+03	7.08E+03
		900.72		29.81	-2.92E+02		6.49E+03
		1093.66		62.50	4.97E+01		3.67E+03
+	LU-173	100.72		5.24	4.62E-02	3.13E-01	9.71E-01
		272.11		21.20	9.27E-02		3.13E-01
+	HF-175	343.40		84.00	8.53E-03	1.75E-01	1.75E-01
+	LU-176	88.34		13.30	-7.72E-02	5.33E-02	4.45E-01
		201.83		86.00	1.12E-02		5.45E-02
		306.78		94.00	2.73E-02		5.33E-02
+	HF-181	133.02		41.70	-3.83E-02	3.53E-01	5.31E-01
		345.85		17.20	7.99E-02		1.63E+00
		482.03		82.80	-2.54E-02		3.53E-01
+	TA-182	67.75		41.20	-3.70E-02	2.37E-01	2.37E-01
		1121.30		34.90	6.37E-01		5.77E-01
		1189.05		16.23	1.28E-01		8.73E-01
		1221.41		26.98	2.50E-02		5.90E-01
		1231.02		11.44	2.16E-01		1.33E+00
+	IR-192	308.46		29.68	-1.19E-01	3.12E-01	4.24E-01
		468.07		48.10	2.39E-02		3.12E-01
+	HG-203	279.19		77.30	6.65E-02	3.17E-01	3.17E-01
+	TL-204	374.74		94.11	-1.34E-02	5.45E-02	5.45E-02
		899.15		99.16	-2.35E-02		6.38E-02
		911.74		91.10	3.52E-01		1.45E-01
+	BI-207	569.67	*	97.72	2.84E-02	5.09E-02	5.09E-02
		1063.62		74.90	3.47E-02		9.39E-02
+	TL-208	583.14	*	30.22	9.37E-01	1.54E-01	3.34E-01
		860.37	*	4.48	1.47E+00		1.52E+00
		2614.66	*	35.85	1.05E+00		1.54E-01
+	BI-210M	262.00		45.00	2.66E-02	1.15E-01	1.15E-01

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-210M	300.00		23.00	-8.42E-01	1.15E-01	2.68E-01
+	PB-210	46.50	*	4.25	1.03E+00	1.33E+00	1.33E+00
+	PB-211	404.84		2.90	-1.46E+00	1.86E+00	1.86E+00
		831.96		2.90	8.89E-01		2.22E+00
+	BI-212	727.17	*	11.80	7.18E-01	7.67E-01	7.67E-01
		1620.62		2.75	-6.43E-01		1.88E+00
+	PB-212	238.63	*	44.60	1.25E+00	2.04E-01	2.04E-01
		300.09	*	3.41	1.89E+00		2.80E+00
+	BI-214	609.31	*	46.30	1.21E+00	2.97E-01	3.53E-01
		1120.29	*	15.10	9.34E-01		7.60E-01
		1764.49	*	15.80	1.35E+00		2.97E-01
		2204.22		4.98	1.83E+00		1.91E+00
+	PB-214	295.21	*	19.19	1.32E+00	2.20E-01	4.95E-01
		351.92	*	37.19	1.19E+00		2.20E-01
+	RN-219	401.80		6.50	3.03E-02	8.25E-01	8.25E-01
+	RA-223	323.87		3.88	-1.26E+00	1.24E+00	1.24E+00
+	RA-224	240.98	*	3.95	3.72E+00	2.30E+00	2.30E+00
+	RA-225	40.00		31.00	9.81E+00	1.67E+01	1.67E+01
+	RA-226	186.21	*	3.28	3.02E+00	2.50E+00	2.50E+00
+	TH-227	50.10		8.40	-2.94E-01	5.30E-01	5.61E-01
		236.00		11.50	-3.18E+00		5.30E-01
		256.20		6.30	-9.05E-02		8.44E-01
+	AC-228	338.32	*	11.40	1.29E+00	3.84E-01	6.65E-01
		911.07	*	27.70	1.15E+00		3.84E-01
		969.11	*	16.60	1.17E+00		1.24E+00
+	TH-230	48.44		16.90	1.38E-01	3.06E-01	3.06E-01
		62.85		4.60	9.34E-01		1.26E+00
		67.67		0.37	-2.24E+00		1.44E+01
+	PA-231	283.67		1.60	-1.34E+00	2.50E+00	3.22E+00
		302.67		2.30	5.06E-01		2.50E+00
+	TH-231	25.64		14.70	-3.12E+00	4.75E-01	4.75E-01
		84.21		6.40	-7.04E-01		8.23E-01
+	PA-233	311.98		38.60	9.82E-01	1.73E+00	1.73E+00
+	PA-234	131.20		20.40	1.22E-02	2.16E-01	2.16E-01
		733.99		8.80	0.00E+00		6.90E-01
		946.00		12.00	-2.71E-01		5.12E-01
+	PA-234M	1001.03		0.92	4.75E+00	7.61E+00	7.61E+00
+	TH-234	63.29	*	3.80	1.08E+00	2.13E+00	2.13E+00
+	U-235	143.76		10.50	3.34E-01	4.51E-01	4.51E-01
		163.35		4.70	-3.92E-01		9.10E-01
		205.31		4.70	-1.06E-01		9.78E-01
+	NP-237	86.50		12.60	1.48E-01	4.52E-01	4.52E-01
+	NP-239	106.10		22.70	7.42E+11	1.34E+12	1.34E+12
		228.18		10.70	-4.24E+11		2.83E+12
		277.60		14.10	7.90E+11		2.55E+12
+	AM-241	59.54		35.90	-6.45E-03	1.44E-01	1.44E-01
+	AM-243	74.67	*	66.00	2.71E-01	1.34E-01	1.34E-01

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CM-243	209.75	3.29	8.19E-01	3.91E-01	1.61E+00
		228.14	10.60	-6.52E-02		4.35E-01
		277.60	14.00	1.21E-01		3.91E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	1.94E+00	1.94E+00	5.22E-01	9.22E-01
	NA-22	1274.54		99.94	7.25E-02	7.25E-02	9.70E-03	3.32E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	4.50E-02	4.50E-02	-1.14E-02	1.88E-02
+	K-40	1460.81	*	10.67	7.86E-01	7.86E-01	2.05E+01	3.64E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	5.65E-02	5.65E-02	-8.81E-03	2.76E-02
		78.34		96.00	7.55E-02		1.91E-01	3.71E-02
	SC-46	889.25		99.98	1.41E-01	1.41E-01	3.18E-02	6.57E-02
		1120.51		99.99	2.46E-01		2.57E-01	1.17E-01
	V-48	983.52		99.98	4.42E+00	4.18E+00	-8.74E-01	2.03E+00
		1312.10		97.50	4.18E+00		-1.20E+00	1.86E+00
+	CR-51	320.08	*	9.83	5.60E+00	5.60E+00	3.79E+00	2.67E+00
	MN-54	834.83		99.97	7.95E-02	7.95E-02	-3.56E-04	3.72E-02
	CO-56	846.75		99.96	1.49E-01	1.49E-01	3.74E-03	6.96E-02
		1037.75		14.03	1.10E+00		-1.83E-01	5.10E-01
		1238.25		67.00	3.64E-01		2.69E-01	1.72E-01
		1771.40		15.51	7.78E-01		-2.07E-02	3.33E-01
		2598.48		16.90	6.54E-01		1.05E-01	2.59E-01

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	CO-57	122.06		85.51	6.40E-02	6.40E-02	-7.60E-03	3.11E-02
		136.48		10.60	5.26E-01		6.32E-02	2.55E-01
	CO-58	810.76		99.40	1.62E-01	1.62E-01	-3.41E-02	7.53E-02
	FE-59	1099.22		56.50	6.83E-01	6.75E-01	1.65E-01	3.20E-01
		1291.56		43.20	6.75E-01		-1.86E-01	3.06E-01
	CO-60	1173.22		100.00	8.16E-02	6.13E-02	2.35E-02	3.80E-02
		1332.49		100.00	6.13E-02		-1.21E-02	2.76E-02
	ZN-65	1115.52		50.75	2.03E-01	2.03E-01	2.49E-02	9.47E-02
	GA-67	93.31		35.70	2.97E+08	2.97E+08	4.63E+08	1.46E+08
		208.95		2.24	4.32E+09		4.92E+09	2.10E+09
		300.22		16.00	6.58E+08		-1.53E+09	3.18E+08
	SE-75	121.11		16.70	4.47E-01	1.30E-01	-1.27E-01	2.17E-01
		136.00		59.20	1.30E-01		1.56E-02	6.31E-02
		264.65		59.80	1.50E-01		-6.75E-03	7.21E-02
		279.53		25.20	3.91E-01		8.20E-02	1.89E-01
		400.65		11.40	8.51E-01		2.34E-01	4.07E-01
	RB-82	776.52		13.00	7.50E+00	7.50E+00	2.67E+00	3.52E+00
	RB-83	520.41		46.00	2.62E-01	2.62E-01	-1.57E-01	1.24E-01
		529.64		30.30	3.78E-01		-2.15E-01	1.78E-01
		552.65		16.40	6.87E-01		-7.01E-02	3.23E-01
	KR-85	513.99		0.43	1.95E+01	1.95E+01	3.46E+00	9.40E+00
	SR-85	513.99		99.27	2.44E-01	2.44E-01	4.35E-02	1.18E-01
	Y-88	898.02		93.40	1.30E-01	9.53E-02	4.36E-02	6.03E-02
		1836.01		99.38	9.53E-02		1.41E-02	4.06E-02
	MO-93	263.06		56.72	9.12E-02	4.34E-02	-1.35E-03	4.40E-02
		684.67		99.68	5.66E-02		-2.01E-03	2.65E-02
		1477.11		99.08	4.34E-02		-3.51E-02	1.85E-02
	NB-93M	16.57		9.43	4.81E-01	4.81E-01	-3.35E-01	2.25E-01
	NB-94	702.63		100.00	6.41E-02	5.52E-02	2.62E-02	3.02E-02
		871.10		100.00	5.52E-02		-6.18E-02	2.54E-02
	NB-95	765.79		99.81	5.23E-01	5.23E-01	1.50E-01	2.47E-01
	NB-95M	235.69		25.00	5.63E+07	5.63E+07	-3.38E+08	2.74E+07
	ZR-95	724.18		43.70	4.75E-01	3.27E-01	-2.58E-03	2.25E-01
		756.72		55.30	3.27E-01		-4.38E-02	1.53E-01
	MO-99	181.06		6.20	6.92E+10	4.32E+10	2.27E+10	3.35E+10
		739.58		12.80	4.32E+10		3.76E+09	2.02E+10
		778.00		4.50	1.24E+11		-5.02E+10	5.80E+10
	RU-103	497.08		89.00	3.59E-01	3.59E-01	9.85E-02	1.70E-01
	RU-106	621.84		9.80	6.47E-01	6.47E-01	-8.58E-02	3.03E-01
	AG-108M	433.93		89.90	5.83E-02	5.83E-02	-3.49E-03	2.77E-02
		614.37		90.40	7.55E-02		-4.15E-01	3.59E-02
		722.95		90.50	6.84E-02		1.06E-02	3.21E-02
+	CD-109	88.03	*	3.72	4.55E+00	4.55E+00	2.95E+00	2.26E+00
	AG-110M	657.75		93.14	9.74E-02	9.74E-02	1.63E-02	4.62E-02
		677.61		10.53	7.25E-01		4.70E-02	3.40E-01
		706.67		16.46	4.98E-01		-4.66E-03	2.34E-01
		763.93		21.98	3.92E-01		-3.72E-01	1.84E-01
		884.67		71.63	1.03E-01		-4.39E-02	4.75E-02
		1384.27		23.94	3.19E-01		1.13E-01	1.43E-01
	CD-113M	263.70		0.02	2.19E+02	2.19E+02	-1.32E+01	1.06E+02
	SN-113	255.12		1.93	4.27E+00	1.48E-01	-5.46E-01	2.05E+00
		391.69		64.90	1.48E-01		-1.94E-02	7.07E-02
	TE123M	159.00		84.10	8.98E-02	8.98E-02	-3.41E-02	4.35E-02

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	SB-124	602.71		97.87	1.81E-01	1.81E-01	-2.03E-01	8.53E-02
		645.85		7.26	2.57E+00		1.26E+00	1.21E+00
		722.78		11.10	1.77E+00		2.74E-01	8.30E-01
		1691.02		49.00	2.77E-01		-3.05E-02	1.16E-01
	I-125	35.49		6.49	2.38E+00	2.38E+00	-5.25E-01	1.15E+00
	SB-125	176.33		6.89	6.90E-01	1.96E-01	-2.02E-01	3.34E-01
		427.89		29.33	1.96E-01		2.12E-02	9.36E-02
		463.38		10.35	6.08E-01		1.50E-01	2.90E-01
		600.56		17.80	3.24E-01		0.00E+00	1.52E-01
		635.90		11.32	5.08E-01		-1.27E-01	2.38E-01
	SB-126	414.70		83.30	1.81E+01	1.76E+01	-5.02E+00	8.63E+00
		666.33		99.60	1.92E+01		-1.56E+01	9.11E+00
		695.00		99.60	1.76E+01		8.31E+00	8.32E+00
		720.50		53.80	2.86E+01		9.65E+00	1.34E+01
+	SN-126	87.57	*	37.00	3.94E-01	3.94E-01	2.55E-01	1.96E-01
	SB-127	473.00		25.00	1.41E+07	1.08E+07	-4.68E+06	6.69E+06
		685.20		35.70	1.08E+07		-3.84E+05	5.06E+06
		783.80		14.70	3.06E+07		1.45E+07	1.43E+07
	I-129	29.78		57.00	9.48E-02	9.48E-02	-5.35E-02	4.59E-02
		33.60		13.20	3.94E-01		1.19E-01	1.91E-01
		39.58		7.52	6.10E-01		-1.91E-01	2.96E-01
	I-131	284.30		6.05	4.90E+03	3.60E+02	2.38E+02	2.36E+03
		364.48		81.20	3.60E+02		1.89E+02	1.72E+02
		636.97		7.26	4.32E+03		-1.44E+02	2.03E+03
		722.89		1.80	1.95E+04		3.03E+03	9.18E+03
	TE-132	49.72		13.10	6.68E+08	9.61E+07	9.31E+07	3.25E+08
		228.16		88.00	9.61E+07		-1.44E+07	4.64E+07
	BA-133	81.00		33.00	1.56E-01	1.29E-01	-5.60E-01	7.62E-02
		302.84		17.80	3.29E-01		6.66E-02	1.59E-01
		356.01		60.00	1.29E-01		1.39E-02	6.26E-02
@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	7.63E+04	7.63E+04	-2.74E+05	3.73E+04
	CS-134	563.23		8.38	6.79E-01	6.91E-02	4.30E-03	3.19E-01
		569.32		15.43	3.91E-01		2.11E-01	1.85E-01
		604.70		97.60	6.91E-02		-6.46E-01	3.27E-02
		795.84		85.40	9.01E-02		7.84E-02	4.25E-02
		801.93		8.73	8.16E-01		-1.40E-02	3.83E-01
+	CS-135	268.24	*	16.00	7.34E-01	7.34E-01	1.40E-01	3.61E-01
@	I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1260.41		28.60	1.00E+26		1.00E+26	1.00E+20
@		1678.03		9.54	1.00E+26		1.00E+26	1.00E+20
	CS-136	153.22		7.46	1.24E+02	1.12E+01	3.95E+01	6.00E+01
		163.89		4.61	1.83E+02		-7.88E+01	8.86E+01
		176.55		13.56	6.45E+01		-1.89E+01	3.12E+01
		273.65		12.66	8.60E+01		-3.08E+01	4.16E+01
		340.57		48.50	3.00E+01		6.28E+01	1.46E+01
		818.50		99.70	1.12E+01		5.95E-02	5.18E+00
		1048.07		79.60	1.75E+01		-2.24E+00	8.15E+00
		1235.34		19.70	9.69E+01		2.38E+00	4.57E+01
	CS-137	661.65		85.12	1.08E-01	1.08E-01	1.82E-01	5.17E-02
	LA-138	788.74		34.00	1.78E-01	7.57E-02	1.01E-02	8.32E-02
		1435.80		66.00	7.57E-02		1.63E-03	3.32E-02
	CE-139	165.85		80.35	9.38E-02	9.38E-02	7.01E-02	4.55E-02

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-140	162.64	6.70	1.46E+02	5.11E+01	-4.10E+01	7.07E+01
	304.84	4.50	2.49E+02		-4.41E+01	1.20E+02
	423.70	3.20	3.59E+02		-1.18E+02	1.71E+02
	437.55	2.00	6.48E+02		3.41E+02	3.09E+02
	537.32	25.00	5.11E+01		2.44E+01	2.42E+01
LA-140	328.77	20.50	6.09E+01	1.36E+01	3.11E+01	2.93E+01
	487.03	45.50	2.76E+01		-3.11E+00	1.31E+01
	815.85	23.50	5.68E+01		-1.72E+01	2.64E+01
	1596.49	95.49	1.36E+01		-6.29E-01	6.00E+00
CE-141	145.44	48.40	8.12E-01	8.12E-01	-2.90E-02	3.95E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	5.09E-01	5.09E-01	-3.66E-02	2.47E-01
PM-144	476.78	42.00	1.50E-01	6.95E-02	-5.09E-02	7.14E-02
	618.01	98.60	6.95E-02		-9.22E-05	3.27E-02
	696.49	99.49	7.63E-02		1.35E-02	3.60E-02
PM-145	36.85	21.70	2.25E-01	1.21E-01	8.24E-02	1.09E-01
	37.36	39.70	1.21E-01		-4.87E-02	5.88E-02
	42.30	15.10	3.01E-01		2.02E-01	1.46E-01
	72.40	2.31	2.71E+00		-5.03E+00	1.33E+00
PM-146	453.90	39.94	1.45E-01	1.45E-01	8.96E-02	6.90E-02
	735.90	14.01	4.38E-01		-5.34E-02	2.05E-01
	747.13	13.10	4.86E-01		1.46E-01	2.28E-01
ND-147	91.11	28.90	1.21E+02	1.21E+02	2.10E+02	5.96E+01
	531.02	13.10	2.18E+02		-1.45E+02	1.03E+02
PM-149	285.90	3.10	7.51E+13	7.51E+13	8.71E+12	3.62E+13
EU-152	121.78	20.50	2.07E-01	2.07E-01	-5.86E-02	1.00E-01
	244.69	5.40	9.41E-01		-9.90E-01	4.55E-01
	344.27	19.13	2.85E-01		1.41E-02	1.37E-01
	778.89	9.20	6.79E-01		-1.04E-01	3.18E-01
	964.01	10.40	7.58E-01		-1.59E+00	3.56E-01
	1085.78	7.22	9.48E-01		3.44E-01	4.39E-01
	1112.02	9.60	7.94E-01		1.17E-01	3.70E-01
	1407.95	14.94	3.97E-01		4.58E-03	1.78E-01
GD-153	97.43	31.30	1.95E-01	1.95E-01	-1.58E-01	9.51E-02
	103.18	22.20	2.61E-01		-8.10E-02	1.27E-01
EU-154	123.07	40.50	1.09E-01	1.09E-01	-8.46E-03	5.28E-02
	723.30	19.70	3.21E-01		4.98E-02	1.51E-01
	873.19	11.50	5.40E-01		2.39E-01	2.51E-01
	996.32	10.30	5.76E-01		-4.89E-01	2.64E-01
	1004.76	17.90	3.64E-01		-1.68E-01	1.68E-01
	1274.45	35.50	1.94E-01		2.59E-02	8.87E-02
EU-155	86.50	30.90	1.91E-01	1.91E-01	6.28E-02	9.38E-02
	105.30	20.70	2.23E-01		1.60E-02	1.08E-01
EU-156	811.77	10.40	5.94E+01	5.94E+01	3.23E+01	2.78E+01
	1153.47	7.20	1.04E+02		-8.62E+00	4.85E+01
	1230.71	8.90	9.03E+01		1.47E+01	4.21E+01
HO-166M	184.41	72.60	7.89E-02	7.89E-02	1.39E-01	3.85E-02
	280.45	29.60	1.89E-01		1.41E-01	9.14E-02
	410.94	11.10	5.34E-01		3.41E-01	2.56E-01
	711.69	54.10	1.12E-01		3.98E-02	5.27E-02
TM-171	66.72	0.14	4.21E+01	4.21E+01	5.37E+00	2.06E+01

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	HF-172	67.35		5.31	1.11E+00	4.28E-01	-1.73E-01	5.43E-01
		125.81		11.30	4.28E-01		-1.71E-01	2.08E-01
	LU-172	181.53		20.60	7.08E+03	3.67E+03	2.32E+03	3.43E+03
		900.72		29.81	6.49E+03		-2.92E+02	3.01E+03
		1093.66		62.50	3.67E+03		4.97E+01	1.70E+03
	LU-173	100.72		5.24	9.71E-01	3.13E-01	4.62E-02	4.73E-01
		272.11		21.20	3.13E-01		9.27E-02	1.52E-01
	HF-175	343.40		84.00	1.75E-01	1.75E-01	8.53E-03	8.41E-02
	LU-176	88.34		13.30	4.45E-01	5.33E-02	-7.72E-02	2.18E-01
		201.83		86.00	5.45E-02		1.12E-02	2.64E-02
		306.78		94.00	5.33E-02		2.73E-02	2.56E-02
	HF-181	133.02		41.70	5.31E-01	3.53E-01	-3.83E-02	2.58E-01
		345.85		17.20	1.63E+00		7.99E-02	7.81E-01
		482.03		82.80	3.53E-01		-2.54E-02	1.68E-01
	TA-182	67.75		41.20	2.37E-01	2.37E-01	-3.70E-02	1.16E-01
		1121.30		34.90	5.77E-01		6.37E-01	2.75E-01
		1189.05		16.23	8.73E-01		1.28E-01	4.06E-01
		1221.41		26.98	5.90E-01		2.50E-02	2.77E-01
		1231.02		11.44	1.33E+00		2.16E-01	6.19E-01
	IR-192	308.46		29.68	4.24E-01	3.12E-01	-1.19E-01	2.04E-01
		468.07		48.10	3.12E-01		2.39E-02	1.49E-01
	HG-203	279.19		77.30	3.17E-01	3.17E-01	6.65E-02	1.53E-01
	TL-204	374.74		94.11	5.45E-02	5.45E-02	-1.34E-02	2.60E-02
		899.15		99.16	6.38E-02		-2.35E-02	2.96E-02
		911.74		91.10	1.45E-01		3.52E-01	7.01E-02
+	BI-207	569.67	*	97.72	5.09E-02	5.09E-02	2.84E-02	2.39E-02
		1063.62		74.90	9.39E-02		3.47E-02	4.36E-02
+	TL-208	583.14	*	30.22	3.34E-01	1.54E-01	9.37E-01	1.62E-01
		860.37	*	4.48	1.52E+00		1.47E+00	7.13E-01
		2614.66	*	35.85	1.54E-01		1.05E+00	6.40E-02
	BI-210M	262.00		45.00	1.15E-01	1.15E-01	2.66E-02	5.57E-02
		300.00		23.00	2.68E-01		-8.42E-01	1.30E-01
+	PB-210	46.50	*	4.25	1.33E+00	1.33E+00	1.03E+00	6.49E-01
	PB-211	404.84		2.90	1.86E+00	1.86E+00	-1.46E+00	8.89E-01
		831.96		2.90	2.22E+00		8.89E-01	1.04E+00
+	BI-212	727.17	*	11.80	7.67E-01	7.67E-01	7.18E-01	3.68E-01
		1620.62		2.75	1.88E+00		-6.43E-01	8.16E-01
+	PB-212	238.63	*	44.60	2.04E-01	2.04E-01	1.25E+00	1.00E-01
		300.09	*	3.41	2.80E+00		1.89E+00	1.37E+00
+	BI-214	609.31	*	46.30	3.53E-01	2.97E-01	1.21E+00	1.73E-01
		1120.29	*	15.10	7.60E-01		9.34E-01	3.63E-01
		1764.49	*	15.80	2.97E-01		1.35E+00	1.26E-01
		2204.22		4.98	1.91E+00		1.83E+00	8.68E-01
+	PB-214	295.21	*	19.19	4.95E-01	2.20E-01	1.32E+00	2.42E-01
		351.92	*	37.19	2.20E-01		1.19E+00	1.07E-01
	RN-219	401.80		6.50	8.25E-01	8.25E-01	3.03E-02	3.94E-01
	RA-223	323.87		3.88	1.24E+00	1.24E+00	-1.26E+00	5.95E-01
+	RA-224	240.98	*	3.95	2.30E+00	2.30E+00	3.72E+00	1.13E+00
	RA-225	40.00		31.00	1.67E+01	1.67E+01	9.81E+00	8.10E+00
+	RA-226	186.21	*	3.28	2.50E+00	2.50E+00	3.02E+00	1.23E+00
	TH-227	50.10		8.40	5.61E-01	5.30E-01	-2.94E-01	2.73E-01
		236.00		11.50	5.30E-01		-3.18E+00	2.58E-01
		256.20		6.30	8.44E-01		-9.05E-02	4.08E-01

Analysis Report for 1707092-03

HTC-A08-S001-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	AC-228	338.32	*	11.40	6.65E-01	3.84E-01	1.29E+00	3.23E-01
		911.07	*	27.70	3.84E-01		1.15E+00	1.84E-01
		969.11	*	16.60	1.24E+00		1.17E+00	6.06E-01
	TH-230	48.44		16.90	3.06E-01	3.06E-01	1.38E-01	1.49E-01
		62.85		4.60	1.26E+00		9.34E-01	6.16E-01
		67.67		0.37	1.44E+01		-2.24E+00	7.03E+00
	PA-231	283.67		1.60	3.22E+00	2.50E+00	-1.34E+00	1.55E+00
		302.67		2.30	2.50E+00		5.06E-01	1.21E+00
	TH-231	25.64		14.70	4.75E-01	4.75E-01	-3.12E+00	2.31E-01
		84.21		6.40	8.23E-01		-7.04E-01	4.03E-01
	PA-233	311.98		38.60	1.73E+00	1.73E+00	9.82E-01	8.31E-01
	PA-234	131.20		20.40	2.16E-01	2.16E-01	1.22E-02	1.05E-01
		733.99		8.80	6.90E-01		0.00E+00	3.24E-01
		946.00		12.00	5.12E-01		-2.71E-01	2.37E-01
	PA-234M	1001.03		0.92	7.61E+00	7.61E+00	4.75E+00	3.55E+00
+	TH-234	63.29	*	3.80	2.13E+00	2.13E+00	1.08E+00	1.05E+00
	U-235	143.76		10.50	4.51E-01	4.51E-01	3.34E-01	2.19E-01
		163.35		4.70	9.10E-01		-3.92E-01	4.40E-01
		205.31		4.70	9.78E-01		-1.06E-01	4.73E-01
	NP-237	86.50		12.60	4.52E-01	4.52E-01	1.48E-01	2.21E-01
	NP-239	106.10		22.70	1.34E+12	1.34E+12	7.42E+11	6.51E+11
		228.18		10.70	2.83E+12		-4.24E+11	1.37E+12
		277.60		14.10	2.55E+12		7.90E+11	1.23E+12
	AM-241	59.54		35.90	1.44E-01	1.44E-01	-6.45E-03	7.02E-02
+	AM-243	74.67	*	66.00	1.34E-01	1.34E-01	2.71E-01	6.63E-02
	CM-243	209.75		3.29	1.61E+00	3.91E-01	8.19E-01	7.81E-01
		228.14		10.60	4.35E-01		-6.52E-02	2.10E-01
		277.60		14.00	3.91E-01		1.21E-01	1.89E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

Analysis Report for 1707092-03
HTC-A08-S001-0006-01

No Data Review Comments Entered.

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: HTC-A08-S001-0006-01

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	70	99	79	172	537	159
25:	69	79	76	64	75	58	69	73
33:	79	58	76	90	70	57	71	71
41:	81	76	82	71	57	108	176	95
49:	93	87	100	96	92	127	87	101
57:	108	112	128	128	116	138	180	231
65:	140	151	121	133	150	138	160	123
73:	161	183	332	348	412	488	161	134
81:	123	124	115	140	162	116	158	231
89:	140	172	169	129	280	216	123	93
97:	99	104	102	107	85	80	92	71
105:	87	113	94	94	102	85	94	92
113:	81	78	83	95	87	79	76	71
121:	75	82	79	72	80	87	77	89
129:	86	103	70	93	56	80	77	72
137:	81	80	64	85	66	90	73	97
145:	93	82	70	70	76	92	78	81
153:	67	87	79	89	73	61	67	65
161:	75	48	56	69	67	76	62	80
169:	58	64	63	77	69	60	65	59
177:	67	66	60	78	64	65	55	61
185:	89	169	137	67	61	80	60	63
193:	50	55	59	54	62	51	78	70
201:	71	49	61	56	52	56	63	62
209:	77	102	80	51	62	75	61	57
217:	56	46	65	54	41	54	51	69
225:	50	44	55	48	40	49	61	51
233:	63	49	48	52	66	223	586	224
241:	101	178	91	56	41	48	43	54
249:	27	43	40	53	40	27	48	43
257:	59	35	47	38	42	41	39	34
265:	33	34	25	45	28	74	70	40
273:	40	34	33	34	44	48	39	46
281:	36	37	35	51	32	25	27	40
289:	34	32	32	39	34	34	172	187
297:	64	35	40	70	58	31	27	26
305:	27	38	19	28	36	31	26	18
313:	35	32	28	23	25	28	19	34
321:	33	31	13	17	28	20	33	41
329:	39	33	25	29	33	25	24	30
337:	32	82	116	63	31	37	34	31
345:	28	25	21	25	39	33	78	314
353:	212	44	36	24	22	36	16	20
361:	21	15	29	28	18	26	19	32

369:	18	18	20	17	22	21	17	27

Sample Title: HTC-A08-S001-0006-01

Channel								
377:	18	22	28	23	29	24	26	21
385:	24	19	27	30	24	20	24	27
393:	20	19	23	17	23	26	19	21
401:	23	27	25	22	21	22	19	22
409:	30	39	26	23	21	27	25	17
417:	25	22	16	24	19	18	18	11
425:	24	18	18	20	22	25	17	26
433:	21	17	16	19	17	22	25	27
441:	28	16	16	21	25	16	21	14
449:	14	21	24	20	22	21	15	20
457:	20	17	10	23	11	20	27	32
465:	15	25	23	22	23	22	20	15
473:	13	15	9	15	19	23	15	18
481:	28	18	18	14	22	21	16	25
489:	11	13	17	20	13	16	17	13
497:	13	11	26	21	11	15	15	20
505:	18	11	18	19	29	51	89	65
513:	35	16	16	21	25	20	12	13
521:	14	20	18	9	12	22	17	12
529:	15	15	15	11	7	16	18	14
537:	15	17	17	11	14	14	15	19
545:	7	12	13	15	7	13	17	13
553:	7	12	9	12	17	10	14	8
561:	13	11	22	10	10	12	13	15
569:	17	20	8	11	12	8	8	19
577:	9	13	18	18	12	32	121	129
585:	27	12	17	18	16	16	13	14
593:	12	15	14	13	11	5	13	19
601:	16	6	13	12	16	8	13	42
609:	165	177	47	15	13	20	12	15
617:	11	14	15	10	12	9	11	11
625:	7	11	13	15	14	10	12	14
633:	11	12	11	16	7	10	9	15
641:	9	13	11	13	16	14	10	10
649:	16	10	7	6	8	8	14	14
657:	11	9	13	21	39	67	38	17
665:	21	20	13	6	9	10	14	12
673:	5	20	16	7	11	15	10	12
681:	9	9	11	8	12	7	13	12
689:	12	9	15	16	12	11	17	10
697:	15	16	10	9	9	14	20	11
705:	15	16	9	8	13	15	13	18
713:	6	8	9	6	14	10	6	12
721:	11	5	11	12	15	17	37	35
729:	13	10	12	14	11	9	12	9
737:	11	9	13	11	9	6	12	10
745:	8	8	16	5	16	15	9	10
753:	7	10	10	11	9	13	8	14
761:	16	12	9	13	11	11	13	24
769:	23	9	14	8	17	12	10	10
777:	10	9	12	9	7	16	6	11
785:	6	20	14	7	6	9	6	7
793:	7	13	18	21	17	7	10	7

801:	9	8	14	12	18	14	7	4

Sample Title: HTC-A08-S001-0006-01

Channel								
809:	8	4	14	16	13	6	12	9
817:	8	7	5	6	9	8	8	7
825:	8	8	6	8	8	11	12	11
833:	14	8	8	10	7	12	11	14
841:	7	5	5	10	8	6	13	10
849:	13	4	6	4	10	7	11	16
857:	7	9	12	17	34	12	7	7
865:	9	11	10	5	12	4	6	5
873:	5	11	18	10	3	3	14	5
881:	5	6	6	6	6	10	9	9
889:	8	6	10	7	6	10	9	9
897:	8	10	10	6	9	3	9	11
905:	4	10	9	6	11	30	104	70
913:	23	11	10	10	10	9	7	8
921:	10	10	5	7	4	14	10	7
929:	8	8	2	8	6	15	13	4
937:	9	11	1	2	6	12	6	7
945:	8	7	7	7	11	11	12	7
953:	8	12	11	7	9	8	9	6
961:	3	7	7	16	30	9	13	32
969:	60	35	10	12	10	9	5	6
977:	13	12	12	9	7	8	4	7
985:	7	0	9	5	7	8	12	6
993:	2	6	7	2	8	6	12	12
1001:	11	6	9	8	6	6	6	6
1009:	11	8	11	6	5	6	7	6
1017:	7	6	11	9	6	5	8	8
1025:	8	13	9	14	7	5	11	5
1033:	10	4	6	5	5	9	13	8
1041:	6	11	7	9	6	11	10	8
1049:	9	10	7	10	11	8	8	6
1057:	7	6	6	8	11	6	4	9
1065:	7	13	4	9	13	7	5	8
1073:	12	9	7	9	4	4	9	6
1081:	9	4	9	5	13	7	9	5
1089:	3	5	5	8	5	10	10	15
1097:	11	15	11	8	8	8	9	9
1105:	10	4	8	8	11	8	8	9
1113:	14	9	4	15	9	7	27	34
1121:	33	14	9	15	8	12	8	9
1129:	4	7	8	9	6	6	8	10
1137:	8	10	6	8	6	13	6	10
1145:	7	11	8	9	7	11	8	10
1153:	6	10	12	6	12	9	9	11
1161:	6	6	12	11	7	8	9	9
1169:	6	6	9	12	9	7	11	10
1177:	5	10	12	6	4	7	5	8
1185:	7	6	8	8	7	6	15	10
1193:	5	11	12	7	7	8	8	7
1201:	14	8	6	13	8	7	8	7
1209:	8	5	7	10	18	6	7	10
1217:	9	19	6	7	12	16	5	9
1225:	10	5	5	11	12	12	13	7

1233:	6	14	13	14	20	18	16	11

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Channel								
1241:	8	7	10	7	10	4	6	5
1249:	6	5	4	13	7	10	14	7
1257:	8	4	11	8	5	2	11	3
1265:	9	5	4	10	4	4	4	7
1273:	3	10	4	5	7	7	5	7
1281:	10	6	7	3	5	8	4	4
1289:	4	8	2	3	7	4	7	4
1297:	7	5	1	5	4	4	7	4
1305:	7	8	4	4	4	4	1	3
1313:	4	2	5	1	7	7	5	5
1321:	5	2	2	4	0	8	6	3
1329:	3	2	3	8	5	4	3	2
1337:	8	1	2	5	3	2	5	3
1345:	5	5	4	9	5	1	2	4
1353:	5	12	5	3	5	6	3	4
1361:	3	3	5	2	7	2	5	5
1369:	5	2	4	5	3	3	3	5
1377:	19	14	4	1	3	1	2	6
1385:	5	3	5	1	3	2	5	5
1393:	6	2	2	2	1	4	6	3
1401:	5	7	2	0	4	3	4	7
1409:	2	5	2	3	1	3	3	1
1417:	2	4	0	1	2	0	4	2
1425:	6	6	3	1	2	4	2	4
1433:	2	0	5	4	2	0	4	0
1441:	2	1	2	2	4	6	3	6
1449:	2	3	4	1	7	0	2	3
1457:	6	15	90	312	385	140	30	9
1465:	13	9	5	3	1	3	2	3
1473:	2	0	1	1	2	2	3	5
1481:	5	2	3	1	1	0	1	2
1489:	1	3	1	2	3	2	1	8
1497:	4	4	2	3	4	1	0	2
1505:	2	2	1	1	8	3	2	4
1513:	4	3	0	3	0	0	4	2
1521:	1	4	2	2	1	0	2	2
1529:	2	0	0	5	0	3	0	3
1537:	2	3	2	1	1	1	2	3
1545:	1	1	1	0	4	2	1	2
1553:	2	0	1	4	3	4	0	1
1561:	2	1	0	2	0	1	0	1
1569:	0	1	3	3	2	0	2	0
1577:	1	1	2	2	0	0	4	5
1585:	0	2	7	9	8	2	4	8
1593:	7	4	0	2	1	1	4	1
1601:	4	2	1	2	4	0	1	4
1609:	2	0	2	0	2	0	5	4
1617:	0	2	2	2	2	4	3	1
1625:	2	2	1	3	2	5	6	2
1633:	3	1	2	2	1	2	1	2
1641:	1	2	1	1	2	1	2	1
1649:	1	0	1	0	1	3	1	1
1657:	0	2	2	2	2	1	1	0

1665:	3	0	3	0	1	2	0	0

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Channel								
1673:	1	0	1	1	3	2	1	2
1681:	1	1	1	4	1	0	1	2
1689:	1	1	0	1	3	3	2	2
1697:	2	2	2	0	2	1	2	0
1705:	2	1	1	1	0	0	3	2
1713:	1	3	1	2	1	1	3	0
1721:	3	0	4	0	2	0	1	6
1729:	6	7	2	0	1	2	4	3
1737:	3	0	0	1	2	0	3	0
1745:	0	0	3	1	3	3	1	1
1753:	2	4	2	2	1	0	0	1
1761:	2	6	11	28	25	6	2	5
1769:	0	2	1	2	0	2	0	0
1777:	1	0	1	1	2	0	1	1
1785:	1	1	1	1	0	2	0	2
1793:	1	2	3	0	1	2	3	2
1801:	2	1	3	3	2	2	0	1
1809:	0	1	3	1	1	1	1	3
1817:	1	1	0	2	2	0	2	0
1825:	0	1	0	0	1	1	0	4
1833:	1	2	0	1	3	0	0	3
1841:	1	0	1	0	2	1	4	4
1849:	1	4	0	3	1	0	2	1
1857:	0	0	2	3	2	1	1	0
1865:	0	0	1	1	4	3	2	2
1873:	0	0	1	1	0	0	1	0
1881:	0	2	1	0	1	1	4	3
1889:	2	2	2	2	0	1	2	2
1897:	0	1	0	1	0	0	2	2
1905:	0	0	0	1	0	1	1	1
1913:	0	1	2	3	2	1	0	0
1921:	1	0	1	1	1	2	1	3
1929:	0	2	1	0	1	0	0	0
1937:	0	1	1	1	0	0	3	0
1945:	2	1	0	0	2	2	0	0
1953:	2	3	0	2	0	1	1	3
1961:	1	2	1	2	3	2	1	1
1969:	0	1	0	0	1	0	4	3
1977:	2	0	1	0	0	1	1	2
1985:	1	1	1	2	4	0	1	1
1993:	1	1	0	0	1	0	0	1
2001:	0	2	0	0	1	1	2	1
2009:	1	1	3	2	3	0	0	0
2017:	0	4	2	3	0	0	2	1
2025:	1	2	1	2	1	0	2	1
2033:	3	4	3	3	1	1	0	0
2041:	0	1	2	0	1	1	0	2
2049:	2	2	1	2	2	1	2	1
2057:	2	0	2	1	2	0	3	1
2065:	0	2	1	2	0	2	2	4
2073:	0	1	1	0	1	0	2	0
2081:	2	0	0	2	1	3	0	1
2089:	0	1	2	0	0	0	0	1

2097:	1	3	1	3	6	4	2	7

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Channel								
2105:	2	0	3	1	1	1	1	0
2113:	2	0	0	3	2	2	2	0
2121:	0	3	0	0	1	0	0	2
2129:	0	0	2	0	1	0	0	2
2137:	0	0	0	2	0	1	0	2
2145:	0	0	0	1	1	0	1	0
2153:	1	1	1	0	1	0	1	1
2161:	0	0	0	0	1	0	1	2
2169:	2	3	1	3	1	2	1	1
2177:	1	0	1	0	3	2	3	4
2185:	1	1	0	2	0	1	0	0
2193:	3	2	1	2	0	1	0	3
2201:	2	2	10	9	3	3	4	2
2209:	0	1	2	0	1	1	1	2
2217:	1	3	2	0	1	2	0	0
2225:	1	2	1	3	2	2	1	2
2233:	1	0	1	0	1	0	0	1
2241:	0	1	0	0	0	2	2	1
2249:	1	1	4	0	2	0	2	1
2257:	0	0	2	2	2	0	0	0
2265:	0	2	3	4	0	2	0	0
2273:	2	0	0	0	2	1	2	2
2281:	1	1	1	2	2	0	1	0
2289:	1	0	2	0	2	0	3	0
2297:	0	0	2	0	0	1	1	2
2305:	0	0	0	2	1	1	1	0
2313:	0	0	2	0	0	0	2	1
2321:	1	0	1	0	0	0	1	2
2329:	1	0	2	0	0	1	0	0
2337:	1	2	0	1	3	3	4	2
2345:	0	3	0	0	2	0	1	1
2353:	2	2	3	1	2	1	1	3
2361:	1	3	2	1	2	2	4	1
2369:	1	1	1	2	0	1	1	1
2377:	0	1	1	3	0	3	0	0
2385:	1	2	0	1	3	2	2	0
2393:	2	1	2	1	1	2	1	3
2401:	0	1	0	0	1	1	0	0
2409:	0	1	1	0	1	3	0	1
2417:	0	0	0	2	1	1	3	1
2425:	1	0	2	1	3	1	1	2
2433:	0	1	1	1	0	0	0	2
2441:	0	0	3	2	2	2	1	0
2449:	1	1	1	1	0	1	1	1
2457:	0	1	0	1	2	4	1	1
2465:	1	1	1	2	0	0	0	1
2473:	0	2	2	0	0	1	1	1
2481:	0	0	0	2	2	1	0	0
2489:	0	0	0	0	0	0	0	1
2497:	0	0	0	0	1	0	0	0
2505:	0	2	0	2	1	1	0	0
2513:	1	0	1	0	0	1	0	0
2521:	0	0	0	0	1	1	0	0

2529:	2	1	0	0	0	2	0	1

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Channel								
2537:	0	0	0	0	2	0	0	1
2545:	1	1	0	0	1	0	0	1
2553:	0	0	2	1	1	0	2	1
2561:	0	0	0	0	0	0	0	0
2569:	0	1	0	1	0	0	1	0
2577:	1	0	0	1	0	1	0	0
2585:	0	0	2	0	0	0	0	0
2593:	1	1	0	1	1	0	0	0
2601:	1	0	1	1	0	0	3	1
2609:	0	3	7	21	30	27	23	2
2617:	1	1	0	0	1	0	0	0
2625:	2	0	0	0	0	0	0	0
2633:	0	0	0	0	0	0	0	0
2641:	0	0	1	0	0	0	1	0
2649:	0	0	1	0	0	0	0	1
2657:	1	1	1	2	0	1	1	1
2665:	1	1	0	0	0	0	0	0
2673:	0	0	0	2	0	0	1	0
2681:	1	0	0	0	1	0	1	0
2689:	0	1	1	0	1	0	0	0
2697:	0	0	0	0	0	1	0	0
2705:	0	1	1	1	1	1	2	0
2713:	0	0	1	0	0	0	0	0
2721:	1	1	0	0	0	0	1	0
2729:	0	0	0	0	1	1	0	1
2737:	0	0	1	0	0	0	0	1
2745:	2	0	1	0	1	0	0	1
2753:	0	0	0	0	0	0	0	1
2761:	0	2	0	0	0	0	0	0
2769:	0	0	0	0	0	1	1	1
2777:	2	0	0	0	2	0	1	0
2785:	0	1	0	0	0	0	0	0
2793:	0	0	0	1	1	0	0	0
2801:	0	1	0	0	0	0	0	0
2809:	1	0	0	1	1	0	1	0
2817:	0	1	0	0	0	0	0	0
2825:	0	0	1	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	1	0	0	0	1	0	0
2849:	0	0	1	1	1	0	1	0
2857:	1	0	0	0	0	1	0	0
2865:	0	1	0	0	0	0	0	0
2873:	0	0	0	0	2	0	0	0
2881:	0	0	0	0	0	1	0	0
2889:	0	0	0	1	0	0	1	0
2897:	0	0	0	1	0	0	0	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	0	1	0	0	0
2921:	0	0	0	0	0	0	1	0
2929:	1	1	1	0	0	0	1	1
2937:	0	1	0	0	0	0	0	0
2945:	0	1	0	0	0	0	1	0
2953:	0	1	0	0	0	0	0	0

2961:	0	1	0	0	0	0	0	0

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Channel								
2969:	0	1	0	0	0	1	0	1
2977:	0	0	1	0	0	0	0	0
2985:	1	0	0	0	0	1	0	1
2993:	0	0	0	1	0	1	0	0
3001:	0	0	0	2	0	1	0	0
3009:	0	0	0	0	0	0	1	0
3017:	1	1	1	0	0	0	1	0
3025:	0	0	0	1	0	0	0	0
3033:	0	0	0	0	1	0	0	0
3041:	0	0	0	0	0	2	0	0
3049:	0	0	0	0	0	0	2	0
3057:	2	0	0	0	0	1	1	0
3065:	0	0	0	1	1	0	0	0
3073:	1	0	0	0	0	0	0	0
3081:	0	0	0	0	0	0	0	1
3089:	0	1	1	0	0	0	0	1
3097:	0	0	1	0	0	0	0	0
3105:	1	0	0	0	0	0	0	0
3113:	0	1	0	0	0	0	1	2
3121:	0	0	0	1	0	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	1	0	1
3145:	1	0	0	0	0	1	0	0
3153:	0	1	0	0	0	0	0	0
3161:	1	0	1	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	1	0	0	1	0
3185:	0	1	0	0	0	0	0	0
3193:	0	0	0	1	0	0	0	0
3201:	1	0	0	0	0	0	0	2
3209:	0	0	0	0	1	1	0	1
3217:	1	1	0	0	0	0	2	0
3225:	0	0	0	0	0	0	0	1
3233:	0	1	0	0	0	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	1	0	0	0	0	0
3257:	1	0	1	0	0	0	0	0
3265:	1	0	0	0	0	0	1	0
3273:	2	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	1	0	0	1	0	0	0
3297:	0	0	0	1	0	0	1	2
3305:	1	1	1	0	0	0	0	1
3313:	0	0	0	0	1	1	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	1	0	0	0	0
3337:	0	0	0	0	1	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	1	0	1	0	0	0	0
3361:	0	0	0	0	0	1	0	0
3369:	0	2	0	0	0	0	0	0
3377:	0	0	0	0	0	1	0	1
3385:	1	1	0	0	0	0	0	0

3393:	0	0	1	0	0	1	0	0

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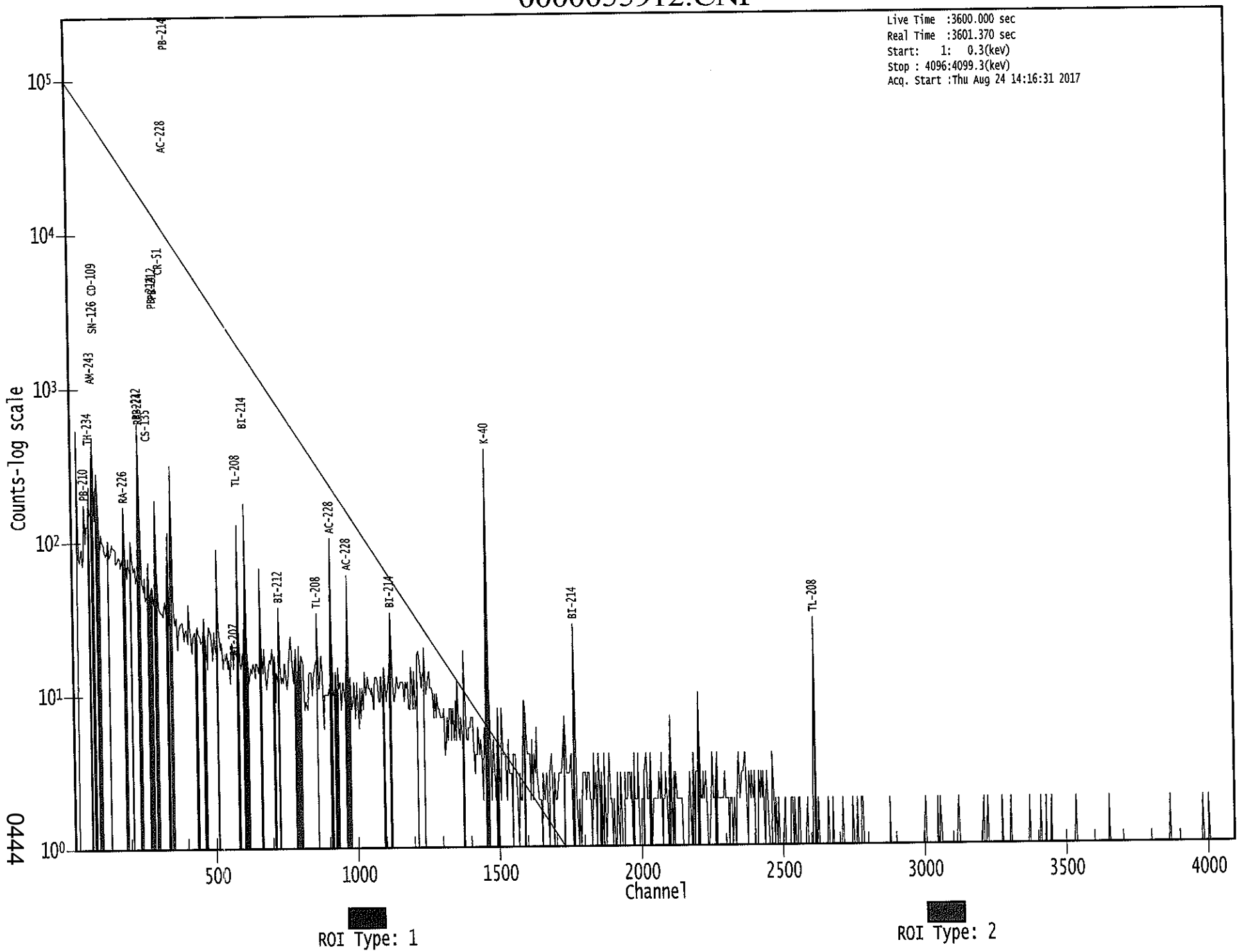
Channel								
3401:	0	0	0	0	0	1	0	0
3409:	2	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	1	2	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	1	0	0	0	0	2
3449:	1	0	0	0	1	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	1	0	0	0	0	0	0	0
3481:	0	0	1	0	0	0	0	0
3489:	0	0	1	0	0	0	1	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	1	0	0	1	0	0
3513:	0	0	0	1	0	0	1	0
3521:	0	0	0	0	0	0	0	0
3529:	1	0	0	0	0	2	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	1	0	0	1	0	0
3553:	0	0	0	0	0	1	0	0
3561:	1	1	0	0	0	0	0	0
3569:	0	1	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	1	1	1
3593:	0	0	0	1	0	0	0	1
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	1	0	0	0
3617:	0	1	0	0	0	0	1	0
3625:	0	0	0	0	0	1	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	2	0	0	1	0	0
3657:	0	0	0	0	1	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	1	0	0	0	0	0	0
3697:	0	1	0	0	0	0	0	0
3705:	1	0	1	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	1	0
3729:	0	0	0	0	0	1	0	0
3737:	0	1	1	0	0	0	0	0
3745:	0	0	0	1	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	1	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	1	0	0	1	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	1	0	0	0	0	0	1	1
3809:	0	0	0	0	0	1	1	0
3817:	0	0	0	0	0	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-S001-0006-01

Channel								
3833:	0	1	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	1	0	0	0	0	0	0	0
3857:	0	1	1	0	0	1	0	0
3865:	2	0	0	0	1	0	0	0
3873:	0	0	0	1	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	1	1
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	1	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	1	1	0	0	0	0
3945:	0	0	1	0	1	0	1	0
3953:	0	0	0	0	0	0	0	1
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	2	2	0	0	0
3985:	0	1	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	2	0	0	1	0	0	1	0
4009:	0	0	0	0	0	1	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	1	0	0	0	0	0	1
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	1	0	0	0	0	0	0
4073:	0	0	0	1	0	0	1	0
4081:	0	1	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000055912.CNF



0444

KB 8/24/17

Apex-Gamma

Analysis Report for 1707092-04
HTC-A08-S001-0006-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-04
Sample Description	: HTC-A08-S001-0006-01
Sample Type	: SOIL
Sample Size	: 6.486E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 7:38:32AM
Acquisition Started	: 8/24/2017 3:17:34PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.4 seconds
Dead Time	: 0.04 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 17 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55918

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 4:17:38PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	43.82	44.45	0.0000	0.00
2	46.30	46.92	0.0000	0.00
3	63.04	63.65	0.0000	0.00
4	74.72	75.31	0.0000	0.00
5	77.21	77.80	0.0000	0.00
6	92.55	93.13	0.0000	0.00
7	115.71	116.26	0.0000	0.00
8	129.14	129.67	0.0000	0.00
9	185.97	186.45	0.0000	0.00
10	208.74	209.19	0.0000	0.00
11	238.65	239.08	0.0000	0.00
12	241.74	242.17	0.0000	0.00
13	295.50	295.87	0.0000	0.00
14	328.76	329.09	0.0000	0.00
15	338.61	338.93	0.0000	0.00
16	351.74	352.06	0.0000	0.00
17	462.44	462.64	0.0000	0.00
18	510.88	511.03	0.0000	0.00
19	523.25	523.39	0.0000	0.00
20	583.31	583.39	0.0000	0.00
21	587.54	587.62	0.0000	0.00
22	609.42	609.47	0.0000	0.00
23	615.99	616.04	0.0000	0.00
24	661.66	661.66	0.0000	0.00
25	727.64	727.57	0.0000	0.00
26	768.05	767.94	0.0000	0.00
27	859.16	858.97	0.0000	0.00
28	911.32	911.07	0.0000	0.00
29	933.50	933.23	0.0000	0.00
30	964.60	964.30	0.0000	0.00
31	969.44	969.13	0.0000	0.00
32	987.34	987.01	0.0000	0.00
33	1050.31	1049.92	0.0000	0.00
34	1057.11	1056.71	0.0000	0.00
35	1121.04	1120.58	0.0000	0.00
36	1156.83	1156.34	0.0000	0.00
37	1238.79	1238.21	0.0000	0.00
38	1244.79	1244.21	0.0000	0.00
39	1281.31	1280.69	0.0000	0.00
40	1290.12	1289.50	0.0000	0.00
41	1402.02	1401.28	0.0000	0.00
42	1408.19	1407.45	0.0000	0.00

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1413.47	1412.72	0.0000	0.00
44	1418.75	1418.00	0.0000	0.00
45	1461.51	1460.72	0.0000	0.00
46	1466.08	1465.28	0.0000	0.00
47	1509.56	1508.72	0.0000	0.00
48	1544.62	1543.75	0.0000	0.00
49	1661.48	1660.49	0.0000	0.00
50	1730.21	1729.15	0.0000	0.00
51	1765.21	1764.11	0.0000	0.00
52	1848.35	1847.18	0.0000	0.00
53	1959.54	1958.26	0.0000	0.00
54	2083.72	2082.32	0.0000	0.00
55	2104.30	2102.88	0.0000	0.00
56	2121.56	2120.12	0.0000	0.00
57	2204.49	2202.97	0.0000	0.00
58	2347.54	2345.89	0.0000	0.00
59	2354.50	2352.84	0.0000	0.00
60	2431.09	2429.35	0.0000	0.00
61	2447.84	2446.09	0.0000	0.00
62	2615.51	2613.60	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 4:17:38PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	43.82	43 -	49	44.45	4.70E+01	30.85	2.81E+02	1.34
m	2	46.30	43 -	49	46.92	1.57E+02	63.77	7.78E+02	1.60
	3	63.04	60 -	66	63.65	2.31E+02	99.38	1.63E+03	1.41
M	4	74.72	71 -	83	75.31	3.83E+02	95.41	1.43E+03	1.81
m	5	77.21	71 -	83	77.80	7.18E+02	102.39	1.41E+03	1.82
	6	92.55	90 -	97	93.13	3.88E+02	112.30	1.77E+03	2.04
	7	115.71	114 -	119	116.26	6.37E+01	69.36	8.97E+02	1.63
	8	129.14	127 -	133	129.67	7.69E+01	80.15	1.10E+03	2.57
	9	185.97	181 -	191	186.45	3.12E+02	103.40	1.26E+03	2.01
	10	208.74	205 -	213	209.19	1.24E+02	83.16	9.82E+02	2.33
M	11	238.65	233 -	246	239.08	9.39E+02	75.68	4.80E+02	1.74
m	12	241.74	233 -	246	242.17	2.09E+02	77.66	4.51E+02	1.82
	13	295.50	291 -	301	295.87	2.56E+02	88.13	9.06E+02	1.90
	14	328.76	325 -	332	329.09	6.54E+01	53.59	4.33E+02	2.26
	15	338.61	335 -	344	338.93	2.04E+02	63.89	4.58E+02	2.22
	16	351.74	346 -	357	352.06	5.16E+02	82.24	5.87E+02	1.88
	17	462.44	459 -	466	462.64	4.65E+01	41.86	2.63E+02	1.96
	18	510.88	505 -	516	511.03	1.76E+02	61.84	3.90E+02	2.62
	19	523.25	521 -	527	523.39	3.83E+01	31.67	1.55E+02	3.86
M	20	583.31	579 -	591	583.39	3.15E+02	43.05	1.24E+02	2.16
m	21	587.54	579 -	591	587.62	2.66E+01	38.50	1.41E+02	2.48
	22	609.42	605 -	613	609.47	3.64E+02	54.82	2.39E+02	2.09
	23	615.99	614 -	619	616.04	3.23E+01	28.09	1.27E+02	4.03
	24	661.66	657 -	664	661.66	1.21E+02	40.94	1.96E+02	1.79
	25	727.64	722 -	730	727.57	6.13E+01	38.40	1.89E+02	2.18
	26	768.05	764 -	771	767.94	3.00E+01	35.61	1.90E+02	2.90
	27	859.16	853 -	865	858.97	8.15E+01	38.56	1.37E+02	7.11
	28	911.32	906 -	917	911.07	1.79E+02	46.00	1.79E+02	2.30
	29	933.50	928 -	940	933.23	3.51E+01	36.90	1.46E+02	5.66
M	30	964.60	962 -	974	964.30	2.33E+01	20.21	7.90E+01	2.24
m	31	969.44	962 -	974	969.13	1.51E+02	33.50	8.54E+01	2.45
	32	987.34	985 -	989	987.01	1.88E+01	15.42	3.43E+01	2.85
	33	1050.31	1045 -	1053	1049.92	2.69E+01	27.67	9.62E+01	5.60
	34	1057.11	1054 -	1060	1056.71	2.52E+01	20.79	6.16E+01	1.96
	35	1121.04	1117 -	1126	1120.58	8.14E+01	41.17	1.97E+02	2.04
	36	1156.83	1152 -	1161	1156.34	3.01E+01	28.71	1.02E+02	3.73
M	37	1238.79	1234 -	1250	1238.21	4.28E+01	26.36	1.12E+02	2.33
m	38	1244.79	1234 -	1250	1244.21	2.15E+01	23.64	7.65E+01	2.33
M	39	1281.31	1279 -	1294	1280.69	1.72E+01	13.71	3.37E+01	2.71
m	40	1290.12	1279 -	1294	1289.50	1.48E+01	22.71	6.10E+01	2.84

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	41	1402.02	1396 -	1422	1401.28	1.67E+01	16.04	2.95E+01	2.89
m	42	1408.19	1396 -	1422	1407.45	1.99E+01	15.66	2.20E+01	2.89
m	43	1413.47	1396 -	1422	1412.72	1.09E+01	15.27	1.65E+01	2.89
m	44	1418.75	1396 -	1422	1418.00	1.00E+01	12.22	9.08E+00	2.17
M	45	1461.51	1455 -	1470	1460.72	8.29E+02	59.76	4.38E+01	2.22
m	46	1466.08	1455 -	1470	1465.28	3.12E+01	49.39	2.94E+01	2.91
	47	1509.56	1498 -	1519	1508.72	3.04E+01	31.08	5.92E+01	9.11
	48	1544.62	1542 -	1547	1543.75	1.26E+01	9.33	4.80E+00	1.46
	49	1661.48	1657 -	1663	1660.49	1.87E+01	11.52	1.05E+01	1.56
	50	1730.21	1727 -	1732	1729.15	1.22E+01	9.75	9.65E+00	3.07
	51	1765.21	1758 -	1769	1764.11	7.51E+01	21.07	1.78E+01	1.88
	52	1848.35	1843 -	1851	1847.18	1.85E+01	11.51	9.00E+00	2.88
	53	1959.54	1956 -	1960	1958.26	5.64E+00	5.85	2.71E+00	2.07
	54	2083.72	2078 -	2085	2082.32	5.94E+00	6.93	4.13E+00	2.16
	55	2104.30	2099 -	2107	2102.88	2.15E+01	10.78	5.00E+00	3.00
	56	2121.56	2115 -	2124	2120.12	1.20E+01	10.86	1.00E+01	1.45
	57	2204.49	2197 -	2206	2202.97	1.60E+01	11.58	1.00E+01	2.58
	58	2347.54	2343 -	2349	2345.89	9.00E+00	6.00	0.00E+00	3.22
	59	2354.50	2350 -	2356	2352.84	9.05E+00	7.50	3.91E+00	3.54
	60	2431.09	2426 -	2432	2429.35	7.22E+00	6.95	3.56E+00	3.35
	61	2447.84	2444 -	2450	2446.09	7.50E+00	8.51	9.00E+00	2.94
	62	2615.51	2609 -	2618	2613.60	1.09E+02	21.75	5.37E+00	2.69

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 4:17:38PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	1	43.82	43 -	49	4.70E+01	30.85	2.81E+02	2.76E+01
m	2	46.30	43 -	49	1.57E+02	63.77	7.78E+02	4.59E+01
	3	63.04	60 -	66	2.31E+02	99.38	1.63E+03	7.78E+01
M	4	74.72	71 -	83	3.83E+02	95.41	1.43E+03	6.21E+01
m	5	77.21	71 -	83	7.18E+02	102.39	1.41E+03	6.18E+01
	6	92.55	90 -	97	3.88E+02	112.30	1.77E+03	8.65E+01

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	7	115.71	114 -	119	6.37E+01	69.36	8.97E+02	5.55E+01
	8	129.14	127 -	133	7.69E+01	80.15	1.10E+03	6.43E+01
	9	185.97	181 -	191	3.12E+02	103.40	1.26E+03	7.99E+01
	10	208.74	205 -	213	1.24E+02	83.16	9.82E+02	6.59E+01
M	11	238.65	233 -	246	9.39E+02	75.68	4.80E+02	3.60E+01
m	12	241.74	233 -	246	2.09E+02	77.66	4.51E+02	3.49E+01
	13	295.50	291 -	301	2.56E+02	88.13	9.06E+02	6.75E+01
	14	328.76	325 -	332	6.54E+01	53.59	4.33E+02	4.20E+01
	15	338.61	335 -	344	2.04E+02	63.89	4.58E+02	4.70E+01
	16	351.74	346 -	357	5.16E+02	82.24	5.87E+02	5.64E+01
	17	462.44	459 -	466	4.65E+01	41.86	2.63E+02	3.25E+01
	18	510.88	505 -	516	1.76E+02	61.84	3.90E+02	4.59E+01
	19	523.25	521 -	527	3.83E+01	31.67	1.55E+02	2.40E+01
M	20	583.31	579 -	591	3.15E+02	43.05	1.24E+02	1.83E+01
m	21	587.54	579 -	591	2.66E+01	38.50	1.41E+02	1.95E+01
	22	609.42	605 -	613	3.64E+02	54.82	2.39E+02	3.24E+01
	23	615.99	614 -	619	3.23E+01	28.09	1.27E+02	2.11E+01
	24	661.66	657 -	664	1.21E+02	40.94	1.96E+02	2.84E+01
	25	727.64	722 -	730	6.13E+01	38.40	1.89E+02	2.88E+01
	26	768.05	764 -	771	3.00E+01	35.61	1.90E+02	2.79E+01
	27	859.16	853 -	865	8.15E+01	38.56	1.37E+02	2.80E+01
	28	911.32	906 -	917	1.79E+02	46.00	1.79E+02	3.08E+01
	29	933.50	928 -	940	3.51E+01	36.90	1.46E+02	2.87E+01
M	30	964.60	962 -	974	2.33E+01	20.21	7.90E+01	1.46E+01
m	31	969.44	962 -	974	1.51E+02	33.50	8.54E+01	1.52E+01
	32	987.34	985 -	989	1.88E+01	15.42	3.43E+01	1.05E+01
	33	1050.31	1045 -	1053	2.69E+01	27.67	9.62E+01	2.11E+01
	34	1057.11	1054 -	1060	2.52E+01	20.79	6.16E+01	1.50E+01
	35	1121.04	1117 -	1126	8.14E+01	41.17	1.97E+02	3.04E+01
	36	1156.83	1152 -	1161	3.01E+01	28.71	1.02E+02	2.18E+01
M	37	1238.79	1234 -	1250	4.28E+01	26.36	1.12E+02	1.74E+01
m	38	1244.79	1234 -	1250	2.15E+01	23.64	7.65E+01	1.44E+01
M	39	1281.31	1279 -	1294	1.72E+01	13.71	3.37E+01	9.54E+00
m	40	1290.12	1279 -	1294	1.48E+01	22.71	6.10E+01	1.28E+01
M	41	1402.02	1396 -	1422	1.67E+01	16.04	2.95E+01	8.94E+00
m	42	1408.19	1396 -	1422	1.99E+01	15.66	2.20E+01	7.71E+00
m	43	1413.47	1396 -	1422	1.09E+01	15.27	1.65E+01	6.67E+00
m	44	1418.75	1396 -	1422	1.00E+01	12.22	9.08E+00	4.95E+00
M	45	1461.51	1455 -	1470	8.29E+02	59.76	4.38E+01	1.09E+01
m	46	1466.08	1455 -	1470	3.12E+01	49.39	2.94E+01	8.91E+00
	47	1509.56	1498 -	1519	3.04E+01	31.08	5.92E+01	1.06E+01
	48	1544.62	1542 -	1547	1.26E+01	9.33	4.80E+00	4.97E+00
	49	1661.48	1657 -	1663	1.87E+01	11.52	1.05E+01	6.25E+00
	50	1730.21	1727 -	1732	1.22E+01	9.75	9.65E+00	5.59E+00
	51	1765.21	1758 -	1769	7.51E+01	21.07	1.78E+01	9.85E+00
	52	1848.35	1843 -	1851	1.85E+01	11.51	9.00E+00	6.29E+00
	53	1959.54	1956 -	1960	5.64E+00	5.85	2.71E+00	2.81E+00
	54	2083.72	2078 -	2085	5.94E+00	6.93	4.13E+00	4.05E+00
	55	2104.30	2099 -	2107	2.15E+01	10.78	5.00E+00	4.52E+00
	56	2121.56	2115 -	2124	1.20E+01	10.86	1.00E+01	6.88E+00
	57	2204.49	2197 -	2206	1.60E+01	11.58	1.00E+01	6.88E+00

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
58	2347.54	2343 -	2349	9.00E+00	6.00	0.00E+00	0.00E+00
59	2354.50	2350 -	2356	9.05E+00	7.50	3.91E+00	3.68E+00
60	2431.09	2426 -	2432	7.22E+00	6.95	3.56E+00	3.62E+00
61	2447.84	2444 -	2450	7.50E+00	8.51	9.00E+00	5.36E+00
62	2615.51	2609 -	2618	1.09E+02	21.75	5.37E+00	4.91E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 4:17:38PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	1	43.82	43 -	49	44.45	4.70E+01	30.85	2.81E+02	.....
m	2	46.30	43 -	49	46.92	1.57E+02	63.77	7.78E+02	PB-210
	3	63.04	60 -	66	63.65	2.31E+02	99.38	1.63E+03	TH-230
									TH-234
M	4	74.72	71 -	83	75.31	3.83E+02	95.41	1.43E+03	AM-243
m	5	77.21	71 -	83	77.80	7.18E+02	102.39	1.41E+03	.....
	6	92.55	90 -	97	93.13	3.88E+02	112.30	1.77E+03	GA-67
	7	115.71	114 -	119	116.26	6.37E+01	69.36	8.97E+02	.....
	8	129.14	127 -	133	129.67	7.69E+01	80.15	1.10E+03	.....
	9	185.97	181 -	191	186.45	3.12E+02	103.40	1.26E+03	RA-226
	10	208.74	205 -	213	209.19	1.24E+02	83.16	9.82E+02	GA-67
M	11	238.65	233 -	246	239.08	9.39E+02	75.68	4.80E+02	PB-212
m	12	241.74	233 -	246	242.17	2.09E+02	77.66	4.51E+02	RA-224
	13	295.50	291 -	301	295.87	2.56E+02	88.13	9.06E+02	PB-214
	14	328.76	325 -	332	329.09	6.54E+01	53.59	4.33E+02	LA-140
	15	338.61	335 -	344	338.93	2.04E+02	63.89	4.58E+02	AC-228
	16	351.74	346 -	357	352.06	5.16E+02	82.24	5.87E+02	PB-214
	17	462.44	459 -	466	462.64	4.65E+01	41.86	2.63E+02	SB-125
	18	510.88	505 -	516	511.03	1.76E+02	61.84	3.90E+02	.....
	19	523.25	521 -	527	523.39	3.83E+01	31.67	1.55E+02	.....
M	20	583.31	579 -	591	583.39	3.15E+02	43.05	1.24E+02	TL-208

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	21	587.54	579 -	591	587.62	2.66E+01	38.50	1.41E+02	.....
	22	609.42	605 -	613	609.47	3.64E+02	54.82	2.39E+02	BI-214
	23	615.99	614 -	619	616.04	3.23E+01	28.09	1.27E+02	.....
	24	661.66	657 -	664	661.66	1.21E+02	40.94	1.96E+02	CS-137
	25	727.64	722 -	730	727.57	6.13E+01	38.40	1.89E+02	BI-212
	26	768.05	764 -	771	767.94	3.00E+01	35.61	1.90E+02	.....
	27	859.16	853 -	865	858.97	8.15E+01	38.56	1.37E+02	.....
	28	911.32	906 -	917	911.07	1.79E+02	46.00	1.79E+02	AC-228 TL-204
	29	933.50	928 -	940	933.23	3.51E+01	36.90	1.46E+02	.....
M	30	964.60	962 -	974	964.30	2.33E+01	20.21	7.90E+01	EU-152
m	31	969.44	962 -	974	969.13	1.51E+02	33.50	8.54E+01	AC-228
	32	987.34	985 -	989	987.01	1.88E+01	15.42	3.43E+01	.....
	33	1050.31	1045 -	1053	1049.92	2.69E+01	27.67	9.62E+01	.....
	34	1057.11	1054 -	1060	1056.71	2.52E+01	20.79	6.16E+01	.....
	35	1121.04	1117 -	1126	1120.58	8.14E+01	41.17	1.97E+02	TA-182 SC-46 BI-214
	36	1156.83	1152 -	1161	1156.34	3.01E+01	28.71	1.02E+02	.....
M	37	1238.79	1234 -	1250	1238.21	4.28E+01	26.36	1.12E+02	CO-56
m	38	1244.79	1234 -	1250	1244.21	2.15E+01	23.64	7.65E+01	.....
M	39	1281.31	1279 -	1294	1280.69	1.72E+01	13.71	3.37E+01	.....
m	40	1290.12	1279 -	1294	1289.50	1.48E+01	22.71	6.10E+01	.....
M	41	1402.02	1396 -	1422	1401.28	1.67E+01	16.04	2.95E+01	.....
m	42	1408.19	1396 -	1422	1407.45	1.99E+01	15.66	2.20E+01	EU-152
m	43	1413.47	1396 -	1422	1412.72	1.09E+01	15.27	1.65E+01	.....
m	44	1418.75	1396 -	1422	1418.00	1.00E+01	12.22	9.08E+00	.....
M	45	1461.51	1455 -	1470	1460.72	8.29E+02	59.76	4.38E+01	K-40
m	46	1466.08	1455 -	1470	1465.28	3.12E+01	49.39	2.94E+01	.....
	47	1509.56	1498 -	1519	1508.72	3.04E+01	31.08	5.92E+01	.....
	48	1544.62	1542 -	1547	1543.75	1.26E+01	9.33	4.80E+00	.....
	49	1661.48	1657 -	1663	1660.49	1.87E+01	11.52	1.05E+01	.....
	50	1730.21	1727 -	1732	1729.15	1.22E+01	9.75	9.65E+00	.....
	51	1765.21	1758 -	1769	1764.11	7.51E+01	21.07	1.78E+01	BI-214
	52	1848.35	1843 -	1851	1847.18	1.85E+01	11.51	9.00E+00	.....
	53	1959.54	1956 -	1960	1958.26	5.64E+00	5.85	2.71E+00	.....
	54	2083.72	2078 -	2085	2082.32	5.94E+00	6.93	4.13E+00	.....
	55	2104.30	2099 -	2107	2102.88	2.15E+01	10.78	5.00E+00	.....
	56	2121.56	2115 -	2124	2120.12	1.20E+01	10.86	1.00E+01	.....
	57	2204.49	2197 -	2206	2202.97	1.60E+01	11.58	1.00E+01	BI-214
	58	2347.54	2343 -	2349	2345.89	9.00E+00	6.00	0.00E+00	.....
	59	2354.50	2350 -	2356	2352.84	9.05E+00	7.50	3.91E+00	.....
	60	2431.09	2426 -	2432	2429.35	7.22E+00	6.95	3.56E+00	.....
	61	2447.84	2444 -	2450	2446.09	7.50E+00	8.51	9.00E+00	.....
	62	2615.51	2609 -	2618	2613.60	1.09E+02	21.75	5.37E+00	TL-208

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 4:17:38PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	1	43.82	4.70E+01	30.85	2.40E-02	2.22E-03
m	2	46.30	1.57E+02	63.77	2.46E-02	2.22E-03
	3	63.04	2.31E+02	99.38	2.70E-02	2.25E-03
M	4	74.72	3.83E+02	95.41	2.75E-02	2.38E-03
m	5	77.21	7.18E+02	102.39	2.75E-02	2.41E-03
	6	92.55	3.88E+02	112.30	2.73E-02	2.45E-03
	7	115.71	6.37E+01	69.36	2.62E-02	2.08E-03
	8	129.14	7.69E+01	80.15	2.53E-02	1.94E-03
	9	185.97	3.12E+02	103.40	2.17E-02	1.68E-03
	10	208.74	1.24E+02	83.16	2.04E-02	1.61E-03
M	11	238.65	9.39E+02	75.68	1.89E-02	1.53E-03
m	12	241.74	2.09E+02	77.66	1.87E-02	1.52E-03
	13	295.50	2.56E+02	88.13	1.64E-02	1.37E-03
	14	328.76	6.54E+01	53.59	1.53E-02	1.29E-03
	15	338.61	2.04E+02	63.89	1.49E-02	1.27E-03
	16	351.74	5.16E+02	82.24	1.45E-02	1.24E-03
	17	462.44	4.65E+01	41.86	1.19E-02	1.10E-03
	18	510.88	1.76E+02	61.84	1.10E-02	1.07E-03
	19	523.25	3.83E+01	31.67	1.08E-02	1.06E-03
M	20	583.31	3.15E+02	43.05	9.96E-03	1.02E-03
m	21	587.54	2.66E+01	38.50	9.91E-03	1.02E-03
	22	609.42	3.64E+02	54.82	9.63E-03	1.01E-03
	23	615.99	3.23E+01	28.09	9.55E-03	1.00E-03
	24	661.66	1.21E+02	40.94	9.04E-03	9.72E-04
	25	727.64	6.13E+01	38.40	8.41E-03	8.67E-04
	26	768.05	3.00E+01	35.61	8.07E-03	8.03E-04
	27	859.16	8.15E+01	38.56	7.41E-03	6.58E-04
	28	911.32	1.79E+02	46.00	7.09E-03	5.91E-04
	29	933.50	3.51E+01	36.90	6.96E-03	5.83E-04
M	30	964.60	2.33E+01	20.21	6.79E-03	5.71E-04
m	31	969.44	1.51E+02	33.50	6.76E-03	5.69E-04
	32	987.34	1.88E+01	15.42	6.67E-03	5.62E-04
	33	1050.31	2.69E+01	27.67	6.37E-03	5.38E-04
	34	1057.11	2.52E+01	20.79	6.34E-03	5.36E-04

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	35	1121.04	8.14E+01	41.17	6.07E-03	5.11E-04
	36	1156.83	3.01E+01	28.71	5.93E-03	4.97E-04
M	37	1238.79	4.28E+01	26.36	5.64E-03	4.76E-04
m	38	1244.79	2.15E+01	23.64	5.62E-03	4.75E-04
M	39	1281.31	1.72E+01	13.71	5.50E-03	4.66E-04
m	40	1290.12	1.48E+01	22.71	5.48E-03	4.64E-04
M	41	1402.02	1.67E+01	16.04	5.16E-03	4.38E-04
m	42	1408.19	1.99E+01	15.66	5.14E-03	4.37E-04
m	43	1413.47	1.09E+01	15.27	5.13E-03	4.36E-04
m	44	1418.75	1.00E+01	12.22	5.11E-03	4.34E-04
M	45	1461.51	8.29E+02	59.76	5.00E-03	4.25E-04
m	46	1466.08	3.12E+01	49.39	4.99E-03	4.24E-04
	47	1509.56	3.04E+01	31.08	4.89E-03	4.13E-04
	48	1544.62	1.26E+01	9.33	4.81E-03	4.05E-04
	49	1661.48	1.87E+01	11.52	4.57E-03	3.78E-04
	50	1730.21	1.22E+01	9.75	4.44E-03	3.62E-04
	51	1765.21	7.51E+01	21.07	4.37E-03	3.54E-04
	52	1848.35	1.85E+01	11.51	4.23E-03	3.38E-04
	53	1959.54	5.64E+00	5.85	4.06E-03	3.38E-04
	54	2083.72	5.94E+00	6.93	3.89E-03	3.38E-04
	55	2104.30	2.15E+01	10.78	3.86E-03	3.38E-04
	56	2121.56	1.20E+01	10.86	3.84E-03	3.38E-04
	57	2204.49	1.60E+01	11.58	3.74E-03	3.38E-04
	58	2347.54	9.00E+00	6.00	3.57E-03	3.38E-04
	59	2354.50	9.05E+00	7.50	3.56E-03	3.38E-04
	60	2431.09	7.22E+00	6.95	3.48E-03	3.38E-04
	61	2447.84	7.50E+00	8.51	3.47E-03	3.38E-04
	62	2615.51	1.09E+02	21.75	3.30E-03	3.38E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 4:17:38PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	43.82	4.70E+01	30.85			4.70E+01	3.09E+01
m	2	46.30	1.57E+02	63.77	3.67E+01	8.40E+00	1.21E+02	6.43E+01

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	3	63.04	2.31E+02	99.38	8.94E+01	1.41E+01	1.42E+02	1.00E+02
M	4	74.72	3.83E+02	95.41			3.83E+02	9.54E+01
m	5	77.21	7.18E+02	102.39	7.20E+00	1.47E+00	7.11E+02	1.02E+02
	6	92.55	3.88E+02	112.30	1.38E+02	1.72E+01	2.50E+02	1.14E+02
	7	115.71	6.37E+01	69.36			6.37E+01	6.94E+01
	8	129.14	7.69E+01	80.15			7.69E+01	8.01E+01
	9	185.97	3.12E+02	103.40	5.22E+01	7.59E+00	2.60E+02	1.04E+02
	10	208.74	1.24E+02	83.16			1.24E+02	8.32E+01
M	11	238.65	9.39E+02	75.68	2.13E+01	6.33E+00	9.18E+02	7.59E+01
m	12	241.74	2.09E+02	77.66			2.09E+02	7.77E+01
	13	295.50	2.56E+02	88.13			2.56E+02	8.81E+01
	14	328.76	6.54E+01	53.59			6.54E+01	5.36E+01
	15	338.61	2.04E+02	63.89			2.04E+02	6.39E+01
	16	351.74	5.16E+02	82.24	5.79E+00	4.49E+00	5.10E+02	8.24E+01
	17	462.44	4.65E+01	41.86			4.65E+01	4.19E+01
	18	510.88	1.76E+02	61.84	7.28E+01	5.30E+00	1.03E+02	6.21E+01
	19	523.25	3.83E+01	31.67			3.83E+01	3.17E+01
M	20	583.31	3.15E+02	43.05	2.72E+00	3.05E+00	3.12E+02	4.32E+01
m	21	587.54	2.66E+01	38.50			2.66E+01	3.85E+01
	22	609.42	3.64E+02	54.82	6.35E+00	4.02E+00	3.57E+02	5.50E+01
	23	615.99	3.23E+01	28.09			3.23E+01	2.81E+01
	24	661.66	1.21E+02	40.94			1.21E+02	4.09E+01
	25	727.64	6.13E+01	38.40			6.13E+01	3.84E+01
	26	768.05	3.00E+01	35.61			3.00E+01	3.56E+01
	27	859.16	8.15E+01	38.56			8.15E+01	3.86E+01
	28	911.32	1.79E+02	46.00	5.31E+00	3.00E+00	1.73E+02	4.61E+01
	29	933.50	3.51E+01	36.90			3.51E+01	3.69E+01
M	30	964.60	2.33E+01	20.21			2.33E+01	2.02E+01
m	31	969.44	1.51E+02	33.50			1.51E+02	3.35E+01
	32	987.34	1.88E+01	15.42			1.88E+01	1.54E+01
	33	1050.31	2.69E+01	27.67			2.69E+01	2.77E+01
	34	1057.11	2.52E+01	20.79			2.52E+01	2.08E+01
	35	1121.04	8.14E+01	41.17			8.14E+01	4.12E+01
	36	1156.83	3.01E+01	28.71			3.01E+01	2.87E+01
M	37	1238.79	4.28E+01	26.36			4.28E+01	2.64E+01
m	38	1244.79	2.15E+01	23.64			2.15E+01	2.36E+01
M	39	1281.31	1.72E+01	13.71			1.72E+01	1.37E+01
m	40	1290.12	1.48E+01	22.71			1.48E+01	2.27E+01
M	41	1402.02	1.67E+01	16.04			1.67E+01	1.60E+01
m	42	1408.19	1.99E+01	15.66			1.99E+01	1.57E+01
m	43	1413.47	1.09E+01	15.27			1.09E+01	1.53E+01
m	44	1418.75	1.00E+01	12.22			1.00E+01	1.22E+01
M	45	1461.51	8.29E+02	59.76	8.09E+00	2.23E+00	8.21E+02	5.98E+01
m	46	1466.08	3.12E+01	49.39			3.12E+01	4.94E+01
	47	1509.56	3.04E+01	31.08			3.04E+01	3.11E+01
	48	1544.62	1.26E+01	9.33			1.26E+01	9.33E+00
	49	1661.48	1.87E+01	11.52			1.87E+01	1.15E+01
	50	1730.21	1.22E+01	9.75			1.22E+01	9.75E+00
	51	1765.21	7.51E+01	21.07			7.51E+01	2.11E+01
	52	1848.35	1.85E+01	11.51			1.85E+01	1.15E+01
	53	1959.54	5.64E+00	5.85			5.64E+00	5.85E+00
	54	2083.72	5.94E+00	6.93			5.94E+00	6.93E+00
	55	2104.30	2.15E+01	10.78			2.15E+01	1.08E+01
	56	2121.56	1.20E+01	10.86			1.20E+01	1.09E+01

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
57	2204.49	1.60E+01	11.58			1.60E+01	1.16E+01
58	2347.54	9.00E+00	6.00			9.00E+00	6.00E+00
59	2354.50	9.05E+00	7.50			9.05E+00	7.50E+00
60	2431.09	7.22E+00	6.95			7.22E+00	6.95E+00
61	2447.84	7.50E+00	8.51			7.50E+00	8.51E+00
62	2615.51	1.09E+02	21.75	5.63E+00	1.38E+00	1.04E+02	2.18E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 4:17:38PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	1	43.82	4.70E+01	30.85			4.70E+01	3.09E+01
m	2	46.30	1.57E+02	63.77	3.67E+01	8.40E+00	1.21E+02	6.43E+01
	3	63.04	2.31E+02	99.38	8.94E+01	1.41E+01	1.42E+02	1.00E+02
M	4	74.72	3.83E+02	95.41			3.83E+02	9.54E+01
m	5	77.21	7.18E+02	102.39	7.20E+00	1.47E+00	7.11E+02	1.02E+02
	6	92.55	3.88E+02	112.30	1.38E+02	1.72E+01	2.50E+02	1.14E+02
	7	115.71	6.37E+01	69.36			6.37E+01	6.94E+01
	8	129.14	7.69E+01	80.15			7.69E+01	8.01E+01
	9	185.97	3.12E+02	103.40	5.22E+01	7.59E+00	2.60E+02	1.04E+02
	10	208.74	1.24E+02	83.16			1.24E+02	8.32E+01
M	11	238.65	9.39E+02	75.68	2.13E+01	6.33E+00	9.18E+02	7.59E+01
m	12	241.74	2.09E+02	77.66			2.09E+02	7.77E+01
	13	295.50	2.56E+02	88.13			2.56E+02	8.81E+01
	14	328.76	6.54E+01	53.59			6.54E+01	5.36E+01
	15	338.61	2.04E+02	63.89			2.04E+02	6.39E+01
	16	351.74	5.16E+02	82.24	5.79E+00	4.49E+00	5.10E+02	8.24E+01
	17	462.44	4.65E+01	41.86			4.65E+01	4.19E+01
	18	510.88	1.76E+02	61.84	7.28E+01	5.30E+00	1.03E+02	6.21E+01
	19	523.25	3.83E+01	31.67			3.83E+01	3.17E+01
M	20	583.31	3.15E+02	43.05	2.72E+00	3.05E+00	3.12E+02	4.32E+01
m	21	587.54	2.66E+01	38.50			2.66E+01	3.85E+01
	22	609.42	3.64E+02	54.82	6.35E+00	4.02E+00	3.57E+02	5.50E+01

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	23	615.99	3.23E+01	28.09			3.23E+01	2.81E+01
	24	661.66	1.21E+02	40.94			1.21E+02	4.09E+01
	25	727.64	6.13E+01	38.40			6.13E+01	3.84E+01
	26	768.05	3.00E+01	35.61			3.00E+01	3.56E+01
	27	859.16	8.15E+01	38.56			8.15E+01	3.86E+01
	28	911.32	1.79E+02	46.00	5.31E+00	3.00E+00	1.73E+02	4.61E+01
	29	933.50	3.51E+01	36.90			3.51E+01	3.69E+01
M	30	964.60	2.33E+01	20.21			2.33E+01	2.02E+01
m	31	969.44	1.51E+02	33.50			1.51E+02	3.35E+01
	32	987.34	1.88E+01	15.42			1.88E+01	1.54E+01
	33	1050.31	2.69E+01	27.67			2.69E+01	2.77E+01
	34	1057.11	2.52E+01	20.79			2.52E+01	2.08E+01
	35	1121.04	8.14E+01	41.17			8.14E+01	4.12E+01
	36	1156.83	3.01E+01	28.71			3.01E+01	2.87E+01
M	37	1238.79	4.28E+01	26.36			4.28E+01	2.64E+01
m	38	1244.79	2.15E+01	23.64			2.15E+01	2.36E+01
M	39	1281.31	1.72E+01	13.71			1.72E+01	1.37E+01
m	40	1290.12	1.48E+01	22.71			1.48E+01	2.27E+01
M	41	1402.02	1.67E+01	16.04			1.67E+01	1.60E+01
m	42	1408.19	1.99E+01	15.66			1.99E+01	1.57E+01
m	43	1413.47	1.09E+01	15.27			1.09E+01	1.53E+01
m	44	1418.75	1.00E+01	12.22			1.00E+01	1.22E+01
M	45	1461.51	8.29E+02	59.76	8.09E+00	2.23E+00	8.21E+02	5.98E+01
m	46	1466.08	3.12E+01	49.39			3.12E+01	4.94E+01
	47	1509.56	3.04E+01	31.08			3.04E+01	3.11E+01
	48	1544.62	1.26E+01	9.33			1.26E+01	9.33E+00
	49	1661.48	1.87E+01	11.52			1.87E+01	1.15E+01
	50	1730.21	1.22E+01	9.75			1.22E+01	9.75E+00
	51	1765.21	7.51E+01	21.07			7.51E+01	2.11E+01
	52	1848.35	1.85E+01	11.51			1.85E+01	1.15E+01
	53	1959.54	5.64E+00	5.85			5.64E+00	5.85E+00
	54	2083.72	5.94E+00	6.93			5.94E+00	6.93E+00
	55	2104.30	2.15E+01	10.78			2.15E+01	1.08E+01
	56	2121.56	1.20E+01	10.86			1.20E+01	1.09E+01
	57	2204.49	1.60E+01	11.58			1.60E+01	1.16E+01
	58	2347.54	9.00E+00	6.00			9.00E+00	6.00E+00
	59	2354.50	9.05E+00	7.50			9.05E+00	7.50E+00
	60	2431.09	7.22E+00	6.95			7.22E+00	6.95E+00
	61	2447.84	7.50E+00	8.51			7.50E+00	8.51E+00
	62	2615.51	1.09E+02	21.75	5.63E+00	1.38E+00	1.04E+02	2.18E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.924	1460.81	*	10.67	1.78E+01	2.02E+00
CS-137	1.000	661.65	*	85.12	1.83E-01	6.50E-02
TL-208	0.828	583.14	*	30.22	1.20E+00	2.07E-01
		860.37		4.48		
		2614.66	*	35.85	1.01E+00	2.37E-01
PB-210	0.994	46.50	*	4.25	1.35E+00	7.28E-01
BI-212	0.736	727.17	*	11.80	7.15E-01	4.54E-01
		1620.62		2.75		
PB-212	0.894	238.63	*	44.60	1.26E+00	1.46E-01
		300.09		3.41		
BI-214	0.967	609.31	*	46.30	9.27E-01	1.72E-01
		1120.29	*	15.10	1.03E+00	5.27E-01
		1764.49	*	15.80	1.26E+00	3.67E-01
		2204.22	*	4.98	9.96E-01	7.26E-01
PB-214	0.992	295.21	*	19.19	9.41E-01	3.33E-01
		351.92	*	37.19	1.09E+00	1.99E-01
RA-224	0.911	240.98	*	3.95	3.28E+00	1.25E+00
RA-226	0.991	186.21	*	3.28	4.22E+00	7.91E+00
AC-228	0.987	338.32	*	11.40	1.39E+00	4.50E-01
		911.07	*	27.70	1.02E+00	2.85E-01
		969.11	*	16.60	1.55E+00	3.69E-01
TH-234	0.990	63.29	*	3.80	1.60E+00	1.14E+00
AM-243	1.000	74.67	*	66.00	2.45E-01	6.45E-02

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 4:17:38PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	1	43.82	1.30688E-02	32.79		
m	5	77.21	1.97364E-01	7.21		
	6	92.55	6.94431E-02	22.72	Sum	
	7	115.71	1.76950E-02	54.44		
	8	129.14	2.13552E-02	52.13		
	10	208.74	3.44099E-02	33.56	Tol.	GA-67
	14	328.76	1.81674E-02	40.97	Tol.	LA-140
	17	462.44	1.29260E-02	44.97	Tol.	SB-125
	18	510.88	2.86556E-02	30.08		
	19	523.25	1.06442E-02	41.32		
m	21	587.54	7.39988E-03	72.26		
	23	615.99	8.98437E-03	43.42		
	26	768.05	8.32222E-03	59.43		
	27	859.16	2.26407E-02	23.66		
	29	933.50	9.74794E-03	52.57		
M	30	964.60	6.46967E-03	43.38	Tol.	EU-152
	32	987.34	5.23534E-03	40.91		
	33	1050.31	7.46667E-03	51.47		
	34	1057.11	6.99405E-03	41.29		
	36	1156.83	8.36420E-03	47.67		
M	37	1238.79	1.18771E-02	30.83		
m	38	1244.79	5.97196E-03	54.99	Sum	
M	39	1281.31	4.77569E-03	39.88		
m	40	1290.12	4.09809E-03	76.97		
M	41	1402.02	4.63414E-03	48.07		
m	42	1408.19	5.53398E-03	39.30	Tol.	EU-152
m	43	1413.47	3.02152E-03	70.20		
m	44	1418.75	2.78366E-03	60.95		
m	46	1466.08	8.66059E-03	79.20		
	47	1509.56	8.44444E-03	51.12		
	48	1544.62	3.50000E-03	37.01		
	49	1661.48	5.20255E-03	30.76		
	50	1730.21	3.38235E-03	40.02	Sum	
	52	1848.35	5.13889E-03	31.11	Sum	
	53	1959.54	1.56746E-03	51.86		
	54	2083.72	1.64931E-03	58.34		
	55	2104.30	5.97222E-03	25.07	S-Esc	
	56	2121.56	3.33333E-03	45.26		
	58	2347.54	2.50000E-03	33.33	Sum	
	59	2354.50	2.51263E-03	41.46		
	60	2431.09	2.00617E-03	48.09	Sum	
	61	2447.84	2.08333E-03	56.76		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.92	1460.81	*	10.67	1.78E+01	2.02E+00
CS-137	1.00	661.65	*	85.12	1.83E-01	6.50E-02
TL-208	0.82	583.14	*	30.22	1.20E+00	2.07E-01
		860.37		4.48		
		2614.66	*	35.85	1.01E+00	2.37E-01
PB-210	0.99	46.50	*	4.25	1.35E+00	7.28E-01
BI-212	0.73	727.17	*	11.80	7.15E-01	4.54E-01
		1620.62		2.75		
PB-212	0.89	238.63	*	44.60	1.26E+00	1.46E-01
		300.09		3.41		
BI-214	0.96	609.31	*	46.30	9.27E-01	1.72E-01
		1120.29	*	15.10	1.03E+00	5.27E-01
		1764.49	*	15.80	1.26E+00	3.67E-01
		2204.22	*	4.98	9.96E-01	7.26E-01
PB-214	0.99	295.21	*	19.19	9.41E-01	3.33E-01
		351.92	*	37.19	1.09E+00	1.99E-01
RA-224	0.91	240.98	*	3.95	3.28E+00	1.25E+00
RA-226	0.99	186.21	*	3.28	4.22E+00	7.91E+00
AC-228	0.98	338.32	*	11.40	1.39E+00	4.50E-01
		911.07	*	27.70	1.02E+00	2.85E-01
		969.11	*	16.60	1.55E+00	3.69E-01
TH-234	0.99	63.29	*	3.80	1.60E+00	1.14E+00
AM-243	1.00	74.67	*	66.00	2.45E-01	6.45E-02

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.924	1.78E+01	2.02E+00	
CS-137	1.000	1.83E-01	6.50E-02	
TL-208	0.828	1.12E+00	1.56E-01	
PB-210	0.994	1.35E+00	7.28E-01	
BI-212	0.736	7.15E-01	4.54E-01	
PB-212	0.894	1.26E+00	1.46E-01	
BI-214	0.967	9.91E-01	1.47E-01	
PB-214	0.992	1.05E+00	1.71E-01	
RA-224	0.911	3.28E+00	1.25E+00	
RA-226	0.991	4.22E+00	7.91E+00	
AC-228	0.987	1.25E+00	2.02E-01	
TH-234	0.990	1.60E+00	1.14E+00	
AM-243	1.000	2.45E-01	6.45E-02	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 4:17:38PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	1	43.82	1.30688E-02	32.79		
m	5	77.21	1.97364E-01	7.21		
	6	92.55	6.94431E-02	22.72	Sum	
	7	115.71	1.76950E-02	54.44		
	8	129.14	2.13552E-02	52.13		
	10	208.74	3.44099E-02	33.56	Tol.	GA-67
	14	328.76	1.81674E-02	40.97	Tol.	LA-140
	17	462.44	1.29260E-02	44.97	Tol.	SB-125
	18	510.88	2.86556E-02	30.08		
	19	523.25	1.06442E-02	41.32		
m	21	587.54	7.39988E-03	72.26		
	23	615.99	8.98437E-03	43.42		
	26	768.05	8.32222E-03	59.43		
	27	859.16	2.26407E-02	23.66		
	29	933.50	9.74794E-03	52.57		
M	30	964.60	6.46967E-03	43.38	Tol.	EU-152
	32	987.34	5.23534E-03	40.91		
	33	1050.31	7.46667E-03	51.47		
	34	1057.11	6.99405E-03	41.29		
	36	1156.83	8.36420E-03	47.67		
M	37	1238.79	1.18771E-02	30.83		
m	38	1244.79	5.97196E-03	54.99	Sum	
M	39	1281.31	4.77569E-03	39.88		
m	40	1290.12	4.09809E-03	76.97		
M	41	1402.02	4.63414E-03	48.07		
m	42	1408.19	5.53398E-03	39.30	Tol.	EU-152
m	43	1413.47	3.02152E-03	70.20		
m	44	1418.75	2.78366E-03	60.95		
m	46	1466.08	8.66059E-03	79.20		
	47	1509.56	8.44444E-03	51.12		
	48	1544.62	3.50000E-03	37.01		
	49	1661.48	5.20255E-03	30.76		
	50	1730.21	3.38235E-03	40.02	Sum	
	52	1848.35	5.13889E-03	31.11	Sum	
	53	1959.54	1.56746E-03	51.86		

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
54	2083.72	1.64931E-03	58.34		
55	2104.30	5.97222E-03	25.07	S-Esc	
56	2121.56	3.33333E-03	45.26		
58	2347.54	2.50000E-03	33.33	Sum	
59	2354.50	2.51263E-03	41.46		
60	2431.09	2.00617E-03	48.09	Sum	
61	2447.84	2.08333E-03	56.76		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	-6.02E-01	1.74E+00	1.74E+00
+	NA-22	1274.54		99.94	2.24E-02	7.65E-02	7.65E-02
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	1.21E-02	4.28E-02	4.28E-02
+	K-40	1460.81	*	10.67	1.78E+01	1.12E+00	1.12E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	3.23E-03	5.48E-02	5.48E-02
		78.34		96.00	1.91E-01		7.62E-02
+	SC-46	889.25		99.98	1.91E-03	1.33E-01	1.33E-01
		1120.51		99.99	2.74E-01		2.57E-01
+	V-48	983.52		99.98	-1.53E+00	4.80E+00	4.80E+00
		1312.10		97.50	8.12E-01		4.96E+00
+	CR-51	320.08		9.83	3.19E-01	6.55E+00	6.55E+00
+	MN-54	834.83		99.97	-6.27E-03	8.01E-02	8.01E-02
+	CO-56	846.75		99.96	5.98E-02	1.43E-01	1.43E-01
		1037.75		14.03	-7.93E-01		9.62E-01
		1238.25		67.00	2.44E-01		3.43E-01
		1771.40		15.51	-1.86E-01		6.21E-01
		2598.48		16.90	1.50E-01		6.54E-01
+	CO-57	122.06		85.51	1.82E-02	6.69E-02	6.69E-02
		136.48		10.60	2.39E-02		5.47E-01

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-58	810.76	99.40	-5.47E-02	1.56E-01	1.56E-01
+	FE-59	1099.22	56.50	1.26E-01	5.98E-01	5.98E-01
		1291.56	43.20	5.94E-02		7.12E-01
+	CO-60	1173.22	100.00	3.17E-02	6.23E-02	8.90E-02
		1332.49	100.00	-5.61E-03		6.23E-02
+	ZN-65	1115.52	50.75	1.51E-02	1.87E-01	1.87E-01
+	GA-67	93.31	35.70	5.86E+08	3.00E+08	3.00E+08
		208.95	2.24	4.95E+09		4.37E+09
		300.22	16.00	-1.65E+08		6.60E+08
+	SE-75	121.11	16.70	7.10E-02	1.35E-01	4.68E-01
		136.00	59.20	5.91E-03		1.35E-01
		264.65	59.80	-2.08E-01		1.41E-01
		279.53	25.20	-1.33E-02		3.78E-01
		400.65	11.40	-4.03E-01		8.71E-01
+	RB-82	776.52	13.00	2.90E+00	7.28E+00	7.28E+00
+	RB-83	520.41	46.00	-3.96E-02	2.74E-01	2.74E-01
		529.64	30.30	1.28E-01		4.04E-01
		552.65	16.40	-2.64E-01		7.02E-01
+	KR-85	513.99	0.43	2.03E+01	1.86E+01	1.86E+01
+	SR-85	513.99	99.27	2.55E-01	2.33E-01	2.33E-01
+	Y-88	898.02	93.40	5.79E-02	7.90E-02	1.42E-01
		1836.01	99.38	1.28E-02		7.90E-02
+	MO-93	263.06	56.72	1.26E-02	5.24E-02	8.86E-02
		684.67	99.68	1.54E-02		5.98E-02
		1477.11	99.08	3.94E-03		5.24E-02
+	NB-93M	16.57	9.43	-4.33E-01	4.68E-01	4.68E-01
+	NB-94	702.63	100.00	3.15E-02	6.02E-02	6.66E-02
		871.10	100.00	2.32E-02		6.02E-02
+	NB-95	765.79	99.81	2.94E-01	5.46E-01	5.46E-01
+	NB-95M	235.69	25.00	-4.16E+08	5.35E+07	5.35E+07
+	ZR-95	724.18	43.70	-1.88E-01	3.37E-01	4.77E-01
		756.72	55.30	-6.84E-03		3.37E-01
+	MO-99	181.06	6.20	-1.68E+11	4.13E+10	6.85E+10
		739.58	12.80	-3.64E+09		4.13E+10
		778.00	4.50	-1.51E+11		1.14E+11
+	RU-103	497.08	89.00	3.05E-02	3.50E-01	3.50E-01
+	RU-106	621.84	9.80	3.64E-01	7.01E-01	7.01E-01
+	AG-108M	433.93	89.90	1.41E-02	5.89E-02	5.89E-02
		614.37	90.40	-4.55E-01		7.68E-02
		722.95	90.50	1.04E-02		6.72E-02
+	CD-109	88.03	3.72	7.85E-01	1.86E+00	1.86E+00
+	AG-110M	657.75	93.14	3.61E-03	9.31E-02	9.31E-02
		677.61	10.53	-3.78E-01		7.03E-01
		706.67	16.46	-6.75E-04		5.22E-01
		763.93	21.98	-2.62E-02		4.19E-01
		884.67	71.63	-4.12E-02		1.04E-01
		1384.27	23.94	-6.18E-02		2.47E-01
+	CD-113M	263.70	0.02	-6.78E+01	2.14E+02	2.14E+02

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SN-113	255.12	1.93	-9.47E-01	1.53E-01	4.11E+00
		391.69	64.90	-5.35E-02		1.53E-01
+	TE123M	159.00	84.10	-6.56E-03	9.58E-02	9.58E-02
+	SB-124	602.71	97.87	-2.13E-02	1.88E-01	1.88E-01
		645.85	7.26	-1.23E+00		2.11E+00
		722.78	11.10	2.68E-01		1.74E+00
		1691.02	49.00	-5.64E-02		2.77E-01
+	I-125	35.49	6.49	4.87E-01	2.32E+00	2.32E+00
+	SB-125	176.33	6.89	-3.89E-02	1.99E-01	6.86E-01
		427.89	29.33	5.87E-02		1.99E-01
		463.38	10.35	5.22E-01		6.27E-01
		600.56	17.80	-1.65E-01		3.40E-01
		635.90	11.32	7.45E-02		5.30E-01
+	SB-126	414.70	83.30	-6.74E+00	1.66E+01	1.70E+01
		666.33	99.60	-2.96E+00		1.89E+01
		695.00	99.60	6.58E+00		1.66E+01
		720.50	53.80	6.92E+00		2.98E+01
+	SN-126	87.57	37.00	4.32E-04	1.56E-01	1.56E-01
+	SB-127	473.00	25.00	5.51E+06	1.15E+07	1.48E+07
		685.20	35.70	2.96E+06		1.15E+07
		783.80	14.70	1.24E+07		3.17E+07
+	I-129	29.78	57.00	-1.41E-02	9.27E-02	9.27E-02
		33.60	13.20	1.68E-02		3.81E-01
		39.58	7.52	-3.95E-02		5.92E-01
+	I-131	284.30	6.05	-1.93E+02	3.63E+02	4.89E+03
		364.48	81.20	3.65E+01		3.63E+02
		636.97	7.26	-2.16E+03		4.23E+03
		722.89	1.80	2.98E+03		1.93E+04
+	TE-132	49.72	13.10	-9.29E+07	9.79E+07	6.64E+08
		228.16	88.00	1.26E+06		9.79E+07
+	BA-133	81.00	33.00	-5.65E-01	1.25E-01	1.62E-01
		302.84	17.80	-8.08E-02		3.31E-01
		356.01	60.00	-7.14E-03		1.25E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-2.78E+05	7.97E+04	7.97E+04
+	CS-134	563.23	8.38	-9.61E-02	7.43E-02	6.83E-01
		569.32	15.43	-3.86E-02		3.76E-01
		604.70	97.60	-7.85E-03		7.43E-02
		795.84	85.40	1.04E-02		8.44E-02
		801.93	8.73	-1.56E-01		7.76E-01
+	CS-135	268.24	16.00	3.42E-01	3.45E-01	3.45E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	-6.35E+00	1.16E+01	1.22E+02
		163.89	4.61	6.61E+00		1.91E+02
		176.55	13.56	-3.64E+00		6.43E+01
		273.65	12.66	-5.31E+01		8.51E+01
		340.57	48.50	6.43E+01		2.86E+01

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
		CS-136	818.50		99.70	1.82E+00	1.16E+01	1.16E+01
			1048.07		79.60	6.09E+00		1.76E+01
			1235.34		19.70	4.16E+00		9.35E+01
+		CS-137	661.65	*	85.12	1.83E-01	9.01E-02	9.01E-02
+		LA-138	788.74		34.00	7.33E-02	8.66E-02	2.00E-01
			1435.80		66.00	-1.27E-02		8.66E-02
+		CE-139	165.85		80.35	-3.60E-02	9.19E-02	9.19E-02
+		BA-140	162.64		6.70	-3.00E+01	5.22E+01	1.53E+02
			304.84		4.50	-2.35E+02		2.68E+02
			423.70		3.20	4.49E+01		3.90E+02
			437.55		2.00	9.18E+01		6.25E+02
			537.32		25.00	-9.20E+00		5.22E+01
+		LA-140	328.77		20.50	4.42E+01	1.57E+01	6.55E+01
			487.03		45.50	4.20E+00		2.70E+01
			815.85		23.50	-4.78E-01		5.70E+01
			1596.49		95.49	8.44E+00		1.57E+01
+		CE-141	145.44		48.40	-1.49E-01	8.07E-01	8.07E-01
+	@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26
	@		293.26		42.00	1.00E+26		1.00E+26
	@		664.55		5.20	1.00E+26		1.00E+26
+		CE-144	133.54		10.80	1.94E-01	5.16E-01	5.16E-01
+		PM-144	476.78		42.00	-7.61E-02	7.31E-02	1.39E-01
			618.01		98.60	-4.41E-03		7.41E-02
			696.49		99.49	1.64E-02		7.31E-02
+		PM-145	36.85		21.70	-1.75E-01	1.20E-01	2.12E-01
			37.36		39.70	4.80E-02		1.20E-01
			42.30		15.10	-1.46E-02		3.09E-01
			72.40		2.31	-3.38E+00		2.76E+00
+		PM-146	453.90		39.94	7.06E-02	1.44E-01	1.44E-01
			735.90		14.01	1.39E-01		4.41E-01
			747.13		13.10	-1.42E-01		4.46E-01
+		ND-147	91.11		28.90	2.26E+02	1.22E+02	1.22E+02
			531.02		13.10	-2.90E+01		2.32E+02
+		PM-149	285.90		3.10	8.56E+12	7.63E+13	7.63E+13
+		EU-152	121.78		20.50	3.29E-02	2.17E-01	2.17E-01
			244.69		5.40	-5.60E-01		9.61E-01
			344.27		19.13	-4.46E-01		2.52E-01
			778.89		9.20	-2.08E-01		6.24E-01
			964.01		10.40	-2.23E+00		7.78E-01
			1085.78		7.22	-6.82E-01		9.31E-01
			1112.02		9.60	-2.12E-01		7.58E-01
			1407.95		14.94	2.20E-02		4.44E-01
+		GD-153	97.43		31.30	7.10E-02	1.91E-01	1.91E-01
			103.18		22.20	-7.39E-03		2.63E-01
+		EU-154	123.07		40.50	-4.14E-03	1.12E-01	1.12E-01
			723.30		19.70	4.87E-02		3.15E-01
			873.19		11.50	-6.17E-02		5.00E-01
			996.32		10.30	-2.82E-01		5.57E-01
			1004.76		17.90	1.73E-01		3.86E-01

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	1274.45		35.50	5.98E-02	1.12E-01	2.05E-01
+	EU-155	86.50		30.90	8.10E-02	1.95E-01	1.95E-01
		105.30		20.70	1.14E-01		2.25E-01
+	EU-156	811.77		10.40	1.12E+01	5.64E+01	5.64E+01
		1153.47		7.20	5.79E+00		9.38E+01
		1230.71		8.90	-1.79E+01		8.31E+01
+	HO-166M	184.41		72.60	1.55E-01	8.17E-02	8.17E-02
		280.45		29.60	1.34E-02		1.80E-01
		410.94		11.10	7.40E-02		5.00E-01
		711.69		54.10	-8.96E-03		1.08E-01
+	TM-171	66.72		0.14	-6.19E-01	4.11E+01	4.11E+01
+	HF-172	67.35		5.31	6.35E-02	4.49E-01	1.08E+00
		125.81		11.30	7.94E-02		4.49E-01
+	LU-172	181.53		20.60	-1.71E+04	3.71E+03	6.96E+03
		900.72		29.81	-2.31E+03		6.89E+03
		1093.66		62.50	4.06E+02		3.71E+03
+	LU-173	100.72		5.24	-3.38E-02	3.06E-01	9.48E-01
		272.11		21.20	8.52E-02		3.06E-01
+	HF-175	343.40		84.00	-4.26E-01	1.57E-01	1.57E-01
+	LU-176	88.34		13.30	1.89E-01	5.43E-02	4.48E-01
		201.83		86.00	-8.41E-03		5.43E-02
		306.78		94.00	2.13E-02		5.58E-02
+	HF-181	133.02		41.70	2.02E-01	3.22E-01	5.39E-01
		345.85		17.20	-3.60E+00		1.47E+00
		482.03		82.80	-1.38E-02		3.22E-01
+	TA-182	67.75		41.20	1.36E-02	2.30E-01	2.30E-01
		1121.30		34.90	7.55E-01		6.01E-01
		1189.05		16.23	3.34E-01		9.75E-01
		1221.41		26.98	-8.13E-02		5.36E-01
		1231.02		11.44	-2.62E-01		1.22E+00
+	IR-192	308.46		29.68	-1.56E-01	2.81E-01	4.31E-01
		468.07		48.10	-1.82E-02		2.81E-01
+	HG-203	279.19		77.30	-1.08E-02	3.07E-01	3.07E-01
+	TL-204	374.74		94.11	-7.47E-03	5.52E-02	5.52E-02
		899.15		99.16	9.96E-03		7.19E-02
		911.74		91.10	3.50E-01		1.39E-01
+	BI-207	569.67		97.72	1.85E-02	5.70E-02	5.70E-02
		1063.62		74.90	3.98E-03		9.01E-02
+	TL-208	583.14	*	30.22	1.20E+00	1.51E-01	2.93E-01
		860.37		4.48	9.48E-01		1.68E+00
		2614.66	*	35.85	1.01E+00		1.51E-01
+	BI-210M	262.00		45.00	-1.47E-02	1.11E-01	1.11E-01
		300.00		23.00	-3.92E-02		2.60E-01
+	PB-210	46.50	*	4.25	1.35E+00	1.39E+00	1.39E+00
+	PB-211	404.84		2.90	3.60E-01	2.01E+00	2.02E+00
		831.96		2.90	-8.48E-01		2.01E+00
+	BI-212	727.17	*	11.80	7.15E-01	7.04E-01	7.04E-01
		1620.62		2.75	4.53E-01		1.76E+00

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PB-212	238.63	*	44.60	1.26E+00	2.33E-01	2.33E-01
		300.09		3.41	-2.64E-01		1.76E+00
+	BI-214	609.31	*	46.30	9.27E-01	1.77E-01	1.77E-01
		1120.29	*	15.10	1.03E+00		8.03E-01
		1764.49	*	15.80	1.26E+00		3.76E-01
		2204.22	*	4.98	9.96E-01		1.02E+00
+	PB-214	295.21	*	19.19	9.41E-01	2.48E-01	5.06E-01
		351.92	*	37.19	1.09E+00		2.48E-01
+	RN-219	401.80		6.50	-1.66E-01	8.57E-01	8.57E-01
+	RA-223	323.87		3.88	1.21E-01	1.35E+00	1.35E+00
+	RA-224	240.98	*	3.95	3.28E+00	2.63E+00	2.63E+00
+	RA-225	40.00		31.00	7.02E+00	1.60E+01	1.60E+01
+	RA-226	186.21	*	3.28	4.22E+00	2.68E+00	2.68E+00
+	TH-227	50.10		8.40	-1.75E-02	5.00E-01	5.59E-01
		236.00		11.50	-3.88E+00		5.00E-01
		256.20		6.30	4.40E-02		8.18E-01
+	AC-228	338.32	*	11.40	1.39E+00	3.83E-01	6.57E-01
		911.07	*	27.70	1.02E+00		3.83E-01
		969.11	*	16.60	1.55E+00		6.22E-01
+	TH-230	48.44		16.90	1.76E-02	3.01E-01	3.01E-01
		62.85		4.60	2.61E+00		1.28E+00
		67.67		0.37	8.23E-01		1.39E+01
+	PA-231	283.67		1.60	-1.37E-01	2.52E+00	3.24E+00
		302.67		2.30	-6.13E-01		2.52E+00
+	TH-231	25.64		14.70	-2.70E+00	4.64E-01	4.64E-01
		84.21		6.40	1.74E-01		8.67E-01
+	PA-233	311.98		38.60	6.09E-01	1.73E+00	1.73E+00
+	PA-234	131.20		20.40	-1.15E-01	2.20E-01	2.20E-01
		733.99		8.80	6.16E-02		6.86E-01
		946.00		12.00	-2.26E-01		4.89E-01
+	PA-234M	1001.03		0.92	2.00E+00	7.15E+00	7.15E+00
+	TH-234	63.29	*	3.80	1.60E+00	1.84E+00	1.84E+00
+	U-235	143.76		10.50	2.30E-01	4.52E-01	4.52E-01
		163.35		4.70	3.28E-02		9.48E-01
		205.31		4.70	-1.11E+00		1.02E+00
+	NP-237	86.50		12.60	1.91E-01	4.61E-01	4.61E-01
+	NP-239	106.10		22.70	-8.81E+10	1.31E+12	1.31E+12
		228.18		10.70	3.72E+10		2.90E+12
		277.60		14.10	1.70E+12		2.59E+12
+	AM-241	59.54		35.90	2.68E-03	1.40E-01	1.40E-01
+	AM-243	74.67	*	66.00	2.45E-01	1.74E-01	1.74E-01
+	CM-243	209.75		3.29	1.77E+00	3.91E-01	1.62E+00
		228.14		10.60	5.64E-03		4.39E-01
		277.60		14.00	2.58E-01		3.91E-01

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	1.74E+00	1.74E+00	-6.02E-01	8.22E-01
	NA-22	1274.54		99.94	7.65E-02	7.65E-02	2.24E-02	3.52E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	4.28E-02	4.28E-02	1.21E-02	1.78E-02
+	K-40	1460.81	*	10.67	1.12E+00	1.12E+00	1.78E+01	5.33E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	5.48E-02	5.48E-02	3.23E-03	2.68E-02
		78.34		96.00	7.62E-02		1.91E-01	3.75E-02
	SC-46	889.25		99.98	1.33E-01	1.33E-01	1.91E-03	6.17E-02
		1120.51		99.99	2.57E-01		2.74E-01	1.22E-01
	V-48	983.52		99.98	4.80E+00	4.80E+00	-1.53E+00	2.22E+00
		1312.10		97.50	4.96E+00		8.12E-01	2.25E+00
	CR-51	320.08		9.83	6.55E+00	6.55E+00	3.19E-01	3.15E+00
	MN-54	834.83		99.97	8.01E-02	8.01E-02	-6.27E-03	3.74E-02
	CO-56	846.75		99.96	1.43E-01	1.43E-01	5.98E-02	6.62E-02
		1037.75		14.03	9.62E-01		-7.93E-01	4.39E-01
		1238.25		67.00	3.43E-01		2.44E-01	1.62E-01
		1771.40		15.51	6.21E-01		-1.86E-01	2.55E-01
		2598.48		16.90	6.54E-01		1.50E-01	2.59E-01
	CO-57	122.06		85.51	6.69E-02	6.69E-02	1.82E-02	3.25E-02
		136.48		10.60	5.47E-01		2.39E-02	2.66E-01
	CO-58	810.76		99.40	1.56E-01	1.56E-01	-5.47E-02	7.24E-02
	FE-59	1099.22		56.50	5.98E-01	5.98E-01	1.26E-01	2.78E-01
		1291.56		43.20	7.12E-01		5.94E-02	3.25E-01
	CO-60	1173.22		100.00	8.90E-02	6.23E-02	3.17E-02	4.17E-02
		1332.49		100.00	6.23E-02		-5.61E-03	2.81E-02
	ZN-65	1115.52		50.75	1.87E-01	1.87E-01	1.51E-02	8.66E-02
	GA-67	93.31		35.70	3.00E+08	3.00E+08	5.86E+08	1.47E+08

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
GA-67	208.95	2.24	4.37E+09	3.00E+08	4.95E+09	2.12E+09
	300.22	16.00	6.60E+08		-1.65E+08	3.19E+08
SE-75	121.11	16.70	4.68E-01	1.35E-01	7.10E-02	2.27E-01
	136.00	59.20	1.35E-01		5.91E-03	6.58E-02
	264.65	59.80	1.41E-01		-2.08E-01	6.80E-02
	279.53	25.20	3.78E-01		-1.33E-02	1.83E-01
	400.65	11.40	8.71E-01		-4.03E-01	4.17E-01
RB-82	776.52	13.00	7.28E+00	7.28E+00	2.90E+00	3.41E+00
RB-83	520.41	46.00	2.74E-01	2.74E-01	-3.96E-02	1.30E-01
	529.64	30.30	4.04E-01		1.28E-01	1.91E-01
	552.65	16.40	7.02E-01		-2.64E-01	3.31E-01
KR-85	513.99	0.43	1.86E+01	1.86E+01	2.03E+01	8.95E+00
SR-85	513.99	99.27	2.33E-01	2.33E-01	2.55E-01	1.12E-01
Y-88	898.02	93.40	1.42E-01	7.90E-02	5.79E-02	6.65E-02
	1836.01	99.38	7.90E-02		1.28E-02	3.24E-02
MO-93	263.06	56.72	8.86E-02	5.24E-02	1.26E-02	4.27E-02
	684.67	99.68	5.98E-02		1.54E-02	2.81E-02
	1477.11	99.08	5.24E-02		3.94E-03	2.30E-02
NB-93M	16.57	9.43	4.68E-01	4.68E-01	-4.33E-01	2.18E-01
NB-94	702.63	100.00	6.66E-02	6.02E-02	3.15E-02	3.15E-02
	871.10	100.00	6.02E-02		2.32E-02	2.80E-02
NB-95	765.79	99.81	5.46E-01	5.46E-01	2.94E-01	2.59E-01
NB-95M	235.69	25.00	5.35E+07	5.35E+07	-4.16E+08	2.60E+07
ZR-95	724.18	43.70	4.77E-01	3.37E-01	-1.88E-01	2.26E-01
	756.72	55.30	3.37E-01		-6.84E-03	1.58E-01
MO-99	181.06	6.20	6.85E+10	4.13E+10	-1.68E+11	3.32E+10
	739.58	12.80	4.13E+10		-3.64E+09	1.92E+10
	778.00	4.50	1.14E+11		-1.51E+11	5.26E+10
RU-103	497.08	89.00	3.50E-01	3.50E-01	3.05E-02	1.66E-01
RU-106	621.84	9.80	7.01E-01	7.01E-01	3.64E-01	3.30E-01
AG-108M	433.93	89.90	5.89E-02	5.89E-02	1.41E-02	2.81E-02
	614.37	90.40	7.68E-02		-4.55E-01	3.66E-02
	722.95	90.50	6.72E-02		1.04E-02	3.15E-02
CD-109	88.03	3.72	1.86E+00	1.86E+00	7.85E-01	9.12E-01
AG-110M	657.75	93.14	9.31E-02	9.31E-02	3.61E-03	4.41E-02
	677.61	10.53	7.03E-01		-3.78E-01	3.29E-01
	706.67	16.46	5.22E-01		-6.75E-04	2.46E-01
	763.93	21.98	4.19E-01		-2.62E-02	1.98E-01
	884.67	71.63	1.04E-01		-4.12E-02	4.80E-02
	1384.27	23.94	2.47E-01		-6.18E-02	1.07E-01
CD-113M	263.70	0.02	2.14E+02	2.14E+02	-6.78E+01	1.03E+02
SN-113	255.12	1.93	4.11E+00	1.53E-01	-9.47E-01	1.97E+00
	391.69	64.90	1.53E-01		-5.35E-02	7.34E-02
TE123M	159.00	84.10	9.58E-02	9.58E-02	-6.56E-03	4.65E-02
SB-124	602.71	97.87	1.88E-01	1.88E-01	-2.13E-02	8.90E-02
	645.85	7.26	2.11E+00		-1.23E+00	9.82E-01
	722.78	11.10	1.74E+00		2.68E-01	8.15E-01
	1691.02	49.00	2.77E-01		-5.64E-02	1.16E-01
I-125	35.49	6.49	2.32E+00	2.32E+00	4.87E-01	1.12E+00
SB-125	176.33	6.89	6.86E-01	1.99E-01	-3.89E-02	3.32E-01
	427.89	29.33	1.99E-01		5.87E-02	9.49E-02
	463.38	10.35	6.27E-01		5.22E-01	3.00E-01
	600.56	17.80	3.40E-01		-1.65E-01	1.60E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-125	635.90	11.32	5.30E-01	1.99E-01	7.45E-02	2.49E-01
SB-126	414.70	83.30	1.70E+01	1.66E+01	-6.74E+00	8.12E+00
	666.33	99.60	1.89E+01		-2.96E+00	8.98E+00
	695.00	99.60	1.66E+01		6.58E+00	7.81E+00
	720.50	53.80	2.98E+01		6.92E+00	1.40E+01
SN-126	87.57	37.00	1.56E-01	1.56E-01	4.32E-04	7.67E-02
SB-127	473.00	25.00	1.48E+07	1.15E+07	5.51E+06	7.01E+06
	685.20	35.70	1.15E+07		2.96E+06	5.40E+06
	783.80	14.70	3.17E+07		1.24E+07	1.49E+07
I-129	29.78	57.00	9.27E-02	9.27E-02	-1.41E-02	4.49E-02
	33.60	13.20	3.81E-01		1.68E-02	1.85E-01
	39.58	7.52	5.92E-01		-3.95E-02	2.87E-01
I-131	284.30	6.05	4.89E+03	3.63E+02	-1.93E+02	2.36E+03
	364.48	81.20	3.63E+02		3.65E+01	1.74E+02
	636.97	7.26	4.23E+03		-2.16E+03	1.98E+03
	722.89	1.80	1.93E+04		2.98E+03	9.05E+03
TE-132	49.72	13.10	6.64E+08	9.79E+07	-9.29E+07	3.23E+08
	228.16	88.00	9.79E+07		1.26E+06	4.72E+07
BA-133	81.00	33.00	1.62E-01	1.25E-01	-5.65E-01	7.92E-02
	302.84	17.80	3.31E-01		-8.08E-02	1.60E-01
	356.01	60.00	1.25E-01		-7.14E-03	6.05E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	7.97E+04	7.97E+04	-2.78E+05	3.90E+04
CS-134	563.23	8.38	6.83E-01	7.43E-02	-9.61E-02	3.21E-01
	569.32	15.43	3.76E-01		-3.86E-02	1.77E-01
	604.70	97.60	7.43E-02		-7.85E-03	3.53E-02
	795.84	85.40	8.44E-02		1.04E-02	3.96E-02
	801.93	8.73	7.76E-01		-1.56E-01	3.63E-01
CS-135	268.24	16.00	3.45E-01	3.45E-01	3.42E-01	1.67E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.22E+02	1.16E+01	-6.35E+00	5.92E+01
	163.89	4.61	1.91E+02		6.61E+00	9.26E+01
	176.55	13.56	6.43E+01		-3.64E+00	3.11E+01
	273.65	12.66	8.51E+01		-5.31E+01	4.11E+01
	340.57	48.50	2.86E+01		6.43E+01	1.39E+01
	818.50	99.70	1.16E+01		1.82E+00	5.37E+00
	1048.07	79.60	1.76E+01		6.09E+00	8.17E+00
	1235.34	19.70	9.35E+01		4.16E+00	4.40E+01
+ CS-137	661.65 *	85.12	9.01E-02	9.01E-02	1.83E-01	4.30E-02
LA-138	788.74	34.00	2.00E-01	8.66E-02	7.33E-02	9.40E-02
	1435.80	66.00	8.66E-02		-1.27E-02	3.86E-02
CE-139	165.85	80.35	9.19E-02	9.19E-02	-3.60E-02	4.45E-02
BA-140	162.64	6.70	1.53E+02	5.22E+01	-3.00E+01	7.43E+01
	304.84	4.50	2.68E+02		-2.35E+02	1.29E+02
	423.70	3.20	3.90E+02		4.49E+01	1.86E+02
	437.55	2.00	6.25E+02		9.18E+01	2.98E+02
	537.32	25.00	5.22E+01		-9.20E+00	2.47E+01
LA-140	328.77	20.50	6.55E+01	1.57E+01	4.42E+01	3.16E+01
	487.03	45.50	2.70E+01		4.20E+00	1.28E+01
	815.85	23.50	5.70E+01		-4.78E-01	2.65E+01
	1596.49	95.49	1.57E+01		8.44E+00	7.04E+00

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CE-141	145.44	48.40	8.07E-01	8.07E-01	-1.49E-01	3.92E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	5.16E-01	5.16E-01	1.94E-01	2.51E-01
PM-144	476.78	42.00	1.39E-01	7.31E-02	-7.61E-02	6.58E-02
	618.01	98.60	7.41E-02		-4.41E-03	3.51E-02
	696.49	99.49	7.31E-02		1.64E-02	3.44E-02
PM-145	36.85	21.70	2.12E-01	1.20E-01	-1.75E-01	1.03E-01
	37.36	39.70	1.20E-01		4.80E-02	5.80E-02
	42.30	15.10	3.09E-01		-1.46E-02	1.50E-01
	72.40	2.31	2.76E+00		-3.38E+00	1.35E+00
PM-146	453.90	39.94	1.44E-01	1.44E-01	7.06E-02	6.85E-02
	735.90	14.01	4.41E-01		1.39E-01	2.07E-01
	747.13	13.10	4.46E-01		-1.42E-01	2.08E-01
ND-147	91.11	28.90	1.22E+02	1.22E+02	2.26E+02	5.97E+01
	531.02	13.10	2.32E+02		-2.90E+01	1.10E+02
PM-149	285.90	3.10	7.63E+13	7.63E+13	8.56E+12	3.68E+13
EU-152	121.78	20.50	2.17E-01	2.17E-01	3.29E-02	1.05E-01
	244.69	5.40	9.61E-01		-5.60E-01	4.65E-01
	344.27	19.13	2.52E-01		-4.46E-01	1.20E-01
	778.89	9.20	6.24E-01		-2.08E-01	2.91E-01
	964.01	10.40	7.78E-01		-2.23E+00	3.67E-01
	1085.78	7.22	9.31E-01		-6.82E-01	4.30E-01
	1112.02	9.60	7.58E-01		-2.12E-01	3.52E-01
	1407.95	14.94	4.44E-01		2.20E-02	2.01E-01
GD-153	97.43	31.30	1.91E-01	1.91E-01	7.10E-02	9.30E-02
	103.18	22.20	2.63E-01		-7.39E-03	1.28E-01
EU-154	123.07	40.50	1.12E-01	1.12E-01	-4.14E-03	5.46E-02
	723.30	19.70	3.15E-01		4.87E-02	1.48E-01
	873.19	11.50	5.00E-01		-6.17E-02	2.31E-01
	996.32	10.30	5.57E-01		-2.82E-01	2.55E-01
	1004.76	17.90	3.86E-01		1.73E-01	1.79E-01
	1274.45	35.50	2.05E-01		5.98E-02	9.41E-02
EU-155	86.50	30.90	1.95E-01	1.95E-01	8.10E-02	9.57E-02
	105.30	20.70	2.25E-01		1.14E-01	1.09E-01
EU-156	811.77	10.40	5.64E+01	5.64E+01	1.12E+01	2.63E+01
	1153.47	7.20	9.38E+01		5.79E+00	4.33E+01
	1230.71	8.90	8.31E+01		-1.79E+01	3.86E+01
HO-166M	184.41	72.60	8.17E-02	8.17E-02	1.55E-01	3.99E-02
	280.45	29.60	1.80E-01		1.34E-02	8.69E-02
	410.94	11.10	5.00E-01		7.40E-02	2.39E-01
	711.69	54.10	1.08E-01		-8.96E-03	5.07E-02
TM-171	66.72	0.14	4.11E+01	4.11E+01	-6.19E-01	2.01E+01
HF-172	67.35	5.31	1.08E+00	4.49E-01	6.35E-02	5.26E-01
	125.81	11.30	4.49E-01		7.94E-02	2.19E-01
LU-172	181.53	20.60	6.96E+03	3.71E+03	-1.71E+04	3.37E+03
	900.72	29.81	6.89E+03		-2.31E+03	3.21E+03
	1093.66	62.50	3.71E+03		4.06E+02	1.73E+03
LU-173	100.72	5.24	9.48E-01	3.06E-01	-3.38E-02	4.61E-01
	272.11	21.20	3.06E-01		8.52E-02	1.48E-01
HF-175	343.40	84.00	1.57E-01	1.57E-01	-4.26E-01	7.52E-02
LU-176	88.34	13.30	4.48E-01	5.43E-02	1.89E-01	2.20E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	LU-176	201.83		86.00	5.43E-02	5.43E-02	-8.41E-03	2.63E-02
		306.78		94.00	5.58E-02		2.13E-02	2.68E-02
	HF-181	133.02		41.70	5.39E-01	3.22E-01	2.02E-01	2.62E-01
		345.85		17.20	1.47E+00		-3.60E+00	7.05E-01
		482.03		82.80	3.22E-01		-1.38E-02	1.53E-01
	TA-182	67.75		41.20	2.30E-01	2.30E-01	1.36E-02	1.12E-01
		1121.30		34.90	6.01E-01		7.55E-01	2.87E-01
		1189.05		16.23	9.75E-01		3.34E-01	4.57E-01
		1221.41		26.98	5.36E-01		-8.13E-02	2.49E-01
		1231.02		11.44	1.22E+00		-2.62E-01	5.66E-01
	IR-192	308.46		29.68	4.31E-01	2.81E-01	-1.56E-01	2.07E-01
		468.07		48.10	2.81E-01		-1.82E-02	1.33E-01
	HG-203	279.19		77.30	3.07E-01	3.07E-01	-1.08E-02	1.48E-01
	TL-204	374.74		94.11	5.52E-02	5.52E-02	-7.47E-03	2.63E-02
		899.15		99.16	7.19E-02		9.96E-03	3.36E-02
		911.74		91.10	1.39E-01		3.50E-01	6.70E-02
	BI-207	569.67		97.72	5.70E-02	5.70E-02	1.85E-02	2.69E-02
		1063.62		74.90	9.01E-02		3.98E-03	4.17E-02
+	TL-208	583.14	*	30.22	2.93E-01	1.51E-01	1.20E+00	1.41E-01
		860.37		4.48	1.68E+00		9.48E-01	7.92E-01
		2614.66	*	35.85	1.51E-01		1.01E+00	6.23E-02
	BI-210M	262.00		45.00	1.11E-01	1.11E-01	-1.47E-02	5.33E-02
		300.00		23.00	2.60E-01		-3.92E-02	1.26E-01
+	PB-210	46.50	*	4.25	1.39E+00	1.39E+00	1.35E+00	6.77E-01
	PB-211	404.84		2.90	2.02E+00	2.01E+00	3.60E-01	9.67E-01
		831.96		2.90	2.01E+00		-8.48E-01	9.32E-01
+	BI-212	727.17	*	11.80	7.04E-01	7.04E-01	7.15E-01	3.36E-01
		1620.62		2.75	1.76E+00		4.53E-01	7.60E-01
+	PB-212	238.63	*	44.60	2.33E-01	2.33E-01	1.26E+00	1.15E-01
		300.09		3.41	1.76E+00		-2.64E-01	8.50E-01
+	BI-214	609.31	*	46.30	1.77E-01	1.77E-01	9.27E-01	8.52E-02
		1120.29	*	15.10	8.03E-01		1.03E+00	3.84E-01
		1764.49	*	15.80	3.76E-01		1.26E+00	1.65E-01
		2204.22	*	4.98	1.02E+00		9.96E-01	4.28E-01
+	PB-214	295.21	*	19.19	5.06E-01	2.48E-01	9.41E-01	2.48E-01
		351.92	*	37.19	2.48E-01		1.09E+00	1.21E-01
	RN-219	401.80		6.50	8.57E-01	8.57E-01	-1.66E-01	4.10E-01
	RA-223	323.87		3.88	1.35E+00	1.35E+00	1.21E-01	6.47E-01
+	RA-224	240.98	*	3.95	2.63E+00	2.63E+00	3.28E+00	1.30E+00
	RA-225	40.00		31.00	1.60E+01	1.60E+01	7.02E+00	7.73E+00
+	RA-226	186.21	*	3.28	2.68E+00	2.68E+00	4.22E+00	1.32E+00
	TH-227	50.10		8.40	5.59E-01	5.00E-01	-1.75E-02	2.72E-01
		236.00		11.50	5.00E-01		-3.88E+00	2.43E-01
		256.20		6.30	8.18E-01		4.40E-02	3.95E-01
+	AC-228	338.32	*	11.40	6.57E-01	3.83E-01	1.39E+00	3.19E-01
		911.07	*	27.70	3.83E-01		1.02E+00	1.84E-01
		969.11	*	16.60	6.22E-01		1.55E+00	2.97E-01
	TH-230	48.44		16.90	3.01E-01	3.01E-01	1.76E-02	1.47E-01
		62.85		4.60	1.28E+00		2.61E+00	6.25E-01
		67.67		0.37	1.39E+01		8.23E-01	6.81E+00
	PA-231	283.67		1.60	3.24E+00	2.52E+00	-1.37E-01	1.56E+00
		302.67		2.30	2.52E+00		-6.13E-01	1.22E+00
	TH-231	25.64		14.70	4.64E-01	4.64E-01	-2.70E+00	2.26E-01

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TH-231	84.21		6.40	8.67E-01	4.64E-01	1.74E-01	4.24E-01
	PA-233	311.98		38.60	1.73E+00	1.73E+00	6.09E-01	8.33E-01
	PA-234	131.20		20.40	2.20E-01	2.20E-01	-1.15E-01	1.07E-01
		733.99		8.80	6.86E-01		6.16E-02	3.21E-01
		946.00		12.00	4.89E-01		-2.26E-01	2.26E-01
	PA-234M	1001.03		0.92	7.15E+00	7.15E+00	2.00E+00	3.32E+00
+	TH-234	63.29	*	3.80	1.84E+00	1.84E+00	1.60E+00	9.06E-01
	U-235	143.76		10.50	4.52E-01	4.52E-01	2.30E-01	2.20E-01
		163.35		4.70	9.48E-01		3.28E-02	4.60E-01
		205.31		4.70	1.02E+00		-1.11E+00	4.93E-01
	NP-237	86.50		12.60	4.61E-01	4.61E-01	1.91E-01	2.26E-01
	NP-239	106.10		22.70	1.31E+12	1.31E+12	-8.81E+10	6.37E+11
		228.18		10.70	2.90E+12		3.72E+10	1.40E+12
		277.60		14.10	2.59E+12		1.70E+12	1.25E+12
	AM-241	59.54		35.90	1.40E-01	1.40E-01	2.68E-03	6.85E-02
+	AM-243	74.67	*	66.00	1.74E-01	1.74E-01	2.45E-01	8.60E-02
	CM-243	209.75		3.29	1.62E+00	3.91E-01	1.77E+00	7.88E-01
		228.14		10.60	4.39E-01		5.64E-03	2.12E-01
		277.60		14.00	3.91E-01		2.58E-01	1.89E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

Analysis Report for 1707092-04

HTC-A08-S001-0006-01

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: HTC-A08-S001-0006-01

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	1	1	64	99	78	160	500	162
25:	60	80	68	56	69	58	65	76
33:	67	69	59	79	72	53	60	85
41:	65	71	65	98	89	109	173	101
49:	76	88	97	94	109	112	97	87
57:	123	115	109	107	115	146	160	253
65:	155	112	136	122	138	143	146	163
73:	145	188	349	322	386	516	162	142
81:	137	131	119	159	171	123	196	218
89:	132	165	172	146	249	232	115	102
97:	92	81	100	107	73	77	86	85
105:	97	105	84	98	74	95	100	93
113:	92	79	94	117	90	79	53	83
121:	85	75	81	92	91	89	86	90
129:	115	113	94	66	62	83	88	90
137:	86	76	66	89	81	88	89	97
145:	75	89	72	73	81	84	66	74
153:	86	70	84	77	84	80	71	73
161:	67	70	69	69	72	64	83	51
169:	92	64	67	72	62	82	59	69
177:	63	61	61	57	59	61	66	66
185:	83	184	150	81	69	69	53	60
193:	57	68	54	61	56	63	65	62
201:	65	51	66	60	57	69	56	72
209:	97	98	64	48	54	49	57	51
217:	40	53	55	58	65	63	52	56
225:	58	48	61	57	51	50	39	54
233:	47	41	60	60	46	181	590	261
241:	105	157	101	58	45	41	46	47
249:	31	28	28	47	39	36	36	38
257:	48	37	41	42	41	31	37	35
265:	24	36	32	28	40	62	64	40
273:	32	34	39	39	39	51	42	34
281:	36	31	33	37	39	32	37	35
289:	32	39	29	33	36	43	150	179
297:	59	32	38	55	55	40	27	36
305:	36	33	29	26	37	28	27	22
313:	23	37	33	28	22	34	40	22
321:	30	34	29	31	27	30	26	47
329:	53	39	35	25	26	32	22	23
337:	33	100	105	52	32	21	26	19
345:	21	18	28	22	31	37	85	272
353:	186	34	33	33	30	29	20	22
361:	30	17	30	23	20	29	23	27

369:	21	21	23	19	25	20	23	20

Sample Title: HTC-A08-S001-0006-01

Channel								
377:	25	16	18	27	24	15	21	14
385:	21	28	24	30	30	24	22	23
393:	25	22	23	30	25	29	21	20
401:	22	26	29	24	29	30	21	28
409:	21	35	22	22	20	16	17	23
417:	23	20	21	18	13	22	24	21
425:	23	19	27	27	15	15	22	15
433:	17	20	19	16	27	20	19	20
441:	21	24	15	20	11	16	16	20
449:	15	22	24	16	17	21	17	27
457:	18	12	16	17	12	32	41	26
465:	15	19	18	17	14	20	17	14
473:	23	13	14	17	11	15	13	14
481:	17	17	15	17	17	19	18	19
489:	17	9	12	18	16	19	17	16
497:	14	15	17	13	14	14	14	19
505:	13	16	22	14	29	51	79	62
513:	32	19	17	17	16	21	13	9
521:	12	22	19	20	19	13	11	12
529:	20	16	14	19	14	8	20	16
537:	16	18	15	19	20	16	7	16
545:	15	12	15	20	13	10	14	3
553:	15	18	13	14	12	15	16	15
561:	13	12	15	13	12	7	7	17
569:	9	19	11	18	16	12	15	12
577:	8	14	7	14	21	35	142	121
585:	38	15	24	15	17	15	10	10
593:	16	11	16	18	18	14	12	15
601:	13	9	17	13	13	18	13	45
609:	156	173	43	12	10	17	22	17
617:	17	16	7	11	12	7	20	17
625:	15	10	6	10	7	14	11	14
633:	17	13	8	12	16	10	7	10
641:	10	16	5	8	10	9	13	7
649:	7	10	11	7	9	6	7	14
657:	6	15	18	8	42	77	40	13
665:	17	18	14	8	10	10	9	12
673:	14	10	7	18	7	14	11	4
681:	14	11	20	12	8	11	11	8
689:	9	12	6	8	15	12	10	18
697:	11	11	6	14	11	15	16	10
705:	19	17	10	17	15	8	16	9
713:	9	9	10	12	8	14	10	10
721:	16	6	11	11	11	15	39	38
729:	19	6	14	6	15	12	11	8
737:	11	7	11	5	11	12	6	13
745:	6	13	5	12	10	6	13	12
753:	10	11	12	15	8	6	10	18
761:	10	14	14	12	15	12	21	22
769:	18	15	10	12	17	18	10	7
777:	12	7	4	8	6	17	9	6
785:	13	20	14	12	14	7	13	8
793:	10	11	15	14	13	5	13	14

801:	8	12	7	8	8	17	8	6

Sample Title: HTC-A08-S001-0006-01

Channel								
809:	8	11	9	10	11	5	11	7
817:	11	9	6	7	9	8	7	4
825:	8	8	11	7	4	10	8	10
833:	8	5	13	13	11	11	12	12
841:	4	6	6	7	8	6	5	11
849:	9	12	8	4	6	9	15	13
857:	10	9	9	22	21	14	10	7
865:	5	6	7	9	11	13	6	6
873:	7	6	8	4	9	4	12	6
881:	8	11	6	4	4	9	7	10
889:	8	7	3	8	8	11	10	16
897:	8	9	6	9	16	7	7	10
905:	8	3	10	9	11	37	81	75
913:	16	4	7	7	8	10	6	11
921:	5	5	8	8	6	7	3	4
929:	5	9	10	9	8	14	14	8
937:	5	5	10	7	8	8	5	8
945:	10	7	6	5	7	13	7	11
953:	8	8	9	7	7	7	7	14
961:	11	6	8	20	20	9	16	35
969:	69	43	12	8	6	4	4	11
977:	8	11	8	8	7	8	3	7
985:	3	14	5	13	1	4	6	3
993:	7	4	6	5	8	8	2	6
1001:	15	10	7	8	6	7	6	10
1009:	4	8	8	5	6	7	6	9
1017:	6	9	4	9	9	5	3	12
1025:	8	5	5	6	7	11	4	3
1033:	5	7	5	2	4	5	8	6
1041:	8	18	5	8	9	8	12	4
1049:	7	10	11	12	2	4	7	13
1057:	9	9	8	6	5	8	9	11
1065:	6	8	9	7	9	10	1	7
1073:	5	11	11	13	7	9	9	11
1081:	12	8	10	9	8	5	4	6
1089:	12	9	7	7	14	10	4	8
1097:	7	7	8	9	10	8	7	7
1105:	8	8	11	10	8	8	11	6
1113:	3	11	10	13	5	8	19	47
1121:	43	10	13	11	13	11	10	10
1129:	5	8	6	9	7	4	9	10
1137:	7	9	5	5	7	7	6	11
1145:	3	6	11	7	4	6	4	4
1153:	3	11	14	8	12	8	9	9
1161:	3	9	9	11	5	9	9	8
1169:	9	8	14	13	10	11	9	12
1177:	8	10	13	14	12	6	5	8
1185:	13	11	9	14	12	10	13	7
1193:	3	12	9	9	9	3	6	14
1201:	13	5	9	10	6	6	9	11
1209:	9	9	13	7	14	13	8	9
1217:	11	8	14	6	6	9	9	8
1225:	8	10	7	8	6	6	9	6

1233:	13	8	10	11	10	27	14	8

Sample Title: HTC-A08-S001-0006-01

Channel								
1241:	8	5	7	15	8	4	7	12
1249:	10	2	5	8	8	6	7	10
1257:	3	7	7	8	5	6	8	5
1265:	3	4	7	8	7	4	5	3
1273:	5	8	4	12	8	5	4	11
1281:	9	8	4	5	7	5	7	3
1289:	6	10	4	7	4	2	4	4
1297:	4	6	5	6	1	7	6	4
1305:	6	5	4	8	4	4	3	4
1313:	3	6	4	3	6	4	1	2
1321:	4	3	3	3	5	2	5	4
1329:	5	3	6	6	1	3	5	6
1337:	3	5	6	6	2	3	3	1
1345:	3	1	2	4	7	2	3	5
1353:	3	2	1	4	0	2	5	5
1361:	6	4	4	3	0	2	2	1
1369:	3	0	2	8	4	1	3	8
1377:	11	16	5	1	1	3	3	1
1385:	1	3	2	3	2	3	4	4
1393:	3	3	3	1	5	4	5	5
1401:	5	9	2	2	2	6	9	10
1409:	2	1	2	5	1	6	4	2
1417:	1	5	1	5	4	0	1	4
1425:	3	5	3	2	1	4	3	6
1433:	4	2	1	4	2	4	3	5
1441:	2	5	2	3	4	3	5	2
1449:	6	5	4	1	3	7	2	5
1457:	5	13	70	259	351	136	22	12
1465:	9	13	4	1	1	0	3	2
1473:	3	2	3	3	3	1	2	3
1481:	1	2	2	2	1	4	1	3
1489:	2	1	2	3	1	2	2	4
1497:	2	3	4	1	2	3	6	3
1505:	4	1	3	2	6	2	5	2
1513:	3	3	3	1	2	1	0	1
1521:	0	3	1	1	1	1	2	1
1529:	1	0	3	4	2	2	2	6
1537:	5	5	7	2	0	3	6	2
1545:	2	2	0	0	2	1	0	0
1553:	0	2	1	2	1	1	2	2
1561:	3	0	4	0	1	2	2	1
1569:	2	2	6	1	2	1	4	3
1577:	2	1	2	3	1	3	5	3
1585:	1	5	2	6	2	2	4	2
1593:	6	6	2	3	3	5	1	1
1601:	1	1	1	3	0	0	1	0
1609:	0	2	0	1	0	4	0	0
1617:	3	0	1	2	4	3	0	0
1625:	4	1	1	0	2	2	6	3
1633:	1	3	0	3	3	2	0	1
1641:	1	1	3	1	0	0	1	2
1649:	0	2	0	2	2	1	2	1
1657:	0	3	3	3	10	5	0	2

1665:	3	3	3	2	1	1	2	2

Sample Title: HTC-A08-S001-0006-01

Channel								
1673:	0	0	3	0	2	2	1	1
1681:	3	2	0	1	2	4	1	1
1689:	0	2	2	1	2	1	0	0
1697:	4	0	2	2	4	2	1	2
1705:	3	3	1	1	1	2	1	1
1713:	0	5	2	0	2	0	1	0
1721:	2	2	1	2	4	0	1	4
1729:	4	5	2	1	1	4	4	3
1737:	3	0	3	0	1	0	1	1
1745:	1	2	0	2	2	1	0	1
1753:	1	2	4	1	0	1	3	1
1761:	0	1	12	35	20	6	1	2
1769:	2	0	0	1	1	1	1	2
1777:	2	0	1	0	0	2	2	1
1785:	0	0	1	0	0	0	0	1
1793:	0	0	0	0	1	0	0	1
1801:	2	2	1	0	1	1	2	0
1809:	1	2	1	1	0	2	0	0
1817:	0	2	1	1	0	1	1	1
1825:	0	2	0	0	3	1	0	0
1833:	0	0	2	0	2	3	1	1
1841:	1	1	0	0	3	5	4	8
1849:	1	2	0	1	1	1	1	0
1857:	1	2	2	1	1	0	0	2
1865:	1	3	0	1	1	1	0	1
1873:	6	0	1	2	3	2	1	2
1881:	1	0	0	0	2	2	1	2
1889:	0	1	3	3	1	0	2	0
1897:	1	3	0	0	1	1	1	1
1905:	0	0	2	1	1	0	0	1
1913:	0	3	1	1	2	0	1	1
1921:	1	0	3	1	0	1	0	0
1929:	3	1	2	1	0	2	0	2
1937:	2	2	1	2	0	2	1	2
1945:	2	1	2	2	1	0	2	3
1953:	1	1	0	0	1	3	3	0
1961:	1	0	0	2	1	0	2	0
1969:	1	0	2	3	0	4	2	0
1977:	1	1	1	0	2	1	1	2
1985:	1	0	2	0	1	2	3	1
1993:	1	2	0	0	2	0	0	0
2001:	0	1	0	2	2	1	1	0
2009:	3	1	1	1	4	1	0	0
2017:	0	1	2	2	2	2	1	0
2025:	1	0	3	2	1	1	1	0
2033:	2	2	0	3	2	1	0	0
2041:	0	0	0	0	0	2	1	0
2049:	0	1	0	0	0	1	1	2
2057:	0	1	1	1	0	3	1	0
2065:	2	1	1	1	1	1	1	2
2073:	0	1	0	2	1	0	0	1
2081:	1	3	2	1	0	0	2	1
2089:	0	4	1	0	0	2	2	1

2097:	3	0	0	1	2	5	7	7

Sample Title: HTC-A08-S001-0006-01

Channel								
2105:	1	1	0	1	0	0	1	1
2113:	0	0	1	1	2	1	1	1
2121:	6	3	1	0	1	2	0	0
2129:	3	1	0	1	2	1	0	0
2137:	0	1	1	0	0	2	1	1
2145:	1	1	1	0	0	1	0	1
2153:	3	1	2	1	1	1	1	0
2161:	2	0	1	0	2	0	1	0
2169:	1	0	1	1	2	2	0	2
2177:	0	0	1	2	1	1	0	1
2185:	0	1	0	2	1	0	1	1
2193:	2	0	3	0	1	1	1	0
2201:	2	1	7	4	4	0	1	1
2209:	0	3	2	1	1	2	1	2
2217:	2	0	0	2	0	0	1	1
2225:	0	0	2	0	0	2	2	1
2233:	2	1	1	1	2	0	1	2
2241:	3	1	0	3	0	0	0	0
2249:	1	1	0	0	3	0	1	1
2257:	0	1	1	1	1	1	0	0
2265:	2	0	2	0	4	1	0	0
2273:	0	1	0	1	0	0	3	0
2281:	3	0	1	1	2	0	2	1
2289:	0	0	1	1	0	0	0	1
2297:	1	0	3	0	0	1	0	0
2305:	1	0	5	1	1	1	2	3
2313:	1	1	0	4	1	0	1	0
2321:	1	2	0	0	0	1	1	1
2329:	2	1	1	0	1	2	3	1
2337:	1	0	1	0	3	0	0	1
2345:	3	2	2	1	0	0	2	2
2353:	3	2	1	1	0	2	3	1
2361:	1	0	0	0	2	1	2	1
2369:	2	0	1	1	1	3	1	3
2377:	2	2	2	0	0	0	0	0
2385:	2	1	0	0	1	1	4	0
2393:	1	1	2	0	1	1	1	3
2401:	0	0	0	3	0	2	0	1
2409:	1	0	1	1	0	0	1	0
2417:	2	0	1	0	1	1	1	1
2425:	0	0	0	2	3	2	2	0
2433:	1	1	1	0	0	1	0	1
2441:	2	3	0	0	5	0	4	2
2449:	1	0	2	2	0	0	0	0
2457:	2	1	1	2	2	1	0	1
2465:	0	0	1	0	0	2	1	1
2473:	0	0	0	0	0	0	1	1
2481:	1	1	0	1	1	2	1	0
2489:	0	2	1	0	1	0	0	0
2497:	0	0	1	1	0	1	0	0
2505:	0	0	0	0	1	2	0	0
2513:	3	1	0	2	0	0	1	1
2521:	2	0	0	0	1	2	0	0

2529:	0	0	0	1	1	0	0	0

Sample Title: HTC-A08-S001-0006-01

Channel								
2537:	1	0	2	1	2	3	0	0
2545:	0	0	0	0	0	0	2	0
2553:	0	0	0	0	0	0	0	0
2561:	0	0	0	0	1	0	0	0
2569:	0	0	1	0	0	0	0	0
2577:	0	0	0	0	1	0	2	0
2585:	0	0	0	0	0	2	0	0
2593:	0	0	0	1	0	3	0	1
2601:	0	0	1	0	1	1	0	0
2609:	0	2	3	16	31	35	15	6
2617:	4	0	1	1	1	0	0	0
2625:	1	1	0	0	0	0	0	1
2633:	1	0	0	0	0	1	0	0
2641:	1	0	1	0	0	0	0	0
2649:	0	0	1	0	1	0	0	1
2657:	0	0	0	0	0	0	0	1
2665:	0	0	0	0	0	0	0	0
2673:	0	0	0	0	0	0	1	0
2681:	1	0	2	0	0	0	0	0
2689:	1	0	1	0	0	0	0	0
2697:	1	0	0	0	0	1	0	1
2705:	0	0	0	0	0	0	1	0
2713:	0	0	0	0	0	0	0	0
2721:	1	0	0	0	0	1	1	1
2729:	1	0	0	0	1	0	1	0
2737:	1	1	0	1	1	0	0	0
2745:	0	1	0	0	1	0	0	0
2753:	1	0	0	0	1	0	0	1
2761:	1	1	1	0	1	0	0	0
2769:	1	0	1	0	1	0	1	0
2777:	0	0	0	1	0	0	0	0
2785:	0	0	0	0	1	0	1	0
2793:	1	1	0	0	0	0	0	1
2801:	2	1	0	0	0	0	0	0
2809:	0	0	2	0	0	0	0	0
2817:	0	0	0	1	0	2	0	0
2825:	0	0	1	1	0	1	0	0
2833:	1	1	0	0	0	0	0	1
2841:	0	0	0	0	0	0	0	1
2849:	2	0	0	0	0	0	1	0
2857:	0	0	1	0	0	0	0	0
2865:	0	0	0	0	0	0	0	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	1	1	1	0	2	0
2897:	0	0	0	0	0	0	0	0
2905:	0	1	0	0	1	0	1	0
2913:	1	1	0	0	1	0	0	0
2921:	0	0	0	0	0	1	0	0
2929:	0	0	0	0	0	0	0	1
2937:	0	0	2	0	0	0	0	1
2945:	0	1	0	0	0	0	0	0
2953:	2	0	0	2	0	0	1	0

2961:	1	2	0	0	1	0	0	1

Sample Title: HTC-A08-S001-0006-01

Channel								
2969:	0	0	0	2	0	0	0	0
2977:	0	0	0	1	0	1	1	0
2985:	1	0	1	0	0	0	1	0
2993:	0	0	0	0	0	0	0	1
3001:	1	0	0	0	1	0	0	0
3009:	0	0	0	0	1	0	0	0
3017:	0	1	0	1	0	0	0	1
3025:	0	0	0	0	0	0	0	0
3033:	0	0	0	0	1	0	0	0
3041:	0	1	0	0	1	0	0	0
3049:	0	0	0	1	1	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	1	0	0	0	0
3073:	0	0	0	0	0	0	0	0
3081:	0	0	0	2	0	1	1	0
3089:	0	0	0	0	0	2	0	1
3097:	0	0	0	0	0	1	0	0
3105:	0	2	0	0	0	0	0	0
3113:	0	0	0	0	1	0	0	0
3121:	0	1	0	0	0	0	0	0
3129:	0	0	1	0	0	1	0	0
3137:	0	0	0	0	0	0	0	1
3145:	0	0	0	1	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	1	0	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	1	0	0	0	0
3185:	0	0	0	0	2	1	0	0
3193:	0	0	0	4	0	0	0	0
3201:	0	0	0	0	0	0	0	0
3209:	0	2	1	0	0	0	0	0
3217:	0	0	0	1	0	1	0	1
3225:	0	0	0	0	0	0	0	1
3233:	1	0	0	0	0	0	0	0
3241:	0	0	0	0	0	0	1	0
3249:	0	0	0	0	0	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	1	0	0	0	0	0	0
3273:	0	0	0	0	0	1	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	1	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	1	0	0	0	0	0
3321:	0	1	0	0	0	1	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	1	0	0	1
3345:	0	1	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	1	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	0	0

3393:	0	0	0	0	0	1	1	0

Sample Title: HTC-A08-S001-0006-01

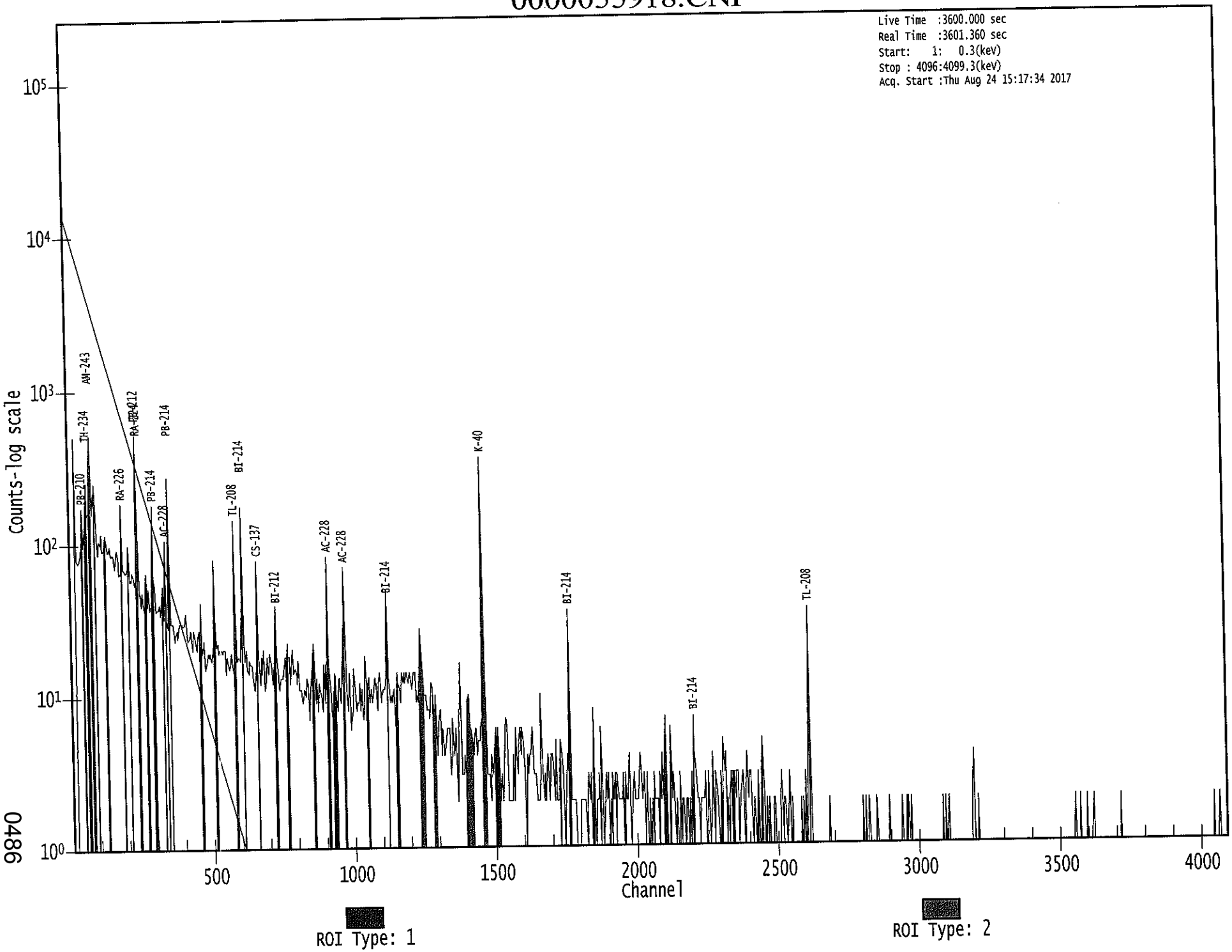
Channel								
3401:	1	0	1	0	0	0	0	0
3409:	0	0	1	0	0	0	0	0
3417:	0	0	0	0	0	0	0	1
3425:	0	0	0	1	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	1	0	0	1	0	1
3449:	0	0	0	0	0	0	1	0
3457:	0	0	0	0	0	0	0	0
3465:	0	1	0	0	0	0	0	0
3473:	0	0	0	0	0	0	1	0
3481:	0	0	0	0	0	1	0	0
3489:	0	0	0	1	0	1	0	0
3497:	0	0	0	0	0	0	0	1
3505:	1	0	0	0	1	0	0	0
3513:	0	0	0	0	1	1	1	1
3521:	0	0	1	1	0	0	1	0
3529:	0	0	0	0	1	0	0	1
3537:	0	0	0	0	0	0	0	0
3545:	0	1	0	0	0	1	0	0
3553:	0	1	2	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	2	0	0	0	0
3577:	0	0	1	0	0	0	0	1
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	2	0	1	0	0
3601:	0	1	0	0	0	0	0	0
3609:	0	0	0	0	1	0	0	0
3617:	0	0	0	2	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	1	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	1	0	0	0	0
3665:	0	0	0	1	1	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	1	0	1	0	0	0	0	1
3689:	0	0	0	0	0	0	0	0
3697:	0	1	0	0	0	0	0	0
3705:	1	0	0	0	0	0	0	0
3713:	0	0	2	0	0	0	0	0
3721:	0	1	0	0	0	1	0	1
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	1	0	1	0	0	0	0
3761:	0	0	0	0	0	1	0	0
3769:	0	0	0	0	1	0	1	0
3777:	0	0	1	0	1	0	1	1
3785:	0	0	0	0	0	0	0	0
3793:	0	1	0	0	0	0	0	0
3801:	1	0	0	0	1	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

3825:	0	0	0	0	0	1	0	0

Sample Title: HTC-A08-S001-0006-01

Channel								
3833:	0	0	0	1	0	0	0	1
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	1	0	0	0	0
3865:	0	1	0	0	0	0	0	0
3873:	1	1	0	1	1	0	0	0
3881:	0	0	0	0	0	1	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	1	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	1	0	0	0	0	0
3937:	0	0	0	0	0	0	1	0
3945:	0	0	0	0	0	0	0	0
3953:	0	1	0	1	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	1	0	0
3977:	0	0	0	0	1	0	0	0
3985:	0	1	0	0	0	0	0	0
3993:	0	0	0	0	0	0	1	0
4001:	0	0	1	1	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	1	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	1	0	0	0	0
4041:	0	1	0	1	0	2	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	1	0	0
4065:	0	0	2	1	0	0	0	0
4073:	0	1	1	0	0	0	1	1
4081:	0	0	0	0	0	0	1	0
4089:	0	0	0	0	0	0	0	0

0000055918.CNF



0486

KB 8/24/17

Apex-Gamma

Analysis Report for 1707092-05
HTC-A08-S001-0612-02

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-05
Sample Description	: HTC-A08-S001-0612-02
Sample Type	: SOIL
Sample Size	: 6.243E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 7:38:59AM
Acquisition Started	: 8/24/2017 2:16:38PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.1 seconds
Dead Time	: 0.03 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 29 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 8/19/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55913

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 3:17:13PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	76.14	76.46	0.0000	0.00
2	88.17	88.47	0.0000	0.00
3	93.05	93.34	0.0000	0.00
4	153.99	154.22	0.0000	0.00
5	185.98	186.18	0.0000	0.00
6	209.90	210.07	0.0000	0.00
7	238.77	238.90	0.0000	0.00
8	241.73	241.87	0.0000	0.00
9	270.52	270.63	0.0000	0.00
10	277.89	277.98	0.0000	0.00
11	295.11	295.19	0.0000	0.00
12	299.81	299.88	0.0000	0.00
13	308.66	308.72	0.0000	0.00
14	338.34	338.37	0.0000	0.00
15	352.00	352.02	0.0000	0.00
16	463.12	463.02	0.0000	0.00
17	485.26	485.14	0.0000	0.00
18	498.07	497.94	0.0000	0.00
19	506.66	506.52	0.0000	0.00
20	511.16	511.01	0.0000	0.00
21	560.41	560.22	0.0000	0.00
22	583.26	583.04	0.0000	0.00
23	609.54	609.29	0.0000	0.00
24	696.32	695.99	0.0000	0.00
25	727.83	727.47	0.0000	0.00
26	735.50	735.13	0.0000	0.00
27	744.97	744.59	0.0000	0.00
28	768.10	767.70	0.0000	0.00
29	773.21	772.81	0.0000	0.00
30	791.42	791.00	0.0000	0.00
31	795.32	794.89	0.0000	0.00
32	838.56	838.10	0.0000	0.00
33	857.08	856.60	0.0000	0.00
34	860.51	860.03	0.0000	0.00
35	871.18	870.69	0.0000	0.00
36	911.64	911.10	0.0000	0.00
37	941.11	940.55	0.0000	0.00
38	969.44	968.85	0.0000	0.00
39	1032.73	1032.08	0.0000	0.00
40	1120.15	1119.42	0.0000	0.00
41	1157.11	1156.35	0.0000	0.00
42	1308.21	1307.32	0.0000	0.00

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1461.17	1460.14	0.0000	0.00
44	1495.63	1494.57	0.0000	0.00
45	1583.04	1581.91	0.0000	0.00
46	1588.96	1587.83	0.0000	0.00
47	1595.18	1594.05	0.0000	0.00
48	1696.99	1695.77	0.0000	0.00
49	1729.33	1728.09	0.0000	0.00
50	1764.50	1763.23	0.0000	0.00
51	1824.63	1823.31	0.0000	0.00
52	1847.85	1846.52	0.0000	0.00
53	1946.26	1944.85	0.0000	0.00
54	1979.95	1978.52	0.0000	0.00
55	2103.35	2101.83	0.0000	0.00
56	2204.46	2202.86	0.0000	0.00
57	2614.76	2612.90	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 3:17:13PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	76.14	72 -	80	76.46	9.18E+02	125.58	1.86E+03	3.91
	2	88.17	86 -	91	88.47	2.19E+02	83.82	1.23E+03	3.07
	3	93.05	91 -	96	93.34	1.25E+02	84.60	1.29E+03	1.41
	4	153.99	150 -	158	154.22	9.76E+01	81.64	9.61E+02	2.78
	5	185.98	183 -	190	186.18	1.60E+02	73.27	7.89E+02	1.55
	6	209.90	206 -	213	210.07	9.93E+01	66.93	6.81E+02	2.58
M	7	238.77	234 -	246	238.90	8.04E+02	72.01	3.29E+02	1.60
m	8	241.73	234 -	246	241.87	1.39E+02	69.09	3.18E+02	1.61
	9	270.52	267 -	274	270.63	6.85E+01	58.10	5.19E+02	2.13
	10	277.89	275 -	282	277.98	4.56E+01	55.79	4.81E+02	1.56
M	11	295.11	290 -	311	295.19	2.39E+02	45.40	2.34E+02	1.56
m	12	299.81	290 -	311	299.88	6.44E+01	36.73	2.23E+02	1.57
m	13	308.66	290 -	311	308.72	2.69E+01	34.30	2.13E+02	1.59
	14	338.34	335 -	342	338.37	1.79E+02	51.81	3.28E+02	1.90
	15	352.00	348 -	356	352.02	4.45E+02	60.40	2.86E+02	1.42
	16	463.12	459 -	465	463.02	5.51E+01	33.22	1.60E+02	2.07
	17	485.26	482 -	489	485.14	4.33E+01	34.12	1.67E+02	4.83
	18	498.07	493 -	503	497.94	3.72E+01	42.21	2.12E+02	7.91
M	19	506.66	505 -	514	506.52	1.95E+01	11.62	3.09E+01	2.09
m	20	511.16	505 -	514	511.01	1.91E+02	37.51	1.20E+02	2.09
	21	560.41	557 -	563	560.22	2.54E+01	29.77	1.41E+02	1.17
	22	583.26	578 -	587	583.04	2.98E+02	52.58	2.25E+02	1.52
	23	609.54	605 -	613	609.29	2.88E+02	51.31	2.24E+02	1.77
	24	696.32	694 -	698	695.99	2.15E+01	21.41	8.30E+01	2.12
	25	727.83	724 -	732	727.47	5.41E+01	34.35	1.48E+02	1.73
	26	735.50	733 -	738	735.13	2.05E+01	21.10	6.90E+01	2.12
	27	744.97	740 -	748	744.59	3.29E+01	27.15	9.03E+01	3.66
M	28	768.10	761 -	779	767.70	3.33E+01	27.06	8.24E+01	2.69
m	29	773.21	761 -	779	772.81	2.61E+01	24.77	8.50E+01	2.23
M	30	791.42	790 -	800	791.00	1.41E+01	9.54	1.89E+01	1.86
m	31	795.32	790 -	800	794.89	4.29E+01	23.13	6.87E+01	2.05
	32	838.56	827 -	846	838.10	7.05E+01	49.32	1.75E+02	15.22
M	33	857.08	854 -	865	856.60	1.64E+01	16.14	3.50E+01	2.32
m	34	860.51	854 -	865	860.03	4.60E+01	24.18	6.64E+01	2.33
	35	871.18	866 -	875	870.69	2.27E+01	27.33	9.05E+01	3.40
	36	911.64	907 -	915	911.10	1.47E+02	37.83	1.27E+02	1.62
	37	941.11	938 -	943	940.55	1.67E+01	17.58	4.45E+01	2.15
	38	969.44	965 -	972	968.85	1.03E+02	36.77	1.42E+02	2.01
	39	1032.73	1029 -	1035	1032.08	2.15E+01	18.31	4.51E+01	4.39
	40	1120.15	1115 -	1123	1119.42	6.61E+01	34.23	1.40E+02	2.35

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1157.11	1153 -	1159	1156.35	1.86E+01	22.75	8.09E+01	1.95
	42	1308.21	1304 -	1311	1307.32	1.90E+01	17.78	4.00E+01	3.00
	43	1461.17	1453 -	1465	1460.14	7.93E+02	61.52	7.41E+01	2.49
	44	1495.63	1492 -	1497	1494.57	7.00E+00	5.29	0.00E+00	2.22
M	45	1583.04	1577 -	1590	1581.91	1.27E+01	18.47	3.79E+01	3.28
m	46	1588.96	1577 -	1590	1587.83	1.62E+01	13.89	3.22E+01	2.59
	47	1595.18	1591 -	1600	1594.05	1.55E+01	16.94	2.50E+01	9.22
	48	1696.99	1693 -	1699	1695.77	5.50E+00	7.78	7.00E+00	2.59
	49	1729.33	1720 -	1733	1728.09	2.66E+01	15.30	1.48E+01	3.45
	50	1764.50	1758 -	1766	1763.23	4.47E+01	17.12	1.67E+01	2.43
	51	1824.63	1819 -	1826	1823.31	7.00E+00	8.72	8.00E+00	1.31
	52	1847.85	1842 -	1850	1846.52	1.39E+01	9.18	4.19E+00	3.08
	53	1946.26	1940 -	1948	1944.85	8.77E+00	9.62	8.46E+00	4.65
	54	1979.95	1974 -	1981	1978.52	4.86E+00	6.63	4.29E+00	1.87
	55	2103.35	2097 -	2106	2101.83	2.45E+01	11.53	5.07E+00	2.25
	56	2204.46	2197 -	2206	2202.86	1.63E+01	13.08	1.53E+01	2.63
	57	2614.76	2606 -	2618	2612.90	1.02E+02	22.81	1.34E+01	3.59

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 3:17:13PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	76.14	72 -	80	9.18E+02	125.58	1.86E+03	9.04E+01
	2	88.17	86 -	91	2.19E+02	83.82	1.23E+03	6.45E+01
	3	93.05	91 -	96	1.25E+02	84.60	1.29E+03	6.71E+01
	4	153.99	150 -	158	9.76E+01	81.64	9.61E+02	6.51E+01
	5	185.98	183 -	190	1.60E+02	73.27	7.89E+02	5.65E+01
	6	209.90	206 -	213	9.93E+01	66.93	6.81E+02	5.25E+01
M	7	238.77	234 -	246	8.04E+02	72.01	3.29E+02	2.98E+01
m	8	241.73	234 -	246	1.39E+02	69.09	3.18E+02	2.93E+01
	9	270.52	267 -	274	6.85E+01	58.10	5.19E+02	4.58E+01
	10	277.89	275 -	282	4.56E+01	55.79	4.81E+02	4.45E+01
M	11	295.11	290 -	311	2.39E+02	45.40	2.34E+02	2.51E+01

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	12	299.81	290 -	311	6.44E+01	36.73	2.23E+02	2.45E+01
m	13	308.66	290 -	311	2.69E+01	34.30	2.13E+02	2.40E+01
	14	338.34	335 -	342	1.79E+02	51.81	3.28E+02	3.65E+01
	15	352.00	348 -	356	4.45E+02	60.40	2.86E+02	3.55E+01
	16	463.12	459 -	465	5.51E+01	33.22	1.60E+02	2.44E+01
	17	485.26	482 -	489	4.33E+01	34.12	1.67E+02	2.59E+01
	18	498.07	493 -	503	3.72E+01	42.21	2.12E+02	3.32E+01
M	19	506.66	505 -	514	1.95E+01	11.62	3.09E+01	9.13E+00
m	20	511.16	505 -	514	1.91E+02	37.51	1.20E+02	1.80E+01
	21	560.41	557 -	563	2.54E+01	29.77	1.41E+02	2.30E+01
	22	583.26	578 -	587	2.98E+02	52.58	2.25E+02	3.26E+01
	23	609.54	605 -	613	2.88E+02	51.31	2.24E+02	3.16E+01
	24	696.32	694 -	698	2.15E+01	21.41	8.30E+01	1.59E+01
	25	727.83	724 -	732	5.41E+01	34.35	1.48E+02	2.55E+01
	26	735.50	733 -	738	2.05E+01	21.10	6.90E+01	1.57E+01
	27	744.97	740 -	748	3.29E+01	27.15	9.03E+01	2.02E+01
M	28	768.10	761 -	779	3.33E+01	27.06	8.24E+01	1.49E+01
m	29	773.21	761 -	779	2.61E+01	24.77	8.50E+01	1.52E+01
M	30	791.42	790 -	800	1.41E+01	9.54	1.89E+01	7.14E+00
m	31	795.32	790 -	800	4.29E+01	23.13	6.87E+01	1.36E+01
	32	838.56	827 -	846	7.05E+01	49.32	1.75E+02	3.81E+01
M	33	857.08	854 -	865	1.64E+01	16.14	3.50E+01	9.72E+00
m	34	860.51	854 -	865	4.60E+01	24.18	6.64E+01	1.34E+01
	35	871.18	866 -	875	2.27E+01	27.33	9.05E+01	2.11E+01
	36	911.64	907 -	915	1.47E+02	37.83	1.27E+02	2.38E+01
	37	941.11	938 -	943	1.67E+01	17.58	4.45E+01	1.28E+01
	38	969.44	965 -	972	1.03E+02	36.77	1.42E+02	2.52E+01
	39	1032.73	1029 -	1035	2.15E+01	18.31	4.51E+01	1.30E+01
	40	1120.15	1115 -	1123	6.61E+01	34.23	1.40E+02	2.48E+01
	41	1157.11	1153 -	1159	1.86E+01	22.75	8.09E+01	1.73E+01
	42	1308.21	1304 -	1311	1.90E+01	17.78	4.00E+01	1.27E+01
	43	1461.17	1453 -	1465	7.93E+02	61.52	7.41E+01	2.04E+01
	44	1495.63	1492 -	1497	7.00E+00	5.29	0.00E+00	0.00E+00
M	45	1583.04	1577 -	1590	1.27E+01	18.47	3.79E+01	1.01E+01
m	46	1588.96	1577 -	1590	1.62E+01	13.89	3.22E+01	9.32E+00
	47	1595.18	1591 -	1600	1.55E+01	16.94	2.50E+01	1.23E+01
	48	1696.99	1693 -	1699	5.50E+00	7.78	7.00E+00	5.10E+00
	49	1729.33	1720 -	1733	2.66E+01	15.30	1.48E+01	9.28E+00
	50	1764.50	1758 -	1766	4.47E+01	17.12	1.67E+01	8.79E+00
	51	1824.63	1819 -	1826	7.00E+00	8.72	8.00E+00	5.70E+00
	52	1847.85	1842 -	1850	1.39E+01	9.18	4.19E+00	4.40E+00
	53	1946.26	1940 -	1948	8.77E+00	9.62	8.46E+00	6.23E+00
	54	1979.95	1974 -	1981	4.86E+00	6.63	4.29E+00	4.07E+00
	55	2103.35	2097 -	2106	2.45E+01	11.53	5.07E+00	4.87E+00
	56	2204.46	2197 -	2206	1.63E+01	13.08	1.53E+01	8.45E+00
	57	2614.76	2606 -	2618	1.02E+02	22.81	1.34E+01	8.68E+00

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 3:17:13PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	76.14	72 -	80	76.46	9.18E+02	125.58	1.86E+03	.....
	2	88.17	86 -	91	88.47	2.19E+02	83.82	1.23E+03	CD-109
									LU-176
									SN-126
	3	93.05	91 -	96	93.34	1.25E+02	84.60	1.29E+03	GA-67
	4	153.99	150 -	158	154.22	9.76E+01	81.64	9.61E+02	CS-136
	5	185.98	183 -	190	186.18	1.60E+02	73.27	7.89E+02	RA-226
	6	209.90	206 -	213	210.07	9.93E+01	66.93	6.81E+02	CM-243
									GA-67
M	7	238.77	234 -	246	238.90	8.04E+02	72.01	3.29E+02	PB-212
m	8	241.73	234 -	246	241.87	1.39E+02	69.09	3.18E+02	RA-224
	9	270.52	267 -	274	270.63	6.85E+01	58.10	5.19E+02	.....
	10	277.89	275 -	282	277.98	4.56E+01	55.79	4.81E+02	CM-243
									NP-239
M	11	295.11	290 -	311	295.19	2.39E+02	45.40	2.34E+02	PB-214
m	12	299.81	290 -	311	299.88	6.44E+01	36.73	2.23E+02	BI-210M
									PB-212
									GA-67
m	13	308.66	290 -	311	308.72	2.69E+01	34.30	2.13E+02	IR-192
	14	338.34	335 -	342	338.37	1.79E+02	51.81	3.28E+02	AC-228
	15	352.00	348 -	356	352.02	4.45E+02	60.40	2.86E+02	PB-214
	16	463.12	459 -	465	463.02	5.51E+01	33.22	1.60E+02	SB-125
	17	485.26	482 -	489	485.14	4.33E+01	34.12	1.67E+02	.....
	18	498.07	493 -	503	497.94	3.72E+01	42.21	2.12E+02	RU-103
M	19	506.66	505 -	514	506.52	1.95E+01	11.62	3.09E+01	.....
m	20	511.16	505 -	514	511.01	1.91E+02	37.51	1.20E+02	.....
	21	560.41	557 -	563	560.22	2.54E+01	29.77	1.41E+02	.....
	22	583.26	578 -	587	583.04	2.98E+02	52.58	2.25E+02	TL-208
	23	609.54	605 -	613	609.29	2.88E+02	51.31	2.24E+02	BI-214
	24	696.32	694 -	698	695.99	2.15E+01	21.41	8.30E+01	PM-144

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	25	727.83	724 -	732	727.47	5.41E+01	34.35	1.48E+02	BI-212
	26	735.50	733 -	738	735.13	2.05E+01	21.10	6.90E+01	PM-146
	27	744.97	740 -	748	744.59	3.29E+01	27.15	9.03E+01	.....
M	28	768.10	761 -	779	767.70	3.33E+01	27.06	8.24E+01	.....
m	29	773.21	761 -	779	772.81	2.61E+01	24.77	8.50E+01	.....
M	30	791.42	790 -	800	791.00	1.41E+01	9.54	1.89E+01	.....
m	31	795.32	790 -	800	794.89	4.29E+01	23.13	6.87E+01	CS-134
	32	838.56	827 -	846	838.10	7.05E+01	49.32	1.75E+02	.....
M	33	857.08	854 -	865	856.60	1.64E+01	16.14	3.50E+01	.....
m	34	860.51	854 -	865	860.03	4.60E+01	24.18	6.64E+01	TL-208
	35	871.18	866 -	875	870.69	2.27E+01	27.33	9.05E+01	NB-94
	36	911.64	907 -	915	911.10	1.47E+02	37.83	1.27E+02	TL-204 AC-228
	37	941.11	938 -	943	940.55	1.67E+01	17.58	4.45E+01	.....
	38	969.44	965 -	972	968.85	1.03E+02	36.77	1.42E+02	AC-228
	39	1032.73	1029 -	1035	1032.08	2.15E+01	18.31	4.51E+01	.....
	40	1120.15	1115 -	1123	1119.42	6.61E+01	34.23	1.40E+02	BI-214 SC-46
	41	1157.11	1153 -	1159	1156.35	1.86E+01	22.75	8.09E+01	.....
	42	1308.21	1304 -	1311	1307.32	1.90E+01	17.78	4.00E+01	.....
	43	1461.17	1453 -	1465	1460.14	7.93E+02	61.52	7.41E+01	K-40
	44	1495.63	1492 -	1497	1494.57	7.00E+00	5.29	0.00E+00	.....
M	45	1583.04	1577 -	1590	1581.91	1.27E+01	18.47	3.79E+01	.....
m	46	1588.96	1577 -	1590	1587.83	1.62E+01	13.89	3.22E+01	.....
	47	1595.18	1591 -	1600	1594.05	1.55E+01	16.94	2.50E+01	.....
	48	1696.99	1693 -	1699	1695.77	5.50E+00	7.78	7.00E+00	.....
	49	1729.33	1720 -	1733	1728.09	2.66E+01	15.30	1.48E+01	.....
	50	1764.50	1758 -	1766	1763.23	4.47E+01	17.12	1.67E+01	BI-214
	51	1824.63	1819 -	1826	1823.31	7.00E+00	8.72	8.00E+00	.....
	52	1847.85	1842 -	1850	1846.52	1.39E+01	9.18	4.19E+00	.....
	53	1946.26	1940 -	1948	1944.85	8.77E+00	9.62	8.46E+00	.....
	54	1979.95	1974 -	1981	1978.52	4.86E+00	6.63	4.29E+00	.....
	55	2103.35	2097 -	2106	2101.83	2.45E+01	11.53	5.07E+00	.....
	56	2204.46	2197 -	2206	2202.86	1.63E+01	13.08	1.53E+01	BI-214
	57	2614.76	2606 -	2618	2612.90	1.02E+02	22.81	1.34E+01	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 3:17:13PM

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.14	9.18E+02	125.58	2.63E-02	2.11E-03
	2	88.17	2.19E+02	83.82	2.70E-02	2.42E-03
	3	93.05	1.25E+02	84.60	2.70E-02	2.33E-03
	4	153.99	9.76E+01	81.64	2.27E-02	1.66E-03
	5	185.98	1.60E+02	73.27	2.03E-02	1.53E-03
	6	209.90	9.93E+01	66.93	1.88E-02	1.43E-03
M	7	238.77	8.04E+02	72.01	1.72E-02	1.30E-03
m	8	241.73	1.39E+02	69.09	1.71E-02	1.28E-03
	9	270.52	6.85E+01	58.10	1.58E-02	1.16E-03
	10	277.89	4.56E+01	55.79	1.55E-02	1.12E-03
M	11	295.11	2.39E+02	45.40	1.48E-02	1.10E-03
m	12	299.81	6.44E+01	36.73	1.47E-02	1.09E-03
m	13	308.66	2.69E+01	34.30	1.44E-02	1.08E-03
	14	338.34	1.79E+02	51.81	1.34E-02	1.04E-03
	15	352.00	4.45E+02	60.40	1.31E-02	1.02E-03
	16	463.12	5.51E+01	33.22	1.06E-02	9.07E-04
	17	485.26	4.33E+01	34.12	1.03E-02	8.87E-04
	18	498.07	3.72E+01	42.21	1.01E-02	8.76E-04
M	19	506.66	1.95E+01	11.62	9.94E-03	8.69E-04
m	20	511.16	1.91E+02	37.51	9.87E-03	8.65E-04
	21	560.41	2.54E+01	29.77	9.19E-03	8.22E-04
	22	583.26	2.98E+02	52.58	8.90E-03	8.02E-04
	23	609.54	2.88E+02	51.31	8.60E-03	7.79E-04
	24	696.32	2.15E+01	21.41	7.73E-03	7.01E-04
	25	727.83	5.41E+01	34.35	7.46E-03	6.70E-04
	26	735.50	2.05E+01	21.10	7.40E-03	6.63E-04
	27	744.97	3.29E+01	27.15	7.32E-03	6.54E-04
M	28	768.10	3.33E+01	27.06	7.14E-03	6.31E-04
m	29	773.21	2.61E+01	24.77	7.10E-03	6.27E-04
M	30	791.42	1.41E+01	9.54	6.97E-03	6.09E-04
m	31	795.32	4.29E+01	23.13	6.94E-03	6.05E-04
	32	838.56	7.05E+01	49.32	6.65E-03	5.63E-04
M	33	857.08	1.64E+01	16.14	6.53E-03	5.46E-04
m	34	860.51	4.60E+01	24.18	6.51E-03	5.42E-04
	35	871.18	2.27E+01	27.33	6.44E-03	5.32E-04
	36	911.64	1.47E+02	37.83	6.21E-03	5.01E-04
	37	941.11	1.67E+01	17.58	6.05E-03	4.91E-04
	38	969.44	1.03E+02	36.77	5.90E-03	4.81E-04
	39	1032.73	2.15E+01	18.31	5.60E-03	4.59E-04
	40	1120.15	6.61E+01	34.23	5.24E-03	4.29E-04
	41	1157.11	1.86E+01	22.75	5.11E-03	4.16E-04
	42	1308.21	1.90E+01	17.78	4.64E-03	4.22E-04
	43	1461.17	7.93E+02	61.52	4.26E-03	3.88E-04
	44	1495.63	7.00E+00	5.29	4.19E-03	3.78E-04
M	45	1583.04	1.27E+01	18.47	4.02E-03	3.52E-04
m	46	1588.96	1.62E+01	13.89	4.01E-03	3.51E-04
	47	1595.18	1.55E+01	16.94	4.00E-03	3.49E-04
	48	1696.99	5.50E+00	7.78	3.84E-03	3.19E-04
	49	1729.33	2.66E+01	15.30	3.79E-03	3.10E-04
	50	1764.50	4.47E+01	17.12	3.75E-03	3.00E-04
	51	1824.63	7.00E+00	8.72	3.67E-03	2.82E-04
	52	1847.85	1.39E+01	9.18	3.64E-03	2.79E-04
	53	1946.26	8.77E+00	9.62	3.54E-03	2.79E-04

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
54	1979.95	4.86E+00	6.63	3.51E-03	2.79E-04
55	2103.35	2.45E+01	11.53	3.41E-03	2.79E-04
56	2204.46	1.63E+01	13.08	3.34E-03	2.79E-04
57	2614.76	1.02E+02	22.81	3.20E-03	2.79E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 3:17:13PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.14	9.18E+02	125.58			9.18E+02	1.26E+02
	2	88.17	2.19E+02	83.82			2.19E+02	8.38E+01
	3	93.05	1.25E+02	84.60	4.88E+01	1.30E+00	7.65E+01	8.46E+01
	4	153.99	9.76E+01	81.64			9.76E+01	8.16E+01
	5	185.98	1.60E+02	73.27	3.48E+01	7.32E+00	1.25E+02	7.36E+01
	6	209.90	9.93E+01	66.93			9.93E+01	6.69E+01
M	7	238.77	8.04E+02	72.01	7.09E+00	6.85E+00	7.97E+02	7.23E+01
m	8	241.73	1.39E+02	69.09			1.39E+02	6.91E+01
	9	270.52	6.85E+01	58.10			6.85E+01	5.81E+01
	10	277.89	4.56E+01	55.79			4.56E+01	5.58E+01
M	11	295.11	2.39E+02	45.40			2.39E+02	4.54E+01
m	12	299.81	6.44E+01	36.73			6.44E+01	3.67E+01
m	13	308.66	2.69E+01	34.30			2.69E+01	3.43E+01
	14	338.34	1.79E+02	51.81			1.79E+02	5.18E+01
	15	352.00	4.45E+02	60.40	1.04E+01	5.08E+00	4.35E+02	6.06E+01
	16	463.12	5.51E+01	33.22			5.51E+01	3.32E+01
	17	485.26	4.33E+01	34.12			4.33E+01	3.41E+01
	18	498.07	3.72E+01	42.21			3.72E+01	4.22E+01
M	19	506.66	1.95E+01	11.62			1.95E+01	1.16E+01
m	20	511.16	1.91E+02	37.51	7.08E+01	4.94E+00	1.20E+02	3.78E+01
	21	560.41	2.54E+01	29.77			2.54E+01	2.98E+01
	22	583.26	2.98E+02	52.58	5.65E+00	3.57E+00	2.92E+02	5.27E+01
	23	609.54	2.88E+02	51.31	1.07E+01	3.96E+00	2.77E+02	5.15E+01
	24	696.32	2.15E+01	21.41			2.15E+01	2.14E+01
	25	727.83	5.41E+01	34.35			5.41E+01	3.44E+01
	26	735.50	2.05E+01	21.10			2.05E+01	2.11E+01

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	27	744.97	3.29E+01	27.15			3.29E+01	2.72E+01
M	28	768.10	3.33E+01	27.06			3.33E+01	2.71E+01
m	29	773.21	2.61E+01	24.77			2.61E+01	2.48E+01
M	30	791.42	1.41E+01	9.54			1.41E+01	9.54E+00
m	31	795.32	4.29E+01	23.13			4.29E+01	2.31E+01
	32	838.56	7.05E+01	49.32			7.05E+01	4.93E+01
M	33	857.08	1.64E+01	16.14			1.64E+01	1.61E+01
m	34	860.51	4.60E+01	24.18			4.60E+01	2.42E+01
	35	871.18	2.27E+01	27.33			2.27E+01	2.73E+01
	36	911.64	1.47E+02	37.83	2.63E+00	2.49E+00	1.45E+02	3.79E+01
	37	941.11	1.67E+01	17.58			1.67E+01	1.76E+01
	38	969.44	1.03E+02	36.77			1.03E+02	3.68E+01
	39	1032.73	2.15E+01	18.31			2.15E+01	1.83E+01
	40	1120.15	6.61E+01	34.23	2.45E+00	2.38E+00	6.37E+01	3.43E+01
	41	1157.11	1.86E+01	22.75			1.86E+01	2.28E+01
	42	1308.21	1.90E+01	17.78			1.90E+01	1.78E+01
	43	1461.17	7.93E+02	61.52	5.90E+00	2.63E+00	7.87E+02	6.16E+01
	44	1495.63	7.00E+00	5.29			7.00E+00	5.29E+00
M	45	1583.04	1.27E+01	18.47			1.27E+01	1.85E+01
m	46	1588.96	1.62E+01	13.89			1.62E+01	1.39E+01
	47	1595.18	1.55E+01	16.94			1.55E+01	1.69E+01
	48	1696.99	5.50E+00	7.78			5.50E+00	7.78E+00
	49	1729.33	2.66E+01	15.30			2.66E+01	1.53E+01
	50	1764.50	4.47E+01	17.12	3.33E+00	1.73E+00	4.13E+01	1.72E+01
	51	1824.63	7.00E+00	8.72			7.00E+00	8.72E+00
	52	1847.85	1.39E+01	9.18			1.39E+01	9.18E+00
	53	1946.26	8.77E+00	9.62			8.77E+00	9.62E+00
	54	1979.95	4.86E+00	6.63			4.86E+00	6.63E+00
	55	2103.35	2.45E+01	11.53			2.45E+01	1.15E+01
	56	2204.46	1.63E+01	13.08			1.63E+01	1.31E+01
	57	2614.76	1.02E+02	22.81	4.77E+00	1.52E+00	9.75E+01	2.29E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 3:17:13PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

Corrected Area is: Original * Peak Ratio - Background

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	76.14	9.18E+02	125.58			9.18E+02	1.26E+02
	2	88.17	2.19E+02	83.82			2.19E+02	8.38E+01
	3	93.05	1.25E+02	84.60	4.88E+01	1.30E+00	7.65E+01	8.46E+01
	4	153.99	9.76E+01	81.64			9.76E+01	8.16E+01
	5	185.98	1.60E+02	73.27	3.48E+01	7.32E+00	1.25E+02	7.36E+01
	6	209.90	9.93E+01	66.93			9.93E+01	6.69E+01
M	7	238.77	8.04E+02	72.01	7.09E+00	6.85E+00	7.97E+02	7.23E+01
m	8	241.73	1.39E+02	69.09			1.39E+02	6.91E+01
	9	270.52	6.85E+01	58.10			6.85E+01	5.81E+01
	10	277.89	4.56E+01	55.79			4.56E+01	5.58E+01
M	11	295.11	2.39E+02	45.40			2.39E+02	4.54E+01
m	12	299.81	6.44E+01	36.73			6.44E+01	3.67E+01
m	13	308.66	2.69E+01	34.30			2.69E+01	3.43E+01
	14	338.34	1.79E+02	51.81			1.79E+02	5.18E+01
	15	352.00	4.45E+02	60.40	1.04E+01	5.08E+00	4.35E+02	6.06E+01
	16	463.12	5.51E+01	33.22			5.51E+01	3.32E+01
	17	485.26	4.33E+01	34.12			4.33E+01	3.41E+01
	18	498.07	3.72E+01	42.21			3.72E+01	4.22E+01
M	19	506.66	1.95E+01	11.62			1.95E+01	1.16E+01
m	20	511.16	1.91E+02	37.51	7.08E+01	4.94E+00	1.20E+02	3.78E+01
	21	560.41	2.54E+01	29.77			2.54E+01	2.98E+01
	22	583.26	2.98E+02	52.58	5.65E+00	3.57E+00	2.92E+02	5.27E+01
	23	609.54	2.88E+02	51.31	1.07E+01	3.96E+00	2.77E+02	5.15E+01
	24	696.32	2.15E+01	21.41			2.15E+01	2.14E+01
	25	727.83	5.41E+01	34.35			5.41E+01	3.44E+01
	26	735.50	2.05E+01	21.10			2.05E+01	2.11E+01
	27	744.97	3.29E+01	27.15			3.29E+01	2.72E+01
M	28	768.10	3.33E+01	27.06			3.33E+01	2.71E+01
m	29	773.21	2.61E+01	24.77			2.61E+01	2.48E+01
M	30	791.42	1.41E+01	9.54			1.41E+01	9.54E+00
m	31	795.32	4.29E+01	23.13			4.29E+01	2.31E+01
	32	838.56	7.05E+01	49.32			7.05E+01	4.93E+01
M	33	857.08	1.64E+01	16.14			1.64E+01	1.61E+01
m	34	860.51	4.60E+01	24.18			4.60E+01	2.42E+01
	35	871.18	2.27E+01	27.33			2.27E+01	2.73E+01
	36	911.64	1.47E+02	37.83	2.63E+00	2.49E+00	1.45E+02	3.79E+01
	37	941.11	1.67E+01	17.58			1.67E+01	1.76E+01
	38	969.44	1.03E+02	36.77			1.03E+02	3.68E+01
	39	1032.73	2.15E+01	18.31			2.15E+01	1.83E+01
	40	1120.15	6.61E+01	34.23	2.45E+00	2.38E+00	6.37E+01	3.43E+01
	41	1157.11	1.86E+01	22.75			1.86E+01	2.28E+01
	42	1308.21	1.90E+01	17.78			1.90E+01	1.78E+01
	43	1461.17	7.93E+02	61.52	5.90E+00	2.63E+00	7.87E+02	6.16E+01
	44	1495.63	7.00E+00	5.29			7.00E+00	5.29E+00
M	45	1583.04	1.27E+01	18.47			1.27E+01	1.85E+01
m	46	1588.96	1.62E+01	13.89			1.62E+01	1.39E+01
	47	1595.18	1.55E+01	16.94			1.55E+01	1.69E+01
	48	1696.99	5.50E+00	7.78			5.50E+00	7.78E+00
	49	1729.33	2.66E+01	15.30			2.66E+01	1.53E+01
	50	1764.50	4.47E+01	17.12	3.33E+00	1.73E+00	4.13E+01	1.72E+01
	51	1824.63	7.00E+00	8.72			7.00E+00	8.72E+00
	52	1847.85	1.39E+01	9.18			1.39E+01	9.18E+00
	53	1946.26	8.77E+00	9.62			8.77E+00	9.62E+00
	54	1979.95	4.86E+00	6.63			4.86E+00	6.63E+00

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
55	2103.35	2.45E+01	11.53			2.45E+01	1.15E+01
56	2204.46	1.63E+01	13.08			1.63E+01	1.31E+01
57	2614.76	1.02E+02	22.81	4.77E+00	1.52E+00	9.75E+01	2.29E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.980	1460.81	*	10.67	2.08E+01	2.53E+00
RU-103	0.828	497.08	*	89.00	2.92E-01	3.34E-01
CD-109	0.997	88.03	*	3.72	3.05E+00	1.21E+00
SN-126	0.944	87.57	*	37.00	2.64E-01	1.04E-01
TL-208	0.998	583.14	*	30.22	1.31E+00	2.63E-01
		860.37	*	4.48	1.90E+00	1.01E+00
		2614.66	*	35.85	1.02E+00	2.56E-01
BI-212	0.713	727.17	*	11.80	7.39E-01	4.74E-01
		1620.62		2.75		
PB-212	0.996	238.63	*	44.60	1.25E+00	1.47E-01
		300.09	*	3.41	1.55E+00	8.90E-01
BI-214	0.994	609.31	*	46.30	8.38E-01	1.73E-01
		1120.29	*	15.10	9.67E-01	5.27E-01
		1764.49	*	15.80	8.40E-01	3.56E-01
		2204.22	*	4.98	1.18E+00	9.50E-01
PB-214	0.999	295.21	*	19.19	1.01E+00	2.06E-01
		351.92	*	37.19	1.08E+00	1.72E-01
RA-224	0.914	240.98	*	3.95	2.48E+00	1.25E+00
RA-226	0.992	186.21	*	3.28	2.25E+00	4.34E+00
AC-228	0.970	338.32	*	11.40	1.40E+00	4.21E-01
		911.07	*	27.70	1.01E+00	2.77E-01
		969.11	*	16.60	1.26E+00	4.63E-01
CM-243	0.366	209.75	*	3.29	1.94E+00	1.32E+00
		228.14		10.60		
		277.60	*	14.00	2.55E-01	3.12E-01

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 3:17:13PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.14	2.54991E-01	6.84		
	3	93.05	2.12491E-02	55.30		
	4	153.99	2.71146E-02	41.82	Tol.	CS-136
	9	270.52	1.90176E-02	42.43		
m	13	308.66	7.47680E-03	63.72	Tol.	IR-192
	16	463.12	1.53086E-02	30.14	Sum	
	17	485.26	1.20177E-02	39.43	Sum	
M	19	506.66	5.42611E-03	29.74		
m	20	511.16	3.33887E-02	15.74		
	21	560.41	7.05440E-03	58.61		
	24	696.32	5.97222E-03	49.78	Tol.	PM-144
	26	735.50	5.69192E-03	51.47	Tol.	PM-146
	27	744.97	9.12749E-03	41.32		
M	28	768.10	9.26292E-03	40.57		
m	29	773.21	7.24941E-03	47.45		
M	30	791.42	3.91814E-03	33.81		
m	31	795.32	1.19120E-02	26.97	Sum	
	32	838.56	1.95956E-02	34.95		
M	33	857.08	4.56771E-03	49.08		
	35	871.18	6.31740E-03	60.09	Tol.	NB-94
	37	941.11	4.64744E-03	52.53		
	39	1032.73	5.95960E-03	42.67		
	41	1157.11	5.15301E-03	61.33		
	42	1308.21	5.27778E-03	46.78	Sum	
	44	1495.63	1.94444E-03	37.80	Sum	
M	45	1583.04	3.53261E-03	72.60		
m	46	1588.96	4.50350E-03	42.84	Sum	
	47	1595.18	4.30556E-03	54.65		
	48	1696.99	1.52778E-03	70.71	Sum	
	49	1729.33	7.39379E-03	28.73	Sum	
	51	1824.63	1.94444E-03	62.27		
	52	1847.85	3.86285E-03	33.00	Sum	
	53	1946.26	2.43590E-03	54.84		
	54	1979.95	1.34921E-03	68.28	Sum	

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
55	2103.35	6.79527E-03	23.57	S-Esc	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.98	1460.81	*	10.67	2.08E+01	2.53E+00
RU-103	0.82	497.08	*	89.00	2.92E-01	3.34E-01
CD-109	0.99	88.03	*	3.72	3.05E+00	1.21E+00
SN-126	0.94	87.57	*	37.00	2.64E-01	1.04E-01
TL-208	0.99	583.14	*	30.22	1.31E+00	2.63E-01
		860.37	*	4.48	1.90E+00	1.01E+00
		2614.66	*	35.85	1.02E+00	2.56E-01
BI-212	0.71	727.17	*	11.80	7.39E-01	4.74E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	1.25E+00	1.47E-01
		300.09	*	3.41	1.55E+00	8.90E-01
BI-214	0.99	609.31	*	46.30	8.38E-01	1.73E-01
		1120.29	*	15.10	9.67E-01	5.27E-01
		1764.49	*	15.80	8.40E-01	3.56E-01
		2204.22	*	4.98	1.18E+00	9.50E-01
PB-214	0.99	295.21	*	19.19	1.01E+00	2.06E-01
		351.92	*	37.19	1.08E+00	1.72E-01
RA-224	0.91	240.98	*	3.95	2.48E+00	1.25E+00
RA-226	0.99	186.21	*	3.28	2.25E+00	4.34E+00
AC-228	0.97	338.32	*	11.40	1.40E+00	4.21E-01
		911.07	*	27.70	1.01E+00	2.77E-01
		969.11	*	16.60	1.26E+00	4.63E-01
CM-243	0.36	209.75	*	3.29	1.94E+00	1.32E+00
		228.14		10.60		
		277.60	*	14.00	2.55E-01	3.12E-01

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.980	2.08E+01	2.53E+00	
	RU-103	0.828	2.92E-01	3.34E-01	
?	CD-109	0.997	3.05E+00	1.21E+00	
?	SN-126	0.944	2.64E-01	1.04E-01	
	TL-208	0.998	1.18E+00	1.81E-01	
	BI-212	0.713	7.39E-01	4.74E-01	
	PB-212	0.996	1.26E+00	1.45E-01	
	BI-214	0.994	8.57E-01	1.47E-01	
	PB-214	0.999	1.05E+00	1.32E-01	
	RA-224	0.914	2.48E+00	1.25E+00	
	RA-226	0.992	2.25E+00	4.34E+00	
	AC-228	0.970	1.16E+00	2.07E-01	
	CM-243	0.366	3.44E-01	3.03E-01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 3:17:13PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.14	2.54991E-01	6.84		
	3	93.05	2.12491E-02	55.30		
	4	153.99	2.71146E-02	41.82	Tol.	CS-136
	9	270.52	1.90176E-02	42.43		
m	13	308.66	7.47680E-03	63.72	Tol.	IR-192
	16	463.12	1.53086E-02	30.14	Sum	
	17	485.26	1.20177E-02	39.43	Sum	
M	19	506.66	5.42611E-03	29.74		
m	20	511.16	3.33887E-02	15.74		
	21	560.41	7.05440E-03	58.61		
	24	696.32	5.97222E-03	49.78	Tol.	PM-144
	26	735.50	5.69192E-03	51.47	Tol.	PM-146
	27	744.97	9.12749E-03	41.32		
M	28	768.10	9.26292E-03	40.57		
m	29	773.21	7.24941E-03	47.45		
M	30	791.42	3.91814E-03	33.81		
m	31	795.32	1.19120E-02	26.97	Sum	
	32	838.56	1.95956E-02	34.95		
M	33	857.08	4.56771E-03	49.08		
	35	871.18	6.31740E-03	60.09	Tol.	NB-94
	37	941.11	4.64744E-03	52.53		
	39	1032.73	5.95960E-03	42.67		
	41	1157.11	5.15301E-03	61.33		
	42	1308.21	5.27778E-03	46.78	Sum	
	44	1495.63	1.94444E-03	37.80	Sum	
M	45	1583.04	3.53261E-03	72.60		
m	46	1588.96	4.50350E-03	42.84	Sum	
	47	1595.18	4.30556E-03	54.65		
	48	1696.99	1.52778E-03	70.71	Sum	
	49	1729.33	7.39379E-03	28.73	Sum	
	51	1824.63	1.94444E-03	62.27		
	52	1847.85	3.86285E-03	33.00	Sum	
	53	1946.26	2.43590E-03	54.84		
	54	1979.95	1.34921E-03	68.28	Sum	
	55	2103.35	6.79527E-03	23.57	S-Esc	

Analysis Report for 1707092-05

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M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	-6.11E-02	1.65E+00	1.65E+00
+	NA-22	1274.54		99.94	-3.34E-02	7.94E-02	7.94E-02
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	-8.71E-03	3.52E-02	3.52E-02
+	K-40	1460.81	*	10.67	2.08E+01	1.17E+00	1.17E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	2.51E-02	4.66E-02	4.66E-02
		78.34		96.00	3.02E-02		5.24E-02
+	SC-46	889.25		99.98	-4.02E-02	1.63E-01	1.63E-01
		1120.51		99.99	2.32E-01		2.79E-01
+	V-48	983.52		99.98	2.04E-01	5.38E+00	5.38E+00
		1312.10		97.50	-5.39E-01		5.84E+00
+	CR-51	320.08		9.83	-3.43E-01	6.06E+00	6.06E+00
+	MN-54	834.83		99.97	-6.65E-03	9.05E-02	9.05E-02
+	CO-56	846.75		99.96	9.55E-03	1.37E-01	1.37E-01
		1037.75		14.03	-1.96E-01		1.18E+00
		1238.25		67.00	1.78E-01		4.00E-01
		1771.40		15.51	-1.02E+00		9.10E-01
		2598.48		16.90	-3.11E-01		5.79E-01
+	CO-57	122.06		85.51	1.22E-02	4.99E-02	4.99E-02
		136.48		10.60	-6.11E-01		4.87E-01
+	CO-58	810.76		99.40	-8.03E-02	1.64E-01	1.64E-01
+	FE-59	1099.22		56.50	-3.10E-01	5.96E-01	5.96E-01
		1291.56		43.20	1.83E-02		8.42E-01
+	CO-60	1173.22		100.00	-1.84E-02	7.33E-02	8.45E-02
		1332.49		100.00	4.14E-03		7.33E-02
+	ZN-65	1115.52		50.75	1.50E-02	2.49E-01	2.49E-01
+	GA-67	93.31		35.70	5.11E+08	2.38E+08	2.38E+08
		208.95		2.24	3.17E+09		4.30E+09
		300.22		16.00	6.04E+08		6.29E+08
+	SE-75	121.11		16.70	-1.26E-01	1.23E-01	3.45E-01

Analysis Report for 1707092-05

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	1.74E-02	1.23E-01	1.23E-01
		264.65		59.80	1.92E-02		1.28E-01
		279.53		25.20	1.08E-01		3.54E-01
		400.65		11.40	6.28E-01		7.93E-01
+	RB-82	776.52		13.00	-2.53E+00	7.63E+00	7.63E+00
+	RB-83	520.41		46.00	-1.61E-01	2.18E-01	2.18E-01
		529.64		30.30	3.38E-02		3.72E-01
		552.65		16.40	-3.35E-01		6.74E-01
+	KR-85	513.99		0.43	-1.19E+00	1.47E+01	1.47E+01
+	SR-85	513.99		99.27	-1.49E-02	1.84E-01	1.84E-01
+	Y-88	898.02		93.40	-2.17E-02	8.96E-02	1.33E-01
		1836.01		99.38	-5.65E-03		8.96E-02
+	MO-93	263.06		56.72	-5.46E-02	5.92E-02	7.55E-02
		684.67		99.68	-7.09E-03		5.92E-02
		1477.11		99.08	2.04E-02		6.23E-02
+	NB-93M	16.57		9.43	0.00E+00	7.03E+00	7.03E+00
+	NB-94	702.63		100.00	-1.47E-03	6.52E-02	6.52E-02
		871.10		100.00	3.76E-02		6.83E-02
+	NB-95	765.79		99.81	3.11E-01	5.57E-01	5.57E-01
+	NB-95M	235.69		25.00	-5.31E+08	6.18E+07	6.18E+07
+	ZR-95	724.18		43.70	4.81E-02	3.63E-01	5.41E-01
		756.72		55.30	1.39E-01		3.63E-01
+	MO-99	181.06		6.20	3.23E+10	4.21E+10	7.05E+10
		739.58		12.80	-4.73E+10		4.21E+10
		778.00		4.50	9.83E+09		1.28E+11
+	RU-103	497.08	*	89.00	2.92E-01	5.43E-01	5.43E-01
+	RU-106	621.84		9.80	3.23E-01	7.67E-01	7.67E-01
+	AG-108M	433.93		89.90	-1.89E-02	5.25E-02	5.25E-02
		614.37		90.40	2.05E-03		6.74E-02
		722.95		90.50	2.06E-02		8.09E-02
+	CD-109	88.03	*	3.72	3.05E+00	1.83E+00	1.83E+00
+	AG-110M	657.75		93.14	-6.81E-02	8.83E-02	8.83E-02
		677.61		10.53	1.41E-01		7.51E-01
		706.67		16.46	-7.38E-02		5.26E-01
		763.93		21.98	-3.43E-01		4.05E-01
		884.67		71.63	4.43E-02		1.27E-01
		1384.27		23.94	9.10E-02		3.67E-01
+	CD-113M	263.70		0.02	-1.50E+01	1.88E+02	1.88E+02
+	SN-113	255.12		1.93	-1.45E+00	1.34E-01	4.11E+00
		391.69		64.90	-5.97E-02		1.34E-01
+	TE123M	159.00		84.10	2.51E-03	9.05E-02	9.05E-02
+	SB-124	602.71		97.87	-5.62E-02	2.08E-01	2.08E-01
		645.85		7.26	9.60E-01		2.80E+00
		722.78		11.10	7.42E-01		2.05E+00
		1691.02		49.00	-8.77E-02		3.04E-01
+	I-125	35.49		6.49	-4.11E+01	6.35E+00	6.35E+00
+	SB-125	176.33		6.89	-2.38E-01	1.90E-01	7.09E-01
		427.89		29.33	-4.76E-04		1.90E-01

Analysis Report for 1707092-05

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	463.38		10.35	5.38E-01	1.90E-01	6.02E-01
		600.56		17.80	-1.15E-01		3.77E-01
		635.90		11.32	-1.83E-01		5.70E-01
+	SB-126	414.70		83.30	1.09E+01	1.67E+01	1.67E+01
		666.33		99.60	-4.40E+00		1.80E+01
		695.00		99.60	-2.07E+00		1.89E+01
		720.50		53.80	2.02E+01		3.69E+01
+	SN-126	87.57	*	37.00	2.64E-01	1.59E-01	1.59E-01
+	SB-127	473.00		25.00	1.60E+05	1.17E+07	1.32E+07
		685.20		35.70	5.24E+05		1.17E+07
		783.80		14.70	6.81E+05		3.14E+07
+	I-129	29.78		57.00	-6.28E-02	4.15E-01	4.15E-01
		33.60		13.20	8.77E+00		2.09E+00
		39.58		7.52	6.98E-01		1.23E+00
+	I-131	284.30		6.05	0.00E+00	3.29E+02	4.43E+03
		364.48		81.20	7.06E+01		3.29E+02
		636.97		7.26	-1.95E+03		4.76E+03
		722.89		1.80	5.89E+03		2.31E+04
+	TE-132	49.72		13.10	1.70E+08	1.04E+08	7.12E+08
		228.16		88.00	-1.68E+06		1.04E+08
+	BA-133	81.00		33.00	6.57E-02	7.42E-02	1.16E-01
		302.84		17.80	-3.19E-01		2.82E-01
		356.01		60.00	5.83E-03		7.42E-02
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	3.22E+04	5.69E+04	5.69E+04
+	CS-134	563.23		8.38	-1.83E-01	7.65E-02	6.01E-01
		569.32		15.43	9.98E-02		3.71E-01
		604.70		97.60	1.58E-02		7.65E-02
		795.84		85.40	6.57E-02		1.05E-01
		801.93		8.73	-1.42E-01		8.42E-01
+	CS-135	268.24		16.00	-2.11E-01	3.12E-01	3.12E-01
+	@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41		28.60	1.00E+26		1.00E+26
	@	1678.03		9.54	1.00E+26		1.00E+26
+	CS-136	153.22		7.46	6.24E+01	1.14E+01	1.25E+02
		163.89		4.61	-6.08E+01		1.83E+02
		176.55		13.56	-2.22E+01		6.62E+01
		273.65		12.66	-9.95E+01		7.75E+01
		340.57		48.50	-6.05E+00		2.39E+01
		818.50		99.70	-5.77E+00		1.14E+01
		1048.07		79.60	8.57E+00		1.88E+01
		1235.34		19.70	2.60E+01		1.12E+02
+	CS-137	661.65		85.12	4.76E-02	8.56E-02	8.56E-02
+	LA-138	788.74		34.00	5.10E-02	1.01E-01	2.06E-01
		1435.80		66.00	2.74E-02		1.01E-01
+	CE-139	165.85		80.35	2.97E-02	8.90E-02	8.90E-02
+	BA-140	162.64		6.70	3.75E+01	4.43E+01	1.49E+02
		304.84		4.50	6.77E+01		2.53E+02
		423.70		3.20	-1.19E+02		3.60E+02

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

		Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
		BA-140	437.55	2.00	-9.31E+01	4.43E+01	5.41E+02
			537.32	25.00	-1.17E+01		4.43E+01
+		LA-140	328.77	20.50	2.26E+01	1.97E+01	6.00E+01
			487.03	45.50	2.21E+00		2.67E+01
			815.85	23.50	9.77E+00		6.03E+01
			1596.49	95.49	1.37E+01		1.97E+01
+		CE-141	145.44	48.40	3.99E-01	8.13E-01	8.13E-01
+	@	CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@		293.26	42.00	1.00E+26		1.00E+26
	@		664.55	5.20	1.00E+26		1.00E+26
+		CE-144	133.54	10.80	7.61E-03	3.83E-01	3.83E-01
+		PM-144	476.78	42.00	-5.00E-03	7.28E-02	1.35E-01
			618.01	98.60	1.05E-02		7.28E-02
			696.49	99.49	-5.82E-03		8.39E-02
+		PM-145	36.85	21.70	-1.07E-01	2.74E-01	5.21E-01
			37.36	39.70	3.66E-02		2.74E-01
			42.30	15.10	-4.16E-02		4.50E-01
			72.40	2.31	-8.80E+00		1.87E+00
+		PM-146	453.90	39.94	7.84E-02	1.36E-01	1.36E-01
			735.90	14.01	2.97E-02		4.69E-01
			747.13	13.10	-1.24E-01		4.96E-01
+		ND-147	91.11	28.90	-1.83E+02	8.13E+01	8.13E+01
			531.02	13.10	3.09E+01		2.23E+02
+		PM-149	285.90	3.10	3.55E+13	6.98E+13	6.98E+13
+		EU-152	121.78	20.50	4.00E-02	1.63E-01	1.63E-01
			244.69	5.40	-1.60E+00		9.24E-01
			344.27	19.13	7.48E-02		2.45E-01
			778.89	9.20	5.16E-02		6.75E-01
			964.01	10.40	-3.92E-02		8.97E-01
			1085.78	7.22	9.23E-02		1.11E+00
			1112.02	9.60	8.26E-02		9.75E-01
			1407.95	14.94	2.64E-01		5.33E-01
+		GD-153	97.43	31.30	-3.05E-02	1.39E-01	1.39E-01
			103.18	22.20	1.69E-02		1.89E-01
+		EU-154	123.07	40.50	-5.27E-02	8.09E-02	8.09E-02
			723.30	19.70	9.66E-02		3.79E-01
			873.19	11.50	2.66E-01		5.75E-01
			996.32	10.30	-4.28E-01		6.64E-01
			1004.76	17.90	2.24E-02		4.10E-01
			1274.45	35.50	-8.93E-02		2.12E-01
+		EU-155	86.50	30.90	1.64E-01	1.52E-01	1.52E-01
			105.30	20.70	-1.94E-02		1.59E-01
+		EU-156	811.77	10.40	-4.65E+00	5.81E+01	5.81E+01
			1153.47	7.20	7.53E+00		1.14E+02
			1230.71	8.90	4.44E+01		1.15E+02
+		HO-166M	184.41	72.60	1.44E-01	7.91E-02	7.91E-02
			280.45	29.60	-1.50E-01		1.52E-01
			410.94	11.10	1.64E-01		4.81E-01
			711.69	54.10	1.44E-02		1.18E-01

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TM-171	66.72		0.14	-1.10E+01	3.33E+01	3.33E+01
+	HF-172	67.35		5.31	4.95E-01	3.33E-01	9.19E-01
		125.81		11.30	1.32E-01		3.33E-01
+	LU-172	181.53		20.60	2.04E+03	4.58E+03	7.28E+03
		900.72		29.81	-8.26E+02		7.00E+03
		1093.66		62.50	3.03E+03		4.58E+03
+	LU-173	100.72		5.24	5.23E-01	3.10E-01	7.36E-01
		272.11		21.20	3.16E-01		3.10E-01
+	HF-175	343.40		84.00	1.50E-02	1.48E-01	1.48E-01
+	LU-176	88.34		13.30	5.14E-01	5.38E-02	3.58E-01
		201.83		86.00	9.23E-03		5.38E-02
		306.78		94.00	3.90E-02		5.50E-02
+	HF-181	133.02		41.70	1.36E-02	2.90E-01	4.10E-01
		345.85		17.20	4.31E-01		1.35E+00
		482.03		82.80	-5.29E-02		2.90E-01
+	TA-182	67.75		41.20	1.05E-01	1.96E-01	1.96E-01
		1121.30		34.90	7.63E-01		6.58E-01
		1189.05		16.23	-2.91E-01		9.95E-01
		1221.41		26.98	1.74E-01		6.68E-01
		1231.02		11.44	6.52E-01		1.70E+00
+	IR-192	308.46		29.68	1.30E-01	2.56E-01	4.19E-01
		468.07		48.10	-3.17E-02		2.56E-01
+	HG-203	279.19		77.30	1.60E-01	2.99E-01	2.99E-01
+	TL-204	374.74		94.11	-7.17E-03	5.20E-02	5.20E-02
		899.15		99.16	-2.71E-04		6.89E-02
		911.74		91.10	3.40E-01		1.54E-01
+	BI-207	569.67		97.72	1.45E-02	5.37E-02	5.37E-02
		1063.62		74.90	-1.22E-02		9.91E-02
+	TL-208	583.14	*	30.22	1.31E+00	2.27E-01	3.07E-01
		860.37	*	4.48	1.90E+00		2.01E+00
		2614.66	*	35.85	1.02E+00		2.27E-01
+	BI-210M	262.00		45.00	7.97E-03	9.72E-02	9.72E-02
		300.00		23.00	2.32E-01		2.41E-01
+	PB-210	46.50		4.25	1.69E+00	1.47E+00	1.47E+00
+	PB-211	404.84		2.90	-2.42E-01	1.64E+00	1.64E+00
		831.96		2.90	-9.84E-01		2.25E+00
+	BI-212	727.17	*	11.80	7.39E-01	7.34E-01	7.34E-01
		1620.62		2.75	2.76E-02		2.35E+00
+	PB-212	238.63	*	44.60	1.25E+00	2.09E-01	2.09E-01
		300.09	*	3.41	1.55E+00		4.29E+00
+	BI-214	609.31	*	46.30	8.38E-01	2.03E-01	2.03E-01
		1120.29	*	15.10	9.67E-01		8.00E-01
		1764.49	*	15.80	8.40E-01		4.37E-01
		2204.22	*	4.98	1.18E+00		1.42E+00
+	PB-214	295.21	*	19.19	1.01E+00	1.86E-01	7.55E-01
		351.92	*	37.19	1.08E+00		1.86E-01
+	RN-219	401.80		6.50	-7.60E-01	7.24E-01	7.24E-01
+	RA-223	323.87		3.88	-9.48E-02	1.24E+00	1.24E+00

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-224	240.98	*	3.95	2.48E+00	2.36E+00	2.36E+00
+	RA-225	40.00		31.00	1.80E+01	3.19E+01	3.19E+01
+	RA-226	186.21	*	3.28	2.25E+00	2.13E+00	2.13E+00
+	TH-227	50.10		8.40	1.42E-01	5.82E-01	5.94E-01
		236.00		11.50	-5.00E+00		5.82E-01
		256.20		6.30	-2.67E-01		6.94E-01
+	AC-228	338.32	*	11.40	1.40E+00	3.56E-01	5.94E-01
		911.07	*	27.70	1.01E+00		3.56E-01
		969.11	*	16.60	1.26E+00		6.52E-01
+	TH-230	48.44		16.90	-3.48E-01	3.03E-01	3.03E-01
		62.85		4.60	8.89E-01		1.06E+00
		67.67		0.37	6.40E+00		1.19E+01
+	PA-231	283.67		1.60	0.00E+00	2.14E+00	2.94E+00
		302.67		2.30	-2.43E+00		2.14E+00
+	TH-231	25.64		14.70	0.00E+00	1.25E-01	1.25E-01
		84.21		6.40	5.52E-01		6.12E-01
+	PA-233	311.98		38.60	5.15E-01	1.56E+00	1.56E+00
+	PA-234	131.20		20.40	5.37E-03	1.74E-01	1.74E-01
		733.99		8.80	2.81E-01		7.68E-01
		946.00		12.00	-3.57E-03		4.96E-01
+	PA-234M	1001.03		0.92	3.96E+00	8.24E+00	8.24E+00
+	TH-234	63.29		3.80	1.63E+00	1.28E+00	1.28E+00
+	U-235	143.76		10.50	-2.49E-02	4.39E-01	4.39E-01
		163.35		4.70	-3.03E-01		9.09E-01
		205.31		4.70	-5.47E-03		9.60E-01
+	NP-237	86.50		12.60	3.88E-01	3.58E-01	3.58E-01
+	NP-239	106.10		22.70	-1.13E+11	9.27E+11	9.27E+11
		228.18		10.70	-4.95E+10		3.05E+12
		277.60		14.10	1.60E+12		2.46E+12
+	AM-241	59.54		35.90	2.09E-02	1.25E-01	1.25E-01
+	AM-243	74.67		66.00	-1.06E-01	8.76E-02	8.76E-02
+	CM-243	209.75	*	3.29	1.94E+00	4.69E-01	2.11E+00
		228.14		10.60	-7.61E-03		4.69E-01
		277.60	*	14.00	2.55E-01		5.12E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	1.65E+00	1.65E+00	-6.11E-02	7.70E-01
	NA-22	1274.54		99.94	7.94E-02	7.94E-02	-3.34E-02	3.60E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	3.52E-02	3.52E-02	-8.71E-03	1.32E-02
+	K-40	1460.81	*	10.67	1.17E+00	1.17E+00	2.08E+01	5.52E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	4.66E-02	4.66E-02	2.51E-02	2.26E-02
		78.34		96.00	5.24E-02		3.02E-02	2.56E-02
	SC-46	889.25		99.98	1.63E-01	1.63E-01	-4.02E-02	7.57E-02
		1120.51		99.99	2.79E-01		2.32E-01	1.32E-01
	V-48	983.52		99.98	5.38E+00	5.38E+00	2.04E-01	2.47E+00
		1312.10		97.50	5.84E+00		-5.39E-01	2.64E+00
	CR-51	320.08		9.83	6.06E+00	6.06E+00	-3.43E-01	2.88E+00
	MN-54	834.83		99.97	9.05E-02	9.05E-02	-6.65E-03	4.22E-02
	CO-56	846.75		99.96	1.37E-01	1.37E-01	9.55E-03	6.24E-02
		1037.75		14.03	1.18E+00		-1.96E-01	5.39E-01
		1238.25		67.00	4.00E-01		1.78E-01	1.88E-01
		1771.40		15.51	9.10E-01		-1.02E+00	3.87E-01
		2598.48		16.90	5.79E-01		-3.11E-01	2.17E-01
	CO-57	122.06		85.51	4.99E-02	4.99E-02	1.22E-02	2.40E-02
		136.48		10.60	4.87E-01		-6.11E-01	2.35E-01
	CO-58	810.76		99.40	1.64E-01	1.64E-01	-8.03E-02	7.54E-02
	FE-59	1099.22		56.50	5.96E-01	5.96E-01	-3.10E-01	2.72E-01
		1291.56		43.20	8.42E-01		1.83E-02	3.83E-01
	CO-60	1173.22		100.00	8.45E-02	7.33E-02	-1.84E-02	3.89E-02
		1332.49		100.00	7.33E-02		4.14E-03	3.30E-02
	ZN-65	1115.52		50.75	2.49E-01	2.49E-01	1.50E-02	1.16E-01
	GA-67	93.31		35.70	2.38E+08	2.38E+08	5.11E+08	1.16E+08
		208.95		2.24	4.30E+09		3.17E+09	2.08E+09
		300.22		16.00	6.29E+08		6.04E+08	3.02E+08
	SE-75	121.11		16.70	3.45E-01	1.23E-01	-1.26E-01	1.66E-01
		136.00		59.20	1.23E-01		1.74E-02	5.95E-02
		264.65		59.80	1.28E-01		1.92E-02	6.10E-02
		279.53		25.20	3.54E-01		1.08E-01	1.70E-01
		400.65		11.40	7.93E-01		6.28E-01	3.75E-01
	RB-82	776.52		13.00	7.63E+00	7.63E+00	-2.53E+00	3.55E+00
	RB-83	520.41		46.00	2.18E-01	2.18E-01	-1.61E-01	1.01E-01
		529.64		30.30	3.72E-01		3.38E-02	1.74E-01
		552.65		16.40	6.74E-01		-3.35E-01	3.13E-01
	KR-85	513.99		0.43	1.47E+01	1.47E+01	-1.19E+00	6.94E+00
	SR-85	513.99		99.27	1.84E-01	1.84E-01	-1.49E-02	8.71E-02

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	Y-88	898.02		93.40	1.33E-01	8.96E-02	-2.17E-02	6.14E-02
		1836.01		99.38	8.96E-02		-5.65E-03	3.62E-02
	MO-93	263.06		56.72	7.55E-02	5.92E-02	-5.46E-02	3.59E-02
		684.67		99.68	5.92E-02		-7.09E-03	2.75E-02
		1477.11		99.08	6.23E-02		2.04E-02	2.72E-02
	NB-93M	16.57		9.43	7.03E+00	7.03E+00	0.00E+00	0.00E+00
	NB-94	702.63		100.00	6.52E-02	6.52E-02	-1.47E-03	3.05E-02
		871.10		100.00	6.83E-02		3.76E-02	3.16E-02
	NB-95	765.79		99.81	5.57E-01	5.57E-01	3.11E-01	2.62E-01
	NB-95M	235.69		25.00	6.18E+07	6.18E+07	-5.31E+08	3.00E+07
	ZR-95	724.18		43.70	5.41E-01	3.63E-01	4.81E-02	2.56E-01
		756.72		55.30	3.63E-01		1.39E-01	1.70E-01
	MO-99	181.06		6.20	7.05E+10	4.21E+10	3.23E+10	3.41E+10
		739.58		12.80	4.21E+10		-4.73E+10	1.94E+10
		778.00		4.50	1.28E+11		9.83E+09	5.94E+10
+	RU-103	497.08	*	89.00	5.43E-01	5.43E-01	2.92E-01	2.61E-01
	RU-106	621.84		9.80	7.67E-01	7.67E-01	3.23E-01	3.60E-01
	AG-108M	433.93		89.90	5.25E-02	5.25E-02	-1.89E-02	2.46E-02
		614.37		90.40	6.74E-02		2.05E-03	3.16E-02
		722.95		90.50	8.09E-02		2.06E-02	3.80E-02
+	CD-109	88.03	*	3.72	1.83E+00	1.83E+00	3.05E+00	8.98E-01
	AG-110M	657.75		93.14	8.83E-02	8.83E-02	-6.81E-02	4.13E-02
		677.61		10.53	7.51E-01		1.41E-01	3.50E-01
		706.67		16.46	5.26E-01		-7.38E-02	2.46E-01
		763.93		21.98	4.05E-01		-3.43E-01	1.89E-01
		884.67		71.63	1.27E-01		4.43E-02	5.90E-02
		1384.27		23.94	3.67E-01		9.10E-02	1.63E-01
	CD-113M	263.70		0.02	1.88E+02	1.88E+02	-1.50E+01	8.94E+01
	SN-113	255.12		1.93	4.11E+00	1.34E-01	-1.45E+00	1.96E+00
		391.69		64.90	1.34E-01		-5.97E-02	6.30E-02
	TE123M	159.00		84.10	9.05E-02	9.05E-02	2.51E-03	4.37E-02
	SB-124	602.71		97.87	2.08E-01	2.08E-01	-5.62E-02	9.81E-02
		645.85		7.26	2.80E+00		9.60E-01	1.31E+00
		722.78		11.10	2.05E+00		7.42E-01	9.65E-01
		1691.02		49.00	3.04E-01		-8.77E-02	1.25E-01
	I-125	35.49		6.49	6.35E+00	6.35E+00	-4.11E+01	3.07E+00
	SB-125	176.33		6.89	7.09E-01	1.90E-01	-2.38E-01	3.42E-01
		427.89		29.33	1.90E-01		-4.76E-04	8.95E-02
		463.38		10.35	6.02E-01		5.38E-01	2.85E-01
		600.56		17.80	3.77E-01		-1.15E-01	1.77E-01
		635.90		11.32	5.70E-01		-1.83E-01	2.66E-01
	SB-126	414.70		83.30	1.67E+01	1.67E+01	1.09E+01	7.90E+00
		666.33		99.60	1.80E+01		-4.40E+00	8.43E+00
		695.00		99.60	1.89E+01		-2.07E+00	8.88E+00
		720.50		53.80	3.69E+01		2.02E+01	1.73E+01
+	SN-126	87.57	*	37.00	1.59E-01	1.59E-01	2.64E-01	7.77E-02
	SB-127	473.00		25.00	1.32E+07	1.17E+07	1.60E+05	6.17E+06
		685.20		35.70	1.17E+07		5.24E+05	5.43E+06
		783.80		14.70	3.14E+07		6.81E+05	1.46E+07
	I-129	29.78		57.00	4.15E-01	4.15E-01	-6.28E-02	2.00E-01
		33.60		13.20	2.09E+00		8.77E+00	1.02E+00
		39.58		7.52	1.23E+00		6.98E-01	5.97E-01
	I-131	284.30		6.05	4.43E+03	3.29E+02	0.00E+00	2.11E+03

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-131	364.48	81.20	3.29E+02	3.29E+02	7.06E+01	1.56E+02
	636.97	7.26	4.76E+03		-1.95E+03	2.23E+03
	722.89	1.80	2.31E+04		5.89E+03	1.09E+04
TE-132	49.72	13.10	7.12E+08	1.04E+08	1.70E+08	3.43E+08
	228.16	88.00	1.04E+08		-1.68E+06	4.99E+07
BA-133	81.00	33.00	1.16E-01	7.42E-02	6.57E-02	5.63E-02
	302.84	17.80	2.82E-01		-3.19E-01	1.34E-01
	356.01	60.00	7.42E-02		5.83E-03	3.50E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	5.69E+04	5.69E+04	3.22E+04	2.75E+04
CS-134	563.23	8.38	6.01E-01	7.65E-02	-1.83E-01	2.77E-01
	569.32	15.43	3.71E-01		9.98E-02	1.73E-01
	604.70	97.60	7.65E-02		1.58E-02	3.61E-02
	795.84	85.40	1.05E-01		6.57E-02	4.94E-02
	801.93	8.73	8.42E-01		-1.42E-01	3.91E-01
CS-135	268.24	16.00	3.12E-01	3.12E-01	-2.11E-01	1.50E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.25E+02	1.14E+01	6.24E+01	6.07E+01
	163.89	4.61	1.83E+02		-6.08E+01	8.82E+01
	176.55	13.56	6.62E+01		-2.22E+01	3.20E+01
	273.65	12.66	7.75E+01		-9.95E+01	3.72E+01
	340.57	48.50	2.39E+01		-6.05E+00	1.15E+01
	818.50	99.70	1.14E+01		-5.77E+00	5.22E+00
	1048.07	79.60	1.88E+01		8.57E+00	8.66E+00
	1235.34	19.70	1.12E+02		2.60E+01	5.29E+01
CS-137	661.65	85.12	8.56E-02	8.56E-02	4.76E-02	4.04E-02
LA-138	788.74	34.00	2.06E-01	1.01E-01	5.10E-02	9.64E-02
	1435.80	66.00	1.01E-01		2.74E-02	4.50E-02
CE-139	165.85	80.35	8.90E-02	8.90E-02	2.97E-02	4.30E-02
BA-140	162.64	6.70	1.49E+02	4.43E+01	3.75E+01	7.18E+01
	304.84	4.50	2.53E+02		6.77E+01	1.21E+02
	423.70	3.20	3.60E+02		-1.19E+02	1.70E+02
	437.55	2.00	5.41E+02		-9.31E+01	2.54E+02
	537.32	25.00	4.43E+01		-1.17E+01	2.06E+01
LA-140	328.77	20.50	6.00E+01	1.97E+01	2.26E+01	2.87E+01
	487.03	45.50	2.67E+01		2.21E+00	1.25E+01
	815.85	23.50	6.03E+01		9.77E+00	2.78E+01
	1596.49	95.49	1.97E+01		1.37E+01	8.89E+00
CE-141	145.44	48.40	8.13E-01	8.13E-01	3.99E-01	3.94E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	3.83E-01	3.83E-01	7.61E-03	1.83E-01
PM-144	476.78	42.00	1.35E-01	7.28E-02	-5.00E-03	6.30E-02
	618.01	98.60	7.28E-02		1.05E-02	3.40E-02
	696.49	99.49	8.39E-02		-5.82E-03	3.94E-02
PM-145	36.85	21.70	5.21E-01	2.74E-01	-1.07E-01	2.52E-01
	37.36	39.70	2.74E-01		3.66E-02	1.32E-01
	42.30	15.10	4.50E-01		-4.16E-02	2.17E-01
	72.40	2.31	1.87E+00		-8.80E+00	9.09E-01
PM-146	453.90	39.94	1.36E-01	1.36E-01	7.84E-02	6.43E-02

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-146	735.90	14.01	4.69E-01	1.36E-01	2.97E-02	2.18E-01
	747.13	13.10	4.96E-01		-1.24E-01	2.30E-01
ND-147	91.11	28.90	8.13E+01	8.13E+01	-1.83E+02	3.95E+01
	531.02	13.10	2.23E+02		3.09E+01	1.04E+02
PM-149	285.90	3.10	6.98E+13	6.98E+13	3.55E+13	3.34E+13
EU-152	121.78	20.50	1.63E-01	1.63E-01	4.00E-02	7.83E-02
	244.69	5.40	9.24E-01		-1.60E+00	4.44E-01
	344.27	19.13	2.45E-01		7.48E-02	1.16E-01
	778.89	9.20	6.75E-01		5.16E-02	3.12E-01
	964.01	10.40	8.97E-01		-3.92E-02	4.22E-01
	1085.78	7.22	1.11E+00		9.23E-02	5.11E-01
	1112.02	9.60	9.75E-01		8.26E-02	4.55E-01
	1407.95	14.94	5.33E-01		2.64E-01	2.41E-01
GD-153	97.43	31.30	1.39E-01	1.39E-01	-3.05E-02	6.68E-02
	103.18	22.20	1.89E-01		1.69E-02	9.06E-02
EU-154	123.07	40.50	8.09E-02	8.09E-02	-5.27E-02	3.88E-02
	723.30	19.70	3.79E-01		9.66E-02	1.78E-01
	873.19	11.50	5.75E-01		2.66E-01	2.65E-01
	996.32	10.30	6.64E-01		-4.28E-01	3.04E-01
	1004.76	17.90	4.10E-01		2.24E-02	1.89E-01
	1274.45	35.50	2.12E-01		-8.93E-02	9.63E-02
EU-155	86.50	30.90	1.52E-01	1.52E-01	1.64E-01	7.38E-02
	105.30	20.70	1.59E-01		-1.94E-02	7.66E-02
EU-156	811.77	10.40	5.81E+01	5.81E+01	-4.65E+00	2.68E+01
	1153.47	7.20	1.14E+02		7.53E+00	5.27E+01
	1230.71	8.90	1.15E+02		4.44E+01	5.40E+01
HO-166M	184.41	72.60	7.91E-02	7.91E-02	1.44E-01	3.84E-02
	280.45	29.60	1.52E-01		-1.50E-01	7.26E-02
	410.94	11.10	4.81E-01		1.64E-01	2.28E-01
	711.69	54.10	1.18E-01		1.44E-02	5.49E-02
TM-171	66.72	0.14	3.33E+01	3.33E+01	-1.10E+01	1.61E+01
HF-172	67.35	5.31	9.19E-01	3.33E-01	4.95E-01	4.46E-01
	125.81	11.30	3.33E-01		1.32E-01	1.60E-01
LU-172	181.53	20.60	7.28E+03	4.58E+03	2.04E+03	3.52E+03
	900.72	29.81	7.00E+03		-8.26E+02	3.22E+03
	1093.66	62.50	4.58E+03		3.03E+03	2.13E+03
LU-173	100.72	5.24	7.36E-01	3.10E-01	5.23E-01	3.55E-01
	272.11	21.20	3.10E-01		3.16E-01	1.49E-01
HF-175	343.40	84.00	1.48E-01	1.48E-01	1.50E-02	6.99E-02
LU-176	88.34	13.30	3.58E-01	5.38E-02	5.14E-01	1.74E-01
	201.83	86.00	5.38E-02		9.23E-03	2.59E-02
	306.78	94.00	5.50E-02		3.90E-02	2.63E-02
HF-181	133.02	41.70	4.10E-01	2.90E-01	1.36E-02	1.97E-01
	345.85	17.20	1.35E+00		4.31E-01	6.37E-01
	482.03	82.80	2.90E-01		-5.29E-02	1.35E-01
TA-182	67.75	41.20	1.96E-01	1.96E-01	1.05E-01	9.49E-02
	1121.30	34.90	6.58E-01		7.63E-01	3.13E-01
	1189.05	16.23	9.95E-01		-2.91E-01	4.61E-01
	1221.41	26.98	6.68E-01		1.74E-01	3.11E-01
	1231.02	11.44	1.70E+00		6.52E-01	7.94E-01
IR-192	308.46	29.68	4.19E-01	2.56E-01	1.30E-01	2.00E-01
	468.07	48.10	2.56E-01		-3.17E-02	1.20E-01
HG-203	279.19	77.30	2.99E-01	2.99E-01	1.60E-01	1.43E-01

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-204	374.74		94.11	5.20E-02	5.20E-02	-7.17E-03	2.45E-02
		899.15		99.16	6.89E-02		-2.71E-04	3.17E-02
		911.74		91.10	1.54E-01		3.40E-01	7.38E-02
	BI-207	569.67		97.72	5.37E-02	5.37E-02	1.45E-02	2.50E-02
		1063.62		74.90	9.91E-02		-1.22E-02	4.55E-02
+	TL-208	583.14	*	30.22	3.07E-01	2.27E-01	1.31E+00	1.47E-01
		860.37	*	4.48	2.01E+00		1.90E+00	9.48E-01
		2614.66	*	35.85	2.27E-01		1.02E+00	9.95E-02
	BI-210M	262.00		45.00	9.72E-02	9.72E-02	7.97E-03	4.63E-02
		300.00		23.00	2.41E-01		2.32E-01	1.16E-01
	PB-210	46.50		4.25	1.47E+00	1.47E+00	1.69E+00	7.12E-01
	PB-211	404.84		2.90	1.64E+00	1.64E+00	-2.42E-01	7.73E-01
		831.96		2.90	2.25E+00		-9.84E-01	1.04E+00
+	BI-212	727.17	*	11.80	7.34E-01	7.34E-01	7.39E-01	3.49E-01
		1620.62		2.75	2.35E+00		2.76E-02	1.03E+00
+	PB-212	238.63	*	44.60	2.09E-01	2.09E-01	1.25E+00	1.02E-01
		300.09	*	3.41	4.29E+00		1.55E+00	2.11E+00
+	BI-214	609.31	*	46.30	2.03E-01	2.03E-01	8.38E-01	9.75E-02
		1120.29	*	15.10	8.00E-01		9.67E-01	3.79E-01
		1764.49	*	15.80	4.37E-01		8.40E-01	1.91E-01
		2204.22	*	4.98	1.42E+00		1.18E+00	6.11E-01
+	PB-214	295.21	*	19.19	7.55E-01	1.86E-01	1.01E+00	3.72E-01
		351.92	*	37.19	1.86E-01		1.08E+00	8.96E-02
	RN-219	401.80		6.50	7.24E-01	7.24E-01	-7.60E-01	3.41E-01
	RA-223	323.87		3.88	1.24E+00	1.24E+00	-9.48E-02	5.92E-01
+	RA-224	240.98	*	3.95	2.36E+00	2.36E+00	2.48E+00	1.16E+00
	RA-225	40.00		31.00	3.19E+01	3.19E+01	1.80E+01	1.54E+01
+	RA-226	186.21	*	3.28	2.13E+00	2.13E+00	2.25E+00	1.04E+00
	TH-227	50.10		8.40	5.94E-01	5.82E-01	1.42E-01	2.86E-01
		236.00		11.50	5.82E-01		-5.00E+00	2.83E-01
		256.20		6.30	6.94E-01		-2.67E-01	3.31E-01
+	AC-228	338.32	*	11.40	5.94E-01	3.56E-01	1.40E+00	2.86E-01
		911.07	*	27.70	3.56E-01		1.01E+00	1.68E-01
		969.11	*	16.60	6.52E-01		1.26E+00	3.10E-01
	TH-230	48.44		16.90	3.03E-01	3.03E-01	-3.48E-01	1.46E-01
		62.85		4.60	1.06E+00		8.89E-01	5.13E-01
		67.67		0.37	1.19E+01		6.40E+00	5.76E+00
	PA-231	283.67		1.60	2.94E+00	2.14E+00	0.00E+00	1.40E+00
		302.67		2.30	2.14E+00		-2.43E+00	1.02E+00
	TH-231	25.64		14.70	1.25E-01	1.25E-01	0.00E+00	0.00E+00
		84.21		6.40	6.12E-01		5.52E-01	2.97E-01
	PA-233	311.98		38.60	1.56E+00	1.56E+00	5.15E-01	7.40E-01
	PA-234	131.20		20.40	1.74E-01	1.74E-01	5.37E-03	8.37E-02
		733.99		8.80	7.68E-01		2.81E-01	3.59E-01
		946.00		12.00	4.96E-01		-3.57E-03	2.26E-01
	PA-234M	1001.03		0.92	8.24E+00	8.24E+00	3.96E+00	3.81E+00
	TH-234	63.29		3.80	1.28E+00	1.28E+00	1.63E+00	6.23E-01
	U-235	143.76		10.50	4.39E-01	4.39E-01	-2.49E-02	2.13E-01
		163.35		4.70	9.09E-01		-3.03E-01	4.39E-01
		205.31		4.70	9.60E-01		-5.47E-03	4.62E-01
	NP-237	86.50		12.60	3.58E-01	3.58E-01	3.88E-01	1.74E-01
	NP-239	106.10		22.70	9.27E+11	9.27E+11	-1.13E+11	4.46E+11
		228.18		10.70	3.05E+12		-4.95E+10	1.47E+12

Analysis Report for 1707092-05

HTC-A08-S001-0612-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	NP-239	277.60		14.10	2.46E+12	9.27E+11	1.60E+12	1.18E+12
	AM-241	59.54		35.90	1.25E-01	1.25E-01	2.09E-02	6.07E-02
	AM-243	74.67		66.00	8.76E-02	8.76E-02	-1.06E-01	4.29E-02
+	CM-243	209.75	*	3.29	2.11E+00	4.69E-01	1.94E+00	1.03E+00
		228.14		10.60	4.69E-01		-7.61E-03	2.26E-01
		277.60	*	14.00	5.12E-01		2.55E-01	2.48E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: HTC-A08-S001-0612-02

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	51	81	118	151
33:	173	680	108	98	100	93	100	92
41:	113	82	73	68	60	85	128	75
49:	67	84	90	74	102	95	69	91
57:	80	96	103	97	108	99	128	172
65:	105	92	124	111	126	110	103	111
73:	121	136	357	206	378	367	88	83
81:	117	104	88	128	121	84	147	216
89:	106	179	102	103	232	162	90	81
97:	91	72	64	81	77	81	61	64
105:	62	77	70	77	74	75	51	79
113:	79	85	76	70	73	58	77	65
121:	75	58	73	62	81	73	60	62
129:	99	80	79	66	63	64	56	58
137:	54	58	51	83	85	67	63	83
145:	83	58	63	66	61	53	67	61
153:	63	80	79	67	57	51	50	51
161:	60	54	48	56	54	50	56	47
169:	47	59	56	60	63	52	54	58
177:	63	45	53	65	56	50	48	58
185:	55	151	103	45	47	47	52	44
193:	51	45	41	45	47	49	50	42
201:	48	52	49	45	41	42	42	45
209:	75	75	62	52	47	40	55	45
217:	48	42	51	51	53	53	37	35
225:	44	41	60	42	42	43	47	42
233:	34	36	38	48	48	238	572	126
241:	106	114	69	36	38	33	29	42
249:	28	36	28	30	34	30	31	32
257:	21	36	35	36	31	25	27	26
265:	24	34	26	34	28	63	65	45
273:	33	34	35	32	45	58	34	25
281:	27	30	24	28	32	36	30	31
289:	26	23	31	29	33	39	166	109
297:	26	32	33	65	38	27	26	25
305:	34	30	36	27	36	23	20	22
313:	38	20	21	28	26	31	23	32
321:	22	25	28	28	24	25	30	54
329:	29	24	21	28	35	16	25	20
337:	29	110	93	27	22	17	24	18
345:	26	23	20	14	21	35	80	279
353:	105	17	24	13	17	20	18	18
361:	16	17	17	19	30	19	20	23

369:	20	25	25	15	21	18	19	23

Sample Title: HTC-A08-S001-0612-02

Channel								
377:	15	24	19	18	17	24	33	17
385:	17	21	22	22	29	13	18	21
393:	19	22	18	20	23	19	24	22
401:	21	18	18	9	29	16	17	20
409:	30	29	20	13	19	18	22	22
417:	19	14	17	8	16	28	16	12
425:	19	18	25	21	19	15	20	17
433:	17	18	11	15	18	10	23	16
441:	14	16	15	7	16	16	17	11
449:	17	6	18	20	23	19	16	14
457:	14	13	13	12	18	20	31	33
465:	8	12	14	18	16	12	15	9
473:	16	19	10	8	19	8	21	14
481:	6	11	16	17	18	21	18	15
489:	11	13	18	16	9	16	19	15
497:	19	9	7	12	18	13	6	9
505:	6	18	12	18	16	55	106	42
513:	27	11	13	15	20	10	11	9
521:	9	13	12	17	10	14	6	15
529:	14	13	17	14	11	15	13	14
537:	8	8	15	17	11	14	10	11
545:	11	8	13	13	13	6	12	9
553:	18	13	20	15	8	15	15	24
561:	8	13	13	5	9	11	13	13
569:	5	11	20	7	14	7	9	10
577:	14	10	14	12	23	54	180	81
585:	12	15	9	12	10	6	9	8
593:	16	9	10	11	15	14	8	9
601:	14	10	14	21	12	18	10	41
609:	173	108	19	10	9	9	12	11
617:	6	7	11	12	12	11	8	12
625:	12	10	10	10	15	6	13	17
633:	7	12	7	14	13	7	10	8
641:	11	15	10	11	15	9	13	6
649:	14	8	4	9	13	3	11	9
657:	11	8	20	9	19	18	16	7
665:	8	12	14	13	8	13	4	7
673:	8	8	14	9	6	11	7	7
681:	7	9	9	10	10	8	4	11
689:	9	10	16	10	8	8	14	19
697:	14	8	9	13	9	8	13	8
705:	10	10	9	10	10	11	14	6
713:	6	8	8	8	11	10	13	15
721:	14	11	11	6	12	16	32	20
729:	12	12	8	10	6	14	15	9
737:	8	3	6	8	8	6	9	13
745:	15	6	10	3	4	7	10	14
753:	10	11	12	6	9	7	12	5
761:	3	9	13	8	9	12	11	23
769:	16	10	6	23	11	13	7	10
777:	8	6	4	10	6	7	7	7
785:	10	13	12	11	4	5	12	6
793:	8	19	28	12	9	9	11	7

801:	7	9	8	8	10	10	7	7

Sample Title: HTC-A08-S001-0612-02

Channel								
809:	5	6	9	8	5	9	8	5
817:	4	9	7	3	5	12	6	8
825:	6	13	2	3	4	12	14	7
833:	6	6	10	13	9	14	8	12
841:	9	10	5	5	8	1	2	6
849:	10	5	7	4	2	4	8	7
857:	12	6	14	28	14	10	7	8
865:	6	6	7	7	6	10	12	7
873:	8	3	2	5	4	3	3	5
881:	4	5	7	6	15	8	8	7
889:	8	14	7	4	11	6	8	6
897:	4	7	7	7	10	4	6	6
905:	8	13	5	6	9	42	92	37
913:	3	12	5	6	6	6	6	8
921:	4	3	11	7	9	6	11	8
929:	6	6	7	8	6	12	9	5
937:	5	7	6	9	11	6	0	5
945:	4	6	2	11	8	8	8	4
953:	4	5	5	6	5	6	4	11
961:	5	7	12	17	17	15	13	41
969:	57	25	4	2	5	7	4	2
977:	4	6	8	9	5	7	4	8
985:	5	6	4	7	11	7	7	8
993:	8	5	4	3	9	8	3	7
1001:	12	7	6	4	8	5	4	4
1009:	10	4	9	6	10	8	10	7
1017:	7	6	5	4	8	6	8	8
1025:	3	2	4	5	2	7	8	8
1033:	9	7	3	3	8	4	4	10
1041:	9	8	4	6	9	6	3	12
1049:	5	7	4	3	6	9	4	4
1057:	3	6	9	5	8	8	11	4
1065:	5	3	10	3	4	8	5	5
1073:	6	6	11	9	5	11	7	8
1081:	4	7	9	3	11	4	10	5
1089:	2	12	5	9	10	13	6	8
1097:	10	3	7	7	2	1	6	8
1105:	3	10	6	15	11	10	2	10
1113:	12	6	9	10	4	19	26	35
1121:	16	12	5	11	11	8	5	11
1129:	5	6	6	6	8	5	6	6
1137:	6	4	9	11	7	8	6	4
1145:	8	5	11	5	5	2	11	7
1153:	4	9	9	9	14	11	3	9
1161:	7	9	9	3	4	6	6	13
1169:	10	6	8	3	9	5	5	5
1177:	8	4	11	6	10	12	10	7
1185:	6	12	10	6	7	2	10	8
1193:	11	9	12	3	6	13	7	12
1201:	8	8	1	6	9	12	8	7
1209:	6	11	9	9	12	5	7	7
1217:	6	11	9	6	13	7	8	10
1225:	11	6	10	14	5	10	11	10

1233:	14	10	6	12	15	17	11	10

Sample Title: HTC-A08-S001-0612-02

Channel								
1241:	5	7	3	8	5	10	5	5
1249:	6	13	8	2	7	2	9	10
1257:	3	13	4	5	5	9	4	7
1265:	4	10	9	7	7	5	4	5
1273:	5	9	5	3	1	9	4	4
1281:	13	7	3	6	4	8	6	5
1289:	4	7	2	5	5	6	1	5
1297:	5	6	1	7	6	8	0	5
1305:	4	3	7	7	7	3	3	2
1313:	4	4	1	9	3	8	2	3
1321:	4	6	5	3	6	4	2	4
1329:	7	7	1	1	3	4	4	5
1337:	3	5	6	3	2	1	2	1
1345:	3	4	4	0	3	3	3	2
1353:	6	2	2	5	2	5	0	4
1361:	2	3	2	1	4	1	3	6
1369:	2	1	1	8	3	2	4	3
1377:	11	8	2	3	3	2	4	2
1385:	5	3	0	0	2	3	2	0
1393:	5	3	3	2	3	2	3	2
1401:	6	0	3	2	2	6	6	6
1409:	2	1	3	1	1	0	1	3
1417:	4	1	3	1	0	2	3	2
1425:	4	4	2	1	4	2	3	2
1433:	1	3	1	5	2	2	2	0
1441:	1	3	3	4	0	3	0	1
1449:	2	1	6	4	4	4	4	9
1457:	12	51	145	289	232	67	10	3
1465:	0	3	1	2	0	1	1	1
1473:	1	3	1	2	0	4	0	4
1481:	2	0	2	1	2	0	1	4
1489:	0	2	0	0	1	2	3	1
1497:	0	0	1	0	2	0	3	1
1505:	2	2	3	4	4	4	2	1
1513:	3	1	1	1	2	0	3	0
1521:	1	1	1	1	3	0	1	2
1529:	1	1	2	3	1	1	0	1
1537:	3	1	1	1	2	1	2	1
1545:	3	1	0	2	1	0	1	0
1553:	1	1	0	0	0	2	1	1
1561:	3	1	2	2	2	1	0	1
1569:	1	1	1	1	3	0	2	3
1577:	0	1	2	3	3	7	3	3
1585:	4	3	6	11	4	0	6	7
1593:	2	4	1	1	1	2	4	0
1601:	1	1	0	0	2	1	1	2
1609:	1	0	1	1	1	2	0	2
1617:	1	1	4	3	3	0	2	2
1625:	2	1	0	0	2	4	0	2
1633:	3	3	1	2	2	3	1	2
1641:	2	3	2	2	3	1	0	1
1649:	1	1	1	1	0	1	0	1
1657:	0	2	0	2	1	1	1	1

1665:	3	2	0	3	1	1	2	0

Sample Title: HTC-A08-S001-0612-02

Channel								
1673:	0	1	1	1	1	0	4	0
1681:	0	1	1	2	2	1	0	1
1689:	1	2	1	0	1	0	3	2
1697:	2	1	0	1	0	2	0	2
1705:	0	0	1	2	0	0	4	1
1713:	1	1	2	0	0	0	2	0
1721:	1	1	2	3	2	2	4	7
1729:	3	5	1	3	0	0	1	0
1737:	3	0	1	1	0	0	1	2
1745:	3	1	3	0	1	0	1	1
1753:	0	1	3	1	1	0	3	3
1761:	2	4	13	18	10	0	3	2
1769:	0	1	0	2	1	2	0	1
1777:	0	1	1	0	0	2	0	1
1785:	0	1	2	0	1	0	3	0
1793:	2	0	1	1	2	1	2	0
1801:	0	1	0	0	1	0	0	0
1809:	1	1	0	1	1	1	1	1
1817:	1	1	0	1	1	1	2	5
1825:	1	0	1	1	0	2	1	0
1833:	0	0	0	1	0	2	2	0
1841:	0	1	1	1	1	4	4	3
1849:	1	0	0	2	1	0	2	0
1857:	0	2	3	1	2	0	1	1
1865:	1	3	1	2	3	1	1	1
1873:	2	3	1	0	2	2	0	2
1881:	1	1	0	3	0	1	1	1
1889:	2	1	1	1	0	0	1	2
1897:	1	1	2	0	0	0	1	2
1905:	2	0	2	2	0	1	2	2
1913:	3	0	1	4	0	1	0	2
1921:	1	1	3	0	1	1	1	0
1929:	3	1	1	0	2	0	2	2
1937:	0	0	1	1	2	0	3	0
1945:	2	1	4	0	0	0	2	0
1953:	2	1	1	0	0	0	2	1
1961:	2	2	2	0	1	2	2	0
1969:	2	0	0	2	1	0	1	0
1977:	0	2	3	1	0	0	0	2
1985:	1	2	1	1	0	2	1	1
1993:	2	2	1	1	0	2	1	2
2001:	0	1	1	0	0	0	2	0
2009:	1	1	1	1	0	1	4	0
2017:	1	0	0	1	0	1	1	2
2025:	0	1	0	2	0	1	1	1
2033:	2	0	0	1	1	0	0	4
2041:	0	0	0	1	1	1	3	0
2049:	0	0	0	0	0	0	1	1
2057:	3	0	0	1	0	0	0	0
2065:	0	2	0	1	3	0	0	0
2073:	3	0	1	2	0	1	3	0
2081:	1	1	0	2	0	0	1	1
2089:	0	2	1	0	0	3	0	0

2097:	0	1	2	3	2	8	7	3

Sample Title: HTC-A08-S001-0612-02

Channel								
2105:	1	0	1	0	0	2	1	1
2113:	0	2	1	4	1	4	0	3
2121:	0	1	1	1	0	0	0	1
2129:	0	0	1	0	2	3	1	1
2137:	2	1	0	0	2	1	1	0
2145:	1	0	2	0	0	0	0	1
2153:	0	1	0	1	1	1	4	0
2161:	0	4	1	2	2	0	1	0
2169:	1	2	1	0	1	0	0	1
2177:	1	1	1	1	1	0	0	0
2185:	0	1	0	2	0	0	1	0
2193:	1	1	2	1	1	0	1	1
2201:	3	5	7	4	2	0	1	2
2209:	1	1	1	2	0	0	0	2
2217:	0	0	1	3	2	1	2	0
2225:	2	1	0	1	1	0	0	1
2233:	1	1	0	1	2	0	1	0
2241:	1	1	1	1	0	2	0	0
2249:	3	2	0	0	0	1	0	0
2257:	0	0	0	2	0	1	1	1
2265:	1	0	1	1	2	0	1	0
2273:	1	1	0	0	0	0	1	1
2281:	1	2	3	3	0	0	4	0
2289:	1	1	2	3	0	2	0	1
2297:	1	1	1	2	1	3	0	2
2305:	2	0	0	0	0	1	0	0
2313:	1	0	0	1	1	0	0	0
2321:	3	0	1	0	0	1	3	1
2329:	1	3	0	0	2	2	1	0
2337:	1	3	1	2	0	3	1	1
2345:	2	0	2	1	2	2	1	0
2353:	0	1	3	2	2	2	1	2
2361:	0	0	2	1	0	2	0	2
2369:	0	0	2	1	3	1	0	2
2377:	0	1	1	0	0	1	0	2
2385:	0	0	2	0	0	0	1	1
2393:	1	1	0	0	0	0	0	0
2401:	0	2	1	0	1	1	3	2
2409:	1	1	0	0	0	0	1	1
2417:	1	1	3	0	0	3	1	1
2425:	1	0	1	1	0	2	1	0
2433:	1	0	2	0	2	2	1	0
2441:	0	0	1	0	1	0	2	2
2449:	0	0	0	1	0	0	0	0
2457:	2	1	1	0	0	0	2	1
2465:	0	0	0	0	0	0	1	0
2473:	1	1	0	1	1	0	0	0
2481:	1	0	2	0	0	0	0	1
2489:	1	0	0	0	0	1	0	0
2497:	0	0	2	0	1	3	0	0
2505:	0	0	0	0	0	1	1	1
2513:	1	1	0	0	1	0	0	0
2521:	1	1	0	0	1	1	1	0

2529:	0	0	0	0	2	0	2	0

Sample Title: HTC-A08-S001-0612-02

Channel								
2537:	0	0	0	0	1	0	0	0
2545:	1	0	1	0	0	0	0	1
2553:	0	0	0	0	0	1	0	0
2561:	0	1	0	0	0	0	0	0
2569:	0	1	1	0	1	2	1	0
2577:	0	0	0	0	0	1	0	0
2585:	0	0	1	0	0	0	1	0
2593:	0	1	1	0	1	0	0	0
2601:	0	0	0	1	2	0	1	2
2609:	1	6	15	18	29	23	10	3
2617:	1	0	0	1	0	0	0	0
2625:	0	1	0	0	1	0	0	0
2633:	0	0	0	0	1	0	0	0
2641:	0	0	0	0	0	0	0	0
2649:	0	0	0	0	0	0	0	2
2657:	0	0	0	1	0	1	0	0
2665:	1	0	0	0	1	1	0	0
2673:	0	0	0	1	0	1	1	1
2681:	0	0	0	2	0	1	0	0
2689:	1	0	1	1	1	2	0	0
2697:	1	0	0	0	0	0	0	1
2705:	0	0	0	0	0	0	0	0
2713:	1	0	0	0	0	0	1	0
2721:	0	0	0	0	1	0	0	1
2729:	0	0	0	1	0	0	0	0
2737:	0	1	0	0	0	0	1	0
2745:	1	0	0	0	1	0	0	0
2753:	0	0	0	0	0	1	1	1
2761:	0	0	0	0	2	0	2	0
2769:	0	0	1	0	0	0	1	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	1	1	1	0	1
2793:	0	0	0	0	0	1	1	0
2801:	2	0	1	1	1	0	1	0
2809:	0	0	0	0	0	0	0	0
2817:	1	0	2	1	0	0	1	0
2825:	0	1	0	0	0	0	0	0
2833:	0	0	0	0	0	0	0	1
2841:	1	0	0	0	0	0	0	0
2849:	0	0	0	2	1	0	0	0
2857:	1	0	0	0	0	0	0	0
2865:	3	0	1	0	0	0	0	0
2873:	0	0	0	1	0	0	0	0
2881:	0	0	0	2	0	0	0	0
2889:	1	1	0	0	0	0	1	0
2897:	0	1	0	0	1	0	0	0
2905:	0	0	1	0	0	0	1	0
2913:	0	0	0	0	1	1	0	0
2921:	0	0	0	0	0	1	0	0
2929:	0	1	0	0	0	0	0	0
2937:	0	0	0	0	0	0	1	0
2945:	0	0	0	0	0	0	1	0
2953:	0	1	0	0	0	0	0	1

2961:	1	0	0	0	0	0	0	0

Sample Title: HTC-A08-S001-0612-02

Channel								
2969:	0	0	0	0	0	0	1	0
2977:	0	1	1	0	0	0	0	0
2985:	0	0	0	0	0	0	0	1
2993:	0	1	0	0	0	0	1	0
3001:	0	0	1	1	0	0	0	1
3009:	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	1	0	0
3033:	0	0	0	0	0	0	1	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	1	0	0	0	0	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	1	0	1	0	0	0	0
3081:	0	0	1	0	0	0	0	0
3089:	0	0	0	0	0	0	0	0
3097:	0	1	0	0	0	0	0	0
3105:	0	1	0	0	0	0	0	0
3113:	0	0	0	0	0	0	1	0
3121:	0	1	0	0	0	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	1	0	0	0	0	0	0	0
3145:	1	0	0	0	0	0	0	1
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	1	0	1	0
3169:	1	1	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	1	0	0	0	0
3201:	0	0	0	0	0	1	0	0
3209:	0	0	0	0	0	0	1	0
3217:	0	0	0	0	0	1	0	1
3225:	0	0	0	0	0	1	0	0
3233:	0	0	0	0	0	0	1	1
3241:	0	0	0	0	1	0	0	1
3249:	0	0	0	0	0	0	0	1
3257:	0	0	0	1	1	0	0	0
3265:	0	0	0	1	0	1	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	1
3297:	0	0	0	0	0	0	0	0
3305:	1	1	0	0	1	0	0	0
3313:	0	0	0	0	0	0	0	0
3321:	0	0	0	0	1	0	0	0
3329:	0	0	0	1	0	0	0	0
3337:	1	0	0	0	0	0	0	0
3345:	1	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	1
3361:	0	0	0	0	1	0	0	0
3369:	0	0	0	0	1	0	0	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	0	1	0	0

3393:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-S001-0612-02

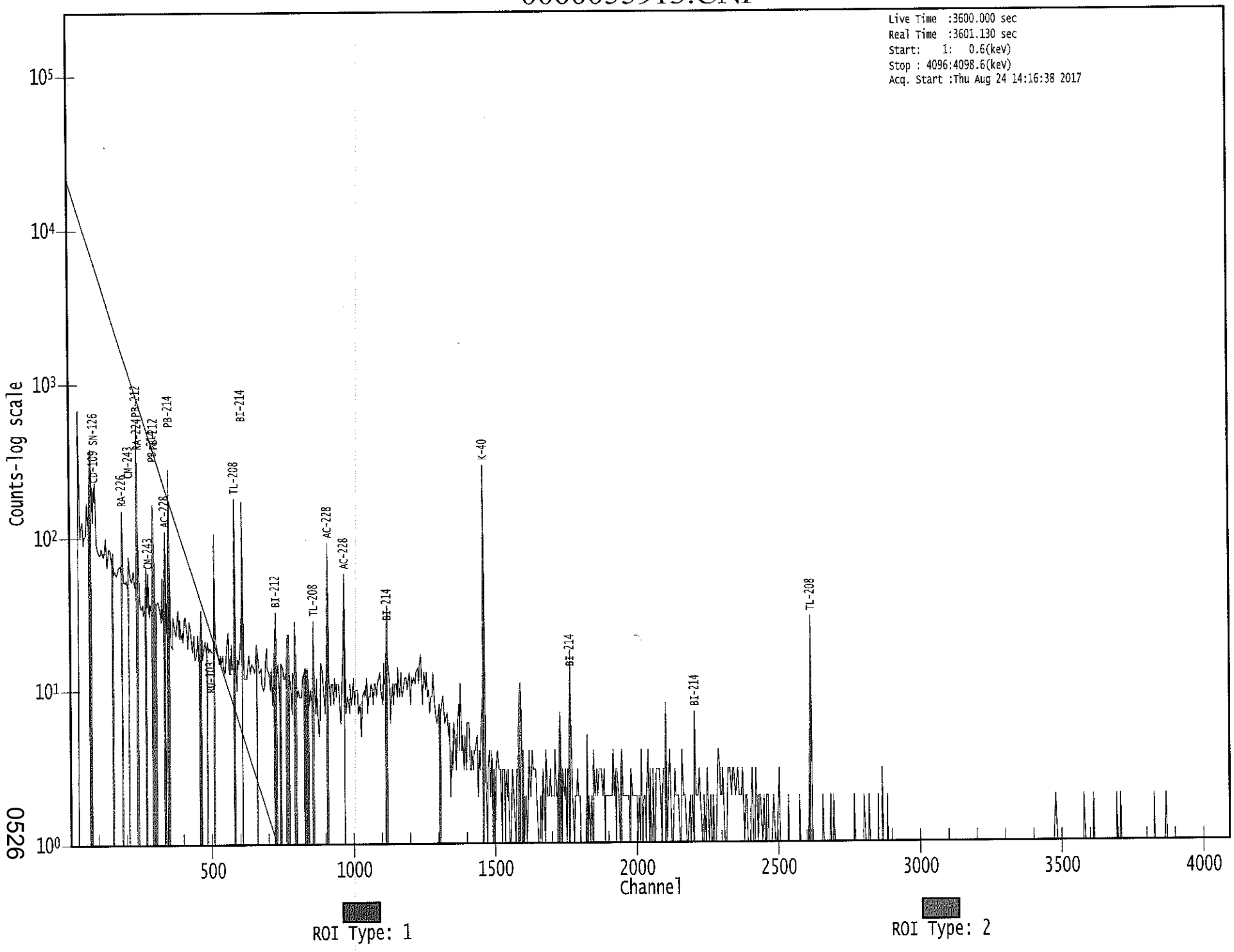
Channel								
3401:	0	0	0	0	0	0	0	1
3409:	0	0	0	1	0	0	0	0
3417:	0	0	0	0	1	0	0	0
3425:	0	1	0	0	0	0	0	1
3433:	1	0	0	0	0	0	0	0
3441:	1	1	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	1	0	0	0	0	1
3473:	0	1	0	0	1	2	0	0
3481:	0	0	0	1	0	0	0	0
3489:	1	0	0	0	0	0	0	0
3497:	0	0	0	1	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	1	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	1	1	0
3553:	0	0	0	0	0	0	0	1
3561:	0	0	0	0	0	0	0	0
3569:	0	1	1	0	0	0	0	1
3577:	2	0	0	0	0	1	1	0
3585:	0	1	0	0	0	0	0	1
3593:	0	1	0	0	0	0	0	0
3601:	1	0	0	1	0	0	0	0
3609:	0	0	2	0	0	1	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	1	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	1	0	0	0
3689:	0	0	0	0	2	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	2	0	1	1	0	0
3713:	0	1	0	0	0	0	0	0
3721:	0	0	0	1	0	1	0	0
3729:	0	0	0	0	1	1	1	0
3737:	0	0	0	1	0	0	0	1
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	1	1	0	0
3761:	0	0	0	1	0	0	0	0
3769:	1	0	1	0	0	0	0	0
3777:	0	0	0	0	0	0	1	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	1	0	0	0	0	1
3801:	0	0	0	0	1	0	0	0
3809:	0	0	1	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

3825:	2	0	0	0	0	0	0	0

Sample Title: HTC-A08-S001-0612-02

Channel								
3833:	0	1	1	1	0	0	0	1
3841:	0	0	1	0	0	0	1	0
3849:	0	0	0	0	0	0	0	1
3857:	0	0	0	0	0	0	1	0
3865:	0	0	1	2	0	0	1	0
3873:	0	1	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	1
3897:	0	0	0	0	0	0	0	1
3905:	0	0	1	0	0	0	1	0
3913:	0	0	1	0	0	0	0	0
3921:	0	1	0	0	1	0	0	0
3929:	0	0	0	0	1	0	0	0
3937:	0	0	1	0	0	0	0	0
3945:	0	0	0	0	0	1	0	0
3953:	1	0	0	0	0	0	1	0
3961:	0	0	0	1	0	0	1	0
3969:	1	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	1	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	1	0	0	0
4017:	1	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	1	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	1	0	0
4057:	0	0	0	0	0	0	0	0
4065:	1	0	0	1	0	0	0	0
4073:	0	0	0	0	0	0	0	1
4081:	0	0	0	0	0	0	0	0
4089:	0	1	0	0	0	0	0	0

0000055913.CNF



0526

Apex-Gamma

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-06
Sample Description	: HTC-A08-S001-1218-01
Sample Type	: SOIL
Sample Size	: 6.042E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 7:39:27AM
Acquisition Started	: 8/24/2017 2:16:45PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3608.4 seconds
Dead Time	: 0.23 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 9 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55914

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 3:17:48PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	26.30	26.62	0.0000	0.00
2	57.84	58.15	0.0000	0.00
3	76.35	76.65	0.0000	0.00
4	87.13	87.43	0.0000	0.00
5	93.42	93.71	0.0000	0.00
6	128.20	128.48	0.0000	0.00
7	155.40	155.68	0.0000	0.00
8	169.88	170.15	0.0000	0.00
9	186.46	186.72	0.0000	0.00
10	207.98	208.23	0.0000	0.00
11	234.92	235.17	0.0000	0.00
12	238.92	239.17	0.0000	0.00
13	241.58	241.83	0.0000	0.00
14	269.75	269.99	0.0000	0.00
15	295.35	295.58	0.0000	0.00
16	300.71	300.94	0.0000	0.00
17	327.79	328.01	0.0000	0.00
18	338.74	338.95	0.0000	0.00
19	352.17	352.38	0.0000	0.00
20	355.61	355.82	0.0000	0.00
21	408.32	408.51	0.0000	0.00
22	511.28	511.43	0.0000	0.00
23	583.79	583.92	0.0000	0.00
24	609.52	609.65	0.0000	0.00
25	623.58	623.70	0.0000	0.00
26	727.52	727.60	0.0000	0.00
27	795.56	795.62	0.0000	0.00
28	814.72	814.77	0.0000	0.00
29	839.27	839.31	0.0000	0.00
30	861.82	861.85	0.0000	0.00
31	911.53	911.55	0.0000	0.00
32	918.99	919.01	0.0000	0.00
33	967.92	967.92	0.0000	0.00
34	1026.63	1026.61	0.0000	0.00
35	1120.83	1120.78	0.0000	0.00
36	1124.27	1124.22	0.0000	0.00
37	1239.49	1239.40	0.0000	0.00
38	1265.20	1265.10	0.0000	0.00
39	1377.98	1377.85	0.0000	0.00
40	1461.07	1460.90	0.0000	0.00
41	1540.13	1539.94	0.0000	0.00
42	1558.51	1558.32	0.0000	0.00

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1572.50	1572.30	0.0000	0.00
44	1579.22	1579.01	0.0000	0.00
45	1587.24	1587.03	0.0000	0.00
46	1593.78	1593.57	0.0000	0.00
47	1701.77	1701.53	0.0000	0.00
48	1764.95	1764.68	0.0000	0.00
49	1847.22	1846.93	0.0000	0.00
50	1933.75	1933.42	0.0000	0.00
51	2058.37	2058.00	0.0000	0.00
52	2104.22	2103.84	0.0000	0.00
53	2185.82	2185.41	0.0000	0.00
54	2195.32	2194.90	0.0000	0.00
55	2204.28	2203.87	0.0000	0.00
56	2328.83	2328.38	0.0000	0.00
57	2614.87	2614.31	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 3:17:48PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	26.30	24 -	30	26.62	7.16E+01	80.38	1.12E+03	3.84
M	2	57.84	56 -	66	58.15	5.78E+01	73.30	1.07E+03	1.63
	3	76.35	71 -	82	76.65	1.26E+03	169.46	2.95E+03	3.75
M	4	87.13	83 -	97	87.43	4.32E+02	107.22	1.71E+03	3.96
m	5	93.42	83 -	97	93.71	3.58E+02	105.30	1.45E+03	2.67
	6	128.20	125 -	132	128.48	9.18E+01	86.32	1.18E+03	4.14
	7	155.40	152 -	158	155.68	7.30E+01	72.92	9.08E+02	4.02
	8	169.88	167 -	173	170.15	6.41E+01	65.98	7.44E+02	3.75
	9	186.46	182 -	193	186.72	2.02E+02	110.31	1.40E+03	2.30
	10	207.98	204 -	212	208.23	1.11E+02	81.39	9.54E+02	4.85
M	11	234.92	234 -	249	235.17	3.56E+01	24.31	1.77E+02	1.87
m	12	238.92	234 -	249	239.17	8.43E+02	78.30	4.99E+02	1.87
m	13	241.58	234 -	249	241.83	1.76E+02	77.69	4.67E+02	1.87
	14	269.75	265 -	275	269.99	1.12E+02	75.91	7.07E+02	2.92
	15	295.35	292 -	298	295.58	2.39E+02	55.97	3.95E+02	2.17
	16	300.71	299 -	304	300.94	3.86E+01	42.25	3.25E+02	2.29
	17	327.79	324 -	331	328.01	6.64E+01	49.32	3.63E+02	1.87
	18	338.74	336 -	343	338.95	1.42E+02	56.64	4.47E+02	1.59
M	19	352.17	348 -	358	352.38	4.25E+02	56.55	2.48E+02	2.17
m	20	355.61	348 -	358	355.82	2.67E+01	44.89	2.25E+02	1.98
	21	408.32	403 -	413	408.51	8.84E+01	54.63	3.47E+02	6.63
	22	511.28	507 -	517	511.43	1.78E+02	49.46	2.33E+02	2.67
	23	583.79	581 -	590	583.92	2.53E+02	49.57	2.10E+02	2.41
	24	609.52	605 -	616	609.65	3.21E+02	55.28	2.21E+02	2.30
	25	623.58	622 -	627	623.70	2.08E+01	24.04	9.45E+01	1.28
	26	727.52	723 -	733	727.60	8.67E+01	42.77	1.97E+02	2.02
	27	795.56	792 -	799	795.62	3.65E+01	29.87	1.25E+02	2.11
	28	814.72	812 -	818	814.77	2.46E+01	21.93	6.88E+01	3.70
	29	839.27	834 -	844	839.31	5.25E+01	32.73	1.13E+02	2.36
	30	861.82	858 -	866	861.85	4.24E+01	30.37	1.13E+02	2.25
	31	911.53	907 -	916	911.55	1.37E+02	36.30	1.10E+02	2.10
	32	918.99	917 -	921	919.01	1.56E+01	16.88	4.88E+01	2.41
	33	967.92	962 -	972	967.92	1.37E+02	33.52	7.70E+01	2.38
	34	1026.63	1024 -	1030	1026.61	2.31E+01	19.38	4.98E+01	1.60
M	35	1120.83	1114 -	1127	1120.78	5.89E+01	27.10	9.10E+01	2.43
m	36	1124.27	1114 -	1127	1124.22	1.70E+01	25.97	9.10E+01	2.43
	37	1239.49	1236 -	1243	1239.40	3.76E+01	29.46	1.19E+02	1.65
	38	1265.20	1261 -	1268	1265.10	2.18E+01	24.17	8.04E+01	3.81
	39	1377.98	1373 -	1382	1377.85	3.15E+01	21.00	4.51E+01	1.50
	40	1461.07	1454 -	1467	1460.90	7.13E+02	56.26	3.45E+01	2.50

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1540.13	1536 -	1544	1539.94	1.52E+01	15.28	2.56E+01	1.78
42	1558.51	1555 -	1560	1558.32	8.00E+00	7.87	6.00E+00	1.96
43	1572.50	1568 -	1575	1572.30	8.95E+00	7.75	4.09E+00	4.56
44	1579.22	1577 -	1582	1579.01	8.20E+00	7.62	3.60E+00	2.82
45	1587.24	1583 -	1591	1587.03	2.76E+01	11.84	4.83E+00	5.62
46	1593.78	1592 -	1595	1593.57	8.22E+00	6.32	1.56E+00	1.73
47	1701.77	1697 -	1705	1701.53	8.50E+00	9.62	9.00E+00	2.23
48	1764.95	1761 -	1770	1764.68	4.10E+01	12.81	0.00E+00	2.31
49	1847.22	1843 -	1851	1846.93	1.40E+01	7.48	0.00E+00	4.33
50	1933.75	1930 -	1936	1933.42	8.50E+00	8.51	7.00E+00	1.79
51	2058.37	2055 -	2060	2058.00	5.00E+00	7.07	6.00E+00	2.58
52	2104.22	2100 -	2107	2103.84	1.04E+01	11.66	1.52E+01	3.52
53	2185.82	2181 -	2188	2185.41	5.88E+00	6.93	4.25E+00	5.52
54	2195.32	2192 -	2197	2194.90	5.38E+00	7.07	5.25E+00	1.45
55	2204.28	2198 -	2209	2203.87	2.41E+01	12.00	5.89E+00	2.90
56	2328.83	2324 -	2331	2328.38	8.00E+00	5.66	0.00E+00	1.12
57	2614.87	2609 -	2619	2614.31	7.54E+01	19.61	1.12E+01	3.17

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 3:17:48PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	26.30	24 -	30	7.16E+01	80.38	1.12E+03	6.46E+01
M	2	57.84	56 -	66	5.78E+01	73.30	1.07E+03	5.37E+01
	3	76.35	71 -	82	1.26E+03	169.46	2.95E+03	1.27E+02
M	4	87.13	83 -	97	4.32E+02	107.22	1.71E+03	6.79E+01
m	5	93.42	83 -	97	3.58E+02	105.30	1.45E+03	6.25E+01
	6	128.20	125 -	132	9.18E+01	86.32	1.18E+03	6.92E+01
	7	155.40	152 -	158	7.30E+01	72.92	9.08E+02	5.83E+01
	8	169.88	167 -	173	6.41E+01	65.98	7.44E+02	5.26E+01
	9	186.46	182 -	193	2.02E+02	110.31	1.40E+03	8.76E+01
	10	207.98	204 -	212	1.11E+02	81.39	9.54E+02	6.46E+01
M	11	234.92	234 -	249	3.56E+01	24.31	1.77E+02	2.19E+01

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	12	238.92	234 -	249	8.43E+02	78.30	4.99E+02	3.67E+01
m	13	241.58	234 -	249	1.76E+02	77.69	4.67E+02	3.55E+01
	14	269.75	265 -	275	1.12E+02	75.91	7.07E+02	5.99E+01
	15	295.35	292 -	298	2.39E+02	55.97	3.95E+02	3.83E+01
	16	300.71	299 -	304	3.86E+01	42.25	3.25E+02	3.32E+01
	17	327.79	324 -	331	6.64E+01	49.32	3.63E+02	3.83E+01
	18	338.74	336 -	343	1.42E+02	56.64	4.47E+02	4.22E+01
M	19	352.17	348 -	358	4.25E+02	56.55	2.48E+02	2.59E+01
m	20	355.61	348 -	358	2.67E+01	44.89	2.25E+02	2.47E+01
	21	408.32	403 -	413	8.84E+01	54.63	3.47E+02	4.22E+01
	22	511.28	507 -	517	1.78E+02	49.46	2.33E+02	3.42E+01
	23	583.79	581 -	590	2.53E+02	49.57	2.10E+02	3.12E+01
	24	609.52	605 -	616	3.21E+02	55.28	2.21E+02	3.46E+01
	25	623.58	622 -	627	2.08E+01	24.04	9.45E+01	1.83E+01
	26	727.52	723 -	733	8.67E+01	42.77	1.97E+02	3.16E+01
	27	795.56	792 -	799	3.65E+01	29.87	1.25E+02	2.25E+01
	28	814.72	812 -	818	2.46E+01	21.93	6.88E+01	1.61E+01
	29	839.27	834 -	844	5.25E+01	32.73	1.13E+02	2.41E+01
	30	861.82	858 -	866	4.24E+01	30.37	1.13E+02	2.26E+01
	31	911.53	907 -	916	1.37E+02	36.30	1.10E+02	2.28E+01
	32	918.99	917 -	921	1.56E+01	16.88	4.88E+01	1.23E+01
	33	967.92	962 -	972	1.37E+02	33.52	7.70E+01	1.98E+01
	34	1026.63	1024 -	1030	2.31E+01	19.38	4.98E+01	1.38E+01
M	35	1120.83	1114 -	1127	5.89E+01	27.10	9.10E+01	1.57E+01
m	36	1124.27	1114 -	1127	1.70E+01	25.97	9.10E+01	1.57E+01
	37	1239.49	1236 -	1243	3.76E+01	29.46	1.19E+02	2.20E+01
	38	1265.20	1261 -	1268	2.18E+01	24.17	8.04E+01	1.83E+01
	39	1377.98	1373 -	1382	3.15E+01	21.00	4.51E+01	1.46E+01
	40	1461.07	1454 -	1467	7.13E+02	56.26	3.45E+01	1.46E+01
	41	1540.13	1536 -	1544	1.52E+01	15.28	2.56E+01	1.08E+01
	42	1558.51	1555 -	1560	8.00E+00	7.87	6.00E+00	4.50E+00
	43	1572.50	1568 -	1575	8.95E+00	7.75	4.09E+00	4.04E+00
	44	1579.22	1577 -	1582	8.20E+00	7.62	3.60E+00	4.13E+00
	45	1587.24	1583 -	1591	2.76E+01	11.84	4.83E+00	4.50E+00
	46	1593.78	1592 -	1595	8.22E+00	6.32	1.56E+00	2.19E+00
	47	1701.77	1697 -	1705	8.50E+00	9.62	9.00E+00	6.29E+00
	48	1764.95	1761 -	1770	4.10E+01	12.81	0.00E+00	0.00E+00
	49	1847.22	1843 -	1851	1.40E+01	7.48	0.00E+00	0.00E+00
	50	1933.75	1930 -	1936	8.50E+00	8.51	7.00E+00	5.10E+00
	51	2058.37	2055 -	2060	5.00E+00	7.07	6.00E+00	4.50E+00
	52	2104.22	2100 -	2107	1.04E+01	11.66	1.52E+01	7.99E+00
	53	2185.82	2181 -	2188	5.88E+00	6.93	4.25E+00	4.07E+00
	54	2195.32	2192 -	2197	5.38E+00	7.07	5.25E+00	4.39E+00
	55	2204.28	2198 -	2209	2.41E+01	12.00	5.89E+00	5.68E+00
	56	2328.83	2324 -	2331	8.00E+00	5.66	0.00E+00	0.00E+00
	57	2614.87	2609 -	2619	7.54E+01	19.61	1.12E+01	7.48E+00

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 3:17:48PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	26.30	24 -	30	26.62	7.16E+01	80.38	1.12E+03	TH-231
M	2	57.84	56 -	66	58.15	5.78E+01	73.30	1.07E+03	CE-143
	3	76.35	71 -	82	76.65	1.26E+03	169.46	2.95E+03	.....
M	4	87.13	83 -	97	87.43	4.32E+02	107.22	1.71E+03	SN-126
									NP-237
									EU-155
									CD-109
m	5	93.42	83 -	97	93.71	3.58E+02	105.30	1.45E+03	GA-67
	6	128.20	125 -	132	128.48	9.18E+01	86.32	1.18E+03	.....
	7	155.40	152 -	158	155.68	7.30E+01	72.92	9.08E+02	.....
	8	169.88	167 -	173	170.15	6.41E+01	65.98	7.44E+02	.....
	9	186.46	182 -	193	186.72	2.02E+02	110.31	1.40E+03	RA-226
	10	207.98	204 -	212	208.23	1.11E+02	81.39	9.54E+02	GA-67
M	11	234.92	234 -	249	235.17	3.56E+01	24.31	1.77E+02	NB-95M
m	12	238.92	234 -	249	239.17	8.43E+02	78.30	4.99E+02	PB-212
m	13	241.58	234 -	249	241.83	1.76E+02	77.69	4.67E+02	RA-224
	14	269.75	265 -	275	269.99	1.12E+02	75.91	7.07E+02	.....
	15	295.35	292 -	298	295.58	2.39E+02	55.97	3.95E+02	PB-214
	16	300.71	299 -	304	300.94	3.86E+01	42.25	3.25E+02	GA-67
									PB-212
									BI-210M
	17	327.79	324 -	331	328.01	6.64E+01	49.32	3.63E+02	LA-140
	18	338.74	336 -	343	338.95	1.42E+02	56.64	4.47E+02	AC-228
M	19	352.17	348 -	358	352.38	4.25E+02	56.55	2.48E+02	PB-214
m	20	355.61	348 -	358	355.82	2.67E+01	44.89	2.25E+02	BA-133
	21	408.32	403 -	413	408.51	8.84E+01	54.63	3.47E+02	.....
	22	511.28	507 -	517	511.43	1.78E+02	49.46	2.33E+02	.....
	23	583.79	581 -	590	583.92	2.53E+02	49.57	2.10E+02	TL-208
	24	609.52	605 -	616	609.65	3.21E+02	55.28	2.21E+02	BI-214
	25	623.58	622 -	627	623.70	2.08E+01	24.04	9.45E+01	.....

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	26	727.52	723 -	733	727.60	8.67E+01	42.77	1.97E+02	BI-212
	27	795.56	792 -	799	795.62	3.65E+01	29.87	1.25E+02	CS-134
	28	814.72	812 -	818	814.77	2.46E+01	21.93	6.88E+01	.....
	29	839.27	834 -	844	839.31	5.25E+01	32.73	1.13E+02	.....
	30	861.82	858 -	866	861.85	4.24E+01	30.37	1.13E+02	.....
	31	911.53	907 -	916	911.55	1.37E+02	36.30	1.10E+02	TL-204 AC-228
	32	918.99	917 -	921	919.01	1.56E+01	16.88	4.88E+01	.....
	33	967.92	962 -	972	967.92	1.37E+02	33.52	7.70E+01	.....
	34	1026.63	1024 -	1030	1026.61	2.31E+01	19.38	4.98E+01	.....
M	35	1120.83	1114 -	1127	1120.78	5.89E+01	27.10	9.10E+01	SC-46 TA-182 BI-214
m	36	1124.27	1114 -	1127	1124.22	1.70E+01	25.97	9.10E+01	.....
	37	1239.49	1236 -	1243	1239.40	3.76E+01	29.46	1.19E+02	.....
	38	1265.20	1261 -	1268	1265.10	2.18E+01	24.17	8.04E+01	.....
	39	1377.98	1373 -	1382	1377.85	3.15E+01	21.00	4.51E+01	.....
	40	1461.07	1454 -	1467	1460.90	7.13E+02	56.26	3.45E+01	K-40
	41	1540.13	1536 -	1544	1539.94	1.52E+01	15.28	2.56E+01	.....
	42	1558.51	1555 -	1560	1558.32	8.00E+00	7.87	6.00E+00	.....
	43	1572.50	1568 -	1575	1572.30	8.95E+00	7.75	4.09E+00	.....
	44	1579.22	1577 -	1582	1579.01	8.20E+00	7.62	3.60E+00	.....
	45	1587.24	1583 -	1591	1587.03	2.76E+01	11.84	4.83E+00	.....
	46	1593.78	1592 -	1595	1593.57	8.22E+00	6.32	1.56E+00	.....
	47	1701.77	1697 -	1705	1701.53	8.50E+00	9.62	9.00E+00	.....
	48	1764.95	1761 -	1770	1764.68	4.10E+01	12.81	0.00E+00	BI-214
	49	1847.22	1843 -	1851	1846.93	1.40E+01	7.48	0.00E+00	.....
	50	1933.75	1930 -	1936	1933.42	8.50E+00	8.51	7.00E+00	.....
	51	2058.37	2055 -	2060	2058.00	5.00E+00	7.07	6.00E+00	.....
	52	2104.22	2100 -	2107	2103.84	1.04E+01	11.66	1.52E+01	.....
	53	2185.82	2181 -	2188	2185.41	5.88E+00	6.93	4.25E+00	.....
	54	2195.32	2192 -	2197	2194.90	5.38E+00	7.07	5.25E+00	.....
	55	2204.28	2198 -	2209	2203.87	2.41E+01	12.00	5.89E+00	BI-214
	56	2328.83	2324 -	2331	2328.38	8.00E+00	5.66	0.00E+00	.....
	57	2614.87	2609 -	2619	2614.31	7.54E+01	19.61	1.12E+01	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 3:17:48PM

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	26.30	7.16E+01	80.38	3.33E-03	1.73E-03
M	2	57.84	5.78E+01	73.30	2.27E-02	1.73E-03
	3	76.35	1.26E+03	169.46	2.67E-02	2.04E-03
M	4	87.13	4.32E+02	107.22	2.71E-02	2.24E-03
m	5	93.42	3.58E+02	105.30	2.71E-02	2.24E-03
	6	128.20	9.18E+01	86.32	2.47E-02	2.05E-03
	7	155.40	7.30E+01	72.92	2.22E-02	1.75E-03
	8	169.88	6.41E+01	65.98	2.09E-02	1.61E-03
	9	186.46	2.02E+02	110.31	1.96E-02	1.55E-03
	10	207.98	1.11E+02	81.39	1.80E-02	1.46E-03
M	11	234.92	3.56E+01	24.31	1.63E-02	1.35E-03
m	12	238.92	8.43E+02	78.30	1.61E-02	1.34E-03
m	13	241.58	1.76E+02	77.69	1.60E-02	1.33E-03
	14	269.75	1.12E+02	75.91	1.46E-02	1.22E-03
	15	295.35	2.39E+02	55.97	1.35E-02	1.15E-03
	16	300.71	3.86E+01	42.25	1.33E-02	1.14E-03
	17	327.79	6.64E+01	49.32	1.23E-02	1.08E-03
	18	338.74	1.42E+02	56.64	1.19E-02	1.06E-03
M	19	352.17	4.25E+02	56.55	1.15E-02	1.03E-03
m	20	355.61	2.67E+01	44.89	1.14E-02	1.03E-03
	21	408.32	8.84E+01	54.63	1.01E-02	9.30E-04
	22	511.28	1.78E+02	49.46	8.25E-03	7.94E-04
	23	583.79	2.53E+02	49.57	7.32E-03	6.98E-04
	24	609.52	3.21E+02	55.28	7.04E-03	6.64E-04
	25	623.58	2.08E+01	24.04	6.90E-03	6.45E-04
	26	727.52	8.67E+01	42.77	6.01E-03	5.36E-04
	27	795.56	3.65E+01	29.87	5.55E-03	4.76E-04
	28	814.72	2.46E+01	21.93	5.43E-03	4.60E-04
	29	839.27	5.25E+01	32.73	5.29E-03	4.38E-04
	30	861.82	4.24E+01	30.37	5.17E-03	4.18E-04
	31	911.53	1.37E+02	36.30	4.92E-03	3.84E-04
	32	918.99	1.56E+01	16.88	4.88E-03	3.83E-04
	33	967.92	1.37E+02	33.52	4.67E-03	3.75E-04
	34	1026.63	2.31E+01	19.38	4.44E-03	3.65E-04
M	35	1120.83	5.89E+01	27.10	4.12E-03	3.50E-04
m	36	1124.27	1.70E+01	25.97	4.11E-03	3.49E-04
	37	1239.49	3.76E+01	29.46	3.78E-03	3.22E-04
	38	1265.20	2.18E+01	24.17	3.72E-03	3.15E-04
	39	1377.98	3.15E+01	21.00	3.47E-03	2.88E-04
	40	1461.07	7.13E+02	56.26	3.31E-03	2.75E-04
	41	1540.13	1.52E+01	15.28	3.17E-03	2.62E-04
	42	1558.51	8.00E+00	7.87	3.15E-03	2.59E-04
	43	1572.50	8.95E+00	7.75	3.12E-03	2.57E-04
	44	1579.22	8.20E+00	7.62	3.11E-03	2.56E-04
	45	1587.24	2.76E+01	11.84	3.10E-03	2.55E-04
	46	1593.78	8.22E+00	6.32	3.09E-03	2.54E-04
	47	1701.77	8.50E+00	9.62	2.94E-03	2.36E-04
	48	1764.95	4.10E+01	12.81	2.86E-03	2.26E-04
	49	1847.22	1.40E+01	7.48	2.77E-03	2.15E-04
	50	1933.75	8.50E+00	8.51	2.68E-03	2.15E-04
	51	2058.37	5.00E+00	7.07	2.57E-03	2.15E-04
	52	2104.22	1.04E+01	11.66	2.54E-03	2.15E-04
	53	2185.82	5.88E+00	6.93	2.48E-03	2.15E-04

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
54	2195.32	5.38E+00	7.07	2.47E-03	2.15E-04
55	2204.28	2.41E+01	12.00	2.46E-03	2.15E-04
56	2328.83	8.00E+00	5.66	2.38E-03	2.15E-04
57	2614.87	7.54E+01	19.61	2.24E-03	2.15E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 3:17:48PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	26.30	7.16E+01	80.38			7.16E+01	8.04E+01
M	2	57.84	5.78E+01	73.30			5.78E+01	7.33E+01
	3	76.35	1.26E+03	169.46			1.26E+03	1.69E+02
M	4	87.13	4.32E+02	107.22			4.32E+02	1.07E+02
m	5	93.42	3.58E+02	105.30	7.98E+01	7.31E+00	2.78E+02	1.06E+02
	6	128.20	9.18E+01	86.32			9.18E+01	8.63E+01
	7	155.40	7.30E+01	72.92			7.30E+01	7.29E+01
	8	169.88	6.41E+01	65.98			6.41E+01	6.60E+01
	9	186.46	2.02E+02	110.31	3.06E+01	5.82E+00	1.72E+02	1.10E+02
	10	207.98	1.11E+02	81.39			1.11E+02	8.14E+01
M	11	234.92	3.56E+01	24.31			3.56E+01	2.43E+01
m	12	238.92	8.43E+02	78.30	1.40E+01	2.71E+00	8.29E+02	7.83E+01
m	13	241.58	1.76E+02	77.69			1.76E+02	7.77E+01
	14	269.75	1.12E+02	75.91			1.12E+02	7.59E+01
	15	295.35	2.39E+02	55.97			2.39E+02	5.60E+01
	16	300.71	3.86E+01	42.25			3.86E+01	4.22E+01
	17	327.79	6.64E+01	49.32			6.64E+01	4.93E+01
	18	338.74	1.42E+02	56.64			1.42E+02	5.66E+01
M	19	352.17	4.25E+02	56.55	6.53E+00	4.43E+00	4.18E+02	5.67E+01
m	20	355.61	2.67E+01	44.89			2.67E+01	4.49E+01
	21	408.32	8.84E+01	54.63			8.84E+01	5.46E+01
	22	511.28	1.78E+02	49.46	5.21E+01	4.74E+00	1.25E+02	4.97E+01
	23	583.79	2.53E+02	49.57			2.53E+02	4.96E+01
	24	609.52	3.21E+02	55.28	3.25E+00	2.97E+00	3.17E+02	5.54E+01
	25	623.58	2.08E+01	24.04			2.08E+01	2.40E+01
	26	727.52	8.67E+01	42.77			8.67E+01	4.28E+01

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	27	795.56	3.65E+01	29.87	0.00E+00	0.00E+00	3.65E+01	2.99E+01
	28	814.72	2.46E+01	21.93			2.46E+01	2.19E+01
	29	839.27	5.25E+01	32.73			5.25E+01	3.27E+01
	30	861.82	4.24E+01	30.37			4.24E+01	3.04E+01
	31	911.53	1.37E+02	36.30	2.85E+00	2.76E+00	1.34E+02	3.64E+01
	32	918.99	1.56E+01	16.88			1.56E+01	1.69E+01
	33	967.92	1.37E+02	33.52			1.37E+02	3.35E+01
	34	1026.63	2.31E+01	19.38			2.31E+01	1.94E+01
M	35	1120.83	5.89E+01	27.10			5.89E+01	2.71E+01
m	36	1124.27	1.70E+01	25.97			1.70E+01	2.60E+01
	37	1239.49	3.76E+01	29.46			3.76E+01	2.95E+01
	38	1265.20	2.18E+01	24.17			2.18E+01	2.42E+01
	39	1377.98	3.15E+01	21.00			3.15E+01	2.10E+01
	40	1461.07	7.13E+02	56.26	1.00E+00	1.77E+00	7.12E+02	5.63E+01
	41	1540.13	1.52E+01	15.28			1.52E+01	1.53E+01
	42	1558.51	8.00E+00	7.87			8.00E+00	7.87E+00
	43	1572.50	8.95E+00	7.75			8.95E+00	7.75E+00
	44	1579.22	8.20E+00	7.62			8.20E+00	7.62E+00
	45	1587.24	2.76E+01	11.84			2.76E+01	1.18E+01
	46	1593.78	8.22E+00	6.32			8.22E+00	6.32E+00
	47	1701.77	8.50E+00	9.62			8.50E+00	9.62E+00
	48	1764.95	4.10E+01	12.81			4.10E+01	1.28E+01
	49	1847.22	1.40E+01	7.48			1.40E+01	7.48E+00
	50	1933.75	8.50E+00	8.51			8.50E+00	8.51E+00
	51	2058.37	5.00E+00	7.07			5.00E+00	7.07E+00
	52	2104.22	1.04E+01	11.66			1.04E+01	1.17E+01
	53	2185.82	5.88E+00	6.93			5.88E+00	6.93E+00
	54	2195.32	5.38E+00	7.07			5.38E+00	7.07E+00
	55	2204.28	2.41E+01	12.00			2.41E+01	1.20E+01
	56	2328.83	8.00E+00	5.66			8.00E+00	5.66E+00
	57	2614.87	7.54E+01	19.61	1.86E+00	1.12E+00	7.35E+01	1.96E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 3:17:48PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

Corrected Area is: Original * Peak Ratio - Background

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	26.30	7.16E+01	80.38			7.16E+01	8.04E+01
M	2	57.84	5.78E+01	73.30			5.78E+01	7.33E+01
	3	76.35	1.26E+03	169.46			1.26E+03	1.69E+02
M	4	87.13	4.32E+02	107.22			4.32E+02	1.07E+02
m	5	93.42	3.58E+02	105.30	7.98E+01	7.31E+00	2.78E+02	1.06E+02
	6	128.20	9.18E+01	86.32			9.18E+01	8.63E+01
	7	155.40	7.30E+01	72.92			7.30E+01	7.29E+01
	8	169.88	6.41E+01	65.98			6.41E+01	6.60E+01
	9	186.46	2.02E+02	110.31	3.06E+01	5.82E+00	1.72E+02	1.10E+02
	10	207.98	1.11E+02	81.39			1.11E+02	8.14E+01
M	11	234.92	3.56E+01	24.31			3.56E+01	2.43E+01
m	12	238.92	8.43E+02	78.30	1.40E+01	2.71E+00	8.29E+02	7.83E+01
m	13	241.58	1.76E+02	77.69			1.76E+02	7.77E+01
	14	269.75	1.12E+02	75.91			1.12E+02	7.59E+01
	15	295.35	2.39E+02	55.97			2.39E+02	5.60E+01
	16	300.71	3.86E+01	42.25			3.86E+01	4.22E+01
	17	327.79	6.64E+01	49.32			6.64E+01	4.93E+01
	18	338.74	1.42E+02	56.64			1.42E+02	5.66E+01
M	19	352.17	4.25E+02	56.55	6.53E+00	4.43E+00	4.18E+02	5.67E+01
m	20	355.61	2.67E+01	44.89			2.67E+01	4.49E+01
	21	408.32	8.84E+01	54.63			8.84E+01	5.46E+01
	22	511.28	1.78E+02	49.46	5.21E+01	4.74E+00	1.25E+02	4.97E+01
	23	583.79	2.53E+02	49.57			2.53E+02	4.96E+01
	24	609.52	3.21E+02	55.28	3.25E+00	2.97E+00	3.17E+02	5.54E+01
	25	623.58	2.08E+01	24.04			2.08E+01	2.40E+01
	26	727.52	8.67E+01	42.77			8.67E+01	4.28E+01
	27	795.56	3.65E+01	29.87	0.00E+00	0.00E+00	3.65E+01	2.99E+01
	28	814.72	2.46E+01	21.93			2.46E+01	2.19E+01
	29	839.27	5.25E+01	32.73			5.25E+01	3.27E+01
	30	861.82	4.24E+01	30.37			4.24E+01	3.04E+01
	31	911.53	1.37E+02	36.30	2.85E+00	2.76E+00	1.34E+02	3.64E+01
	32	918.99	1.56E+01	16.88			1.56E+01	1.69E+01
	33	967.92	1.37E+02	33.52			1.37E+02	3.35E+01
	34	1026.63	2.31E+01	19.38			2.31E+01	1.94E+01
M	35	1120.83	5.89E+01	27.10			5.89E+01	2.71E+01
m	36	1124.27	1.70E+01	25.97			1.70E+01	2.60E+01
	37	1239.49	3.76E+01	29.46			3.76E+01	2.95E+01
	38	1265.20	2.18E+01	24.17			2.18E+01	2.42E+01
	39	1377.98	3.15E+01	21.00			3.15E+01	2.10E+01
	40	1461.07	7.13E+02	56.26	1.00E+00	1.77E+00	7.12E+02	5.63E+01
	41	1540.13	1.52E+01	15.28			1.52E+01	1.53E+01
	42	1558.51	8.00E+00	7.87			8.00E+00	7.87E+00
	43	1572.50	8.95E+00	7.75			8.95E+00	7.75E+00
	44	1579.22	8.20E+00	7.62			8.20E+00	7.62E+00
	45	1587.24	2.76E+01	11.84			2.76E+01	1.18E+01
	46	1593.78	8.22E+00	6.32			8.22E+00	6.32E+00
	47	1701.77	8.50E+00	9.62			8.50E+00	9.62E+00
	48	1764.95	4.10E+01	12.81			4.10E+01	1.28E+01
	49	1847.22	1.40E+01	7.48			1.40E+01	7.48E+00
	50	1933.75	8.50E+00	8.51			8.50E+00	8.51E+00
	51	2058.37	5.00E+00	7.07			5.00E+00	7.07E+00
	52	2104.22	1.04E+01	11.66			1.04E+01	1.17E+01
	53	2185.82	5.88E+00	6.93			5.88E+00	6.93E+00
	54	2195.32	5.38E+00	7.07			5.38E+00	7.07E+00

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
55	2204.28	2.41E+01	12.00			2.41E+01	1.20E+01
56	2328.83	8.00E+00	5.66			8.00E+00	5.66E+00
57	2614.87	7.54E+01	19.61	1.86E+00	1.12E+00	7.35E+01	1.96E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.989	1460.81	*	10.67	2.50E+01	2.92E+00
CD-109	0.878	88.03	*	3.72	6.19E+00	1.66E+00
SN-126	0.970	87.57	*	37.00	5.35E-01	1.40E-01
EU-155	0.325	86.50	*	30.90	6.66E-01	1.74E-01
		105.30		20.70		
TL-208	0.856	583.14	*	30.22	1.42E+00	3.10E-01
		860.37		4.48		
		2614.66	*	35.85	1.14E+00	3.23E-01
BI-212	0.756	727.17	*	11.80	1.52E+00	7.62E-01
		1620.62		2.75		
PB-212	0.983	238.63	*	44.60	1.43E+00	1.80E-01
		300.09	*	3.41	1.06E+00	1.17E+00
BI-214	0.981	609.31	*	46.30	1.21E+00	2.40E-01
		1120.29	*	15.10	1.18E+00	5.51E-01
		1764.49	*	15.80	1.13E+00	3.63E-01
		2204.22	*	4.98	2.44E+00	1.23E+00
PB-214	0.993	295.21	*	19.19	1.15E+00	2.86E-01
		351.92	*	37.19	1.21E+00	1.97E-01
RA-224	0.944	240.98	*	3.95	3.47E+00	1.56E+00
RA-226	0.990	186.21	*	3.28	3.33E+00	6.45E+00
AC-228	0.558	338.32	*	11.40	1.30E+00	5.30E-01
		911.07	*	27.70	1.22E+00	3.45E-01
		969.11		16.60		
NP-237	0.939	86.50	*	12.60	1.57E+00	4.10E-01

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 3:17:48PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	26.30	1.98820E-02	56.15	Tol.	TH-231
M	2	57.84	1.60484E-02	63.44	Tol.	CE-143
	3	76.35	3.49544E-01	6.73		
m	5	93.42	7.72087E-02	18.99		
	6	128.20	2.54876E-02	47.04		
	7	155.40	2.02744E-02	49.95		
	8	169.88	1.77950E-02	51.50		
	10	207.98	3.08907E-02	36.60		
M	11	234.92	9.87508E-03	34.19	Tol.	NB-95M
	14	269.75	3.10051E-02	34.00		
	17	327.79	1.84341E-02	37.16	Sum	
m	20	355.61	7.40805E-03	84.16	Tol.	BA-133
	21	408.32	2.45462E-02	30.91		
	22	511.28	3.48601E-02	19.80		
	25	623.58	5.76797E-03	57.89		
	27	795.56	1.01263E-02	40.96	Sum	
	28	814.72	6.82910E-03	44.60	Sum	
	29	839.27	1.45770E-02	31.19		
	30	861.82	1.17845E-02	35.80		
	32	918.99	4.34028E-03	54.02		
	33	967.92	3.79167E-02	12.28		
	34	1026.63	6.41493E-03	41.97		
m	36	1124.27	4.72796E-03	76.29		
	37	1239.49	1.04353E-02	39.21		
	38	1265.20	6.05735E-03	55.41		
	39	1377.98	8.74228E-03	33.36		
	41	1540.13	4.21627E-03	50.34		
	42	1558.51	2.22222E-03	49.21		
	43	1572.50	2.48737E-03	43.25		
	44	1579.22	2.27778E-03	46.44		
	45	1587.24	7.66204E-03	21.47		
	46	1593.78	2.28395E-03	38.46	D-Esc	
	47	1701.77	2.36111E-03	56.57	Sum	
	49	1847.22	3.88889E-03	26.73		

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
50	1933.75	2.36111E-03	50.09		
51	2058.37	1.38889E-03	70.71		
52	2104.22	2.88580E-03	56.13	S-Esc	
53	2185.82	1.63194E-03	58.96		
54	2195.32	1.49306E-03	65.78		
56	2328.83	2.22222E-03	35.36		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.98	1460.81	*	10.67	2.50E+01	2.92E+00
CD-109	0.87	88.03	*	3.72	6.19E+00	1.66E+00
SN-126	0.97	87.57	*	37.00	5.35E-01	1.40E-01
EU-155	0.32	86.50	*	30.90	6.66E-01	1.74E-01
		105.30		20.70		
TL-208	0.85	583.14	*	30.22	1.42E+00	3.10E-01
		860.37		4.48		
		2614.66	*	35.85	1.14E+00	3.23E-01
BI-212	0.75	727.17	*	11.80	1.52E+00	7.62E-01
		1620.62		2.75		
PB-212	0.98	238.63	*	44.60	1.43E+00	1.80E-01
		300.09	*	3.41	1.06E+00	1.17E+00
BI-214	0.98	609.31	*	46.30	1.21E+00	2.40E-01
		1120.29	*	15.10	1.18E+00	5.51E-01
		1764.49	*	15.80	1.13E+00	3.63E-01
		2204.22	*	4.98	2.44E+00	1.23E+00
PB-214	0.99	295.21	*	19.19	1.15E+00	2.86E-01
		351.92	*	37.19	1.21E+00	1.97E-01
RA-224	0.94	240.98	*	3.95	3.47E+00	1.56E+00
RA-226	0.99	186.21	*	3.28	3.33E+00	6.45E+00
AC-228	0.55	338.32	*	11.40	1.30E+00	5.30E-01
		911.07	*	27.70	1.22E+00	3.45E-01

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
AC-228	0.55	969.11		16.60		
NP-237	0.93	86.50	*	12.60	1.57E+00	4.10E-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.989	2.50E+01	2.92E+00	
?	CD-109	0.878	6.19E+00	1.66E+00	
?	SN-126	0.970	5.35E-01	1.40E-01	
?	EU-155	0.325	6.66E-01	1.74E-01	
	TL-208	0.856	1.29E+00	2.24E-01	
	BI-212	0.756	1.52E+00	7.62E-01	
	PB-212	0.983	1.43E+00	1.78E-01	
	BI-214	0.981	1.21E+00	1.86E-01	
	PB-214	0.993	1.19E+00	1.62E-01	
	RA-224	0.944	3.47E+00	1.56E+00	
	RA-226	0.990	3.33E+00	6.45E+00	
	AC-228	0.558	1.25E+00	2.89E-01	
?	NP-237	0.939	1.57E+00	4.10E-01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 3:17:48PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	26.30	1.98820E-02	56.15	Tol.	TH-231
M	2	57.84	1.60484E-02	63.44	Tol.	CE-143
	3	76.35	3.49544E-01	6.73		
m	5	93.42	7.72087E-02	18.99		
	6	128.20	2.54876E-02	47.04		
	7	155.40	2.02744E-02	49.95		
	8	169.88	1.77950E-02	51.50		
	10	207.98	3.08907E-02	36.60		
M	11	234.92	9.87508E-03	34.19	Tol.	NB-95M
	14	269.75	3.10051E-02	34.00		
	17	327.79	1.84341E-02	37.16	Sum	
m	20	355.61	7.40805E-03	84.16	Tol.	BA-133
	21	408.32	2.45462E-02	30.91		
	22	511.28	3.48601E-02	19.80		
	25	623.58	5.76797E-03	57.89		
	27	795.56	1.01263E-02	40.96	Sum	
	28	814.72	6.82910E-03	44.60	Sum	
	29	839.27	1.45770E-02	31.19		
	30	861.82	1.17845E-02	35.80		
	32	918.99	4.34028E-03	54.02		
	33	967.92	3.79167E-02	12.28		
	34	1026.63	6.41493E-03	41.97		
m	36	1124.27	4.72796E-03	76.29		
	37	1239.49	1.04353E-02	39.21		
	38	1265.20	6.05735E-03	55.41		
	39	1377.98	8.74228E-03	33.36		
	41	1540.13	4.21627E-03	50.34		
	42	1558.51	2.22222E-03	49.21		
	43	1572.50	2.48737E-03	43.25		
	44	1579.22	2.27778E-03	46.44		
	45	1587.24	7.66204E-03	21.47		
	46	1593.78	2.28395E-03	38.46	D-Esc	
	47	1701.77	2.36111E-03	56.57	Sum	
	49	1847.22	3.88889E-03	26.73		
	50	1933.75	2.36111E-03	50.09		

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
51	2058.37	1.38889E-03	70.71		
52	2104.22	2.88580E-03	56.13	S-Esc	
53	2185.82	1.63194E-03	58.96		
54	2195.32	1.49306E-03	65.78		
56	2328.83	2.22222E-03	35.36		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	-5.53E-01	2.62E+00	2.62E+00
+	NA-22	1274.54		99.94	6.41E-02	1.20E-01	1.20E-01
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	0.00E+00		1.00E+26
+	AL-26	1808.65		99.76	2.66E-02	6.24E-02	6.24E-02
+	K-40	1460.81	*	10.67	2.50E+01	1.13E+00	1.13E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	4.82E-02	6.44E-02	6.44E-02
		78.34		96.00	2.20E-01		8.31E-02
+	SC-46	889.25		99.98	-1.11E-01	2.00E-01	2.00E-01
		1120.51		99.99	3.09E-01		3.50E-01
+	V-48	983.52		99.98	1.87E+00	7.43E+00	7.43E+00
		1312.10		97.50	-2.58E+00		8.67E+00
+	CR-51	320.08		9.83	3.17E+00	8.16E+00	8.16E+00
+	MN-54	834.83		99.97	1.13E-04	1.11E-01	1.11E-01
+	CO-56	846.75		99.96	-8.83E-02	1.88E-01	1.88E-01
		1037.75		14.03	1.23E+00		1.86E+00
		1238.25		67.00	9.32E-02		5.48E-01
		1771.40		15.51	7.33E-02		1.29E+00
		2598.48		16.90	-1.33E-01		7.42E-01
+	CO-57	122.06		85.51	1.04E-02	7.06E-02	7.06E-02
		136.48		10.60	-2.72E-02		6.01E-01
+	CO-58	810.76		99.40	8.29E-03	2.47E-01	2.47E-01
+	FE-59	1099.22		56.50	-3.12E-01	9.35E-01	9.35E-01

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	FE-59	1291.56		43.20	-5.84E-01	9.35E-01	1.09E+00
+	CO-60	1173.22		100.00	1.22E-02	1.05E-01	1.20E-01
		1332.49		100.00	1.64E-03		1.05E-01
+	ZN-65	1115.52		50.75	-7.90E-03	2.71E-01	2.71E-01
+	GA-67	93.31		35.70	5.88E+08	3.80E+08	3.80E+08
		208.95		2.24	2.25E+09		7.15E+09
		300.22		16.00	-2.43E+09		1.03E+09
+	SE-75	121.11		16.70	1.28E-01	1.47E-01	5.05E-01
		136.00		59.20	-2.82E-02		1.47E-01
		264.65		59.80	-2.60E-03		1.99E-01
		279.53		25.20	1.32E-01		4.66E-01
		400.65		11.40	-9.75E-02		1.06E+00
+	RB-82	776.52		13.00	-9.26E+00	1.04E+01	1.04E+01
+	RB-83	520.41		46.00	1.56E-01	4.05E-01	4.05E-01
		529.64		30.30	4.99E-02		5.87E-01
		552.65		16.40	-2.95E-01		1.05E+00
+	KR-85	513.99		0.43	2.62E+01	2.49E+01	2.49E+01
+	SR-85	513.99		99.27	3.32E-01	3.16E-01	3.16E-01
+	Y-88	898.02		93.40	2.88E-03	1.57E-01	1.98E-01
		1836.01		99.38	5.64E-02		1.57E-01
+	MO-93	263.06		56.72	-3.41E-02	7.32E-02	1.17E-01
		684.67		99.68	-1.29E-02		9.22E-02
		1477.11		99.08	2.04E-02		7.32E-02
+	NB-93M	16.57		9.43	-5.64E+01	7.03E+01	7.03E+01
+	NB-94	702.63		100.00	-6.05E-02	9.20E-02	9.20E-02
		871.10		100.00	3.62E-02		9.55E-02
+	NB-95	765.79		99.81	3.81E-01	8.06E-01	8.06E-01
+	NB-95M	235.69		25.00	6.95E+07	1.19E+08	1.19E+08
+	ZR-95	724.18		43.70	-5.12E-02	4.80E-01	6.82E-01
		756.72		55.30	-1.00E-01		4.80E-01
+	MO-99	181.06		6.20	-1.06E+10	9.10E+10	1.08E+11
		739.58		12.80	6.32E+10		9.10E+10
		778.00		4.50	-1.27E+11		2.46E+11
+	RU-103	497.08		89.00	1.28E-01	5.27E-01	5.27E-01
+	RU-106	621.84		9.80	-1.69E-03	1.09E+00	1.09E+00
+	AG-108M	433.93		89.90	-1.40E-02	7.58E-02	7.58E-02
		614.37		90.40	-3.05E-01		1.08E-01
		722.95		90.50	7.45E-03		1.01E-01
+	CD-109	88.03	*	3.72	6.19E+00	3.83E+00	3.83E+00
+	AG-110M	657.75		93.14	1.48E-02	1.23E-01	1.23E-01
		677.61		10.53	-1.91E-01		1.07E+00
		706.67		16.46	1.23E-01		7.76E-01
		763.93		21.98	-2.80E-01		5.90E-01
		884.67		71.63	5.02E-02		1.63E-01
		1384.27		23.94	-3.75E-02		4.68E-01
+	CD-113M	263.70		0.02	-6.58E+01	2.87E+02	2.87E+02
+	SN-113	255.12		1.93	-1.77E+00	2.03E-01	6.17E+00
		391.69		64.90	1.87E-02		2.03E-01

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE123M	159.00		84.10	-2.54E-02	1.07E-01	1.07E-01
+	SB-124	602.71		97.87	4.22E-02	2.64E-01	2.64E-01
		645.85		7.26	6.10E-01		3.49E+00
		722.78		11.10	1.95E-01		2.64E+00
		1691.02		49.00	1.38E-02		4.59E-01
+	I-125	35.49		6.49	-9.58E-01	6.47E+00	6.47E+00
+	SB-125	176.33		6.89	-2.63E-01	2.58E-01	7.62E-01
		427.89		29.33	1.18E-02		2.58E-01
		463.38		10.35	5.15E-01		9.04E-01
		600.56		17.80	2.05E-01		4.99E-01
		635.90		11.32	-5.36E-04		7.74E-01
+	SB-126	414.70		83.30	-1.21E+01	2.33E+01	2.36E+01
		666.33		99.60	-1.15E+01		2.33E+01
		695.00		99.60	2.30E+00		2.76E+01
		720.50		53.80	1.76E+01		4.60E+01
+	SN-126	87.57	*	37.00	5.35E-01	3.31E-01	3.31E-01
+	SB-127	473.00		25.00	-3.21E+06	2.11E+07	2.37E+07
		685.20		35.70	-2.95E+06		2.11E+07
		783.80		14.70	6.78E+06		5.35E+07
+	I-129	29.78		57.00	-1.26E-01	3.95E-01	3.95E-01
		33.60		13.20	1.15E-01		1.18E+00
		39.58		7.52	-8.09E-01		1.33E+00
+	I-131	284.30		6.05	5.72E+02	5.39E+02	6.70E+03
		364.48		81.20	1.20E+02		5.39E+02
		636.97		7.26	2.21E+03		7.20E+03
		722.89		1.80	2.32E+03		3.14E+04
+	TE-132	49.72		13.10	-7.26E+08	1.68E+08	1.25E+09
		228.16		88.00	-3.66E+06		1.68E+08
+	BA-133	81.00		33.00	-7.70E-01	1.68E-01	1.77E-01
		302.84		17.80	1.16E-01		4.05E-01
		356.01		60.00	8.64E-02		1.68E-01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-4.30E+05	9.90E+04	9.90E+04
+	CS-134	563.23		8.38	-5.22E-01	1.06E-01	9.82E-01
		569.32		15.43	3.85E-01		5.92E-01
		604.70		97.60	1.51E-02		1.06E-01
		795.84		85.40	1.36E-01		1.36E-01
		801.93		8.73	-7.48E-01		1.12E+00
+	CS-135	268.24		16.00	2.99E-01	4.55E-01	4.55E-01
+	@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41		28.60	1.00E+26		1.00E+26
	@	1678.03		9.54	1.00E+26		1.00E+26
+	CS-136	153.22		7.46	-6.41E+01	1.81E+01	1.43E+02
		163.89		4.61	3.36E+01		2.25E+02
		176.55		13.56	-2.59E+01		7.51E+01
		273.65		12.66	-9.67E+00		1.12E+02
		340.57		48.50	8.32E+01		4.04E+01
		818.50		99.70	4.06E+00		1.81E+01
		1048.07		79.60	8.78E+00		2.70E+01

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-136	1235.34		19.70	2.93E+01	1.81E+01	1.53E+02
+	CS-137	661.65		85.12	2.39E-02	1.05E-01	1.05E-01
+	LA-138	788.74		34.00	7.04E-02	1.32E-01	2.67E-01
		1435.80		66.00	1.40E-02		1.32E-01
+	CE-139	165.85		80.35	2.69E-03	1.01E-01	1.01E-01
+	BA-140	162.64		6.70	1.02E+02	7.55E+01	1.83E+02
		304.84		4.50	7.95E+01		3.53E+02
		423.70		3.20	-5.00E+02		5.15E+02
		437.55		2.00	-1.61E+02		8.37E+02
		537.32		25.00	-8.41E+00		7.55E+01
+	LA-140	328.77		20.50	6.98E+01	2.18E+01	8.96E+01
		487.03		45.50	3.00E+00		4.02E+01
		815.85		23.50	-1.26E+00		9.22E+01
		1596.49		95.49	-9.48E-01		2.18E+01
+	CE-141	145.44		48.40	3.82E-02	9.06E-01	9.06E-01
+	@ CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26		42.00	1.00E+26		1.00E+26
	@	664.55		5.20	1.00E+26		1.00E+26
+	CE-144	133.54		10.80	-8.34E-02	5.62E-01	5.62E-01
+	PM-144	476.78		42.00	-9.19E-02	1.01E-01	2.08E-01
		618.01		98.60	4.14E-02		1.01E-01
		696.49		99.49	4.60E-02		1.20E-01
+	PM-145	36.85		21.70	-6.23E-02	2.88E-01	5.47E-01
		37.36		39.70	-1.35E-01		2.88E-01
		42.30		15.10	-2.41E-01		5.95E-01
		72.40		2.31	-7.76E+00		3.03E+00
+	PM-146	453.90		39.94	-7.42E-02	1.77E-01	1.77E-01
		735.90		14.01	5.76E-03		6.30E-01
		747.13		13.10	-1.85E-01		6.97E-01
+	ND-147	91.11		28.90	-7.36E+01	1.29E+02	1.29E+02
		531.02		13.10	-7.75E+01		3.57E+02
+	PM-149	285.90		3.10	3.30E+13	1.29E+14	1.29E+14
+	EU-152	121.78		20.50	3.40E-02	2.30E-01	2.30E-01
		244.69		5.40	-3.95E+00		1.42E+00
		344.27		19.13	1.97E-02		3.79E-01
		778.89		9.20	1.89E-01		1.00E+00
		964.01		10.40	-1.91E+00		1.05E+00
		1085.78		7.22	-2.66E-01		1.39E+00
		1112.02		9.60	6.50E-02		1.03E+00
		1407.95		14.94	4.64E-02		5.82E-01
+	GD-153	97.43		31.30	3.55E-02	2.07E-01	2.07E-01
		103.18		22.20	-1.40E-01		2.84E-01
+	EU-154	123.07		40.50	4.70E-03	1.18E-01	1.18E-01
		723.30		19.70	3.50E-02		4.73E-01
		873.19		11.50	-2.16E-02		8.38E-01
		996.32		10.30	-1.79E-01		9.46E-01
		1004.76		17.90	-1.58E-01		5.89E-01
		1274.45		35.50	1.71E-01		3.22E-01
+	EU-155	86.50	*	30.90	6.66E-01	2.39E-01	4.12E-01

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-155	105.30		20.70	2.21E-02	2.39E-01	2.39E-01
+	EU-156	811.77		10.40	1.07E+01	8.97E+01	8.97E+01
		1153.47		7.20	-2.43E+01		1.65E+02
		1230.71		8.90	-5.87E+00		1.48E+02
+	HO-166M	184.41		72.60	1.14E-01	9.00E-02	9.00E-02
		280.45		29.60	4.37E-02		2.19E-01
		410.94		11.10	2.11E-01		6.94E-01
		711.69		54.10	4.17E-02		1.72E-01
+	TM-171	66.72		0.14	1.37E+01	4.97E+01	4.97E+01
+	HF-172	67.35		5.31	9.51E-01	4.71E-01	1.27E+00
		125.81		11.30	-2.80E-01		4.71E-01
+	LU-172	181.53		20.60	-3.23E+02	5.99E+03	9.58E+03
		900.72		29.81	7.67E+03		1.18E+04
		1093.66		62.50	5.00E+02		5.99E+03
+	LU-173	100.72		5.24	5.78E-01	3.94E-01	1.07E+00
		272.11		21.20	3.01E-01		3.94E-01
+	HF-175	343.40		84.00	1.20E-02	2.31E-01	2.31E-01
+	LU-176	88.34		13.30	4.08E-01	6.45E-02	4.90E-01
		201.83		86.00	-1.15E-02		6.45E-02
		306.78		94.00	1.95E-02		6.94E-02
+	HF-181	133.02		41.70	1.03E-01	5.00E-01	6.08E-01
		345.85		17.20	1.14E-01		2.08E+00
		482.03		82.80	3.14E-01		5.00E-01
+	TA-182	67.75		41.20	2.04E-01	2.72E-01	2.72E-01
		1121.30		34.90	8.45E-01		8.23E-01
		1189.05		16.23	7.06E-01		1.54E+00
		1221.41		26.98	-6.52E-01		8.13E-01
		1231.02		11.44	-8.29E-02		2.09E+00
+	IR-192	308.46		29.68	1.11E-01	4.28E-01	5.75E-01
		468.07		48.10	-1.44E-01		4.28E-01
+	HG-203	279.19		77.30	6.91E-02	3.79E-01	3.79E-01
+	TL-204	374.74		94.11	-2.08E-02	7.53E-02	7.53E-02
		899.15		99.16	-2.52E-02		1.00E-01
		911.74		91.10	3.97E-01		1.88E-01
+	BI-207	569.67		97.72	2.93E-02	8.46E-02	8.46E-02
		1063.62		74.90	2.60E-02		1.41E-01
+	TL-208	583.14	*	30.22	1.42E+00	2.86E-01	3.66E-01
		860.37		4.48	1.12E+00		2.46E+00
		2614.66	*	35.85	1.14E+00		2.86E-01
+	BI-210M	262.00		45.00	-3.00E-02	1.44E-01	1.44E-01
		300.00		23.00	-7.52E-01		3.18E-01
+	PB-210	46.50		4.25	2.75E-01	1.92E+00	1.92E+00
+	PB-211	404.84		2.90	-7.79E-01	2.61E+00	2.61E+00
		831.96		2.90	-7.26E-02		2.73E+00
+	BI-212	727.17	*	11.80	1.52E+00	1.16E+00	1.16E+00
		1620.62		2.75	1.72E+00		3.48E+00
+	PB-212	238.63	*	44.60	1.43E+00	3.10E-01	3.10E-01
		300.09	*	3.41	1.06E+00		1.90E+00

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BI-214	609.31	*	46.30	1.21E+00	7.43E-02	2.76E-01
		1120.29	*	15.10	1.18E+00		1.31E+00
		1764.49	*	15.80	1.13E+00		7.43E-02
		2204.22	*	4.98	2.44E+00		1.43E+00
+	PB-214	295.21	*	19.19	1.15E+00	2.55E-01	3.82E-01
		351.92	*	37.19	1.21E+00		2.55E-01
+	RN-219	401.80		6.50	-9.32E-02	1.06E+00	1.06E+00
+	RA-223	323.87		3.88	2.66E-01	1.65E+00	1.65E+00
+	RA-224	240.98	*	3.95	3.47E+00	3.51E+00	3.51E+00
+	RA-225	40.00		31.00	-2.20E+01	3.61E+01	3.61E+01
+	RA-226	186.21	*	3.28	3.33E+00	3.47E+00	3.47E+00
+	TH-227	50.10		8.40	-4.91E-01	8.46E-01	8.46E-01
		236.00		11.50	5.40E-01		9.22E-01
		256.20		6.30	5.97E-01		1.06E+00
+	AC-228	338.32	*	11.40	1.30E+00	4.46E-01	7.96E-01
		911.07	*	27.70	1.22E+00		4.46E-01
		969.11		16.60	1.26E+00		9.17E-01
+	TH-230	48.44		16.90	2.36E-01	4.58E-01	4.58E-01
		62.85		4.60	1.11E+00		1.48E+00
		67.67		0.37	1.23E+01		1.64E+01
+	PA-231	283.67		1.60	-2.54E+00	3.08E+00	3.93E+00
		302.67		2.30	8.78E-01		3.08E+00
+	TH-231	25.64		14.70	1.01E+00	9.11E-01	2.96E+00
		84.21		6.40	-7.53E-01		9.11E-01
+	PA-233	311.98		38.60	1.03E+00	2.26E+00	2.26E+00
+	PA-234	131.20		20.40	2.36E-02	2.47E-01	2.47E-01
		733.99		8.80	-2.69E-01		9.39E-01
		946.00		12.00	5.17E-02		7.67E-01
+	PA-234M	1001.03		0.92	1.91E-01	1.09E+01	1.09E+01
+	TH-234	63.29		3.80	1.27E+00	1.77E+00	1.77E+00
+	U-235	143.76		10.50	-1.54E-01	4.67E-01	4.67E-01
		163.35		4.70	1.59E-01		1.06E+00
		205.31		4.70	-1.02E+00		1.44E+00
+	NP-237	86.50	*	12.60	1.57E+00	9.72E-01	9.72E-01
+	NP-239	106.10		22.70	1.72E+11	1.86E+12	1.86E+12
		228.18		10.70	-1.17E+11		5.38E+12
		277.60		14.10	7.23E+11		4.10E+12
+	AM-241	59.54		35.90	-5.12E-02	1.82E-01	1.82E-01
+	AM-243	74.67		66.00	2.30E-01	1.28E-01	1.28E-01
+	CM-243	209.75		3.29	1.13E+00	4.69E-01	2.20E+00
		228.14		10.60	-1.34E-02		6.15E-01
		277.60		14.00	8.26E-02		4.69E-01

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	2.62E+00	2.62E+00	-5.53E-01	1.24E+00
	NA-22	1274.54		99.94	1.20E-01	1.20E-01	6.41E-02	5.53E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		0.00E+00	1.00E+20
	AL-26	1808.65		99.76	6.24E-02	6.24E-02	2.66E-02	2.52E-02
+	K-40	1460.81	*	10.67	1.13E+00	1.13E+00	2.50E+01	5.19E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	6.44E-02	6.44E-02	4.82E-02	3.15E-02
		78.34		96.00	8.31E-02		2.20E-01	4.09E-02
	SC-46	889.25		99.98	2.00E-01	2.00E-01	-1.11E-01	9.21E-02
		1120.51		99.99	3.50E-01		3.09E-01	1.65E-01
	V-48	983.52		99.98	7.43E+00	7.43E+00	1.87E+00	3.42E+00
		1312.10		97.50	8.67E+00		-2.58E+00	3.95E+00
	CR-51	320.08		9.83	8.16E+00	8.16E+00	3.17E+00	3.91E+00
	MN-54	834.83		99.97	1.11E-01	1.11E-01	1.13E-04	5.14E-02
	CO-56	846.75		99.96	1.88E-01	1.88E-01	-8.83E-02	8.60E-02
		1037.75		14.03	1.86E+00		1.23E+00	8.63E-01
		1238.25		67.00	5.48E-01		9.32E-02	2.58E-01
		1771.40		15.51	1.29E+00		7.33E-02	5.51E-01
		2598.48		16.90	7.42E-01		-1.33E-01	2.63E-01
	CO-57	122.06		85.51	7.06E-02	7.06E-02	1.04E-02	3.43E-02
		136.48		10.60	6.01E-01		-2.72E-02	2.92E-01
	CO-58	810.76		99.40	2.47E-01	2.47E-01	8.29E-03	1.15E-01
	FE-59	1099.22		56.50	9.35E-01	9.35E-01	-3.12E-01	4.33E-01
		1291.56		43.20	1.09E+00		-5.84E-01	4.91E-01
	CO-60	1173.22		100.00	1.20E-01	1.05E-01	1.22E-02	5.56E-02
		1332.49		100.00	1.05E-01		1.64E-03	4.76E-02
	ZN-65	1115.52		50.75	2.71E-01	2.71E-01	-7.90E-03	1.25E-01
	GA-67	93.31		35.70	3.80E+08	3.80E+08	5.88E+08	1.86E+08

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	GA-67	208.95		2.24	7.15E+09	3.80E+08	2.25E+09	3.48E+09
		300.22		16.00	1.03E+09		-2.43E+09	4.96E+08
	SE-75	121.11		16.70	5.05E-01	1.47E-01	1.28E-01	2.45E-01
		136.00		59.20	1.47E-01		-2.82E-02	7.13E-02
		264.65		59.80	1.99E-01		-2.60E-03	9.59E-02
		279.53		25.20	4.66E-01		1.32E-01	2.24E-01
		400.65		11.40	1.06E+00		-9.75E-02	5.06E-01
	RB-82	776.52		13.00	1.04E+01	1.04E+01	-9.26E+00	4.82E+00
	RB-83	520.41		46.00	4.05E-01	4.05E-01	1.56E-01	1.92E-01
		529.64		30.30	5.87E-01		4.99E-02	2.78E-01
		552.65		16.40	1.05E+00		-2.95E-01	4.94E-01
	KR-85	513.99		0.43	2.49E+01	2.49E+01	2.62E+01	1.20E+01
	SR-85	513.99		99.27	3.16E-01	3.16E-01	3.32E-01	1.52E-01
	Y-88	898.02		93.40	1.98E-01	1.57E-01	2.88E-03	9.22E-02
		1836.01		99.38	1.57E-01		5.64E-02	6.69E-02
	MO-93	263.06		56.72	1.17E-01	7.32E-02	-3.41E-02	5.62E-02
		684.67		99.68	9.22E-02		-1.29E-02	4.34E-02
		1477.11		99.08	7.32E-02		2.04E-02	3.14E-02
	NB-93M	16.57		9.43	7.03E+01	7.03E+01	-5.64E+01	3.42E+01
	NB-94	702.63		100.00	9.20E-02	9.20E-02	-6.05E-02	4.33E-02
		871.10		100.00	9.55E-02		3.62E-02	4.45E-02
	NB-95	765.79		99.81	8.06E-01	8.06E-01	3.81E-01	3.81E-01
	NB-95M	235.69		25.00	1.19E+08	1.19E+08	6.95E+07	5.81E+07
	ZR-95	724.18		43.70	6.82E-01	4.80E-01	-5.12E-02	3.22E-01
		756.72		55.30	4.80E-01		-1.00E-01	2.24E-01
	MO-99	181.06		6.20	1.08E+11	9.10E+10	-1.06E+10	5.22E+10
		739.58		12.80	9.10E+10		6.32E+10	4.28E+10
		778.00		4.50	2.46E+11		-1.27E+11	1.15E+11
	RU-103	497.08		89.00	5.27E-01	5.27E-01	1.28E-01	2.50E-01
	RU-106	621.84		9.80	1.09E+00	1.09E+00	-1.69E-03	5.14E-01
	AG-108M	433.93		89.90	7.58E-02	7.58E-02	-1.40E-02	3.59E-02
		614.37		90.40	1.08E-01		-3.05E-01	5.14E-02
		722.95		90.50	1.01E-01		7.45E-03	4.74E-02
+	CD-109	88.03	*	3.72	3.83E+00	3.83E+00	6.19E+00	1.90E+00
	AG-110M	657.75		93.14	1.23E-01	1.23E-01	1.48E-02	5.80E-02
		677.61		10.53	1.07E+00		-1.91E-01	5.02E-01
		706.67		16.46	7.76E-01		1.23E-01	3.66E-01
		763.93		21.98	5.90E-01		-2.80E-01	2.78E-01
		884.67		71.63	1.63E-01		5.02E-02	7.56E-02
		1384.27		23.94	4.68E-01		-3.75E-02	2.07E-01
	CD-113M	263.70		0.02	2.87E+02	2.87E+02	-6.58E+01	1.38E+02
	SN-113	255.12		1.93	6.17E+00	2.03E-01	-1.77E+00	2.98E+00
		391.69		64.90	2.03E-01		1.87E-02	9.70E-02
	TE123M	159.00		84.10	1.07E-01	1.07E-01	-2.54E-02	5.18E-02
	SB-124	602.71		97.87	2.64E-01	2.64E-01	4.22E-02	1.24E-01
		645.85		7.26	3.49E+00		6.10E-01	1.63E+00
		722.78		11.10	2.64E+00		1.95E-01	1.24E+00
		1691.02		49.00	4.59E-01		1.38E-02	1.92E-01
	I-125	35.49		6.49	6.47E+00	6.47E+00	-9.58E-01	3.15E+00
	SB-125	176.33		6.89	7.62E-01	2.58E-01	-2.63E-01	3.68E-01
		427.89		29.33	2.58E-01		1.18E-02	1.23E-01
		463.38		10.35	9.04E-01		5.15E-01	4.33E-01
		600.56		17.80	4.99E-01		2.05E-01	2.35E-01

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	SB-125	635.90		11.32	7.74E-01	2.58E-01	-5.36E-04	3.64E-01
	SB-126	414.70		83.30	2.36E+01	2.33E+01	-1.21E+01	1.12E+01
		666.33		99.60	2.33E+01		-1.15E+01	1.09E+01
		695.00		99.60	2.76E+01		2.30E+00	1.30E+01
		720.50		53.80	4.60E+01		1.76E+01	2.15E+01
+	SN-126	87.57	*	37.00	3.31E-01	3.31E-01	5.35E-01	1.64E-01
	SB-127	473.00		25.00	2.37E+07	2.11E+07	-3.21E+06	1.12E+07
		685.20		35.70	2.11E+07		-2.95E+06	9.92E+06
		783.80		14.70	5.35E+07		6.78E+06	2.51E+07
	I-129	29.78		57.00	3.95E-01	3.95E-01	-1.26E-01	1.92E-01
		33.60		13.20	1.18E+00		1.15E-01	5.73E-01
		39.58		7.52	1.33E+00		-8.09E-01	6.45E-01
	I-131	284.30		6.05	6.70E+03	5.39E+02	5.72E+02	3.22E+03
		364.48		81.20	5.39E+02		1.20E+02	2.58E+02
		636.97		7.26	7.20E+03		2.21E+03	3.39E+03
		722.89		1.80	3.14E+04		2.32E+03	1.48E+04
	TE-132	49.72		13.10	1.25E+09	1.68E+08	-7.26E+08	6.10E+08
		228.16		88.00	1.68E+08		-3.66E+06	8.14E+07
	BA-133	81.00		33.00	1.77E-01	1.68E-01	-7.70E-01	8.67E-02
		302.84		17.80	4.05E-01		1.16E-01	1.95E-01
		356.01		60.00	1.68E-01		8.64E-02	8.16E-02
@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	9.90E+04	9.90E+04	-4.30E+05	4.84E+04
	CS-134	563.23		8.38	9.82E-01	1.06E-01	-5.22E-01	4.62E-01
		569.32		15.43	5.92E-01		3.85E-01	2.80E-01
		604.70		97.60	1.06E-01		1.51E-02	5.04E-02
		795.84		85.40	1.36E-01		1.36E-01	6.43E-02
		801.93		8.73	1.12E+00		-7.48E-01	5.20E-01
	CS-135	268.24		16.00	4.55E-01	4.55E-01	2.99E-01	2.20E-01
@	I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1260.41		28.60	1.00E+26		1.00E+26	1.00E+20
@		1678.03		9.54	1.00E+26		1.00E+26	1.00E+20
	CS-136	153.22		7.46	1.43E+02	1.81E+01	-6.41E+01	6.92E+01
		163.89		4.61	2.25E+02		3.36E+01	1.09E+02
		176.55		13.56	7.51E+01		-2.59E+01	3.63E+01
		273.65		12.66	1.12E+02		-9.67E+00	5.41E+01
		340.57		48.50	4.04E+01		8.32E+01	1.96E+01
		818.50		99.70	1.81E+01		4.06E+00	8.40E+00
		1048.07		79.60	2.70E+01		8.78E+00	1.25E+01
		1235.34		19.70	1.53E+02		2.93E+01	7.18E+01
	CS-137	661.65		85.12	1.05E-01	1.05E-01	2.39E-02	4.93E-02
	LA-138	788.74		34.00	2.67E-01	1.32E-01	7.04E-02	1.25E-01
		1435.80		66.00	1.32E-01		1.40E-02	5.84E-02
	CE-139	165.85		80.35	1.01E-01	1.01E-01	2.69E-03	4.89E-02
	BA-140	162.64		6.70	1.83E+02	7.55E+01	1.02E+02	8.87E+01
		304.84		4.50	3.53E+02		7.95E+01	1.70E+02
		423.70		3.20	5.15E+02		-5.00E+02	2.44E+02
		437.55		2.00	8.37E+02		-1.61E+02	3.97E+02
		537.32		25.00	7.55E+01		-8.41E+00	3.57E+01
	LA-140	328.77		20.50	8.96E+01	2.18E+01	6.98E+01	4.32E+01
		487.03		45.50	4.02E+01		3.00E+00	1.91E+01
		815.85		23.50	9.22E+01		-1.26E+00	4.29E+01
		1596.49		95.49	2.18E+01		-9.48E-01	9.50E+00

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	CE-141	145.44		48.40	9.06E-01	9.06E-01	3.82E-02	4.40E-01
@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		293.26		42.00	1.00E+26		1.00E+26	1.00E+20
@		664.55		5.20	1.00E+26		1.00E+26	1.00E+20
	CE-144	133.54		10.80	5.62E-01	5.62E-01	-8.34E-02	2.73E-01
	PM-144	476.78		42.00	2.08E-01	1.01E-01	-9.19E-02	9.83E-02
		618.01		98.60	1.01E-01		4.14E-02	4.74E-02
		696.49		99.49	1.20E-01		4.60E-02	5.67E-02
	PM-145	36.85		21.70	5.47E-01	2.88E-01	-6.23E-02	2.66E-01
		37.36		39.70	2.88E-01		-1.35E-01	1.40E-01
		42.30		15.10	5.95E-01		-2.41E-01	2.90E-01
		72.40		2.31	3.03E+00		-7.76E+00	1.49E+00
	PM-146	453.90		39.94	1.77E-01	1.77E-01	-7.42E-02	8.40E-02
		735.90		14.01	6.30E-01		5.76E-03	2.94E-01
		747.13		13.10	6.97E-01		-1.85E-01	3.26E-01
	ND-147	91.11		28.90	1.29E+02	1.29E+02	-7.36E+01	6.34E+01
		531.02		13.10	3.57E+02		-7.75E+01	1.69E+02
	PM-149	285.90		3.10	1.29E+14	1.29E+14	3.30E+13	6.22E+13
	EU-152	121.78		20.50	2.30E-01	2.30E-01	3.40E-02	1.12E-01
		244.69		5.40	1.42E+00		-3.95E+00	6.89E-01
		344.27		19.13	3.79E-01		1.97E-02	1.82E-01
		778.89		9.20	1.00E+00		1.89E-01	4.68E-01
		964.01		10.40	1.05E+00		-1.91E+00	4.93E-01
		1085.78		7.22	1.39E+00		-2.66E-01	6.37E-01
		1112.02		9.60	1.03E+00		6.50E-02	4.72E-01
		1407.95		14.94	5.82E-01		4.64E-02	2.58E-01
	GD-153	97.43		31.30	2.07E-01	2.07E-01	3.55E-02	1.01E-01
		103.18		22.20	2.84E-01		-1.40E-01	1.38E-01
	EU-154	123.07		40.50	1.18E-01	1.18E-01	4.70E-03	5.71E-02
		723.30		19.70	4.73E-01		3.50E-02	2.22E-01
		873.19		11.50	8.38E-01		-2.16E-02	3.90E-01
		996.32		10.30	9.46E-01		-1.79E-01	4.36E-01
		1004.76		17.90	5.89E-01		-1.58E-01	2.73E-01
		1274.45		35.50	3.22E-01		1.71E-01	1.48E-01
+	EU-155	86.50	*	30.90	4.12E-01	2.39E-01	6.66E-01	2.04E-01
		105.30		20.70	2.39E-01		2.21E-02	1.16E-01
	EU-156	811.77		10.40	8.97E+01	8.97E+01	1.07E+01	4.18E+01
		1153.47		7.20	1.65E+02		-2.43E+01	7.68E+01
		1230.71		8.90	1.48E+02		-5.87E+00	6.89E+01
	HO-166M	184.41		72.60	9.00E-02	9.00E-02	1.14E-01	4.38E-02
		280.45		29.60	2.19E-01		4.37E-02	1.05E-01
		410.94		11.10	6.94E-01		2.11E-01	3.32E-01
		711.69		54.10	1.72E-01		4.17E-02	8.09E-02
	TM-171	66.72		0.14	4.97E+01	4.97E+01	1.37E+01	2.43E+01
	HF-172	67.35		5.31	1.27E+00	4.71E-01	9.51E-01	6.22E-01
		125.81		11.30	4.71E-01		-2.80E-01	2.29E-01
	LU-172	181.53		20.60	9.58E+03	5.99E+03	-3.23E+02	4.64E+03
		900.72		29.81	1.18E+04		7.67E+03	5.51E+03
		1093.66		62.50	5.99E+03		5.00E+02	2.77E+03
	LU-173	100.72		5.24	1.07E+00	3.94E-01	5.78E-01	5.21E-01
		272.11		21.20	3.94E-01		3.01E-01	1.91E-01
	HF-175	343.40		84.00	2.31E-01	2.31E-01	1.20E-02	1.11E-01
	LU-176	88.34		13.30	4.90E-01	6.45E-02	4.08E-01	2.40E-01

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	LU-176	201.83		86.00	6.45E-02	6.45E-02	-1.15E-02	3.12E-02
		306.78		94.00	6.94E-02		1.95E-02	3.33E-02
	HF-181	133.02		41.70	6.08E-01	5.00E-01	1.03E-01	2.95E-01
		345.85		17.20	2.08E+00		1.14E-01	9.94E-01
		482.03		82.80	5.00E-01		3.14E-01	2.38E-01
	TA-182	67.75		41.20	2.72E-01	2.72E-01	2.04E-01	1.33E-01
		1121.30		34.90	8.23E-01		8.45E-01	3.90E-01
		1189.05		16.23	1.54E+00		7.06E-01	7.23E-01
		1221.41		26.98	8.13E-01		-6.52E-01	3.76E-01
		1231.02		11.44	2.09E+00		-8.29E-02	9.74E-01
	IR-192	308.46		29.68	5.75E-01	4.28E-01	1.11E-01	2.76E-01
		468.07		48.10	4.28E-01		-1.44E-01	2.04E-01
	HG-203	279.19		77.30	3.79E-01	3.79E-01	6.91E-02	1.83E-01
	TL-204	374.74		94.11	7.53E-02	7.53E-02	-2.08E-02	3.59E-02
		899.15		99.16	1.00E-01		-2.52E-02	4.65E-02
		911.74		91.10	1.88E-01		3.97E-01	9.00E-02
	BI-207	569.67		97.72	8.46E-02	8.46E-02	2.93E-02	4.00E-02
		1063.62		74.90	1.41E-01		2.60E-02	6.50E-02
+	TL-208	583.14	*	30.22	3.66E-01	2.86E-01	1.42E+00	1.76E-01
		860.37		4.48	2.46E+00		1.12E+00	1.16E+00
		2614.66	*	35.85	2.86E-01		1.14E+00	1.22E-01
	BI-210M	262.00		45.00	1.44E-01	1.44E-01	-3.00E-02	6.97E-02
		300.00		23.00	3.18E-01		-7.52E-01	1.54E-01
	PB-210	46.50		4.25	1.92E+00	1.92E+00	2.75E-01	9.36E-01
	PB-211	404.84		2.90	2.61E+00	2.61E+00	-7.79E-01	1.25E+00
		831.96		2.90	2.73E+00		-7.26E-02	1.25E+00
+	BI-212	727.17	*	11.80	1.16E+00	1.16E+00	1.52E+00	5.55E-01
		1620.62		2.75	3.48E+00		1.72E+00	1.54E+00
+	PB-212	238.63	*	44.60	3.10E-01	3.10E-01	1.43E+00	1.52E-01
		300.09	*	3.41	1.90E+00		1.06E+00	9.13E-01
+	BI-214	609.31	*	46.30	2.76E-01	7.43E-02	1.21E+00	1.33E-01
		1120.29	*	15.10	1.31E+00		1.18E+00	6.28E-01
		1764.49	*	15.80	7.43E-02		1.13E+00	0.00E+00
		2204.22	*	4.98	1.43E+00		2.44E+00	5.76E-01
+	PB-214	295.21	*	19.19	3.82E-01	2.55E-01	1.15E+00	1.84E-01
		351.92	*	37.19	2.55E-01		1.21E+00	1.24E-01
	RN-219	401.80		6.50	1.06E+00	1.06E+00	-9.32E-02	5.06E-01
	RA-223	323.87		3.88	1.65E+00	1.65E+00	2.66E-01	7.91E-01
+	RA-224	240.98	*	3.95	3.51E+00	3.51E+00	3.47E+00	1.73E+00
	RA-225	40.00		31.00	3.61E+01	3.61E+01	-2.20E+01	1.76E+01
+	RA-226	186.21	*	3.28	3.47E+00	3.47E+00	3.33E+00	1.71E+00
	TH-227	50.10		8.40	8.46E-01	8.46E-01	-4.91E-01	4.13E-01
		236.00		11.50	9.22E-01		5.40E-01	4.52E-01
		256.20		6.30	1.06E+00		5.97E-01	5.13E-01
+	AC-228	338.32	*	11.40	7.96E-01	4.46E-01	1.30E+00	3.86E-01
		911.07	*	27.70	4.46E-01		1.22E+00	2.11E-01
		969.11		16.60	9.17E-01		1.26E+00	4.37E-01
	TH-230	48.44		16.90	4.58E-01	4.58E-01	2.36E-01	2.23E-01
		62.85		4.60	1.48E+00		1.11E+00	7.23E-01
		67.67		0.37	1.64E+01		1.23E+01	8.03E+00
	PA-231	283.67		1.60	3.93E+00	3.08E+00	-2.54E+00	1.89E+00
		302.67		2.30	3.08E+00		8.78E-01	1.48E+00
	TH-231	25.64		14.70	2.96E+00	9.11E-01	1.01E+00	1.44E+00

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TH-231	84.21		6.40	9.11E-01	9.11E-01	-7.53E-01	4.46E-01
	PA-233	311.98		38.60	2.26E+00	2.26E+00	1.03E+00	1.09E+00
	PA-234	131.20		20.40	2.47E-01	2.47E-01	2.36E-02	1.20E-01
		733.99		8.80	9.39E-01		-2.69E-01	4.38E-01
		946.00		12.00	7.67E-01		5.17E-02	3.54E-01
	PA-234M	1001.03		0.92	1.09E+01	1.09E+01	1.91E-01	5.04E+00
	TH-234	63.29		3.80	1.77E+00	1.77E+00	1.27E+00	8.67E-01
	U-235	143.76		10.50	4.67E-01	4.67E-01	-1.54E-01	2.27E-01
		163.35		4.70	1.06E+00		1.59E-01	5.13E-01
		205.31		4.70	1.44E+00		-1.02E+00	7.00E-01
+	NP-237	86.50	*	12.60	9.72E-01	9.72E-01	1.57E+00	4.81E-01
	NP-239	106.10		22.70	1.86E+12	1.86E+12	1.72E+11	9.07E+11
		228.18		10.70	5.38E+12		-1.17E+11	2.60E+12
		277.60		14.10	4.10E+12		7.23E+11	1.98E+12
	AM-241	59.54		35.90	1.82E-01	1.82E-01	-5.12E-02	8.88E-02
	AM-243	74.67		66.00	1.28E-01	1.28E-01	2.30E-01	6.30E-02
	CM-243	209.75		3.29	2.20E+00	4.69E-01	1.13E+00	1.07E+00
		228.14		10.60	6.15E-01		-1.34E-02	2.98E-01
		277.60		14.00	4.69E-01		8.26E-02	2.26E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

Analysis Report for 1707092-06

HTC-A08-S001-1218-01

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: HTC-A08-S001-1218-01

Elapsed Live time: 3600
Elapsed Real Time: 3608

Channel								
1:	0	0	0	0	0	0	0	0
9:	8	177	180	161	136	112	103	108
17:	98	98	78	115	72	71	94	69
25:	103	99	101	102	83	75	83	90
33:	112	85	96	79	95	92	79	94
41:	98	86	107	87	95	109	142	114
49:	93	121	106	100	105	121	97	102
57:	113	137	110	164	121	128	156	197
65:	180	114	146	133	150	140	122	142
73:	154	219	313	346	420	442	190	135
81:	131	119	113	127	165	127	184	216
89:	174	168	158	132	193	216	119	110
97:	76	92	112	95	94	94	88	84
105:	88	97	97	85	93	80	96	85
113:	80	86	82	85	84	71	76	79
121:	74	78	90	68	77	75	100	83
129:	96	100	80	72	78	74	83	63
137:	80	78	85	79	82	82	56	67
145:	78	82	85	71	81	80	77	64
153:	69	91	69	87	80	67	54	68
161:	66	67	68	67	65	53	55	61
169:	70	66	74	65	45	60	53	56
177:	59	52	58	67	67	69	77	64
185:	84	129	117	77	59	60	62	58
193:	44	58	67	66	59	59	65	60
201:	68	64	40	61	62	60	68	62
209:	76	75	77	47	63	61	55	42
217:	58	47	46	35	52	46	46	50
225:	44	60	48	48	43	37	50	48
233:	46	43	64	56	46	173	429	340
241:	122	119	85	47	36	43	41	31
249:	30	44	36	28	38	33	40	40
257:	42	51	45	43	31	42	34	35
265:	32	43	43	38	50	53	59	38
273:	42	31	36	26	37	37	34	41
281:	27	32	28	32	29	32	33	43
289:	30	30	30	27	31	48	114	131
297:	59	27	29	40	48	39	22	23
305:	30	40	25	25	27	29	37	20
313:	23	32	23	21	22	23	27	25
321:	27	29	22	16	26	27	27	56
329:	45	33	18	34	33	26	26	19
337:	29	62	110	52	39	27	28	36
345:	24	24	17	16	30	31	64	187
353:	179	68	23	33	20	21	17	33
361:	17	26	26	23	25	18	29	24

369:	14	27	18	16	24	17	21	27

Sample Title: HTC-A08-S001-1218-01

Channel								
377:	25	17	21	27	19	32	22	26
385:	20	23	24	19	23	28	23	12
393:	28	21	19	14	28	17	13	16
401:	24	23	14	23	23	30	23	27
409:	30	32	25	23	12	15	20	15
417:	22	18	41	15	13	19	13	22
425:	15	18	19	19	24	16	16	20
433:	16	12	20	15	15	14	18	18
441:	16	24	18	20	24	15	16	14
449:	14	12	10	16	16	20	19	18
457:	7	22	22	18	27	18	32	25
465:	20	28	20	17	20	13	20	17
473:	20	7	15	14	15	14	20	22
481:	11	26	15	18	16	11	14	22
489:	16	17	11	13	17	18	21	16
497:	12	16	20	17	20	11	16	14
505:	16	12	8	18	18	40	68	56
513:	31	19	12	18	6	16	17	19
521:	20	20	15	14	14	18	16	16
529:	19	14	10	17	14	14	13	19
537:	13	13	12	17	13	17	6	10
545:	13	12	11	13	14	12	14	12
553:	12	14	11	16	21	11	18	9
561:	11	18	11	9	12	15	19	14
569:	19	11	11	15	12	8	14	14
577:	13	18	18	12	7	30	98	102
585:	50	14	12	17	14	14	8	11
593:	11	10	10	10	11	11	16	10
601:	15	14	16	11	8	13	18	41
609:	99	140	67	15	11	9	6	4
617:	14	16	20	13	13	8	23	14
625:	8	10	5	8	14	12	10	11
633:	9	8	16	10	14	8	16	14
641:	11	10	12	10	11	6	10	12
649:	12	7	10	17	16	7	10	9
657:	14	9	13	15	16	14	9	12
665:	10	11	11	11	8	15	9	10
673:	9	15	7	9	8	17	12	10
681:	15	14	11	6	17	16	12	11
689:	13	15	11	5	15	13	18	11
697:	14	19	13	13	15	11	12	13
705:	12	10	16	18	15	10	12	14
713:	11	7	17	7	5	9	14	15
721:	9	7	12	5	11	21	31	46
729:	20	9	13	9	8	9	3	10
737:	11	12	14	12	10	10	16	9
745:	8	15	9	8	11	10	9	12
753:	13	9	9	12	11	9	5	14
761:	15	5	8	17	11	8	20	13
769:	27	14	12	9	22	7	11	5
777:	5	15	10	9	14	11	12	5
785:	12	9	11	10	10	13	7	7
793:	9	13	21	17	8	14	10	7

801:	5	12	6	11	11	17	11	10

Sample Title: HTC-A08-S001-1218-01

Channel								
809:	10	10	8	3	10	13	11	11
817:	7	4	5	8	13	9	8	7
825:	6	5	5	6	7	6	5	4
833:	9	4	10	11	11	8	16	16
841:	9	10	10	4	4	10	2	10
849:	4	7	6	14	3	8	12	5
857:	12	4	11	14	20	13	12	9
865:	11	5	5	10	8	9	10	6
873:	10	9	4	12	7	10	11	9
881:	3	7	6	9	6	12	7	4
889:	2	9	9	5	10	12	7	4
897:	9	10	12	8	9	5	7	12
905:	5	4	7	5	12	19	43	62
913:	24	10	6	4	7	9	9	12
921:	3	6	5	7	9	13	2	8
929:	8	11	6	6	9	8	11	13
937:	7	4	9	5	4	11	4	9
945:	8	7	8	5	8	8	4	9
953:	13	13	8	5	13	8	12	9
961:	1	6	8	12	12	15	13	22
969:	42	32	11	2	5	7	9	9
977:	11	9	6	5	4	6	10	10
985:	3	8	4	6	4	9	7	8
993:	9	5	7	9	7	6	5	4
1001:	12	8	11	7	5	9	6	10
1009:	12	9	5	11	11	8	9	12
1017:	11	10	8	7	9	5	3	6
1025:	7	8	14	7	4	2	4	10
1033:	5	11	10	10	9	5	13	6
1041:	4	3	2	10	7	7	6	4
1049:	7	9	12	4	7	8	7	9
1057:	5	5	4	13	7	4	10	10
1065:	10	7	4	5	5	6	7	8
1073:	8	5	9	7	5	12	5	8
1081:	8	7	10	4	5	7	4	8
1089:	6	8	6	7	4	11	9	9
1097:	4	6	7	8	10	10	10	8
1105:	5	3	7	2	6	4	8	5
1113:	6	7	5	10	8	5	14	21
1121:	32	14	10	14	5	10	4	9
1129:	6	8	5	9	10	8	8	7
1137:	11	10	8	7	7	2	12	4
1145:	8	11	9	6	8	9	5	11
1153:	6	8	7	11	10	11	10	8
1161:	7	11	9	11	7	10	6	3
1169:	4	7	9	7	5	8	14	4
1177:	8	12	5	4	10	12	5	7
1185:	7	9	6	10	8	18	11	12
1193:	9	8	3	12	7	13	14	8
1201:	11	3	12	14	8	8	12	7
1209:	7	12	7	8	8	12	13	9
1217:	13	5	5	8	7	10	8	10
1225:	17	8	13	6	6	12	6	8

1233:	14	11	9	7	9	22	15	13

Sample Title: HTC-A08-S001-1218-01

Channel								
1241:	11	12	8	6	10	6	9	11
1249:	9	5	9	8	12	5	4	4
1257:	6	7	7	9	5	5	8	15
1265:	9	8	10	2	5	5	3	8
1273:	6	6	7	10	3	4	1	4
1281:	4	4	7	5	6	5	4	5
1289:	8	2	4	3	5	4	7	9
1297:	6	8	9	4	7	5	2	6
1305:	7	7	7	5	7	3	7	3
1313:	4	4	7	5	8	2	6	3
1321:	7	2	3	4	5	6	4	2
1329:	2	9	3	8	3	4	3	2
1337:	9	3	4	4	3	5	4	6
1345:	3	6	4	4	4	3	8	5
1353:	4	12	2	7	5	0	2	2
1361:	3	0	3	4	5	1	2	3
1369:	3	3	2	2	1	3	4	3
1377:	8	17	6	5	2	5	1	2
1385:	3	5	2	2	3	1	2	1
1393:	3	4	3	3	4	1	4	1
1401:	6	3	0	2	2	4	5	4
1409:	1	3	1	4	3	5	2	2
1417:	1	5	2	2	4	2	6	2
1425:	3	0	1	3	8	6	2	3
1433:	5	3	3	3	3	2	1	3
1441:	2	0	1	4	2	4	2	1
1449:	3	3	0	5	2	2	3	4
1457:	6	10	52	173	272	162	37	5
1465:	2	1	1	0	3	2	1	2
1473:	1	0	1	2	3	1	1	1
1481:	2	0	0	2	2	1	3	0
1489:	0	1	1	3	2	1	4	3
1497:	3	2	3	1	5	2	2	2
1505:	1	2	3	5	2	4	1	1
1513:	2	1	1	3	3	0	1	0
1521:	0	3	0	1	1	1	1	5
1529:	0	1	2	1	5	4	3	1
1537:	4	2	6	7	1	2	4	1
1545:	1	0	1	2	2	0	1	2
1553:	3	1	0	0	2	4	5	0
1561:	1	1	0	2	0	1	1	0
1569:	1	2	0	3	2	3	0	0
1577:	2	2	3	2	1	0	0	7
1585:	0	2	6	7	4	3	1	0
1593:	4	5	0	0	1	2	2	2
1601:	0	1	1	0	1	1	0	1
1609:	1	1	1	1	1	0	0	2
1617:	1	1	0	5	3	1	4	3
1625:	2	2	2	1	2	3	5	0
1633:	3	2	1	1	3	1	2	1
1641:	1	1	3	1	0	0	1	2
1649:	1	0	0	0	5	1	0	2
1657:	0	2	3	2	1	1	2	1

1665:	0	1	4	2	2	1	1	0

Sample Title: HTC-A08-S001-1218-01

Channel								
1673:	1	2	0	0	0	0	1	3
1681:	0	0	1	1	0	3	1	1
1689:	1	1	0	2	1	2	0	1
1697:	0	1	1	1	3	4	2	1
1705:	0	1	0	1	1	1	0	1
1713:	1	1	0	0	1	4	1	2
1721:	0	0	1	1	1	1	1	5
1729:	2	6	0	3	1	3	2	2
1737:	1	1	2	0	0	0	0	0
1745:	0	1	1	0	0	0	0	0
1753:	2	1	2	1	1	0	2	0
1761:	0	4	3	13	11	5	3	1
1769:	1	0	0	5	1	0	1	2
1777:	1	1	1	0	2	0	1	1
1785:	0	0	0	0	0	1	2	2
1793:	2	1	2	0	2	0	0	1
1801:	1	0	0	1	0	1	1	1
1809:	0	0	2	0	0	0	0	0
1817:	1	1	0	0	2	1	1	1
1825:	2	0	2	0	3	1	0	2
1833:	1	2	0	1	1	1	2	1
1841:	1	0	0	3	0	2	4	2
1849:	1	2	0	0	0	0	1	0
1857:	3	0	0	0	1	0	0	1
1865:	2	1	0	1	1	2	0	1
1873:	2	0	0	0	0	1	1	0
1881:	1	1	0	1	2	0	0	1
1889:	0	0	0	1	0	2	0	0
1897:	2	1	0	1	0	2	2	1
1905:	1	1	1	2	2	2	0	1
1913:	2	3	0	2	0	1	2	1
1921:	2	0	0	1	2	0	0	0
1929:	1	0	2	2	1	4	3	0
1937:	1	1	4	2	0	2	0	0
1945:	0	0	0	0	1	1	1	1
1953:	0	2	0	0	0	0	0	2
1961:	1	1	2	1	0	1	2	0
1969:	2	0	0	2	1	0	0	0
1977:	1	1	1	1	2	3	0	0
1985:	1	2	1	1	1	0	1	0
1993:	2	1	1	1	0	1	0	1
2001:	3	0	0	1	0	0	0	0
2009:	2	2	1	1	1	1	0	1
2017:	4	1	1	1	1	3	0	1
2025:	1	1	1	1	2	1	2	1
2033:	0	2	0	0	0	0	0	1
2041:	1	1	0	0	1	0	0	2
2049:	0	3	0	0	1	1	0	1
2057:	2	2	3	0	1	1	1	1
2065:	2	1	1	1	0	0	1	1
2073:	1	3	1	0	3	1	2	0
2081:	1	0	0	0	1	1	0	0
2089:	0	1	1	0	1	2	0	2

2097:	0	1	3	0	1	4	3	5

Sample Title: HTC-A08-S001-1218-01

Channel								
2105:	3	2	0	1	1	0	1	2
2113:	2	1	2	2	0	4	0	1
2121:	0	1	0	0	0	1	1	0
2129:	1	1	0	1	0	2	1	0
2137:	1	1	1	0	0	0	0	1
2145:	0	1	3	0	0	0	0	1
2153:	1	0	0	2	0	0	0	0
2161:	0	1	1	0	2	1	3	0
2169:	1	0	2	2	2	2	2	1
2177:	1	2	3	1	0	2	0	0
2185:	1	2	3	0	0	0	2	0
2193:	1	2	4	1	0	0	1	1
2201:	2	2	4	4	7	2	2	1
2209:	1	0	1	0	1	0	0	0
2217:	0	2	1	1	1	1	1	0
2225:	2	2	1	2	3	0	1	3
2233:	0	0	2	0	1	1	1	1
2241:	1	1	1	1	1	1	2	0
2249:	1	0	1	1	1	0	1	0
2257:	2	2	1	1	1	0	0	0
2265:	1	1	2	0	1	1	1	4
2273:	1	1	0	2	2	0	2	0
2281:	0	1	1	1	1	1	1	0
2289:	0	3	0	2	2	0	2	1
2297:	3	3	0	0	1	2	0	2
2305:	0	1	2	1	0	2	1	1
2313:	0	1	1	0	1	0	1	0
2321:	0	1	0	0	1	0	1	0
2329:	5	1	0	0	1	3	0	1
2337:	1	1	1	0	0	1	1	0
2345:	0	1	0	0	0	1	1	0
2353:	0	1	1	0	0	2	0	1
2361:	0	0	1	2	0	2	0	1
2369:	1	2	2	0	2	0	1	0
2377:	0	1	0	1	0	1	1	2
2385:	1	1	2	1	0	1	0	1
2393:	1	0	1	0	1	0	1	1
2401:	0	1	0	0	1	0	0	1
2409:	1	0	0	0	1	0	0	1
2417:	1	1	1	1	1	2	0	1
2425:	1	2	0	1	0	0	2	0
2433:	1	0	2	1	3	0	1	3
2441:	1	0	0	0	0	1	0	1
2449:	2	2	0	1	2	4	0	1
2457:	0	2	0	0	0	0	0	2
2465:	1	0	2	3	1	1	1	0
2473:	0	1	1	0	0	3	0	2
2481:	1	1	0	0	0	0	0	0
2489:	0	1	0	1	0	0	0	0
2497:	0	0	0	1	0	1	0	1
2505:	0	2	0	0	2	0	1	0
2513:	0	0	1	0	0	0	0	2
2521:	1	0	1	0	0	1	1	2

2529:	0	0	1	0	1	0	0	1

Sample Title: HTC-A08-S001-1218-01

Channel								
2537:	0	0	1	0	1	0	0	0
2545:	1	0	0	1	0	0	2	0
2553:	0	0	0	0	1	0	0	0
2561:	0	0	1	0	0	2	0	0
2569:	0	0	0	1	0	0	1	0
2577:	0	0	0	1	0	0	1	0
2585:	0	0	0	0	0	1	0	0
2593:	1	0	0	0	0	0	0	0
2601:	2	0	1	1	0	1	0	0
2609:	0	1	0	6	14	22	21	10
2617:	6	1	0	2	0	0	0	0
2625:	0	0	0	0	0	0	0	0
2633:	0	1	0	0	1	0	0	0
2641:	0	0	0	0	0	1	1	0
2649:	0	2	0	0	0	0	0	0
2657:	0	0	0	0	1	0	0	0
2665:	0	0	0	0	0	0	1	0
2673:	0	1	0	0	0	0	0	0
2681:	0	0	2	0	1	0	0	0
2689:	0	1	0	0	0	1	0	0
2697:	0	0	0	1	0	0	1	1
2705:	1	0	1	0	1	0	0	1
2713:	0	0	0	0	0	0	0	2
2721:	0	0	0	0	0	1	0	0
2729:	1	1	0	0	0	1	1	1
2737:	0	0	0	0	0	0	0	0
2745:	0	0	1	0	0	0	0	0
2753:	0	0	0	0	0	0	0	0
2761:	0	0	0	0	0	1	0	1
2769:	0	0	1	0	0	1	0	0
2777:	1	0	0	0	0	1	1	0
2785:	2	0	0	0	0	0	1	0
2793:	0	0	1	1	0	0	0	0
2801:	0	0	1	0	0	0	0	0
2809:	0	1	0	0	0	0	1	0
2817:	0	0	1	0	1	0	0	1
2825:	0	0	0	0	0	0	0	0
2833:	1	0	1	0	0	0	1	1
2841:	0	0	0	0	0	0	0	0
2849:	0	1	0	0	0	0	0	2
2857:	0	0	0	0	0	0	0	0
2865:	0	0	0	0	0	0	0	0
2873:	0	0	0	0	0	0	1	0
2881:	0	0	0	1	0	0	0	0
2889:	0	1	0	1	0	0	1	1
2897:	0	0	0	0	0	0	1	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	0	1	0	0	0
2929:	0	0	0	0	0	0	0	1
2937:	0	1	0	0	0	0	0	0
2945:	0	0	0	0	0	0	0	1
2953:	1	0	0	0	0	0	0	1

2961:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-S001-1218-01

Channel								
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	0	0	0	1	0
2985:	0	0	0	0	1	0	0	0
2993:	1	0	1	1	0	0	0	0
3001:	0	0	0	1	0	0	0	0
3009:	0	0	0	1	0	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	0	0	0
3033:	0	1	0	0	0	0	0	1
3041:	0	0	0	1	0	1	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	1	0	0	1	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	0	0	0	0	0	1	0
3081:	0	0	0	0	0	0	0	0
3089:	1	0	0	0	0	0	0	0
3097:	0	0	0	0	0	0	1	0
3105:	0	1	0	0	1	1	0	0
3113:	0	0	0	0	0	0	0	1
3121:	0	0	0	0	0	0	0	1
3129:	0	0	1	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	1	0
3161:	0	0	0	0	0	0	0	0
3169:	0	0	0	1	0	0	0	0
3177:	0	1	0	0	0	0	0	0
3185:	0	0	0	1	0	0	0	0
3193:	1	0	0	1	0	1	0	0
3201:	0	0	0	0	0	0	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	1	0	0	0	0	0	0
3225:	2	0	0	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	1	0	0	0	0	0	0	0
3249:	0	0	0	0	0	0	1	0
3257:	0	0	1	1	0	0	0	0
3265:	0	0	0	0	0	0	0	1
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	1	0
3289:	0	0	1	1	0	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	1	1	0
3321:	0	0	0	0	1	0	0	0
3329:	0	1	0	0	0	0	0	0
3337:	0	1	0	0	1	0	0	0
3345:	1	0	0	0	1	0	1	1
3353:	0	1	0	0	0	0	0	0
3361:	1	0	0	0	0	0	0	0
3369:	0	0	1	0	0	1	1	0
3377:	0	1	0	0	0	0	1	0
3385:	0	0	0	0	0	0	0	0

3393:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-S001-1218-01

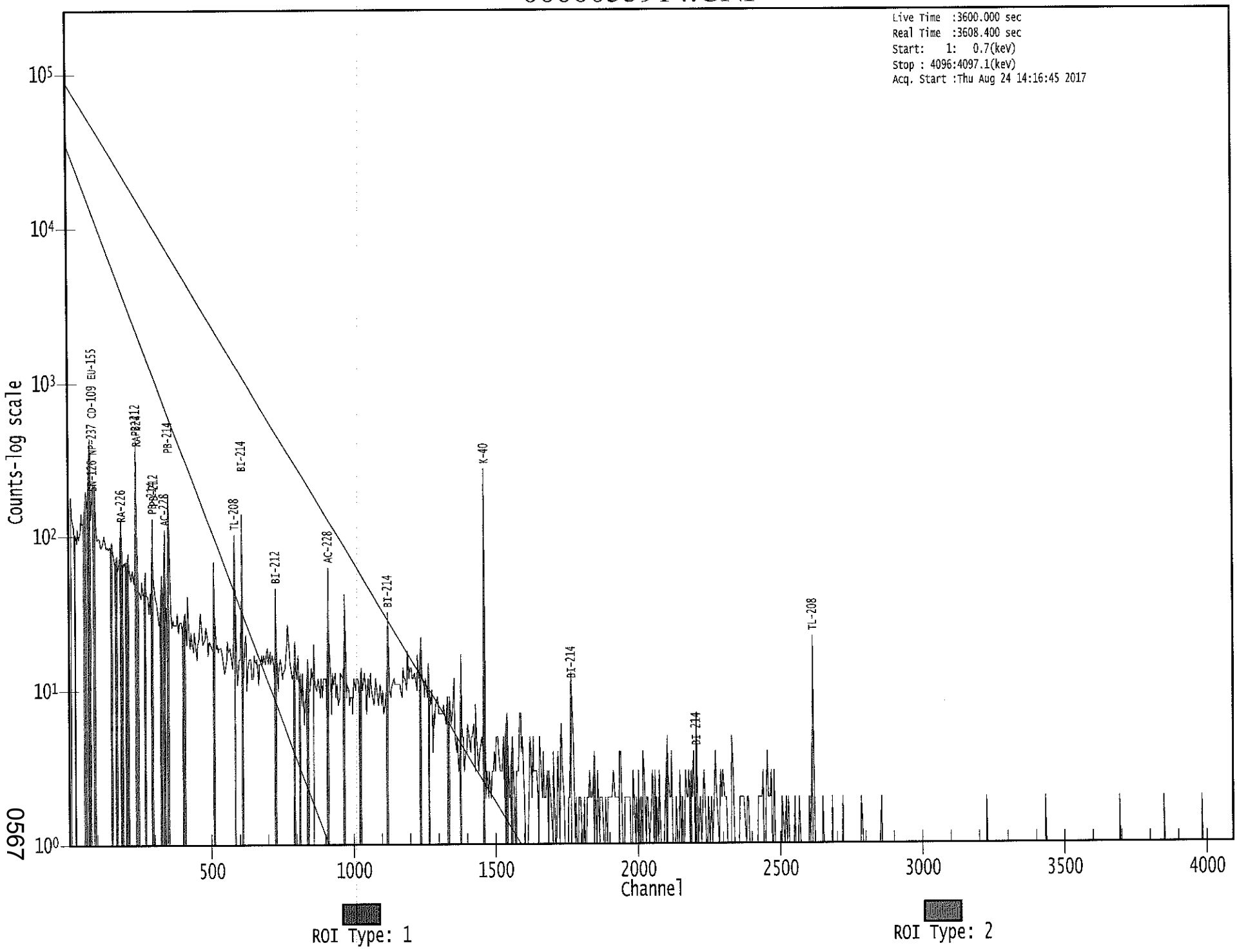
Channel								
3401:	0	1	0	0	0	0	1	0
3409:	0	0	0	0	0	0	0	0
3417:	0	1	0	0	1	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	2	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	1
3449:	0	0	0	1	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	1	0	0	0	0
3473:	1	0	0	0	0	0	1	0
3481:	1	0	0	0	0	1	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	1	0	0	0	0
3513:	1	1	1	0	0	0	1	0
3521:	0	0	0	0	0	0	1	0
3529:	0	1	1	1	0	0	0	0
3537:	0	0	1	0	1	0	0	0
3545:	0	0	0	0	0	0	0	1
3553:	1	1	0	0	0	0	0	0
3561:	0	0	1	0	0	0	1	0
3569:	0	0	0	0	0	0	0	0
3577:	0	1	0	0	0	0	0	0
3585:	1	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	1	0	0	1
3609:	1	1	1	1	0	0	0	0
3617:	1	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	1
3633:	0	0	1	0	0	0	0	0
3641:	0	1	0	1	0	0	0	0
3649:	0	1	1	0	0	0	0	0
3657:	1	1	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	1
3673:	0	0	0	0	0	0	0	1
3681:	0	0	0	0	0	1	0	0
3689:	0	0	0	0	2	0	0	0
3697:	0	0	0	0	0	0	1	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	1	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	1	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	1
3761:	0	0	0	0	0	0	1	0
3769:	0	0	1	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	1	0
3817:	0	1	0	0	0	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-S001-1218-01

Channel								
3833:	0	0	0	0	1	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	2	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	1
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	1	0	1	0
3889:	0	0	0	0	0	0	1	0
3897:	0	1	0	0	0	0	0	0
3905:	0	0	0	0	0	0	1	1
3913:	0	0	0	1	1	0	0	0
3921:	0	0	0	0	0	1	0	0
3929:	1	0	0	0	0	0	0	0
3937:	0	1	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	1
3953:	0	0	0	0	1	1	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	1	0	0	0	1
3977:	0	0	0	0	0	0	2	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	1	0	0	1
4001:	0	0	0	0	0	0	0	1
4009:	0	0	0	0	0	0	0	0
4017:	0	0	1	0	0	0	0	1
4025:	1	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	1	0
4049:	0	0	0	0	0	0	1	0
4057:	0	0	0	1	0	1	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	1	0	0	0	0	0	1

0000055914.CNF



0667

KLB 8/28/17

Apex-Gamma

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-07
Sample Description	: HTC-A08-S001-1824-01
Sample Type	: SOIL
Sample Size	: 5.856E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 7:39:55AM
Acquisition Started	: 8/24/2017 3:04:43PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.8 seconds
Dead Time	: 0.05 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 15 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55917

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 4:04:46PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.14	45.19	0.0000	0.00
2	74.36	73.41	0.0000	0.00
3	76.89	75.95	0.0000	0.00
4	87.28	86.34	0.0000	0.00
5	92.69	91.75	0.0000	0.00
6	128.56	127.64	0.0000	0.00
7	186.62	185.71	0.0000	0.00
8	209.42	208.52	0.0000	0.00
9	238.84	237.95	0.0000	0.00
10	241.80	240.91	0.0000	0.00
11	270.56	269.68	0.0000	0.00
12	295.38	294.50	0.0000	0.00
13	338.28	337.42	0.0000	0.00
14	352.17	351.31	0.0000	0.00
15	429.50	428.67	0.0000	0.00
16	461.40	460.59	0.0000	0.00
17	511.09	510.29	0.0000	0.00
18	579.11	578.34	0.0000	0.00
19	583.24	582.48	0.0000	0.00
20	599.29	598.52	0.0000	0.00
21	609.46	608.70	0.0000	0.00
22	727.20	726.48	0.0000	0.00
23	767.97	767.27	0.0000	0.00
24	785.12	784.43	0.0000	0.00
25	794.46	793.78	0.0000	0.00
26	861.49	860.83	0.0000	0.00
27	911.08	910.44	0.0000	0.00
28	916.63	916.00	0.0000	0.00
29	969.46	968.84	0.0000	0.00
30	1004.55	1003.95	0.0000	0.00
31	1111.10	1110.55	0.0000	0.00
32	1119.81	1119.26	0.0000	0.00
33	1238.74	1238.25	0.0000	0.00
34	1248.43	1247.95	0.0000	0.00
35	1303.59	1303.13	0.0000	0.00
36	1313.27	1312.82	0.0000	0.00
37	1341.12	1340.68	0.0000	0.00
38	1377.31	1376.89	0.0000	0.00
39	1384.75	1384.34	0.0000	0.00
40	1460.78	1460.40	0.0000	0.00
41	1592.94	1592.63	0.0000	0.00
42	1763.49	1763.27	0.0000	0.00

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	2104.00	2103.99	0.0000	0.00
44	2115.79	2115.79	0.0000	0.00
45	2202.01	2202.06	0.0000	0.00
46	2402.55	2402.73	0.0000	0.00
47	2455.92	2456.13	0.0000	0.00
48	2613.72	2614.03	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 4:04:46PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	46.14	42 -	49	45.19	1.00E+02	88.09	1.23E+03	3.96
m	2	74.36	59 -	79	73.41	4.16E+02	109.08	1.43E+03	2.28
m	3	76.89	59 -	79	75.95	7.74E+02	112.58	1.40E+03	2.39
	4	87.28	84 -	88	86.34	9.18E+01	77.90	1.27E+03	1.87
	5	92.69	89 -	98	91.75	2.15E+02	126.49	2.08E+03	2.26
	6	128.56	123 -	132	127.64	1.29E+02	96.43	1.25E+03	4.81
	7	186.62	181 -	192	185.71	1.49E+02	100.86	1.19E+03	2.96
	8	209.42	205 -	212	208.52	7.40E+01	67.94	7.20E+02	2.52
M	9	238.84	233 -	244	237.95	6.71E+02	76.68	5.15E+02	2.33
m	10	241.80	233 -	244	240.91	1.25E+02	76.73	4.53E+02	2.33
	11	270.56	266 -	273	269.68	1.24E+02	53.44	3.88E+02	3.53
	12	295.38	291 -	297	294.50	2.24E+02	52.00	3.28E+02	2.16
	13	338.28	334 -	342	337.42	1.28E+02	54.78	3.83E+02	2.27
	14	352.17	346 -	357	351.31	3.47E+02	68.50	4.11E+02	2.32
	15	429.50	425 -	432	428.67	3.38E+01	36.44	1.97E+02	2.75
	16	461.40	456 -	464	460.59	3.54E+01	40.36	2.27E+02	6.28
	17	511.09	503 -	518	510.29	1.88E+02	59.53	2.76E+02	3.14
M	18	579.11	577 -	589	578.34	1.38E+01	10.68	3.18E+01	2.16
m	19	583.24	577 -	589	582.48	2.12E+02	39.65	1.19E+02	2.59
	20	599.29	594 -	603	598.52	5.13E+01	33.93	1.35E+02	6.85
	21	609.46	604 -	613	608.70	2.30E+02	44.80	1.56E+02	2.17
	22	727.20	722 -	731	726.48	7.21E+01	33.53	1.18E+02	2.34
	23	767.97	762 -	770	767.27	2.70E+01	29.44	1.16E+02	2.30
	24	785.12	782 -	787	784.43	2.62E+01	20.32	5.96E+01	2.15
	25	794.46	789 -	796	793.78	2.69E+01	26.15	9.61E+01	2.55
	26	861.49	855 -	869	860.83	4.20E+01	40.71	1.54E+02	4.02
M	27	911.08	907 -	923	910.44	8.43E+01	28.51	1.01E+02	2.65
m	28	916.63	907 -	923	916.00	1.51E+01	24.48	7.62E+01	2.43
	29	969.46	965 -	972	968.84	6.57E+01	30.98	1.09E+02	2.51
	30	1004.55	999 -	1008	1003.95	2.35E+01	28.14	9.91E+01	6.52
M	31	1111.10	1107 -	1125	1110.55	3.07E+01	22.72	8.13E+01	3.33
m	32	1119.81	1107 -	1125	1119.26	4.88E+01	28.88	8.37E+01	3.33
M	33	1238.74	1232 -	1258	1238.25	2.60E+01	25.85	9.15E+01	2.79
m	34	1248.43	1232 -	1258	1247.95	1.44E+01	23.07	7.48E+01	2.80
	35	1303.59	1297 -	1307	1303.13	2.11E+01	20.98	4.18E+01	3.19
	36	1313.27	1308 -	1321	1312.82	2.17E+01	23.13	5.26E+01	11.30
	37	1341.12	1337 -	1343	1340.68	1.09E+01	13.33	2.41E+01	1.97
	38	1377.31	1373 -	1381	1376.89	1.84E+01	14.60	1.93E+01	3.89
	39	1384.75	1381 -	1388	1384.34	8.59E+00	11.49	1.68E+01	2.58
	40	1460.78	1454 -	1467	1460.40	5.01E+02	47.50	2.80E+01	2.97

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1592.94	1590 -	1595	1592.63	1.27E+01	8.06	2.57E+00	3.23
42	1763.49	1757 -	1767	1763.27	3.59E+01	13.65	6.13E+00	3.36
43	2104.00	2100 -	2107	2103.99	1.00E+01	8.00	3.92E+00	3.37
44	2115.79	2110 -	2120	2115.79	1.40E+01	7.48	0.00E+00	1.24
45	2202.01	2197 -	2205	2202.06	1.70E+01	8.25	0.00E+00	3.19
46	2402.55	2399 -	2405	2402.73	6.25E+00	6.65	3.50E+00	2.40
47	2455.92	2453 -	2458	2456.13	4.58E+00	5.74	2.83E+00	2.72
48	2613.72	2609 -	2618	2614.03	6.30E+01	15.87	0.00E+00	2.62

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 4:04:46PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.14	42 -	49	1.00E+02	88.09	1.23E+03	7.05E+01
m	2	74.36	59 -	79	4.16E+02	109.08	1.43E+03	6.21E+01
m	3	76.89	59 -	79	7.74E+02	112.58	1.40E+03	6.16E+01
	4	87.28	84 -	88	9.18E+01	77.90	1.27E+03	6.21E+01
	5	92.69	89 -	98	2.15E+02	126.49	2.08E+03	1.01E+02
	6	128.56	123 -	132	1.29E+02	96.43	1.25E+03	7.70E+01
	7	186.62	181 -	192	1.49E+02	100.86	1.19E+03	8.04E+01
	8	209.42	205 -	212	7.40E+01	67.94	7.20E+02	5.40E+01
M	9	238.84	233 -	244	6.71E+02	76.68	5.15E+02	3.73E+01
m	10	241.80	233 -	244	1.25E+02	76.73	4.53E+02	3.50E+01
	11	270.56	266 -	273	1.24E+02	53.44	3.88E+02	3.99E+01
	12	295.38	291 -	297	2.24E+02	52.00	3.28E+02	3.49E+01
	13	338.28	334 -	342	1.28E+02	54.78	3.83E+02	4.10E+01
	14	352.17	346 -	357	3.47E+02	68.50	4.11E+02	4.73E+01
	15	429.50	425 -	432	3.38E+01	36.44	1.97E+02	2.84E+01
	16	461.40	456 -	464	3.54E+01	40.36	2.27E+02	3.17E+01
	17	511.09	503 -	518	1.88E+02	59.53	2.76E+02	4.34E+01
M	18	579.11	577 -	589	1.38E+01	10.68	3.18E+01	9.27E+00
m	19	583.24	577 -	589	2.12E+02	39.65	1.19E+02	1.79E+01

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	20	599.29	594 -	603	5.13E+01	33.93	1.35E+02	2.53E+01
	21	609.46	604 -	613	2.30E+02	44.80	1.56E+02	2.71E+01
	22	727.20	722 -	731	7.21E+01	33.53	1.18E+02	2.38E+01
	23	767.97	762 -	770	2.70E+01	29.44	1.16E+02	2.26E+01
	24	785.12	782 -	787	2.62E+01	20.32	5.96E+01	1.44E+01
	25	794.46	789 -	796	2.69E+01	26.15	9.61E+01	1.97E+01
	26	861.49	855 -	869	4.20E+01	40.71	1.54E+02	3.17E+01
M	27	911.08	907 -	923	8.43E+01	28.51	1.01E+02	1.65E+01
m	28	916.63	907 -	923	1.51E+01	24.48	7.62E+01	1.44E+01
	29	969.46	965 -	972	6.57E+01	30.98	1.09E+02	2.17E+01
	30	1004.55	999 -	1008	2.35E+01	28.14	9.91E+01	1.19E+01
M	31	1111.10	1107 -	1125	3.07E+01	22.72	8.13E+01	1.48E+01
m	32	1119.81	1107 -	1125	4.88E+01	28.88	8.37E+01	1.50E+01
M	33	1238.74	1232 -	1258	2.60E+01	25.85	9.15E+01	1.57E+01
m	34	1248.43	1232 -	1258	1.44E+01	23.07	7.48E+01	1.42E+01
	35	1303.59	1297 -	1307	2.11E+01	20.98	4.18E+01	1.55E+01
	36	1313.27	1308 -	1321	2.17E+01	23.13	5.26E+01	1.74E+01
	37	1341.12	1337 -	1343	1.09E+01	13.33	2.41E+01	9.52E+00
	38	1377.31	1373 -	1381	1.84E+01	14.60	1.93E+01	9.72E+00
	39	1384.75	1381 -	1388	8.59E+00	11.49	1.68E+01	8.12E+00
	40	1460.78	1454 -	1467	5.01E+02	47.50	2.80E+01	1.30E+01
	41	1592.94	1590 -	1595	1.27E+01	8.06	2.57E+00	3.09E+00
	42	1763.49	1757 -	1767	3.59E+01	13.65	6.13E+00	5.36E+00
	43	2104.00	2100 -	2107	1.00E+01	8.00	3.92E+00	4.01E+00
	44	2115.79	2110 -	2120	1.40E+01	7.48	0.00E+00	0.00E+00
	45	2202.01	2197 -	2205	1.70E+01	8.25	0.00E+00	0.00E+00
	46	2402.55	2399 -	2405	6.25E+00	6.65	3.50E+00	3.61E+00
	47	2455.92	2453 -	2458	4.58E+00	5.74	2.83E+00	3.15E+00
	48	2613.72	2609 -	2618	6.30E+01	15.87	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 4:04:46PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	46.14	42 -	49	45.19	1.00E+02	88.09	1.23E+03	PB-210
m	2	74.36	59 -	79	73.41	4.16E+02	109.08	1.43E+03	AM-243
m	3	76.89	59 -	79	75.95	7.74E+02	112.58	1.40E+03	.....
	4	87.28	84 -	88	86.34	9.18E+01	77.90	1.27E+03	SN-126
									CD-109
									NP-237
									EU-155
	5	92.69	89 -	98	91.75	2.15E+02	126.49	2.08E+03	GA-67
	6	128.56	123 -	132	127.64	1.29E+02	96.43	1.25E+03	.....
	7	186.62	181 -	192	185.71	1.49E+02	100.86	1.19E+03	RA-226
	8	209.42	205 -	212	208.52	7.40E+01	67.94	7.20E+02	CM-243
									GA-67
M	9	238.84	233 -	244	237.95	6.71E+02	76.68	5.15E+02	PB-212
m	10	241.80	233 -	244	240.91	1.25E+02	76.73	4.53E+02	RA-224
	11	270.56	266 -	273	269.68	1.24E+02	53.44	3.88E+02	.....
	12	295.38	291 -	297	294.50	2.24E+02	52.00	3.28E+02	PB-214
	13	338.28	334 -	342	337.42	1.28E+02	54.78	3.83E+02	AC-228
	14	352.17	346 -	357	351.31	3.47E+02	68.50	4.11E+02	PB-214
	15	429.50	425 -	432	428.67	3.38E+01	36.44	1.97E+02	.....
	16	461.40	456 -	464	460.59	3.54E+01	40.36	2.27E+02	.....
	17	511.09	503 -	518	510.29	1.88E+02	59.53	2.76E+02	.....
M	18	579.11	577 -	589	578.34	1.38E+01	10.68	3.18E+01	.....
m	19	583.24	577 -	589	582.48	2.12E+02	39.65	1.19E+02	TL-208
	20	599.29	594 -	603	598.52	5.13E+01	33.93	1.35E+02	.....
	21	609.46	604 -	613	608.70	2.30E+02	44.80	1.56E+02	BI-214
	22	727.20	722 -	731	726.48	7.21E+01	33.53	1.18E+02	BI-212
	23	767.97	762 -	770	767.27	2.70E+01	29.44	1.16E+02	.....
	24	785.12	782 -	787	784.43	2.62E+01	20.32	5.96E+01	.....
	25	794.46	789 -	796	793.78	2.69E+01	26.15	9.61E+01	.....
	26	861.49	855 -	869	860.83	4.20E+01	40.71	1.54E+02	.....
M	27	911.08	907 -	923	910.44	8.43E+01	28.51	1.01E+02	AC-228
									TL-204
m	28	916.63	907 -	923	916.00	1.51E+01	24.48	7.62E+01	.....
	29	969.46	965 -	972	968.84	6.57E+01	30.98	1.09E+02	AC-228
	30	1004.55	999 -	1008	1003.95	2.35E+01	28.14	9.91E+01	EU-154
M	31	1111.10	1107 -	1125	1110.55	3.07E+01	22.72	8.13E+01	EU-152
m	32	1119.81	1107 -	1125	1119.26	4.88E+01	28.88	8.37E+01	BI-214
									SC-46
M	33	1238.74	1232 -	1258	1238.25	2.60E+01	25.85	9.15E+01	CO-56
m	34	1248.43	1232 -	1258	1247.95	1.44E+01	23.07	7.48E+01	.....
	35	1303.59	1297 -	1307	1303.13	2.11E+01	20.98	4.18E+01	.....
	36	1313.27	1308 -	1321	1312.82	2.17E+01	23.13	5.26E+01	.....
	37	1341.12	1337 -	1343	1340.68	1.09E+01	13.33	2.41E+01	.....
	38	1377.31	1373 -	1381	1376.89	1.84E+01	14.60	1.93E+01	.....
	39	1384.75	1381 -	1388	1384.34	8.59E+00	11.49	1.68E+01	AG-110M
	40	1460.78	1454 -	1467	1460.40	5.01E+02	47.50	2.80E+01	K-40
	41	1592.94	1590 -	1595	1592.63	1.27E+01	8.06	2.57E+00	.....
	42	1763.49	1757 -	1767	1763.27	3.59E+01	13.65	6.13E+00	.....
	43	2104.00	2100 -	2107	2103.99	1.00E+01	8.00	3.92E+00	.....
	44	2115.79	2110 -	2120	2115.79	1.40E+01	7.48	0.00E+00	.....
	45	2202.01	2197 -	2205	2202.06	1.70E+01	8.25	0.00E+00	.....

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
46	2402.55	2399 -	2405	2402.73	6.25E+00	6.65	3.50E+00	.....
47	2455.92	2453 -	2458	2456.13	4.58E+00	5.74	2.83E+00	.....
48	2613.72	2609 -	2618	2614.03	6.30E+01	15.87	0.00E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 4:04:46PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.14	1.00E+02	88.09	1.63E-02	1.56E-03
m	2	74.36	4.16E+02	109.08	2.31E-02	1.88E-03
m	3	76.89	7.74E+02	112.58	2.33E-02	1.93E-03
	4	87.28	9.18E+01	77.90	2.37E-02	2.15E-03
	5	92.69	2.15E+02	126.49	2.37E-02	2.10E-03
	6	128.56	1.29E+02	96.43	2.16E-02	1.63E-03
	7	186.62	1.49E+02	100.86	1.69E-02	1.39E-03
	8	209.42	7.40E+01	67.94	1.53E-02	1.28E-03
M	9	238.84	6.71E+02	76.68	1.36E-02	1.14E-03
m	10	241.80	1.25E+02	76.73	1.34E-02	1.13E-03
	11	270.56	1.24E+02	53.44	1.20E-02	9.89E-04
	12	295.38	2.24E+02	52.00	1.10E-02	9.13E-04
	13	338.28	1.28E+02	54.78	9.60E-03	8.23E-04
	14	352.17	3.47E+02	68.50	9.21E-03	7.94E-04
	15	429.50	3.38E+01	36.44	7.50E-03	6.95E-04
	16	461.40	3.54E+01	40.36	6.97E-03	6.82E-04
	17	511.09	1.88E+02	59.53	6.28E-03	6.61E-04
M	18	579.11	1.38E+01	10.68	5.54E-03	6.33E-04
m	19	583.24	2.12E+02	39.65	5.50E-03	6.31E-04
	20	599.29	5.13E+01	33.93	5.36E-03	6.25E-04
	21	609.46	2.30E+02	44.80	5.27E-03	6.20E-04
	22	727.20	7.21E+01	33.53	4.45E-03	5.16E-04
	23	767.97	2.70E+01	29.44	4.23E-03	4.65E-04
	24	785.12	2.62E+01	20.32	4.14E-03	4.44E-04
	25	794.46	2.69E+01	26.15	4.10E-03	4.32E-04
	26	861.49	4.20E+01	40.71	3.81E-03	3.48E-04
M	27	911.08	8.43E+01	28.51	3.62E-03	2.99E-04

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	28	916.63	1.51E+01	24.48	3.60E-03	2.98E-04
	29	969.46	6.57E+01	30.98	3.42E-03	2.85E-04
	30	1004.55	2.35E+01	28.14	3.32E-03	2.77E-04
M	31	1111.10	3.07E+01	22.72	3.04E-03	2.52E-04
m	32	1119.81	4.88E+01	28.88	3.02E-03	2.50E-04
M	33	1238.74	2.60E+01	25.85	2.76E-03	2.33E-04
m	34	1248.43	1.44E+01	23.07	2.74E-03	2.33E-04
	35	1303.59	2.11E+01	20.98	2.64E-03	2.29E-04
	36	1313.27	2.17E+01	23.13	2.62E-03	2.28E-04
	37	1341.12	1.09E+01	13.33	2.57E-03	2.26E-04
	38	1377.31	1.84E+01	14.60	2.51E-03	2.20E-04
	39	1384.75	8.59E+00	11.49	2.50E-03	2.19E-04
	40	1460.78	5.01E+02	47.50	2.38E-03	2.08E-04
	41	1592.94	1.27E+01	8.06	2.20E-03	1.88E-04
	42	1763.49	3.59E+01	13.65	2.00E-03	1.62E-04
	43	2104.00	1.00E+01	8.00	1.67E-03	1.51E-04
	44	2115.79	1.40E+01	7.48	1.66E-03	1.51E-04
	45	2202.01	1.70E+01	8.25	1.58E-03	1.51E-04
	46	2402.55	6.25E+00	6.65	1.43E-03	1.51E-04
	47	2455.92	4.58E+00	5.74	1.39E-03	1.51E-04
	48	2613.72	6.30E+01	15.87	1.28E-03	1.51E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 4:04:46PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.14	1.00E+02	88.09	2.81E+01	8.29E+00	7.19E+01	8.85E+01
m	2	74.36	4.16E+02	109.08	2.66E+01	8.34E+00	3.90E+02	1.09E+02
m	3	76.89	7.74E+02	112.58			7.74E+02	1.13E+02
	4	87.28	9.18E+01	77.90			9.18E+01	7.79E+01
	5	92.69	2.15E+02	126.49	5.99E+01	8.61E+00	1.55E+02	1.27E+02
	6	128.56	1.29E+02	96.43			1.29E+02	9.64E+01
	7	186.62	1.49E+02	100.86	2.43E+01	7.50E+00	1.24E+02	1.01E+02
	8	209.42	7.40E+01	67.94			7.40E+01	6.79E+01
M	9	238.84	6.71E+02	76.68	1.06E+01	6.01E+00	6.61E+02	7.69E+01

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	10	241.80	1.25E+02	76.73			1.25E+02	7.67E+01
	11	270.56	1.24E+02	53.44			1.24E+02	5.34E+01
	12	295.38	2.24E+02	52.00			2.24E+02	5.20E+01
	13	338.28	1.28E+02	54.78			1.28E+02	5.48E+01
	14	352.17	3.47E+02	68.50			3.47E+02	6.85E+01
	15	429.50	3.38E+01	36.44			3.38E+01	3.64E+01
	16	461.40	3.54E+01	40.36			3.54E+01	4.04E+01
	17	511.09	1.88E+02	59.53	4.55E+01	4.99E+00	1.43E+02	5.97E+01
M	18	579.11	1.38E+01	10.68			1.38E+01	1.07E+01
m	19	583.24	2.12E+02	39.65			2.12E+02	3.96E+01
	20	599.29	5.13E+01	33.93			5.13E+01	3.39E+01
	21	609.46	2.30E+02	44.80			2.30E+02	4.48E+01
	22	727.20	7.21E+01	33.53			7.21E+01	3.35E+01
	23	767.97	2.70E+01	29.44			2.70E+01	2.94E+01
	24	785.12	2.62E+01	20.32			2.62E+01	2.03E+01
	25	794.46	2.69E+01	26.15			2.69E+01	2.62E+01
	26	861.49	4.20E+01	40.71			4.20E+01	4.07E+01
M	27	911.08	8.43E+01	28.51			8.43E+01	2.85E+01
m	28	916.63	1.51E+01	24.48			1.51E+01	2.45E+01
	29	969.46	6.57E+01	30.98			6.57E+01	3.10E+01
	30	1004.55	2.35E+01	28.14			2.35E+01	2.81E+01
M	31	1111.10	3.07E+01	22.72			3.07E+01	2.27E+01
m	32	1119.81	4.88E+01	28.88			4.88E+01	2.89E+01
M	33	1238.74	2.60E+01	25.85			2.60E+01	2.58E+01
m	34	1248.43	1.44E+01	23.07			1.44E+01	2.31E+01
	35	1303.59	2.11E+01	20.98			2.11E+01	2.10E+01
	36	1313.27	2.17E+01	23.13			2.17E+01	2.31E+01
	37	1341.12	1.09E+01	13.33			1.09E+01	1.33E+01
	38	1377.31	1.84E+01	14.60			1.84E+01	1.46E+01
	39	1384.75	8.59E+00	11.49			8.59E+00	1.15E+01
	40	1460.78	5.01E+02	47.50			5.01E+02	4.75E+01
	41	1592.94	1.27E+01	8.06			1.27E+01	8.06E+00
	42	1763.49	3.59E+01	13.65			3.59E+01	1.36E+01
	43	2104.00	1.00E+01	8.00			1.00E+01	8.00E+00
	44	2115.79	1.40E+01	7.48			1.40E+01	7.48E+00
	45	2202.01	1.70E+01	8.25			1.70E+01	8.25E+00
	46	2402.55	6.25E+00	6.65			6.25E+00	6.65E+00
	47	2455.92	4.58E+00	5.74			4.58E+00	5.74E+00
	48	2613.72	6.30E+01	15.87			6.30E+01	1.59E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 4:04:46PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	46.14	1.00E+02	88.09	2.81E+01	8.29E+00	7.19E+01	8.85E+01
m	2	74.36	4.16E+02	109.08	2.66E+01	8.34E+00	3.90E+02	1.09E+02
m	3	76.89	7.74E+02	112.58			7.74E+02	1.13E+02
	4	87.28	9.18E+01	77.90			9.18E+01	7.79E+01
	5	92.69	2.15E+02	126.49	5.99E+01	8.61E+00	1.55E+02	1.27E+02
	6	128.56	1.29E+02	96.43			1.29E+02	9.64E+01
	7	186.62	1.49E+02	100.86	2.43E+01	7.50E+00	1.24E+02	1.01E+02
	8	209.42	7.40E+01	67.94			7.40E+01	6.79E+01
M	9	238.84	6.71E+02	76.68	1.06E+01	6.01E+00	6.61E+02	7.69E+01
m	10	241.80	1.25E+02	76.73			1.25E+02	7.67E+01
	11	270.56	1.24E+02	53.44			1.24E+02	5.34E+01
	12	295.38	2.24E+02	52.00			2.24E+02	5.20E+01
	13	338.28	1.28E+02	54.78			1.28E+02	5.48E+01
	14	352.17	3.47E+02	68.50			3.47E+02	6.85E+01
	15	429.50	3.38E+01	36.44			3.38E+01	3.64E+01
	16	461.40	3.54E+01	40.36			3.54E+01	4.04E+01
	17	511.09	1.88E+02	59.53	4.55E+01	4.99E+00	1.43E+02	5.97E+01
M	18	579.11	1.38E+01	10.68			1.38E+01	1.07E+01
m	19	583.24	2.12E+02	39.65			2.12E+02	3.96E+01
	20	599.29	5.13E+01	33.93			5.13E+01	3.39E+01
	21	609.46	2.30E+02	44.80			2.30E+02	4.48E+01
	22	727.20	7.21E+01	33.53			7.21E+01	3.35E+01
	23	767.97	2.70E+01	29.44			2.70E+01	2.94E+01
	24	785.12	2.62E+01	20.32			2.62E+01	2.03E+01
	25	794.46	2.69E+01	26.15			2.69E+01	2.62E+01
	26	861.49	4.20E+01	40.71			4.20E+01	4.07E+01
M	27	911.08	8.43E+01	28.51			8.43E+01	2.85E+01
m	28	916.63	1.51E+01	24.48			1.51E+01	2.45E+01
	29	969.46	6.57E+01	30.98			6.57E+01	3.10E+01
	30	1004.55	2.35E+01	28.14			2.35E+01	2.81E+01
M	31	1111.10	3.07E+01	22.72			3.07E+01	2.27E+01
m	32	1119.81	4.88E+01	28.88			4.88E+01	2.89E+01
M	33	1238.74	2.60E+01	25.85			2.60E+01	2.58E+01
m	34	1248.43	1.44E+01	23.07			1.44E+01	2.31E+01
	35	1303.59	2.11E+01	20.98			2.11E+01	2.10E+01
	36	1313.27	2.17E+01	23.13			2.17E+01	2.31E+01
	37	1341.12	1.09E+01	13.33			1.09E+01	1.33E+01
	38	1377.31	1.84E+01	14.60			1.84E+01	1.46E+01
	39	1384.75	8.59E+00	11.49			8.59E+00	1.15E+01
	40	1460.78	5.01E+02	47.50			5.01E+02	4.75E+01
	41	1592.94	1.27E+01	8.06			1.27E+01	8.06E+00

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1763.49	3.59E+01	13.65			3.59E+01	1.36E+01
43	2104.00	1.00E+01	8.00			1.00E+01	8.00E+00
44	2115.79	1.40E+01	7.48			1.40E+01	7.48E+00
45	2202.01	1.70E+01	8.25			1.70E+01	8.25E+00
46	2402.55	6.25E+00	6.65			6.25E+00	6.65E+00
47	2455.92	4.58E+00	5.74			4.58E+00	5.74E+00
48	2613.72	6.30E+01	15.87			6.30E+01	1.59E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	1.000	1460.81	*	10.67	2.52E+01	3.29E+00
CD-109	0.914	88.03	*	3.72	1.55E+00	1.33E+00
SN-126	0.987	87.57	*	37.00	1.34E-01	1.15E-01
EU-155	0.305	86.50	*	30.90	1.67E-01	1.43E-01
		105.30		20.70		
TL-208	0.813	583.14	*	30.22	1.64E+00	3.59E-01
		860.37		4.48		
		2614.66	*	35.85	1.76E+00	4.90E-01
PB-210	0.980	46.50	*	4.25	1.34E+00	1.66E+00
BI-212	0.776	727.17	*	11.80	1.76E+00	8.43E-01
		1620.62		2.75		
PB-212	0.891	238.63	*	44.60	1.40E+00	2.01E-01
		300.09		3.41		
BI-214	0.707	609.31	*	46.30	1.21E+00	2.75E-01
		1120.29	*	15.10	1.37E+00	8.21E-01
		1764.49		15.80		
		2204.22		4.98		
PB-214	0.992	295.21	*	19.19	1.36E+00	3.35E-01
		351.92	*	37.19	1.30E+00	2.80E-01
RA-224	0.898	240.98	*	3.95	3.03E+00	1.87E+00
RA-226	0.974	186.21	*	3.28	2.88E+00	5.77E+00
AC-228	0.994	338.32	*	11.40	1.50E+00	6.55E-01
		911.07	*	27.70	1.08E+00	3.75E-01
		969.11	*	16.60	1.48E+00	7.10E-01

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
NP-237	0.907	86.50	*	12.60	3.94E-01	3.37E-01
AM-243	0.984	74.67	*	66.00	3.28E-01	9.58E-02

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 4:04:46PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	3	76.89	2.15038E-01	7.27		
	5	92.69	4.29727E-02	40.98	Sum	
	6	128.56	3.59050E-02	37.30		
	8	209.42	2.05556E-02	45.91	Tol.	GA-67 CM-243
	11	270.56	3.45126E-02	21.51		
	15	429.50	9.37500E-03	53.99		
	16	461.40	9.84247E-03	56.95		
	17	511.09	3.96035E-02	20.95		
M	18	579.11	3.84464E-03	38.57	Sum	
	20	599.29	1.42460E-02	33.08		
	23	767.97	7.50817E-03	54.45		
	24	785.12	7.27679E-03	38.79		
	25	794.46	7.48148E-03	48.55		
	26	861.49	1.16795E-02	48.41		
m	28	916.63	4.20831E-03	80.79		
	30	1004.55	6.51446E-03	60.00	Tol.	EU-154
M	31	1111.10	8.52882E-03	36.99	Tol.	EU-152
M	33	1238.74	7.21359E-03	49.76		
m	34	1248.43	3.99596E-03	80.17	Sum	
	35	1303.59	5.86310E-03	49.70		
	36	1313.27	6.02141E-03	53.35		
	37	1341.12	3.03744E-03	60.96		
	38	1377.31	5.09921E-03	39.77		
	39	1384.75	2.38562E-03	66.89	Tol.	AG-110M
	41	1592.94	3.53175E-03	31.71		
	42	1763.49	9.98219E-03	18.99		

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
43	2104.00	2.78935E-03	39.83		
44	2115.79	3.88889E-03	26.73		
45	2202.01	4.72222E-03	24.25		
46	2402.55	1.73611E-03	53.22		
47	2455.92	1.27315E-03	62.67		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	1.00	1460.81	*	10.67	2.52E+01	3.29E+00
CD-109	0.91	88.03	*	3.72	1.55E+00	1.33E+00
SN-126	0.98	87.57	*	37.00	1.34E-01	1.15E-01
EU-155	0.30	86.50	*	30.90	1.67E-01	1.43E-01
		105.30		20.70		
TL-208	0.81	583.14	*	30.22	1.64E+00	3.59E-01
		860.37		4.48		
		2614.66	*	35.85	1.76E+00	4.90E-01
PB-210	0.98	46.50	*	4.25	1.34E+00	1.66E+00
BI-212	0.77	727.17	*	11.80	1.76E+00	8.43E-01
		1620.62		2.75		
PB-212	0.89	238.63	*	44.60	1.40E+00	2.01E-01
		300.09		3.41		
BI-214	0.70	609.31	*	46.30	1.21E+00	2.75E-01
		1120.29	*	15.10	1.37E+00	8.21E-01
		1764.49		15.80		
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	1.36E+00	3.35E-01
		351.92	*	37.19	1.30E+00	2.80E-01
RA-224	0.89	240.98	*	3.95	3.03E+00	1.87E+00
RA-226	0.97	186.21	*	3.28	2.88E+00	5.77E+00
AC-228	0.99	338.32	*	11.40	1.50E+00	6.55E-01
		911.07	*	27.70	1.08E+00	3.75E-01

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
AC-228	0.99	969.11	*	16.60	1.48E+00	7.10E-01
NP-237	0.90	86.50	*	12.60	3.94E-01	3.37E-01
AM-243	0.98	74.67	*	66.00	3.28E-01	9.58E-02

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	1.000	2.52E+01	3.29E+00	
?	CD-109	0.914	1.55E+00	1.33E+00	
?	SN-126	0.987	1.34E-01	1.15E-01	
?	EU-155	0.305	1.67E-01	1.43E-01	
	TL-208	0.813	1.68E+00	2.89E-01	
	PB-210	0.980	1.34E+00	1.66E+00	
	BI-212	0.776	1.76E+00	8.43E-01	
	PB-212	0.891	1.40E+00	2.01E-01	
	BI-214	0.707	1.22E+00	2.61E-01	
	PB-214	0.992	1.32E+00	2.15E-01	
	RA-224	0.898	3.03E+00	1.87E+00	
	RA-226	0.974	2.88E+00	5.77E+00	
	AC-228	0.994	1.23E+00	2.96E-01	
?	NP-237	0.907	3.94E-01	3.37E-01	
	AM-243	0.984	3.28E-01	9.58E-02	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 4:04:46PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	3	76.89	2.15038E-01	7.27		
	5	92.69	4.29727E-02	40.98	Sum	
	6	128.56	3.59050E-02	37.30		
	8	209.42	2.05556E-02	45.91	Tol.	GA-67 CM-243
	11	270.56	3.45126E-02	21.51		
	15	429.50	9.37500E-03	53.99		
	16	461.40	9.84247E-03	56.95		
	17	511.09	3.96035E-02	20.95		
M	18	579.11	3.84464E-03	38.57	Sum	
	20	599.29	1.42460E-02	33.08		
	23	767.97	7.50817E-03	54.45		
	24	785.12	7.27679E-03	38.79		
	25	794.46	7.48148E-03	48.55		
	26	861.49	1.16795E-02	48.41		
m	28	916.63	4.20831E-03	80.79		
	30	1004.55	6.51446E-03	60.00	Tol.	EU-154
M	31	1111.10	8.52882E-03	36.99	Tol.	EU-152
M	33	1238.74	7.21359E-03	49.76		
m	34	1248.43	3.99596E-03	80.17	Sum	
	35	1303.59	5.86310E-03	49.70		
	36	1313.27	6.02141E-03	53.35		
	37	1341.12	3.03744E-03	60.96		
	38	1377.31	5.09921E-03	39.77		
	39	1384.75	2.38562E-03	66.89	Tol.	AG-110M
	41	1592.94	3.53175E-03	31.71		
	42	1763.49	9.98219E-03	18.99		
	43	2104.00	2.78935E-03	39.83		
	44	2115.79	3.88889E-03	26.73		
	45	2202.01	4.72222E-03	24.25		
	46	2402.55	1.73611E-03	53.22		
	47	2455.92	1.27315E-03	62.67		

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HTC-A08-S001-1824-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		BE-7	477.59		10.42	8.85E-01	3.62E+00	3.62E+00
+		NA-22	1274.54		99.94	9.79E-02	1.91E-01	1.91E-01
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	4.23E-02	1.05E-01	1.05E-01
+		K-40	1460.81	*	10.67	2.52E+01	1.45E+00	1.45E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	-1.20E-01	8.62E-02	8.62E-02
			78.34		96.00	3.69E-01		1.11E-01
+		SC-46	889.25		99.98	1.37E-01	3.40E-01	3.40E-01
			1120.51		99.99	5.35E-01		4.63E-01
+		V-48	983.52		99.98	-2.67E+00	1.17E+01	1.17E+01
			1312.10		97.50	4.37E+00		1.20E+01
+		CR-51	320.08		9.83	6.92E-01	1.03E+01	1.03E+01
+		MN-54	834.83		99.97	-1.02E-02	1.67E-01	1.67E-01
+		CO-56	846.75		99.96	5.41E-02	3.73E-01	3.73E-01
			1037.75		14.03	-3.24E-01		2.51E+00
			1238.25		67.00	5.63E-01		7.92E-01
			1771.40		15.51	-8.78E-01		1.43E+00
			2598.48		16.90	9.56E-02		1.33E+00
+		CO-57	122.06		85.51	9.40E-03	9.17E-02	9.17E-02
			136.48		10.60	6.17E-01		8.17E-01
+		CO-58	810.76		99.40	-3.91E-01	3.27E-01	3.27E-01
+		FE-59	1099.22		56.50	-1.48E-01	1.27E+00	1.27E+00
			1291.56		43.20	1.74E-01		1.84E+00
+		CO-60	1173.22		100.00	3.36E-03	1.40E-01	1.81E-01
			1332.49		100.00	4.65E-02		1.40E-01
+		ZN-65	1115.52		50.75	-1.00E-01	4.87E-01	4.87E-01
+		GA-67	93.31		35.70	1.05E+09	5.19E+08	5.19E+08
			208.95		2.24	5.88E+09		7.98E+09
			300.22		16.00	7.66E+07		1.19E+09
+		SE-75	121.11		16.70	-1.32E-01	2.02E-01	6.46E-01

Analysis Report for 1707092-07

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	1.61E-01	2.02E-01	2.02E-01
		264.65		59.80	-5.51E-02		2.24E-01
		279.53		25.20	-4.80E-02		5.47E-01
		400.65		11.40	1.68E-01		1.37E+00
+	RB-82	776.52		13.00	4.18E+00	1.49E+01	1.49E+01
+	RB-83	520.41		46.00	-1.21E-01	4.60E-01	4.60E-01
		529.64		30.30	-4.26E-01		6.87E-01
		552.65		16.40	4.96E-01		1.39E+00
+	KR-85	513.99		0.43	2.50E+01	3.03E+01	3.03E+01
+	SR-85	513.99		99.27	3.17E-01	3.85E-01	3.85E-01
+	Y-88	898.02		93.40	-3.15E-02	1.95E-01	2.80E-01
		1836.01		99.38	-9.70E-02		1.95E-01
+	MO-93	263.06		56.72	-2.44E-02	7.31E-02	1.35E-01
		684.67		99.68	2.36E-02		1.37E-01
		1477.11		99.08	-5.84E-02		7.31E-02
+	NB-93M	16.57		9.43	2.00E+01	8.97E+00	8.97E+00
+	NB-94	702.63		100.00	-3.21E-02	1.24E-01	1.26E-01
		871.10		100.00	1.53E-02		1.24E-01
+	NB-95	765.79		99.81	5.10E-01	1.05E+00	1.05E+00
+	NB-95M	235.69		25.00	2.09E+08	1.42E+08	1.42E+08
+	ZR-95	724.18		43.70	1.83E-01	7.55E-01	1.06E+00
		756.72		55.30	1.30E-01		7.55E-01
+	MO-99	181.06		6.20	3.08E+10	1.30E+11	1.39E+11
		739.58		12.80	1.78E+10		1.30E+11
		778.00		4.50	-2.43E+10		3.39E+11
+	RU-103	497.08		89.00	-5.39E-02	6.06E-01	6.06E-01
+	RU-106	621.84		9.80	-9.19E-02	1.31E+00	1.31E+00
+	AG-108M	433.93		89.90	-2.71E-02	8.97E-02	8.97E-02
		614.37		90.40	-1.53E-02		1.17E-01
		722.95		90.50	2.09E-02		1.58E-01
+	CD-109	88.03	*	3.72	1.55E+00	2.15E+00	2.15E+00
+	AG-110M	657.75		93.14	-4.05E-02	1.79E-01	1.79E-01
		677.61		10.53	3.60E-01		1.63E+00
		706.67		16.46	3.33E-01		1.05E+00
		763.93		21.98	-2.95E-02		7.86E-01
		884.67		71.63	-2.42E-01		2.39E-01
		1384.27		23.94	-2.42E-01		6.36E-01
+	CD-113M	263.70		0.02	-4.82E+01	3.30E+02	3.30E+02
+	SN-113	255.12		1.93	-1.33E+00	2.61E-01	7.22E+00
		391.69		64.90	6.58E-02		2.61E-01
+	TE123M	159.00		84.10	-1.00E-01	1.38E-01	1.38E-01
+	SB-124	602.71		97.87	-3.10E-01	3.46E-01	3.46E-01
		645.85		7.26	1.09E+00		5.04E+00
		722.78		11.10	5.47E-01		4.14E+00
		1691.02		49.00	4.03E-02		7.03E-01
+	I-125	35.49		6.49	-2.24E-01	6.23E+00	6.23E+00
+	SB-125	176.33		6.89	-5.76E-01	3.35E-01	1.03E+00
		427.89		29.33	1.07E-01		3.35E-01

Analysis Report for 1707092-07

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	463.38		10.35	9.70E-02	3.35E-01	1.01E+00
		600.56		17.80	3.06E-01		6.65E-01
		635.90		11.32	-3.36E-02		9.99E-01
+	SB-126	414.70		83.30	-3.52E+00	3.25E+01	3.25E+01
		666.33		99.60	1.05E+01		3.61E+01
		695.00		99.60	-6.43E+00		3.92E+01
		720.50		53.80	-5.69E+00		6.70E+01
+	SN-126	87.57	*	37.00	1.34E-01	1.86E-01	1.86E-01
+	SB-127	473.00		25.00	1.78E+07	3.14E+07	3.32E+07
		685.20		35.70	5.42E+06		3.14E+07
		783.80		14.70	1.06E+07		7.84E+07
+	I-129	29.78		57.00	4.48E-03	3.11E-01	3.11E-01
		33.60		13.20	4.76E-01		1.06E+00
		39.58		7.52	-6.07E-01		1.38E+00
+	I-131	284.30		6.05	-1.72E+03	6.23E+02	7.92E+03
		364.48		81.20	-7.47E+01		6.23E+02
		636.97		7.26	1.06E+03		9.06E+03
		722.89		1.80	6.53E+03		4.94E+04
+	TE-132	49.72		13.10	6.56E+07	2.07E+08	1.54E+09
		228.16		88.00	4.87E+07		2.07E+08
+	BA-133	81.00		33.00	-2.92E-02	1.83E-01	2.54E-01
		302.84		17.80	1.56E-01		4.65E-01
		356.01		60.00	-8.14E-02		1.83E-01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-1.64E+04	1.42E+05	1.42E+05
+	CS-134	563.23		8.38	-1.92E-01	1.24E-01	1.28E+00
		569.32		15.43	-2.85E-01		7.62E-01
		604.70		97.60	-7.85E-01		1.24E-01
		795.84		85.40	-1.84E-02		1.84E-01
		801.93		8.73	1.01E-01		1.79E+00
+	CS-135	268.24		16.00	-4.95E-02	5.25E-01	5.25E-01
+	@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41		28.60	1.00E+26		1.00E+26
	@	1678.03		9.54	1.00E+26		1.00E+26
+	CS-136	153.22		7.46	-2.42E+01	2.75E+01	1.90E+02
		163.89		4.61	8.13E+01		3.05E+02
		176.55		13.56	1.03E+01		1.03E+02
		273.65		12.66	-4.68E+01		1.29E+02
		340.57		48.50	5.29E+01		4.47E+01
		818.50		99.70	4.90E+00		2.75E+01
		1048.07		79.60	2.21E+00		3.70E+01
		1235.34		19.70	4.10E+01		2.23E+02
+	CS-137	661.65		85.12	1.51E-03	1.47E-01	1.47E-01
+	LA-138	788.74		34.00	-2.59E-01	1.93E-01	3.88E-01
		1435.80		66.00	5.31E-02		1.93E-01
+	CE-139	165.85		80.35	2.95E-02	1.43E-01	1.43E-01
+	BA-140	162.64		6.70	-4.63E+01	9.61E+01	2.38E+02
		304.84		4.50	-4.30E+02		4.10E+02
		423.70		3.20	4.02E+01		6.70E+02

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	437.55	2.00	-1.60E+02	9.61E+01	1.07E+03
		537.32	25.00	1.94E+01		9.61E+01
+	LA-140	328.77	20.50	4.70E+01	3.24E+01	1.07E+02
		487.03	45.50	-3.43E+00		5.05E+01
		815.85	23.50	-1.62E+01		1.33E+02
		1596.49	95.49	-6.91E+00		3.24E+01
+	CE-141	145.44	48.40	7.49E-01	1.23E+00	1.23E+00
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	1.02E-01	7.70E-01	7.70E-01
+	PM-144	476.78	42.00	5.56E-02	1.30E-01	2.90E-01
		618.01	98.60	1.78E-02		1.30E-01
		696.49	99.49	4.89E-02		1.69E-01
+	PM-145	36.85	21.70	-4.12E-01	2.87E-01	5.37E-01
		37.36	39.70	-2.20E-01		2.87E-01
		42.30	15.10	-2.25E-02		6.60E-01
		72.40	2.31	-1.07E+01		4.08E+00
+	PM-146	453.90	39.94	-2.51E-02	2.47E-01	2.47E-01
		735.90	14.01	1.21E-02		9.43E-01
		747.13	13.10	-1.40E-01		1.06E+00
+	ND-147	91.11	28.90	3.12E+02	1.79E+02	1.79E+02
		531.02	13.10	-5.46E+01		4.31E+02
+	PM-149	285.90	3.10	8.89E+13	1.60E+14	1.60E+14
+	EU-152	121.78	20.50	3.06E-02	2.99E-01	2.99E-01
		244.69	5.40	-3.70E-02		1.52E+00
		344.27	19.13	6.49E-02		4.21E-01
		778.89	9.20	-2.47E-01		1.32E+00
		964.01	10.40	1.87E-01		1.57E+00
		1085.78	7.22	-2.43E-01		2.14E+00
		1112.02	9.60	-2.71E-01		1.77E+00
		1407.95	14.94	1.74E-01		9.49E-01
+	GD-153	97.43	31.30	-3.82E-01	2.89E-01	2.89E-01
		103.18	22.20	1.31E-01		3.79E-01
+	EU-154	123.07	40.50	1.29E-02	1.55E-01	1.55E-01
		723.30	19.70	1.38E-01		8.01E-01
		873.19	11.50	6.73E-03		1.16E+00
		996.32	10.30	-2.78E-01		1.38E+00
		1004.76	17.90	2.19E-01		9.00E-01
		1274.45	35.50	2.62E-01		5.10E-01
+	EU-155	86.50 *	30.90	1.67E-01	2.31E-01	2.31E-01
		105.30	20.70	-1.93E-01		3.09E-01
+	EU-156	811.77	10.40	5.00E+00	1.26E+02	1.26E+02
		1153.47	7.20	-5.28E+00		2.64E+02
		1230.71	8.90	-3.46E+01		2.13E+02
+	HO-166M	184.41	72.60	1.25E-01	1.11E-01	1.11E-01
		280.45	29.60	-2.77E-02		2.64E-01
		410.94	11.10	2.54E-01		8.64E-01
		711.69	54.10	2.09E-01		2.48E-01

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TM-171	66.72		0.14	3.16E+00	6.61E+01	6.61E+01
+	HF-172	67.35		5.31	8.30E-02	6.30E-01	1.74E+00
		125.81		11.30	1.55E-02		6.30E-01
+	LU-172	181.53		20.60	2.18E+03	8.55E+03	1.23E+04
		900.72		29.81	-3.21E+03		1.68E+04
		1093.66		62.50	-1.36E+03		8.55E+03
+	LU-173	100.72		5.24	-4.15E-01	4.64E-01	1.35E+00
		272.11		21.20	4.42E-01		4.64E-01
+	HF-175	343.40		84.00	3.96E-02	2.57E-01	2.57E-01
+	LU-176	88.34		13.30	-3.58E-01	8.44E-02	6.17E-01
		201.83		86.00	3.72E-02		8.63E-02
		306.78		94.00	3.48E-02		8.44E-02
+	HF-181	133.02		41.70	3.27E-01	6.05E-01	8.40E-01
		345.85		17.20	3.75E-01		2.41E+00
		482.03		82.80	-2.09E-01		6.05E-01
+	TA-182	67.75		41.20	-5.08E-01	3.64E-01	3.64E-01
		1121.30		34.90	9.01E-01		1.03E+00
		1189.05		16.23	-1.10E-01		2.15E+00
		1221.41		26.98	8.23E-02		1.28E+00
		1231.02		11.44	-2.88E-01		3.00E+00
+	IR-192	308.46		29.68	5.53E-03	4.84E-01	6.83E-01
		468.07		48.10	6.99E-03		4.84E-01
+	HG-203	279.19		77.30	1.04E-01	4.44E-01	4.44E-01
+	TL-204	374.74		94.11	2.64E-02	9.45E-02	9.45E-02
		899.15		99.16	-4.16E-02		1.44E-01
		911.74		91.10	3.32E-01		2.48E-01
+	BI-207	569.67		97.72	-4.12E-02	1.10E-01	1.10E-01
		1063.62		74.90	8.25E-02		2.05E-01
+	TL-208	583.14	*	30.22	1.64E+00	7.56E-02	5.13E-01
		860.37		4.48	2.44E+00		3.41E+00
		2614.66	*	35.85	1.76E+00		7.56E-02
+	BI-210M	262.00		45.00	7.52E-02	1.71E-01	1.71E-01
		300.00		23.00	2.36E-02		3.65E-01
+	PB-210	46.50	*	4.25	1.34E+00	2.72E+00	2.72E+00
+	PB-211	404.84		2.90	-1.70E+00	3.00E+00	3.00E+00
		831.96		2.90	-5.36E-01		4.65E+00
+	BI-212	727.17	*	11.80	1.76E+00	1.23E+00	1.23E+00
		1620.62		2.75	-6.21E-01		3.58E+00
+	PB-212	238.63	*	44.60	1.40E+00	2.81E-01	2.81E-01
		300.09		3.41	1.59E-01		2.46E+00
+	BI-214	609.31	*	46.30	1.21E+00	2.99E-01	2.99E-01
		1120.29	*	15.10	1.37E+00		2.04E+00
		1764.49		15.80	9.34E-01		1.23E+00
		2204.22		4.98	-4.07E-01		3.56E+00
+	PB-214	295.21	*	19.19	1.36E+00	3.64E-01	4.40E-01
		351.92	*	37.19	1.30E+00		3.64E-01
+	RN-219	401.80		6.50	6.04E-02	1.32E+00	1.32E+00
+	RA-223	323.87		3.88	-6.04E-01	2.16E+00	2.16E+00

Analysis Report for 1707092-07

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-224	240.98	*	3.95	3.03E+00	3.16E+00	3.16E+00
+	RA-225	40.00		31.00	-1.67E+01	3.78E+01	3.78E+01
+	RA-226	186.21	*	3.28	2.88E+00	3.82E+00	3.82E+00
+	TH-227	50.10		8.40	4.41E-02	1.04E+00	1.04E+00
		236.00		11.50	1.62E+00		1.10E+00
		256.20		6.30	-3.18E-01		1.21E+00
+	AC-228	338.32	*	11.40	1.50E+00	9.93E-01	9.93E-01
		911.07	*	27.70	1.08E+00		1.04E+00
		969.11	*	16.60	1.48E+00		1.04E+00
+	TH-230	48.44		16.90	-1.37E-01	5.28E-01	5.28E-01
		62.85		4.60	1.49E+00		1.85E+00
		67.67		0.37	-3.06E+01		2.19E+01
+	PA-231	283.67		1.60	-1.04E+00	3.53E+00	4.80E+00
		302.67		2.30	1.18E+00		3.53E+00
+	TH-231	25.64		14.70	1.52E-01	1.21E+00	1.68E+00
		84.21		6.40	-1.47E-01		1.21E+00
+	PA-233	311.98		38.60	3.29E-01	2.77E+00	2.77E+00
+	PA-234	131.20		20.40	-1.95E-01	3.24E-01	3.24E-01
		733.99		8.80	-4.92E-02		1.45E+00
		946.00		12.00	3.98E-01		1.29E+00
+	PA-234M	1001.03		0.92	2.30E+00	1.65E+01	1.65E+01
+	TH-234	63.29		3.80	1.80E+00	2.24E+00	2.24E+00
+	U-235	143.76		10.50	-4.34E-01	6.22E-01	6.22E-01
		163.35		4.70	-2.73E-01		1.40E+00
		205.31		4.70	-1.71E-01		1.54E+00
+	NP-237	86.50	*	12.60	3.94E-01	5.45E-01	5.45E-01
+	NP-239	106.10		22.70	2.18E+11	2.47E+12	2.47E+12
		228.18		10.70	1.56E+12		6.63E+12
		277.60		14.10	4.64E+11		4.76E+12
+	AM-241	59.54		35.90	-1.71E-02	2.30E-01	2.30E-01
+	AM-243	74.67	*	66.00	3.28E-01	3.07E-01	3.07E-01
+	CM-243	209.75		3.29	1.49E+00	5.38E-01	2.45E+00
		228.14		10.60	1.77E-01		7.52E-01
		277.60		14.00	5.24E-02		5.38E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1707092-07

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NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	3.62E+00	3.62E+00	8.85E-01	1.72E+00
	NA-22	1274.54		99.94	1.91E-01	1.91E-01	9.79E-02	8.85E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	1.05E-01	1.05E-01	4.23E-02	4.33E-02
+	K-40	1460.81	*	10.67	1.45E+00	1.45E+00	2.52E+01	6.58E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	8.62E-02	8.62E-02	-1.20E-01	4.23E-02
		78.34		96.00	1.11E-01		3.69E-01	5.47E-02
	SC-46	889.25		99.98	3.40E-01	3.40E-01	1.37E-01	1.59E-01
		1120.51		99.99	4.63E-01		5.35E-01	2.18E-01
	V-48	983.52		99.98	1.17E+01	1.17E+01	-2.67E+00	5.41E+00
		1312.10		97.50	1.20E+01		4.37E+00	5.44E+00
	CR-51	320.08		9.83	1.03E+01	1.03E+01	6.92E-01	4.93E+00
	MN-54	834.83		99.97	1.67E-01	1.67E-01	-1.02E-02	7.80E-02
	CO-56	846.75		99.96	3.73E-01	3.73E-01	5.41E-02	1.76E-01
		1037.75		14.03	2.51E+00		-3.24E-01	1.16E+00
		1238.25		67.00	7.92E-01		5.63E-01	3.73E-01
		1771.40		15.51	1.43E+00		-8.78E-01	5.77E-01
		2598.48		16.90	1.33E+00		9.56E-02	4.72E-01
	CO-57	122.06		85.51	9.17E-02	9.17E-02	9.40E-03	4.47E-02
		136.48		10.60	8.17E-01		6.17E-01	3.98E-01
	CO-58	810.76		99.40	3.27E-01	3.27E-01	-3.91E-01	1.52E-01
	FE-59	1099.22		56.50	1.27E+00	1.27E+00	-1.48E-01	5.87E-01
		1291.56		43.20	1.84E+00		1.74E-01	8.49E-01
	CO-60	1173.22		100.00	1.81E-01	1.40E-01	3.36E-03	8.41E-02
		1332.49		100.00	1.40E-01		4.65E-02	6.32E-02
	ZN-65	1115.52		50.75	4.87E-01	4.87E-01	-1.00E-01	2.29E-01
	GA-67	93.31		35.70	5.19E+08	5.19E+08	1.05E+09	2.55E+08
		208.95		2.24	7.98E+09		5.88E+09	3.88E+09
		300.22		16.00	1.19E+09		7.66E+07	5.71E+08
	SE-75	121.11		16.70	6.46E-01	2.02E-01	-1.32E-01	3.15E-01
		136.00		59.20	2.02E-01		1.61E-01	9.84E-02
		264.65		59.80	2.24E-01		-5.51E-02	1.08E-01
		279.53		25.20	5.47E-01		-4.80E-02	2.63E-01
		400.65		11.40	1.37E+00		1.68E-01	6.52E-01
	RB-82	776.52		13.00	1.49E+01	1.49E+01	4.18E+00	6.96E+00
	RB-83	520.41		46.00	4.60E-01	4.60E-01	-1.21E-01	2.16E-01
		529.64		30.30	6.87E-01		-4.26E-01	3.22E-01
		552.65		16.40	1.39E+00		4.96E-01	6.56E-01
	KR-85	513.99		0.43	3.03E+01	3.03E+01	2.50E+01	1.45E+01
	SR-85	513.99		99.27	3.85E-01	3.85E-01	3.17E-01	1.84E-01

Analysis Report for 1707092-07

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	Y-88	898.02		93.40	2.80E-01	1.95E-01	-3.15E-02	1.30E-01
		1836.01		99.38	1.95E-01		-9.70E-02	7.98E-02
	MO-93	263.06		56.72	1.35E-01	7.31E-02	-2.44E-02	6.50E-02
		684.67		99.68	1.37E-01		2.36E-02	6.46E-02
		1477.11		99.08	7.31E-02		-5.84E-02	2.90E-02
	NB-93M	16.57		9.43	8.97E+00	8.97E+00	2.00E+01	4.36E+00
	NB-94	702.63		100.00	1.26E-01	1.24E-01	-3.21E-02	5.91E-02
		871.10		100.00	1.24E-01		1.53E-02	5.76E-02
	NB-95	765.79		99.81	1.05E+00	1.05E+00	5.10E-01	4.93E-01
	NB-95M	235.69		25.00	1.42E+08	1.42E+08	2.09E+08	6.95E+07
	ZR-95	724.18		43.70	1.06E+00	7.55E-01	1.83E-01	5.03E-01
		756.72		55.30	7.55E-01		1.30E-01	3.55E-01
	MO-99	181.06		6.20	1.39E+11	1.30E+11	3.08E+10	6.74E+10
		739.58		12.80	1.30E+11		1.78E+10	6.12E+10
		778.00		4.50	3.39E+11		-2.43E+10	1.58E+11
	RU-103	497.08		89.00	6.06E-01	6.06E-01	-5.39E-02	2.85E-01
	RU-106	621.84		9.80	1.31E+00	1.31E+00	-9.19E-02	6.13E-01
	AG-108M	433.93		89.90	8.97E-02	8.97E-02	-2.71E-02	4.22E-02
		614.37		90.40	1.17E-01		-1.53E-02	5.51E-02
		722.95		90.50	1.58E-01		2.09E-02	7.48E-02
+	CD-109	88.03	*	3.72	2.15E+00	2.15E+00	1.55E+00	1.05E+00
	AG-110M	657.75		93.14	1.79E-01	1.79E-01	-4.05E-02	8.44E-02
		677.61		10.53	1.63E+00		3.60E-01	7.68E-01
		706.67		16.46	1.05E+00		3.33E-01	4.95E-01
		763.93		21.98	7.86E-01		-2.95E-02	3.69E-01
		884.67		71.63	2.39E-01		-2.42E-01	1.11E-01
		1384.27		23.94	6.36E-01		-2.42E-01	2.80E-01
	CD-113M	263.70		0.02	3.30E+02	3.30E+02	-4.82E+01	1.59E+02
	SN-113	255.12		1.93	7.22E+00	2.61E-01	-1.33E+00	3.48E+00
		391.69		64.90	2.61E-01		6.58E-02	1.24E-01
	TE123M	159.00		84.10	1.38E-01	1.38E-01	-1.00E-01	6.71E-02
	SB-124	602.71		97.87	3.46E-01	3.46E-01	-3.10E-01	1.62E-01
		645.85		7.26	5.04E+00		1.09E+00	2.37E+00
		722.78		11.10	4.14E+00		5.47E-01	1.96E+00
		1691.02		49.00	7.03E-01		4.03E-02	2.97E-01
	I-125	35.49		6.49	6.23E+00	6.23E+00	-2.24E-01	3.04E+00
	SB-125	176.33		6.89	1.03E+00	3.35E-01	-5.76E-01	5.01E-01
		427.89		29.33	3.35E-01		1.07E-01	1.59E-01
		463.38		10.35	1.01E+00		9.70E-02	4.79E-01
		600.56		17.80	6.65E-01		3.06E-01	3.13E-01
		635.90		11.32	9.99E-01		-3.36E-02	4.67E-01
	SB-126	414.70		83.30	3.25E+01	3.25E+01	-3.52E+00	1.55E+01
		666.33		99.60	3.61E+01		1.05E+01	1.70E+01
		695.00		99.60	3.92E+01		-6.43E+00	1.85E+01
		720.50		53.80	6.70E+01		-5.69E+00	3.14E+01
+	SN-126	87.57	*	37.00	1.86E-01	1.86E-01	1.34E-01	9.09E-02
	SB-127	473.00		25.00	3.32E+07	3.14E+07	1.78E+07	1.58E+07
		685.20		35.70	3.14E+07		5.42E+06	1.49E+07
		783.80		14.70	7.84E+07		1.06E+07	3.68E+07
	I-129	29.78		57.00	3.11E-01	3.11E-01	4.48E-03	1.52E-01
		33.60		13.20	1.06E+00		4.76E-01	5.18E-01
		39.58		7.52	1.38E+00		-6.07E-01	6.71E-01
	I-131	284.30		6.05	7.92E+03	6.23E+02	-1.72E+03	3.80E+03

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-131	364.48	81.20	6.23E+02	6.23E+02	-7.47E+01	2.96E+02
	636.97	7.26	9.06E+03		1.06E+03	4.23E+03
	722.89	1.80	4.94E+04		6.53E+03	2.34E+04
TE-132	49.72	13.10	1.54E+09	2.07E+08	6.56E+07	7.55E+08
	228.16	88.00	2.07E+08		4.87E+07	1.00E+08
BA-133	81.00	33.00	2.54E-01	1.83E-01	-2.92E-02	1.25E-01
	302.84	17.80	4.65E-01		1.56E-01	2.23E-01
	356.01	60.00	1.83E-01		-8.14E-02	8.84E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	1.42E+05	1.42E+05	-1.64E+04	6.99E+04
CS-134	563.23	8.38	1.28E+00	1.24E-01	-1.92E-01	5.98E-01
	569.32	15.43	7.62E-01		-2.85E-01	3.59E-01
	604.70	97.60	1.24E-01		-7.85E-01	5.86E-02
	795.84	85.40	1.84E-01		-1.84E-02	8.64E-02
	801.93	8.73	1.79E+00		1.01E-01	8.41E-01
CS-135	268.24	16.00	5.25E-01	5.25E-01	-4.95E-02	2.54E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.90E+02	2.75E+01	-2.42E+01	9.25E+01
	163.89	4.61	3.05E+02		8.13E+01	1.48E+02
	176.55	13.56	1.03E+02		1.03E+01	5.02E+01
	273.65	12.66	1.29E+02		-4.68E+01	6.20E+01
	340.57	48.50	4.47E+01		5.29E+01	2.16E+01
	818.50	99.70	2.75E+01		4.90E+00	1.29E+01
	1048.07	79.60	3.70E+01		2.21E+00	1.71E+01
	1235.34	19.70	2.23E+02		4.10E+01	1.05E+02
CS-137	661.65	85.12	1.47E-01	1.47E-01	1.51E-03	6.95E-02
LA-138	788.74	34.00	3.88E-01	1.93E-01	-2.59E-01	1.82E-01
	1435.80	66.00	1.93E-01		5.31E-02	8.55E-02
CE-139	165.85	80.35	1.43E-01	1.43E-01	2.95E-02	6.94E-02
BA-140	162.64	6.70	2.38E+02	9.61E+01	-4.63E+01	1.16E+02
	304.84	4.50	4.10E+02		-4.30E+02	1.96E+02
	423.70	3.20	6.70E+02		4.02E+01	3.17E+02
	437.55	2.00	1.07E+03		-1.60E+02	5.04E+02
	537.32	25.00	9.61E+01		1.94E+01	4.52E+01
LA-140	328.77	20.50	1.07E+02	3.24E+01	4.70E+01	5.14E+01
	487.03	45.50	5.05E+01		-3.43E+00	2.39E+01
	815.85	23.50	1.33E+02		-1.62E+01	6.21E+01
	1596.49	95.49	3.24E+01		-6.91E+00	1.42E+01
CE-141	145.44	48.40	1.23E+00	1.23E+00	7.49E-01	6.00E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	7.70E-01	7.70E-01	1.02E-01	3.76E-01
PM-144	476.78	42.00	2.90E-01	1.30E-01	5.56E-02	1.38E-01
	618.01	98.60	1.30E-01		1.78E-02	6.07E-02
	696.49	99.49	1.69E-01		4.89E-02	8.00E-02
PM-145	36.85	21.70	5.37E-01	2.87E-01	-4.12E-01	2.62E-01
	37.36	39.70	2.87E-01		-2.20E-01	1.40E-01
	42.30	15.10	6.60E-01		-2.25E-02	3.22E-01
	72.40	2.31	4.08E+00		-1.07E+01	2.01E+00
PM-146	453.90	39.94	2.47E-01	2.47E-01	-2.51E-02	1.17E-01

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PM-146	735.90		14.01	9.43E-01	2.47E-01	1.21E-02	4.42E-01
		747.13		13.10	1.06E+00		-1.40E-01	4.98E-01
	ND-147	91.11		28.90	1.79E+02	1.79E+02	3.12E+02	8.79E+01
		531.02		13.10	4.31E+02		-5.46E+01	2.02E+02
	PM-149	285.90		3.10	1.60E+14	1.60E+14	8.89E+13	7.69E+13
	EU-152	121.78		20.50	2.99E-01	2.99E-01	3.06E-02	1.46E-01
		244.69		5.40	1.52E+00		-3.70E-02	7.34E-01
		344.27		19.13	4.21E-01		6.49E-02	2.01E-01
		778.89		9.20	1.32E+00		-2.47E-01	6.15E-01
		964.01		10.40	1.57E+00		1.87E-01	7.37E-01
		1085.78		7.22	2.14E+00		-2.43E-01	9.94E-01
		1112.02		9.60	1.77E+00		-2.71E-01	8.24E-01
		1407.95		14.94	9.49E-01		1.74E-01	4.27E-01
	GD-153	97.43		31.30	2.89E-01	2.89E-01	-3.82E-01	1.41E-01
		103.18		22.20	3.79E-01		1.31E-01	1.85E-01
	EU-154	123.07		40.50	1.55E-01	1.55E-01	1.29E-02	7.57E-02
		723.30		19.70	8.01E-01		1.38E-01	3.80E-01
		873.19		11.50	1.16E+00		6.73E-03	5.41E-01
		996.32		10.30	1.38E+00		-2.78E-01	6.38E-01
		1004.76		17.90	9.00E-01		2.19E-01	4.20E-01
		1274.45		35.50	5.10E-01		2.62E-01	2.37E-01
+	EU-155	86.50	*	30.90	2.31E-01	2.31E-01	1.67E-01	1.13E-01
		105.30		20.70	3.09E-01		-1.93E-01	1.51E-01
	EU-156	811.77		10.40	1.26E+02	1.26E+02	5.00E+00	5.86E+01
		1153.47		7.20	2.64E+02		-5.28E+00	1.24E+02
		1230.71		8.90	2.13E+02		-3.46E+01	9.91E+01
	HO-166M	184.41		72.60	1.11E-01	1.11E-01	1.25E-01	5.39E-02
		280.45		29.60	2.64E-01		-2.77E-02	1.27E-01
		410.94		11.10	8.64E-01		2.54E-01	4.12E-01
		711.69		54.10	2.48E-01		2.09E-01	1.17E-01
	TM-171	66.72		0.14	6.61E+01	6.61E+01	3.16E+00	3.24E+01
	HF-172	67.35		5.31	1.74E+00	6.30E-01	8.30E-02	8.53E-01
		125.81		11.30	6.30E-01		1.55E-02	3.07E-01
	LU-172	181.53		20.60	1.23E+04	8.55E+03	2.18E+03	6.00E+03
		900.72		29.81	1.68E+04		-3.21E+03	7.81E+03
		1093.66		62.50	8.55E+03		-1.36E+03	3.95E+03
	LU-173	100.72		5.24	1.35E+00	4.64E-01	-4.15E-01	6.60E-01
		272.11		21.20	4.64E-01		4.42E-01	2.24E-01
	HF-175	343.40		84.00	2.57E-01	2.57E-01	3.96E-02	1.23E-01
	LU-176	88.34		13.30	6.17E-01	8.44E-02	-3.58E-01	3.03E-01
		201.83		86.00	8.63E-02		3.72E-02	4.19E-02
		306.78		94.00	8.44E-02		3.48E-02	4.05E-02
	HF-181	133.02		41.70	8.40E-01	6.05E-01	3.27E-01	4.10E-01
		345.85		17.20	2.41E+00		3.75E-01	1.15E+00
		482.03		82.80	6.05E-01		-2.09E-01	2.86E-01
	TA-182	67.75		41.20	3.64E-01	3.64E-01	-5.08E-01	1.78E-01
		1121.30		34.90	1.03E+00		9.01E-01	4.86E-01
		1189.05		16.23	2.15E+00		-1.10E-01	1.01E+00
		1221.41		26.98	1.28E+00		8.23E-02	5.98E-01
		1231.02		11.44	3.00E+00		-2.88E-01	1.40E+00
	IR-192	308.46		29.68	6.83E-01	4.84E-01	5.53E-03	3.27E-01
		468.07		48.10	4.84E-01		6.99E-03	2.28E-01
	HG-203	279.19		77.30	4.44E-01	4.44E-01	1.04E-01	2.13E-01

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-204	374.74		94.11	9.45E-02	9.45E-02	2.64E-02	4.50E-02
		899.15		99.16	1.44E-01		-4.16E-02	6.69E-02
		911.74		91.10	2.48E-01		3.32E-01	1.19E-01
	BI-207	569.67		97.72	1.10E-01	1.10E-01	-4.12E-02	5.20E-02
		1063.62		74.90	2.05E-01		8.25E-02	9.50E-02
+	TL-208	583.14	*	30.22	5.13E-01	7.56E-02	1.64E+00	2.46E-01
		860.37		4.48	3.41E+00		2.44E+00	1.60E+00
		2614.66	*	35.85	7.56E-02		1.76E+00	0.00E+00
	BI-210M	262.00		45.00	1.71E-01	1.71E-01	7.52E-02	8.23E-02
		300.00		23.00	3.65E-01		2.36E-02	1.76E-01
+	PB-210	46.50	*	4.25	2.72E+00	2.72E+00	1.34E+00	1.33E+00
	PB-211	404.84		2.90	3.00E+00	3.00E+00	-1.70E+00	1.42E+00
		831.96		2.90	4.65E+00		-5.36E-01	2.17E+00
+	BI-212	727.17	*	11.80	1.23E+00	1.23E+00	1.76E+00	5.80E-01
		1620.62		2.75	3.58E+00		-6.21E-01	1.50E+00
+	PB-212	238.63	*	44.60	2.81E-01	2.81E-01	1.40E+00	1.38E-01
		300.09		3.41	2.46E+00		1.59E-01	1.18E+00
+	BI-214	609.31	*	46.30	2.99E-01	2.99E-01	1.21E+00	1.42E-01
		1120.29	*	15.10	2.04E+00		1.37E+00	9.80E-01
		1764.49		15.80	1.23E+00		9.34E-01	5.59E-01
		2204.22		4.98	3.56E+00		-4.07E-01	1.56E+00
+	PB-214	295.21	*	19.19	4.40E-01	3.64E-01	1.36E+00	2.12E-01
		351.92	*	37.19	3.64E-01		1.30E+00	1.77E-01
	RN-219	401.80		6.50	1.32E+00	1.32E+00	6.04E-02	6.28E-01
	RA-223	323.87		3.88	2.16E+00	2.16E+00	-6.04E-01	1.04E+00
+	RA-224	240.98	*	3.95	3.16E+00	3.16E+00	3.03E+00	1.55E+00
	RA-225	40.00		31.00	3.78E+01	3.78E+01	-1.67E+01	1.84E+01
+	RA-226	186.21	*	3.28	3.82E+00	3.82E+00	2.88E+00	1.88E+00
	TH-227	50.10		8.40	1.04E+00	1.04E+00	4.41E-02	5.08E-01
		236.00		11.50	1.10E+00		1.62E+00	5.37E-01
		256.20		6.30	1.21E+00		-3.18E-01	5.85E-01
+	AC-228	338.32	*	11.40	9.93E-01	9.93E-01	1.50E+00	4.81E-01
		911.07	*	27.70	1.04E+00		1.08E+00	5.04E-01
		969.11	*	16.60	1.04E+00		1.48E+00	4.90E-01
	TH-230	48.44		16.90	5.28E-01	5.28E-01	-1.37E-01	2.58E-01
		62.85		4.60	1.85E+00		1.49E+00	9.10E-01
		67.67		0.37	2.19E+01		-3.06E+01	1.08E+01
	PA-231	283.67		1.60	4.80E+00	3.53E+00	-1.04E+00	2.31E+00
		302.67		2.30	3.53E+00		1.18E+00	1.70E+00
	TH-231	25.64		14.70	1.68E+00	1.21E+00	1.52E-01	8.17E-01
		84.21		6.40	1.21E+00		-1.47E-01	5.94E-01
	PA-233	311.98		38.60	2.77E+00	2.77E+00	3.29E-01	1.33E+00
	PA-234	131.20		20.40	3.24E-01	3.24E-01	-1.95E-01	1.58E-01
		733.99		8.80	1.45E+00		-4.92E-02	6.78E-01
		946.00		12.00	1.29E+00		3.98E-01	6.03E-01
	PA-234M	1001.03		0.92	1.65E+01	1.65E+01	2.30E+00	7.67E+00
	TH-234	63.29		3.80	2.24E+00	2.24E+00	1.80E+00	1.10E+00
	U-235	143.76		10.50	6.22E-01	6.22E-01	-4.34E-01	3.03E-01
		163.35		4.70	1.40E+00		-2.73E-01	6.81E-01
		205.31		4.70	1.54E+00		-1.71E-01	7.45E-01
+	NP-237	86.50	*	12.60	5.45E-01	5.45E-01	3.94E-01	2.67E-01
	NP-239	106.10		22.70	2.47E+12	2.47E+12	2.18E+11	1.20E+12
		228.18		10.70	6.63E+12		1.56E+12	3.21E+12

Analysis Report for 1707092-07

HTC-A08-S001-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	NP-239	277.60		14.10	4.76E+12	2.47E+12	4.64E+11	2.29E+12
	AM-241	59.54		35.90	2.30E-01	2.30E-01	-1.71E-02	1.13E-01
+	AM-243	74.67	*	66.00	3.07E-01	3.07E-01	3.28E-01	1.52E-01
	CM-243	209.75		3.29	2.45E+00	5.38E-01	1.49E+00	1.19E+00
		228.14		10.60	7.52E-01		1.77E-01	3.64E-01
		277.60		14.00	5.38E-01		5.24E-02	2.59E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: HTC-A08-S001-1824-01

Elapsed Live time: 3600
Elapsed Real Time: 3602

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	24	117
17:	81	97	94	72	73	81	59	70
25:	70	70	77	66	70	63	82	85
33:	76	75	76	68	62	74	62	89
41:	73	72	92	90	102	107	91	85
49:	77	84	98	111	111	98	112	102
57:	98	110	107	108	106	161	175	128
65:	121	119	122	137	127	132	129	160
73:	256	300	337	399	300	155	85	110
81:	109	134	123	118	133	180	175	122
89:	142	154	161	204	173	101	86	74
97:	71	90	85	90	80	68	73	96
105:	83	76	71	93	84	63	76	80
113:	85	73	81	78	61	73	73	59
121:	79	62	65	66	86	71	80	95
129:	93	66	74	60	64	89	91	62
137:	72	81	64	53	67	67	66	78
145:	72	67	89	74	66	68	64	65
153:	70	73	66	60	60	58	45	57
161:	56	57	72	52	63	65	57	64
169:	60	60	58	43	62	58	53	41
177:	54	53	54	65	42	66	56	65
185:	102	88	82	59	40	51	52	40
193:	53	47	56	52	41	61	55	58
201:	57	40	40	54	36	57	51	64
209:	76	68	39	43	47	55	50	47
217:	32	36	45	44	44	48	51	44
225:	45	50	52	38	42	61	41	40
233:	44	52	39	80	241	313	213	94
241:	88	45	40	30	29	39	31	34
249:	32	42	38	38	37	39	30	29
257:	32	41	32	41	28	28	39	29
265:	29	28	37	40	59	51	45	37
273:	21	21	25	27	43	28	30	26
281:	25	28	34	37	34	18	34	31
289:	27	23	26	24	42	116	112	46
297:	22	23	37	44	24	20	27	24
305:	22	29	24	29	28	23	22	16
313:	34	25	26	19	30	18	31	20
321:	31	22	17	28	30	35	37	28
329:	22	30	25	29	25	17	30	37
337:	71	66	34	29	16	20	23	18
345:	22	15	21	22	29	80	151	116
353:	37	23	24	21	13	19	19	17
361:	18	18	19	18	20	22	18	25

369:	18	20	14	18	17	19	20	27

Sample Title: HTC-A08-S001-1824-01

Channel								
377:	21	16	15	19	22	16	17	18
385:	21	13	23	20	28	18	25	11
393:	19	26	19	20	18	16	21	17
401:	22	13	18	14	16	15	24	23
409:	25	21	16	21	15	19	21	16
417:	28	16	20	13	22	19	16	14
425:	14	16	15	25	18	19	12	13
433:	9	16	13	7	12	20	23	14
441:	19	22	19	17	13	15	8	13
449:	17	15	19	16	20	17	12	16
457:	22	13	11	10	22	26	19	10
465:	13	16	15	7	18	17	14	14
473:	16	15	21	12	15	20	17	18
481:	14	16	5	12	20	18	12	16
489:	15	10	18	8	13	12	9	11
497:	13	13	14	13	12	7	13	10
505:	16	17	17	17	46	47	48	18
513:	20	11	12	12	16	6	9	18
521:	11	9	14	24	10	9	9	13
529:	8	11	15	12	12	14	15	13
537:	11	12	11	11	11	10	17	14
545:	10	13	11	10	13	13	8	9
553:	12	16	15	13	6	16	9	10
561:	9	8	14	12	14	12	13	10
569:	13	17	15	11	20	15	12	5
577:	11	10	18	10	39	76	82	30
585:	11	7	14	10	4	10	10	10
593:	7	6	13	13	17	6	13	18
601:	14	12	7	7	7	9	30	82
609:	101	34	18	10	10	7	9	15
617:	7	13	10	13	12	7	12	7
625:	10	12	9	9	11	12	9	9
633:	9	18	8	9	11	6	9	11
641:	8	8	14	13	10	12	12	11
649:	9	12	8	7	14	11	18	10
657:	5	10	8	13	6	13	16	13
665:	8	6	7	11	6	11	6	10
673:	10	12	12	5	12	12	10	10
681:	12	10	11	14	11	8	15	9
689:	12	7	14	11	12	12	11	16
697:	5	11	17	9	8	11	6	11
705:	6	4	13	8	15	15	4	12
713:	6	12	8	10	3	6	12	7
721:	10	4	11	15	11	27	24	14
729:	9	11	5	5	12	5	8	15
737:	8	10	10	9	11	10	7	10
745:	9	7	16	7	7	11	11	9
753:	13	10	6	18	7	8	8	10
761:	6	9	9	4	7	7	16	19
769:	12	2	9	8	10	7	8	6
777:	6	4	8	9	8	5	9	17
785:	16	6	3	5	6	7	7	6
793:	14	13	19	3	10	7	6	6

801:	11	12	6	15	10	8	6	5

Sample Title: HTC-A08-S001-1824-01

Channel								
809:	6	9	8	2	6	7	16	5
817:	5	9	7	9	7	3	6	11
825:	11	6	12	11	6	8	3	9
833:	6	9	5	10	6	11	5	9
841:	10	11	10	9	10	13	12	4
849:	6	12	8	9	7	4	8	5
857:	6	13	9	13	15	8	8	7
865:	7	4	7	4	5	4	9	9
873:	5	6	8	5	8	11	6	10
881:	5	2	7	7	5	6	7	7
889:	12	12	11	5	8	5	6	7
897:	11	4	6	8	5	4	9	10
905:	8	12	9	7	16	45	38	23
913:	3	8	6	11	3	7	8	5
921:	5	5	2	6	7	8	6	8
929:	6	6	6	10	10	12	8	9
937:	7	8	6	6	8	10	3	10
945:	9	9	7	7	9	5	9	5
953:	7	5	4	8	5	8	4	5
961:	7	7	12	12	12	3	14	32
969:	31	17	9	2	4	3	4	11
977:	7	6	10	3	5	4	5	6
985:	9	8	7	6	10	5	12	5
993:	3	5	6	12	5	5	6	5
1001:	13	4	6	6	13	7	9	4
1009:	5	9	5	6	6	5	10	6
1017:	6	9	6	3	7	11	8	5
1025:	5	3	6	7	9	4	11	4
1033:	6	5	9	4	8	8	5	6
1041:	1	4	7	7	3	6	3	2
1049:	6	7	8	7	8	10	7	8
1057:	8	4	4	6	4	4	6	7
1065:	10	6	9	1	5	10	2	8
1073:	7	4	7	6	8	6	9	5
1081:	4	9	4	8	4	3	7	8
1089:	7	9	3	7	7	4	4	4
1097:	6	7	4	6	3	11	5	5
1105:	8	6	5	5	7	17	6	6
1113:	8	3	6	7	9	10	23	17
1121:	6	6	9	4	2	5	2	8
1129:	2	10	7	11	6	7	6	7
1137:	7	9	10	8	10	5	3	8
1145:	7	9	11	9	3	7	10	8
1153:	9	7	11	11	8	7	6	8
1161:	8	7	10	4	7	8	9	1
1169:	7	4	12	8	8	11	6	3
1177:	3	9	5	8	8	9	6	8
1185:	12	5	11	5	8	8	7	7
1193:	9	9	9	8	5	8	10	9
1201:	2	10	11	7	9	6	10	9
1209:	7	5	10	9	10	8	9	8
1217:	4	2	14	8	6	7	4	15
1225:	7	5	7	6	12	8	4	9

1233:	7	7	5	9	18	14	12	8

Sample Title: HTC-A08-S001-1824-01

Channel								
1241:	10	7	6	8	4	3	8	10
1249:	7	4	5	3	4	7	5	6
1257:	5	1	7	4	5	5	3	5
1265:	4	3	2	3	3	6	8	4
1273:	7	9	4	4	7	6	3	4
1281:	8	10	4	4	7	5	2	6
1289:	10	7	3	5	5	5	3	6
1297:	3	4	5	6	3	0	8	4
1305:	6	3	0	0	5	3	8	4
1313:	2	2	4	5	2	2	2	7
1321:	2	5	2	3	3	4	2	8
1329:	2	6	2	1	2	2	3	2
1337:	2	2	1	8	6	4	0	3
1345:	4	2	3	5	3	0	1	3
1353:	2	2	2	4	3	1	1	1
1361:	2	4	5	1	4	1	2	4
1369:	2	4	4	2	2	2	5	5
1377:	5	6	2	1	0	1	4	4
1385:	3	2	3	0	3	1	1	1
1393:	2	1	2	0	6	3	1	3
1401:	3	5	1	3	0	7	1	5
1409:	3	2	2	4	1	3	2	2
1417:	3	3	1	2	2	2	3	0
1425:	0	1	4	0	2	0	4	6
1433:	2	1	3	2	1	0	2	1
1441:	3	2	2	1	2	1	0	1
1449:	3	1	0	5	1	1	1	4
1457:	9	25	85	145	149	69	14	4
1465:	5	2	2	0	1	3	1	0
1473:	0	1	1	0	2	0	0	0
1481:	1	2	2	2	1	3	0	1
1489:	0	4	0	5	2	2	2	1
1497:	1	2	0	2	3	1	2	0
1505:	0	3	1	3	1	2	1	3
1513:	4	2	2	2	0	1	1	0
1521:	2	0	0	2	1	1	2	0
1529:	3	0	1	1	0	0	2	0
1537:	0	2	0	1	0	2	2	2
1545:	3	0	3	0	1	0	0	0
1553:	1	1	1	0	0	0	2	3
1561:	2	0	2	0	1	0	1	1
1569:	2	0	1	1	2	2	1	0
1577:	2	1	2	1	4	3	5	1
1585:	3	4	2	1	1	0	3	3
1593:	5	3	0	0	1	3	1	1
1601:	2	2	1	3	4	1	1	1
1609:	1	1	0	0	2	1	2	0
1617:	2	1	0	1	1	2	2	0
1625:	0	1	2	1	0	2	0	0
1633:	3	2	1	2	0	1	2	1
1641:	0	0	6	1	3	1	0	2
1649:	0	2	0	1	0	1	3	1
1657:	2	0	0	1	1	0	1	2

1665:	1	1	1	1	3	0	0	0

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Channel								
1673:	0	1	1	1	2	0	0	1
1681:	1	0	1	0	2	1	0	1
1689:	3	0	1	2	1	2	0	1
1697:	2	0	0	2	0	3	1	0
1705:	1	2	0	1	0	0	1	1
1713:	1	1	1	1	0	2	0	2
1721:	1	0	2	2	1	2	2	3
1729:	3	2	2	1	0	0	0	2
1737:	3	0	0	1	0	0	1	1
1745:	1	2	0	1	1	1	0	0
1753:	2	0	1	1	0	2	2	0
1761:	4	3	8	9	8	3	0	0
1769:	2	2	0	1	1	0	0	1
1777:	0	2	0	0	0	1	1	0
1785:	0	0	1	1	0	0	1	0
1793:	0	0	0	1	3	1	1	0
1801:	1	0	0	0	1	2	0	1
1809:	0	1	1	2	0	0	0	0
1817:	1	0	1	0	1	1	0	1
1825:	2	1	0	0	0	1	2	0
1833:	0	0	0	1	2	2	2	0
1841:	3	2	3	2	1	2	1	2
1849:	2	1	0	2	1	0	0	2
1857:	1	1	0	2	0	0	1	0
1865:	0	2	2	2	0	1	1	2
1873:	0	0	1	0	0	0	0	1
1881:	0	1	1	1	2	1	2	1
1889:	0	3	0	1	1	1	1	0
1897:	1	2	2	0	1	2	0	1
1905:	1	2	0	2	1	1	0	0
1913:	2	1	0	0	0	0	0	1
1921:	1	1	1	0	0	0	0	2
1929:	1	0	0	3	2	0	0	0
1937:	0	0	1	0	2	2	0	1
1945:	0	1	1	0	0	0	0	1
1953:	1	0	1	1	0	1	0	2
1961:	1	0	0	1	1	0	1	0
1969:	0	1	1	1	1	1	1	1
1977:	1	1	1	1	1	2	1	0
1985:	2	0	0	1	1	1	0	1
1993:	1	1	1	3	0	1	0	1
2001:	0	1	1	1	0	0	1	0
2009:	1	0	1	1	1	1	1	0
2017:	2	2	1	3	1	1	1	1
2025:	1	0	2	0	0	3	1	1
2033:	1	1	0	1	3	0	1	1
2041:	0	0	1	0	0	3	0	1
2049:	1	0	1	0	1	1	1	0
2057:	0	1	2	0	0	2	1	1
2065:	0	2	0	3	0	1	2	1
2073:	1	0	0	0	0	0	0	0
2081:	1	0	0	2	2	0	0	1
2089:	2	2	0	1	2	0	0	1

2097:	1	0	0	0	1	0	3	3

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Channel								
2105:	3	2	0	1	0	0	1	2
2113:	0	0	0	6	2	1	2	0
2121:	0	0	2	0	0	1	1	2
2129:	0	1	1	1	1	1	1	1
2137:	1	3	0	1	0	1	1	0
2145:	0	0	1	1	2	0	0	2
2153:	0	0	1	1	0	0	0	0
2161:	0	3	0	0	0	0	1	0
2169:	0	2	2	0	2	1	2	0
2177:	0	2	0	2	3	0	0	0
2185:	1	1	3	0	0	0	0	2
2193:	1	0	0	0	0	2	0	1
2201:	2	4	3	5	0	0	1	1
2209:	0	0	1	0	0	2	0	1
2217:	2	1	1	1	0	1	0	1
2225:	1	2	0	2	0	0	1	0
2233:	1	0	1	1	1	0	1	1
2241:	0	0	0	1	0	1	0	2
2249:	0	1	2	1	1	0	1	1
2257:	0	0	0	2	1	1	2	1
2265:	2	0	0	1	0	1	0	0
2273:	1	0	2	1	0	0	0	1
2281:	1	0	1	1	1	0	2	1
2289:	0	2	1	1	2	0	1	1
2297:	0	0	0	0	0	0	0	1
2305:	0	1	1	0	2	1	3	1
2313:	0	2	0	1	2	0	2	2
2321:	1	0	1	1	0	3	0	1
2329:	0	0	0	1	1	1	0	0
2337:	1	0	0	0	2	0	1	0
2345:	2	1	0	0	1	0	0	1
2353:	1	1	3	3	1	2	2	2
2361:	2	0	0	3	0	1	2	0
2369:	0	0	0	0	1	0	1	0
2377:	0	0	0	1	2	2	0	0
2385:	1	0	1	1	1	2	0	0
2393:	1	1	0	0	1	0	1	0
2401:	0	2	3	2	0	0	1	2
2409:	0	1	1	0	0	0	1	1
2417:	1	2	0	1	1	2	0	0
2425:	0	0	1	0	1	1	1	0
2433:	0	0	1	1	0	1	1	0
2441:	0	0	0	0	1	0	0	3
2449:	1	1	1	0	0	0	2	1
2457:	3	0	1	1	3	0	1	1
2465:	0	0	0	0	1	0	0	0
2473:	1	1	1	0	0	0	1	0
2481:	0	0	0	0	0	0	0	0
2489:	0	0	0	3	0	0	0	1
2497:	0	1	0	1	0	0	0	1
2505:	0	0	1	1	1	0	0	0
2513:	1	0	1	2	0	0	1	0
2521:	1	0	0	1	0	0	0	0

2529:	0	1	2	1	0	0	0	0

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Channel								
2537:	1	0	1	0	0	0	1	0
2545:	0	0	0	0	0	0	1	0
2553:	1	0	0	1	0	0	0	0
2561:	1	2	0	1	0	0	0	0
2569:	0	1	1	2	0	0	2	0
2577:	1	0	0	0	1	0	0	1
2585:	0	0	1	0	0	0	0	0
2593:	1	0	0	1	0	0	0	0
2601:	0	1	0	0	0	0	0	0
2609:	0	2	0	6	12	21	12	8
2617:	2	0	0	0	0	1	0	0
2625:	0	0	1	2	0	0	0	0
2633:	0	0	0	0	0	0	1	0
2641:	0	0	0	0	0	0	0	0
2649:	0	0	0	0	0	0	0	0
2657:	0	0	0	0	0	0	0	1
2665:	0	1	1	1	0	0	0	1
2673:	0	0	0	0	0	0	0	0
2681:	0	0	1	0	0	0	0	1
2689:	0	0	0	0	1	1	0	0
2697:	0	0	1	0	0	0	0	1
2705:	0	0	1	0	0	0	0	0
2713:	0	0	1	1	0	0	0	0
2721:	0	0	1	1	0	0	0	0
2729:	0	1	0	0	0	0	1	0
2737:	1	0	1	0	0	2	0	0
2745:	0	0	0	0	0	0	0	1
2753:	0	0	2	0	0	0	0	1
2761:	0	0	0	0	0	0	0	0
2769:	0	0	1	0	0	1	0	0
2777:	1	1	0	0	0	0	1	1
2785:	0	1	0	0	0	0	0	1
2793:	0	0	0	0	0	0	0	0
2801:	1	0	0	0	0	0	0	0
2809:	0	0	1	0	0	0	0	0
2817:	0	1	0	1	0	0	0	0
2825:	1	1	0	0	1	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	1	0	0	1	1	0	1
2849:	0	0	1	0	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	0	0	0	1	0	0	0	0
2873:	0	0	0	1	0	0	0	1
2881:	0	0	1	0	0	1	0	0
2889:	0	0	0	0	0	0	0	0
2897:	0	1	0	0	0	0	0	0
2905:	0	0	1	0	0	0	1	0
2913:	0	0	0	0	0	1	0	0
2921:	0	0	0	1	0	0	0	0
2929:	1	0	0	0	0	0	0	2
2937:	0	0	0	1	0	1	0	0
2945:	0	0	0	0	0	0	0	0
2953:	0	0	1	0	0	0	0	0

2961:	0	0	0	0	0	0	0	1

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Channel								
2969:	0	0	2	0	0	0	0	1
2977:	0	0	0	0	2	0	0	0
2985:	1	0	0	0	0	0	0	1
2993:	0	0	0	0	0	0	1	0
3001:	0	0	0	0	0	0	0	0
3009:	0	1	0	0	0	1	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	1	0	1
3033:	0	0	0	0	0	0	0	0
3041:	0	1	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	1	0	1	0
3065:	0	0	0	1	0	0	0	1
3073:	0	0	0	0	0	1	1	0
3081:	0	0	0	0	0	1	0	0
3089:	0	0	0	0	0	0	0	0
3097:	0	0	1	0	0	0	0	0
3105:	0	0	0	0	0	0	0	1
3113:	0	0	0	0	0	0	1	0
3121:	1	0	0	0	0	0	0	0
3129:	0	0	0	0	0	1	0	0
3137:	0	0	0	0	0	0	0	0
3145:	1	0	0	0	0	0	0	0
3153:	0	0	0	0	1	0	0	0
3161:	0	0	0	0	0	0	0	0
3169:	0	0	0	1	0	0	0	0
3177:	0	0	0	0	1	1	0	0
3185:	0	0	0	1	0	0	0	1
3193:	0	0	1	0	0	0	0	0
3201:	0	1	1	0	0	0	0	0
3209:	0	1	0	0	0	0	0	0
3217:	0	0	1	0	0	0	2	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	1	0	0	0	0	0
3241:	0	0	0	0	0	1	0	0
3249:	0	0	0	0	0	0	0	0
3257:	1	0	0	0	0	0	0	0
3265:	0	0	0	0	1	0	0	1
3273:	0	0	0	0	0	0	0	0
3281:	0	1	0	1	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	1	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	2	1	0	0
3321:	0	0	0	0	0	0	0	0
3329:	2	0	0	0	0	0	0	0
3337:	0	0	0	0	1	0	0	1
3345:	0	1	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	1	0	0	0	1	0
3369:	0	1	0	0	0	0	0	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	1	2	0	0

3393:	0	0	0	0	1	0	0	0

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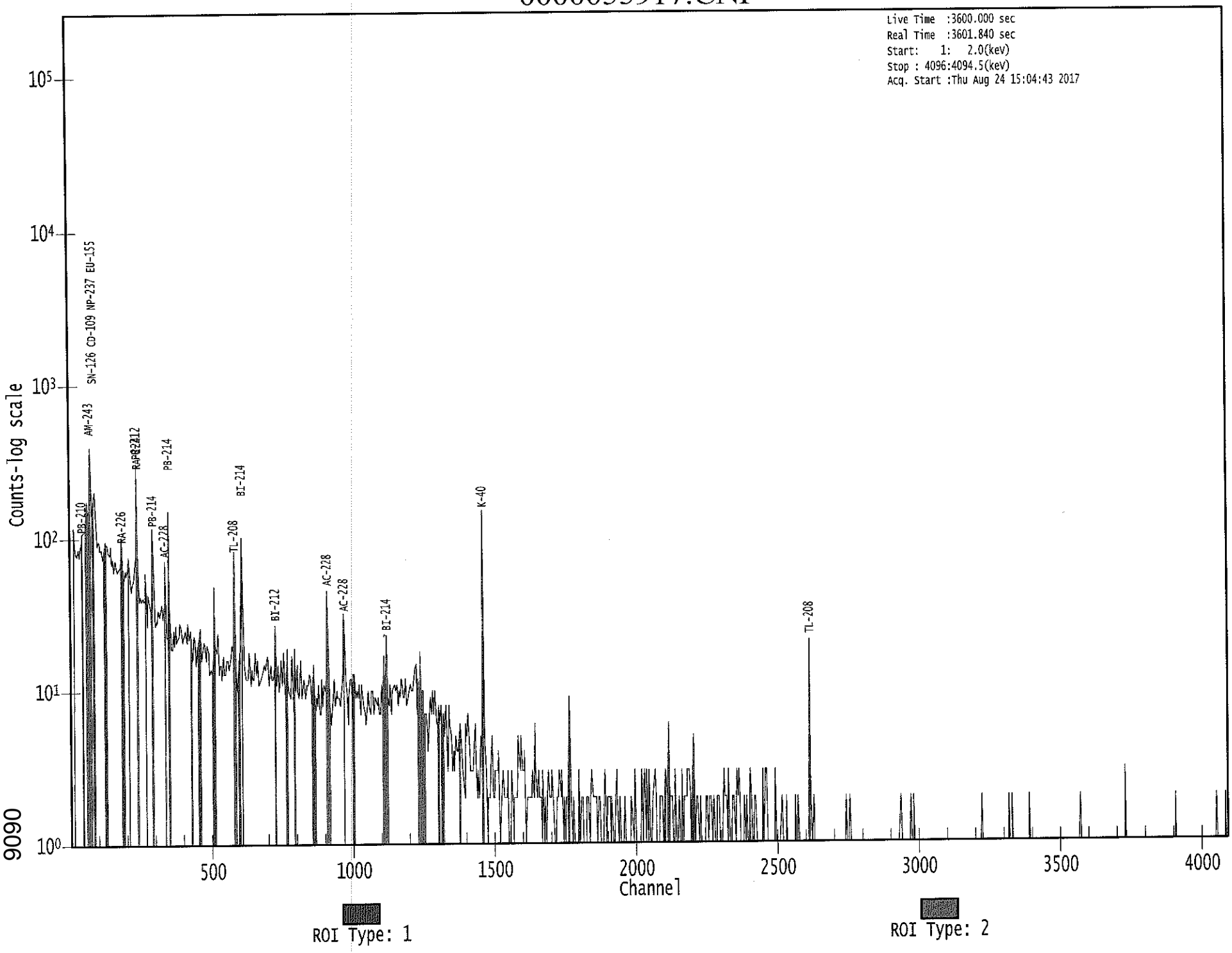
Channel								
3401:	1	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	1	1	0	0	0
3425:	1	1	0	0	0	1	0	0
3433:	1	0	1	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	1	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	1	0	0	0
3521:	0	1	0	0	0	0	0	0
3529:	0	1	0	0	0	1	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	1	0	0	0	0	1	0
3553:	0	0	0	0	0	0	0	1
3561:	0	0	0	0	0	0	1	0
3569:	0	0	2	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	1	0	0	0	0	0
3633:	0	0	0	0	0	1	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	1	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	1	0	1
3681:	1	1	0	0	0	0	0	1
3689:	0	0	0	0	0	0	1	0
3697:	0	0	0	0	0	0	0	0
3705:	1	0	0	0	0	1	0	0
3713:	1	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	3	0	0	0	1	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	1	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	1	0	0	0	0
3769:	0	0	0	1	0	0	0	0
3777:	0	0	1	0	0	0	0	0
3785:	0	0	1	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	1	0	0	1	0	1
3817:	1	0	0	0	0	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-S001-1824-01

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	1	0	0	0	0
3865:	0	0	0	0	1	0	0	0
3873:	0	0	0	0	0	1	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	1	1	2	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	1
3929:	1	0	0	0	0	0	0	0
3937:	1	0	1	0	0	0	1	1
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	1	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	1
3985:	0	0	0	1	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	1	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	1	0	0	2	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	2	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000055917.CNF



9090

KCB 9/24/17

Apex-Gamma

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-08
Sample Description	: HTC-A08-S001-2430-01
Sample Type	: SOIL
Sample Size	: 6.498E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 7:40:20AM
Acquisition Started	: 8/24/2017 3:17:42PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.2 seconds
Dead Time	: 0.03 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 29 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 8/19/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55919

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 4:18:14PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	76.16	76.48	0.0000	0.00
2	87.30	87.60	0.0000	0.00
3	93.34	93.64	0.0000	0.00
4	129.07	129.32	0.0000	0.00
5	185.96	186.16	0.0000	0.00
6	209.51	209.68	0.0000	0.00
7	238.69	238.83	0.0000	0.00
8	241.60	241.73	0.0000	0.00
9	270.23	270.33	0.0000	0.00
10	276.85	276.95	0.0000	0.00
11	295.34	295.42	0.0000	0.00
12	300.34	300.41	0.0000	0.00
13	327.92	327.97	0.0000	0.00
14	338.79	338.82	0.0000	0.00
15	352.04	352.05	0.0000	0.00
16	360.32	360.33	0.0000	0.00
17	369.01	369.01	0.0000	0.00
18	462.46	462.36	0.0000	0.00
19	511.03	510.88	0.0000	0.00
20	583.14	582.92	0.0000	0.00
21	609.30	609.05	0.0000	0.00
22	727.15	726.79	0.0000	0.00
23	785.35	784.93	0.0000	0.00
24	795.55	795.13	0.0000	0.00
25	829.15	828.70	0.0000	0.00
26	835.71	835.24	0.0000	0.00
27	839.10	838.63	0.0000	0.00
28	860.65	860.16	0.0000	0.00
29	911.26	910.72	0.0000	0.00
30	964.92	964.33	0.0000	0.00
31	969.21	968.62	0.0000	0.00
32	1034.38	1033.73	0.0000	0.00
33	1119.64	1118.91	0.0000	0.00
34	1213.84	1213.03	0.0000	0.00
35	1237.72	1236.89	0.0000	0.00
36	1371.04	1370.10	0.0000	0.00
37	1377.86	1376.91	0.0000	0.00
38	1461.18	1460.15	0.0000	0.00
39	1590.69	1589.56	0.0000	0.00
40	1660.50	1659.31	0.0000	0.00
41	1765.00	1763.73	0.0000	0.00
42	1773.64	1772.36	0.0000	0.00

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1811.58	1810.27	0.0000	0.00
44	2104.67	2103.15	0.0000	0.00
45	2231.97	2230.35	0.0000	0.00
46	2435.86	2434.10	0.0000	0.00
47	2614.99	2613.12	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 4:18:14PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	76.16	72 -	83	76.48	9.43E+02	161.47	2.76E+03	3.71
	2	87.30	86 -	89	87.60	8.83E+01	66.15	1.01E+03	1.47
	3	93.34	91 -	97	93.64	1.69E+02	95.10	1.46E+03	1.95
	4	129.07	126 -	133	129.32	1.29E+02	83.28	1.05E+03	1.42
	5	185.96	183 -	189	186.16	1.71E+02	70.28	7.69E+02	1.38
	6	209.51	208 -	212	209.68	1.10E+02	49.22	4.38E+02	1.75
M	7	238.69	234 -	246	238.83	9.06E+02	73.39	3.64E+02	1.53
m	8	241.60	234 -	246	241.73	2.18E+02	83.57	4.65E+02	2.35
	9	270.23	267 -	274	270.33	8.13E+01	56.21	4.73E+02	1.89
	10	276.85	274 -	280	276.95	4.88E+01	49.61	4.10E+02	4.39
	11	295.34	292 -	298	295.42	2.49E+02	58.62	4.41E+02	1.81
	12	300.34	299 -	304	300.41	5.07E+01	43.85	3.43E+02	2.19
	13	327.92	324 -	331	327.97	5.61E+01	51.38	4.00E+02	1.43
	14	338.79	335 -	344	338.82	1.63E+02	66.00	5.02E+02	1.81
	15	352.04	349 -	354	352.05	3.90E+02	51.22	2.13E+02	1.45
	16	360.32	357 -	366	360.33	5.26E+01	51.67	3.55E+02	6.17
	17	369.01	366 -	372	369.01	4.75E+01	36.37	2.05E+02	1.69
	18	462.46	459 -	466	462.36	4.79E+01	39.60	2.24E+02	1.65
	19	511.03	507 -	517	510.88	1.97E+02	53.05	2.73E+02	2.35
	20	583.14	577 -	586	582.92	2.97E+02	53.63	2.43E+02	1.88
	21	609.30	604 -	613	609.05	3.42E+02	49.17	1.50E+02	1.72
	22	727.15	721 -	731	726.79	6.38E+01	46.34	2.50E+02	1.93
	23	785.35	780 -	789	784.93	3.99E+01	36.63	1.66E+02	3.84
	24	795.55	790 -	800	795.13	4.74E+01	38.88	1.77E+02	1.92
	25	829.15	825 -	832	828.70	3.31E+01	26.53	9.38E+01	3.08
M	26	835.71	833 -	842	835.24	2.45E+01	16.97	4.40E+01	2.04
m	27	839.10	833 -	842	838.63	1.82E+01	28.14	1.07E+02	2.53
	28	860.65	855 -	864	860.16	3.83E+01	35.67	1.59E+02	1.43
	29	911.26	904 -	914	910.72	1.99E+02	42.80	1.41E+02	2.58
M	30	964.92	962 -	971	964.33	1.75E+01	19.25	7.21E+01	2.45
m	31	969.21	962 -	971	968.62	1.23E+02	29.56	7.39E+01	2.00
	32	1034.38	1031 -	1036	1033.73	1.91E+01	17.66	4.58E+01	2.99
	33	1119.64	1113 -	1124	1118.91	7.57E+01	42.33	1.87E+02	2.76
	34	1213.84	1208 -	1216	1213.03	2.68E+01	30.91	1.30E+02	1.86
	35	1237.72	1233 -	1240	1236.89	3.61E+01	31.18	1.34E+02	4.03
M	36	1371.04	1365 -	1385	1370.10	1.68E+01	14.97	3.51E+01	2.55
m	37	1377.86	1365 -	1385	1376.91	2.10E+01	16.00	2.46E+01	2.56
	38	1461.18	1453 -	1465	1460.15	1.01E+03	65.60	3.54E+01	2.50
	39	1590.69	1583 -	1596	1589.56	3.30E+01	22.58	4.20E+01	5.78
	40	1660.50	1656 -	1662	1659.31	9.00E+00	8.51	6.00E+00	2.56

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1765.00	1759 -	1766	1763.73	4.87E+01	16.97	1.46E+01	1.58
42	1773.64	1770 -	1775	1772.36	5.88E+00	7.07	4.25E+00	1.79
43	1811.58	1807 -	1814	1810.27	1.10E+01	6.63	0.00E+00	1.33
44	2104.67	2098 -	2108	2103.15	2.65E+01	12.09	5.00E+00	4.50
45	2231.97	2225 -	2234	2230.35	7.00E+00	9.90	1.00E+01	3.23
46	2435.86	2430 -	2437	2434.10	8.10E+00	7.48	3.80E+00	3.39
47	2614.99	2606 -	2619	2613.12	8.92E+01	21.95	1.37E+01	3.15

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 4:18:14PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	76.16	72 -	83	9.43E+02	161.47	2.76E+03	1.23E+02
	2	87.30	86 -	89	8.83E+01	66.15	1.01E+03	5.21E+01
	3	93.34	91 -	97	1.69E+02	95.10	1.46E+03	7.52E+01
	4	129.07	126 -	133	1.29E+02	83.28	1.05E+03	6.59E+01
	5	185.96	183 -	189	1.71E+02	70.28	7.69E+02	5.36E+01
	6	209.51	208 -	212	1.10E+02	49.22	4.38E+02	3.66E+01
M	7	238.69	234 -	246	9.06E+02	73.39	3.64E+02	3.14E+01
m	8	241.60	234 -	246	2.18E+02	83.57	4.65E+02	3.55E+01
	9	270.23	267 -	274	8.13E+01	56.21	4.73E+02	4.38E+01
	10	276.85	274 -	280	4.88E+01	49.61	4.10E+02	3.91E+01
	11	295.34	292 -	298	2.49E+02	58.62	4.41E+02	4.06E+01
	12	300.34	299 -	304	5.07E+01	43.85	3.43E+02	3.41E+01
	13	327.92	324 -	331	5.61E+01	51.38	4.00E+02	4.04E+01
	14	338.79	335 -	344	1.63E+02	66.00	5.02E+02	5.00E+01
	15	352.04	349 -	354	3.90E+02	51.22	2.13E+02	2.68E+01
	16	360.32	357 -	366	5.26E+01	51.67	3.55E+02	4.08E+01
	17	369.01	366 -	372	4.75E+01	36.37	2.05E+02	2.77E+01
	18	462.46	459 -	466	4.79E+01	39.60	2.24E+02	3.05E+01
	19	511.03	507 -	517	1.97E+02	53.05	2.73E+02	3.70E+01
	20	583.14	577 -	586	2.97E+02	53.63	2.43E+02	3.38E+01

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	21	609.30	604 -	613	3.42E+02	49.17	1.50E+02	2.66E+01
	22	727.15	721 -	731	6.38E+01	46.34	2.50E+02	3.58E+01
	23	785.35	780 -	789	3.99E+01	36.63	1.66E+02	2.83E+01
	24	795.55	790 -	800	4.74E+01	38.88	1.77E+02	2.99E+01
	25	829.15	825 -	832	3.31E+01	26.53	9.38E+01	1.97E+01
M	26	835.71	833 -	842	2.45E+01	16.97	4.40E+01	1.09E+01
m	27	839.10	833 -	842	1.82E+01	28.14	1.07E+02	1.70E+01
	28	860.65	855 -	864	3.83E+01	35.67	1.59E+02	2.75E+01
	29	911.26	904 -	914	1.99E+02	42.80	1.41E+02	2.65E+01
M	30	964.92	962 -	971	1.75E+01	19.25	7.21E+01	1.40E+01
m	31	969.21	962 -	971	1.23E+02	29.56	7.39E+01	1.41E+01
	32	1034.38	1031 -	1036	1.91E+01	17.66	4.58E+01	1.26E+01
	33	1119.64	1113 -	1124	7.57E+01	42.33	1.87E+02	3.17E+01
	34	1213.84	1208 -	1216	2.68E+01	30.91	1.30E+02	2.39E+01
	35	1237.72	1233 -	1240	3.61E+01	31.18	1.34E+02	2.36E+01
M	36	1371.04	1365 -	1385	1.68E+01	14.97	3.51E+01	9.74E+00
m	37	1377.86	1365 -	1385	2.10E+01	16.00	2.46E+01	8.15E+00
	38	1461.18	1453 -	1465	1.01E+03	65.60	3.54E+01	1.38E+01
	39	1590.69	1583 -	1596	3.30E+01	22.58	4.20E+01	1.60E+01
	40	1660.50	1656 -	1662	9.00E+00	8.51	6.00E+00	4.97E+00
	41	1765.00	1759 -	1766	4.87E+01	16.97	1.46E+01	7.94E+00
	42	1773.64	1770 -	1775	5.88E+00	7.07	4.25E+00	4.23E+00
	43	1811.58	1807 -	1814	1.10E+01	6.63	0.00E+00	0.00E+00
	44	2104.67	2098 -	2108	2.65E+01	12.09	5.00E+00	5.22E+00
	45	2231.97	2225 -	2234	7.00E+00	9.90	1.00E+01	6.88E+00
	46	2435.86	2430 -	2437	8.10E+00	7.48	3.80E+00	3.99E+00
	47	2614.99	2606 -	2619	8.92E+01	21.95	1.37E+01	9.20E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 4:18:14PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	76.16	72 -	83	76.48	9.43E+02	161.47	2.76E+03	.....
	2	87.30	86 -	89	87.60	8.83E+01	66.15	1.01E+03	SN-126
									CD-109
									NP-237
									EU-155
	3	93.34	91 -	97	93.64	1.69E+02	95.10	1.46E+03	GA-67
	4	129.07	126 -	133	129.32	1.29E+02	83.28	1.05E+03	.....
	5	185.96	183 -	189	186.16	1.71E+02	70.28	7.69E+02	RA-226
	6	209.51	208 -	212	209.68	1.10E+02	49.22	4.38E+02	CM-243
									GA-67
M	7	238.69	234 -	246	238.83	9.06E+02	73.39	3.64E+02	PB-212
m	8	241.60	234 -	246	241.73	2.18E+02	83.57	4.65E+02	RA-224
	9	270.23	267 -	274	270.33	8.13E+01	56.21	4.73E+02	.....
	10	276.85	274 -	280	276.95	4.88E+01	49.61	4.10E+02	CM-243
									NP-239
	11	295.34	292 -	298	295.42	2.49E+02	58.62	4.41E+02	PB-214
	12	300.34	299 -	304	300.41	5.07E+01	43.85	3.43E+02	GA-67
									PB-212
									BI-210M
	13	327.92	324 -	331	327.97	5.61E+01	51.38	4.00E+02	LA-140
	14	338.79	335 -	344	338.82	1.63E+02	66.00	5.02E+02	AC-228
	15	352.04	349 -	354	352.05	3.90E+02	51.22	2.13E+02	PB-214
	16	360.32	357 -	366	360.33	5.26E+01	51.67	3.55E+02	.....
	17	369.01	366 -	372	369.01	4.75E+01	36.37	2.05E+02	.....
	18	462.46	459 -	466	462.36	4.79E+01	39.60	2.24E+02	SB-125
	19	511.03	507 -	517	510.88	1.97E+02	53.05	2.73E+02	.....
	20	583.14	577 -	586	582.92	2.97E+02	53.63	2.43E+02	TL-208
	21	609.30	604 -	613	609.05	3.42E+02	49.17	1.50E+02	BI-214
	22	727.15	721 -	731	726.79	6.38E+01	46.34	2.50E+02	BI-212
	23	785.35	780 -	789	784.93	3.99E+01	36.63	1.66E+02	.....
	24	795.55	790 -	800	795.13	4.74E+01	38.88	1.77E+02	CS-134
	25	829.15	825 -	832	828.70	3.31E+01	26.53	9.38E+01	.....
M	26	835.71	833 -	842	835.24	2.45E+01	16.97	4.40E+01	MN-54
m	27	839.10	833 -	842	838.63	1.82E+01	28.14	1.07E+02	.....
	28	860.65	855 -	864	860.16	3.83E+01	35.67	1.59E+02	TL-208
	29	911.26	904 -	914	910.72	1.99E+02	42.80	1.41E+02	AC-228
									TL-204
M	30	964.92	962 -	971	964.33	1.75E+01	19.25	7.21E+01	EU-152
m	31	969.21	962 -	971	968.62	1.23E+02	29.56	7.39E+01	AC-228
	32	1034.38	1031 -	1036	1033.73	1.91E+01	17.66	4.58E+01	.....
	33	1119.64	1113 -	1124	1118.91	7.57E+01	42.33	1.87E+02	BI-214
									SC-46
	34	1213.84	1208 -	1216	1213.03	2.68E+01	30.91	1.30E+02	.....
	35	1237.72	1233 -	1240	1236.89	3.61E+01	31.18	1.34E+02	CO-56
M	36	1371.04	1365 -	1385	1370.10	1.68E+01	14.97	3.51E+01	.....
m	37	1377.86	1365 -	1385	1376.91	2.10E+01	16.00	2.46E+01	.....
	38	1461.18	1453 -	1465	1460.15	1.01E+03	65.60	3.54E+01	K-40
	39	1590.69	1583 -	1596	1589.56	3.30E+01	22.58	4.20E+01	.....
	40	1660.50	1656 -	1662	1659.31	9.00E+00	8.51	6.00E+00	.....
	41	1765.00	1759 -	1766	1763.73	4.87E+01	16.97	1.46E+01	BI-214
	42	1773.64	1770 -	1775	1772.36	5.88E+00	7.07	4.25E+00	.....
	43	1811.58	1807 -	1814	1810.27	1.10E+01	6.63	0.00E+00	.....
	44	2104.67	2098 -	2108	2103.15	2.65E+01	12.09	5.00E+00	.....
	45	2231.97	2225 -	2234	2230.35	7.00E+00	9.90	1.00E+01	.....

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
46	2435.86	2430 -	2437	2434.10	8.10E+00	7.48	3.80E+00	.....
47	2614.99	2606 -	2619	2613.12	8.92E+01	21.95	1.37E+01	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 4:18:14PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.16	9.43E+02	161.47	2.63E-02	2.11E-03
	2	87.30	8.83E+01	66.15	2.70E-02	2.41E-03
	3	93.34	1.69E+02	95.10	2.70E-02	2.32E-03
	4	129.07	1.29E+02	83.28	2.48E-02	1.75E-03
	5	185.96	1.71E+02	70.28	2.03E-02	1.53E-03
	6	209.51	1.10E+02	49.22	1.88E-02	1.43E-03
M	7	238.69	9.06E+02	73.39	1.72E-02	1.30E-03
m	8	241.60	2.18E+02	83.57	1.71E-02	1.28E-03
	9	270.23	8.13E+01	56.21	1.58E-02	1.16E-03
	10	276.85	4.88E+01	49.61	1.55E-02	1.13E-03
	11	295.34	2.49E+02	58.62	1.48E-02	1.10E-03
	12	300.34	5.07E+01	43.85	1.47E-02	1.09E-03
	13	327.92	5.61E+01	51.38	1.38E-02	1.05E-03
	14	338.79	1.63E+02	66.00	1.34E-02	1.04E-03
	15	352.04	3.90E+02	51.22	1.31E-02	1.02E-03
	16	360.32	5.26E+01	51.67	1.28E-02	1.01E-03
	17	369.01	4.75E+01	36.37	1.26E-02	9.99E-04
	18	462.46	4.79E+01	39.60	1.07E-02	9.07E-04
	19	511.03	1.97E+02	53.05	9.87E-03	8.65E-04
	20	583.14	2.97E+02	53.63	8.91E-03	8.02E-04
	21	609.30	3.42E+02	49.17	8.60E-03	7.80E-04
	22	727.15	6.38E+01	46.34	7.47E-03	6.71E-04
	23	785.35	3.99E+01	36.63	7.01E-03	6.15E-04
	24	795.55	4.74E+01	38.88	6.94E-03	6.05E-04
	25	829.15	3.31E+01	26.53	6.71E-03	5.73E-04
M	26	835.71	2.45E+01	16.97	6.67E-03	5.66E-04
m	27	839.10	1.82E+01	28.14	6.64E-03	5.63E-04
	28	860.65	3.83E+01	35.67	6.51E-03	5.42E-04

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	29	911.26	1.99E+02	42.80	6.21E-03	5.02E-04
M	30	964.92	1.75E+01	19.25	5.92E-03	4.83E-04
m	31	969.21	1.23E+02	29.56	5.90E-03	4.81E-04
	32	1034.38	1.91E+01	17.66	5.60E-03	4.59E-04
	33	1119.64	7.57E+01	42.33	5.25E-03	4.29E-04
	34	1213.84	2.68E+01	30.91	4.92E-03	4.14E-04
	35	1237.72	3.61E+01	31.18	4.84E-03	4.16E-04
M	36	1371.04	1.68E+01	14.97	4.47E-03	4.14E-04
m	37	1377.86	2.10E+01	16.00	4.45E-03	4.12E-04
	38	1461.18	1.01E+03	65.60	4.26E-03	3.88E-04
	39	1590.69	3.30E+01	22.58	4.01E-03	3.50E-04
	40	1660.50	9.00E+00	8.51	3.90E-03	3.30E-04
	41	1765.00	4.87E+01	16.97	3.75E-03	3.00E-04
	42	1773.64	5.88E+00	7.07	3.73E-03	2.97E-04
	43	1811.58	1.10E+01	6.63	3.69E-03	2.86E-04
	44	2104.67	2.65E+01	12.09	3.41E-03	2.79E-04
	45	2231.97	7.00E+00	9.90	3.32E-03	2.79E-04
	46	2435.86	8.10E+00	7.48	3.24E-03	2.79E-04
	47	2614.99	8.92E+01	21.95	3.20E-03	2.79E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 4:18:14PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.16	9.43E+02	161.47			9.43E+02	1.61E+02
	2	87.30	8.83E+01	66.15			8.83E+01	6.62E+01
	3	93.34	1.69E+02	95.10	4.88E+01	1.30E+00	1.20E+02	9.51E+01
	4	129.07	1.29E+02	83.28			1.29E+02	8.33E+01
	5	185.96	1.71E+02	70.28	3.48E+01	7.32E+00	1.36E+02	7.07E+01
	6	209.51	1.10E+02	49.22			1.10E+02	4.92E+01
M	7	238.69	9.06E+02	73.39	7.09E+00	6.85E+00	8.99E+02	7.37E+01
m	8	241.60	2.18E+02	83.57			2.18E+02	8.36E+01
	9	270.23	8.13E+01	56.21			8.13E+01	5.62E+01
	10	276.85	4.88E+01	49.61			4.88E+01	4.96E+01
	11	295.34	2.49E+02	58.62			2.49E+02	5.86E+01

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	12	300.34	5.07E+01	43.85			5.07E+01	4.39E+01
	13	327.92	5.61E+01	51.38			5.61E+01	5.14E+01
	14	338.79	1.63E+02	66.00			1.63E+02	6.60E+01
	15	352.04	3.90E+02	51.22	1.04E+01	5.08E+00	3.79E+02	5.15E+01
	16	360.32	5.26E+01	51.67			5.26E+01	5.17E+01
	17	369.01	4.75E+01	36.37			4.75E+01	3.64E+01
	18	462.46	4.79E+01	39.60			4.79E+01	3.96E+01
	19	511.03	1.97E+02	53.05	7.08E+01	4.94E+00	1.26E+02	5.33E+01
	20	583.14	2.97E+02	53.63	5.65E+00	3.57E+00	2.92E+02	5.37E+01
	21	609.30	3.42E+02	49.17	1.07E+01	3.96E+00	3.31E+02	4.93E+01
	22	727.15	6.38E+01	46.34			6.38E+01	4.63E+01
	23	785.35	3.99E+01	36.63			3.99E+01	3.66E+01
	24	795.55	4.74E+01	38.88			4.74E+01	3.89E+01
	25	829.15	3.31E+01	26.53			3.31E+01	2.65E+01
M	26	835.71	2.45E+01	16.97			2.45E+01	1.70E+01
m	27	839.10	1.82E+01	28.14			1.82E+01	2.81E+01
	28	860.65	3.83E+01	35.67			3.83E+01	3.57E+01
	29	911.26	1.99E+02	42.80	2.63E+00	2.49E+00	1.96E+02	4.29E+01
M	30	964.92	1.75E+01	19.25			1.75E+01	1.92E+01
m	31	969.21	1.23E+02	29.56			1.23E+02	2.96E+01
	32	1034.38	1.91E+01	17.66			1.91E+01	1.77E+01
	33	1119.64	7.57E+01	42.33	2.45E+00	2.38E+00	7.32E+01	4.24E+01
	34	1213.84	2.68E+01	30.91			2.68E+01	3.09E+01
	35	1237.72	3.61E+01	31.18			3.61E+01	3.12E+01
M	36	1371.04	1.68E+01	14.97			1.68E+01	1.50E+01
m	37	1377.86	2.10E+01	16.00			2.10E+01	1.60E+01
	38	1461.18	1.01E+03	65.60	5.90E+00	2.63E+00	9.99E+02	6.57E+01
	39	1590.69	3.30E+01	22.58			3.30E+01	2.26E+01
	40	1660.50	9.00E+00	8.51			9.00E+00	8.51E+00
	41	1765.00	4.87E+01	16.97	3.33E+00	1.73E+00	4.53E+01	1.71E+01
	42	1773.64	5.88E+00	7.07			5.88E+00	7.07E+00
	43	1811.58	1.10E+01	6.63			1.10E+01	6.63E+00
	44	2104.67	2.65E+01	12.09			2.65E+01	1.21E+01
	45	2231.97	7.00E+00	9.90			7.00E+00	9.90E+00
	46	2435.86	8.10E+00	7.48			8.10E+00	7.48E+00
	47	2614.99	8.92E+01	21.95	4.77E+00	1.52E+00	8.44E+01	2.20E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 4:18:14PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	76.16	9.43E+02	161.47			9.43E+02	1.61E+02
	2	87.30	8.83E+01	66.15			8.83E+01	6.62E+01
	3	93.34	1.69E+02	95.10	4.88E+01	1.30E+00	1.20E+02	9.51E+01
	4	129.07	1.29E+02	83.28			1.29E+02	8.33E+01
	5	185.96	1.71E+02	70.28	3.48E+01	7.32E+00	1.36E+02	7.07E+01
	6	209.51	1.10E+02	49.22			1.10E+02	4.92E+01
M	7	238.69	9.06E+02	73.39	7.09E+00	6.85E+00	8.99E+02	7.37E+01
m	8	241.60	2.18E+02	83.57			2.18E+02	8.36E+01
	9	270.23	8.13E+01	56.21			8.13E+01	5.62E+01
	10	276.85	4.88E+01	49.61			4.88E+01	4.96E+01
	11	295.34	2.49E+02	58.62			2.49E+02	5.86E+01
	12	300.34	5.07E+01	43.85			5.07E+01	4.39E+01
	13	327.92	5.61E+01	51.38			5.61E+01	5.14E+01
	14	338.79	1.63E+02	66.00			1.63E+02	6.60E+01
	15	352.04	3.90E+02	51.22	1.04E+01	5.08E+00	3.79E+02	5.15E+01
	16	360.32	5.26E+01	51.67			5.26E+01	5.17E+01
	17	369.01	4.75E+01	36.37			4.75E+01	3.64E+01
	18	462.46	4.79E+01	39.60			4.79E+01	3.96E+01
	19	511.03	1.97E+02	53.05	7.08E+01	4.94E+00	1.26E+02	5.33E+01
	20	583.14	2.97E+02	53.63	5.65E+00	3.57E+00	2.92E+02	5.37E+01
	21	609.30	3.42E+02	49.17	1.07E+01	3.96E+00	3.31E+02	4.93E+01
	22	727.15	6.38E+01	46.34			6.38E+01	4.63E+01
	23	785.35	3.99E+01	36.63			3.99E+01	3.66E+01
	24	795.55	4.74E+01	38.88			4.74E+01	3.89E+01
	25	829.15	3.31E+01	26.53			3.31E+01	2.65E+01
M	26	835.71	2.45E+01	16.97			2.45E+01	1.70E+01
m	27	839.10	1.82E+01	28.14			1.82E+01	2.81E+01
	28	860.65	3.83E+01	35.67			3.83E+01	3.57E+01
	29	911.26	1.99E+02	42.80	2.63E+00	2.49E+00	1.96E+02	4.29E+01
M	30	964.92	1.75E+01	19.25			1.75E+01	1.92E+01
m	31	969.21	1.23E+02	29.56			1.23E+02	2.96E+01
	32	1034.38	1.91E+01	17.66			1.91E+01	1.77E+01
	33	1119.64	7.57E+01	42.33	2.45E+00	2.38E+00	7.32E+01	4.24E+01
	34	1213.84	2.68E+01	30.91			2.68E+01	3.09E+01
	35	1237.72	3.61E+01	31.18			3.61E+01	3.12E+01
M	36	1371.04	1.68E+01	14.97			1.68E+01	1.50E+01
m	37	1377.86	2.10E+01	16.00			2.10E+01	1.60E+01
	38	1461.18	1.01E+03	65.60	5.90E+00	2.63E+00	9.99E+02	6.57E+01
	39	1590.69	3.30E+01	22.58			3.30E+01	2.26E+01
	40	1660.50	9.00E+00	8.51			9.00E+00	8.51E+00
	41	1765.00	4.87E+01	16.97	3.33E+00	1.73E+00	4.53E+01	1.71E+01

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1773.64	5.88E+00	7.07			5.88E+00	7.07E+00
43	1811.58	1.10E+01	6.63			1.10E+01	6.63E+00
44	2104.67	2.65E+01	12.09			2.65E+01	1.21E+01
45	2231.97	7.00E+00	9.90			7.00E+00	9.90E+00
46	2435.86	8.10E+00	7.48			8.10E+00	7.48E+00
47	2614.99	8.92E+01	21.95	4.77E+00	1.52E+00	8.44E+01	2.20E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.979	1460.81	*	10.67	2.54E+01	2.90E+00
MN-54	0.883	834.83	*	99.97	5.32E-02	3.71E-02
CD-109	0.918	88.03	*	3.72	1.18E+00	8.95E-01
SN-126	0.988	87.57	*	37.00	1.02E-01	7.71E-02
EU-155	0.302	86.50	*	30.90	1.27E-01	9.60E-02
		105.30		20.70		
TL-208	0.990	583.14	*	30.22	1.25E+00	2.57E-01
		860.37	*	4.48	1.52E+00	1.42E+00
		2614.66	*	35.85	8.51E-01	2.34E-01
BI-212	0.768	727.17	*	11.80	8.36E-01	6.12E-01
		1620.62		2.75		
PB-212	0.999	238.63	*	44.60	1.35E+00	1.50E-01
		300.09	*	3.41	1.17E+00	1.02E+00
BI-214	0.911	609.31	*	46.30	9.62E-01	1.68E-01
		1120.29	*	15.10	1.07E+00	6.25E-01
		1764.49	*	15.80	8.85E-01	3.41E-01
		2204.22		4.98		
PB-214	0.998	295.21	*	19.19	1.01E+00	2.49E-01
		351.92	*	37.19	9.02E-01	1.41E-01
RA-224	0.941	240.98	*	3.95	3.73E+00	1.46E+00
RA-226	0.990	186.21	*	3.28	2.35E+00	4.48E+00
AC-228	0.990	338.32	*	11.40	1.23E+00	5.07E-01
		911.07	*	27.70	1.32E+00	3.07E-01
		969.11	*	16.60	1.45E+00	3.68E-01
NP-237	0.903	86.50	*	12.60	3.00E-01	2.26E-01

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CM-243	0.329	209.75	*	3.29	2.07E+00	9.38E-01
		228.14		10.60		
		277.60	*	14.00	2.61E-01	2.66E-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 4:18:14PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.16	2.61821E-01	8.57		
	3	93.34	3.32555E-02	39.72	Tol.	GA-67
	4	129.07	3.57518E-02	32.35		
	9	270.23	2.25961E-02	34.55		
	13	327.92	1.55859E-02	45.79	Sum	
	16	360.32	1.46002E-02	49.15		
	17	369.01	1.32000E-02	38.27		
	18	462.46	1.33160E-02	41.30	Sum	
	19	511.03	3.49616E-02	21.17		
	23	785.35	1.10795E-02	45.92		
	24	795.55	1.31801E-02	40.98	Sum	
	25	829.15	9.20139E-03	40.05		
m	27	839.10	5.04731E-03	77.44		
M	30	964.92	4.86205E-03	54.98	Sum	
	32	1034.38	5.30423E-03	46.25		
	34	1213.84	7.44565E-03	57.65		
	35	1237.72	1.00283E-02	43.18		
M	36	1371.04	4.67308E-03	44.48		
m	37	1377.86	5.82006E-03	38.18		
	39	1590.69	9.16667E-03	34.22		
	40	1660.50	2.50000E-03	47.30		
	42	1773.64	1.63194E-03	60.18		
	43	1811.58	3.05556E-03	30.15		
	44	2104.67	7.36111E-03	22.82	S-Esc	
	45	2231.97	1.94444E-03	70.71		
	46	2435.86	2.25000E-03	46.19		

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.97	1460.81	*	10.67	2.54E+01	2.90E+00
MN-54	0.88	834.83	*	99.97	5.32E-02	3.71E-02
CD-109	0.91	88.03	*	3.72	1.18E+00	8.95E-01
SN-126	0.98	87.57	*	37.00	1.02E-01	7.71E-02
EU-155	0.30	86.50	*	30.90	1.27E-01	9.60E-02
		105.30		20.70		
TL-208	0.99	583.14	*	30.22	1.25E+00	2.57E-01
		860.37	*	4.48	1.52E+00	1.42E+00
		2614.66	*	35.85	8.51E-01	2.34E-01
BI-212	0.76	727.17	*	11.80	8.36E-01	6.12E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	1.35E+00	1.50E-01
		300.09	*	3.41	1.17E+00	1.02E+00
BI-214	0.91	609.31	*	46.30	9.62E-01	1.68E-01
		1120.29	*	15.10	1.07E+00	6.25E-01
		1764.49	*	15.80	8.85E-01	3.41E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	1.01E+00	2.49E-01
		351.92	*	37.19	9.02E-01	1.41E-01
RA-224	0.94	240.98	*	3.95	3.73E+00	1.46E+00
RA-226	0.99	186.21	*	3.28	2.35E+00	4.48E+00
AC-228	0.99	338.32	*	11.40	1.23E+00	5.07E-01
		911.07	*	27.70	1.32E+00	3.07E-01
		969.11	*	16.60	1.45E+00	3.68E-01
NP-237	0.90	86.50	*	12.60	3.00E-01	2.26E-01
CM-243	0.32	209.75	*	3.29	2.07E+00	9.38E-01
		228.14		10.60		
		277.60	*	14.00	2.61E-01	2.66E-01

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* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.979	2.54E+01	2.90E+00	
	MN-54	0.883	5.32E-02	3.71E-02	
?	CD-109	0.918	1.18E+00	8.95E-01	
?	SN-126	0.988	1.02E-01	7.71E-02	
?	EU-155	0.302	1.27E-01	9.60E-02	
	TL-208	0.990	1.04E+00	1.72E-01	
	BI-212	0.768	8.36E-01	6.12E-01	
	PB-212	0.999	1.35E+00	1.49E-01	
	BI-214	0.911	9.53E-01	1.46E-01	
	PB-214	0.998	9.29E-01	1.23E-01	
	RA-224	0.941	3.73E+00	1.46E+00	
	RA-226	0.990	2.35E+00	4.48E+00	
	AC-228	0.990	1.35E+00	2.14E-01	
?	NP-237	0.903	3.00E-01	2.26E-01	
	CM-243	0.329	3.95E-01	2.56E-01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 4:18:14PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.16	2.61821E-01	8.57		
	3	93.34	3.32555E-02	39.72	Tol.	GA-67
	4	129.07	3.57518E-02	32.35		
	9	270.23	2.25961E-02	34.55		
	13	327.92	1.55859E-02	45.79	Sum	
	16	360.32	1.46002E-02	49.15		
	17	369.01	1.32000E-02	38.27		
	18	462.46	1.33160E-02	41.30	Sum	
	19	511.03	3.49616E-02	21.17		
	23	785.35	1.10795E-02	45.92		
	24	795.55	1.31801E-02	40.98	Sum	
	25	829.15	9.20139E-03	40.05		
m	27	839.10	5.04731E-03	77.44		
M	30	964.92	4.86205E-03	54.98	Sum	
	32	1034.38	5.30423E-03	46.25		
	34	1213.84	7.44565E-03	57.65		
	35	1237.72	1.00283E-02	43.18		
M	36	1371.04	4.67308E-03	44.48		
m	37	1377.86	5.82006E-03	38.18		
	39	1590.69	9.16667E-03	34.22		
	40	1660.50	2.50000E-03	47.30		
	42	1773.64	1.63194E-03	60.18		
	43	1811.58	3.05556E-03	30.15		
	44	2104.67	7.36111E-03	22.82	S-Esc	
	45	2231.97	1.94444E-03	70.71		
	46	2435.86	2.25000E-03	46.19		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-08

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NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		BE-7	477.59		10.42	-5.99E-01	1.77E+00	1.77E+00
+		NA-22	1274.54		99.94	3.26E-02	9.37E-02	9.37E-02
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	6.28E-03	6.31E-02	6.31E-02
+		K-40	1460.81	*	10.67	2.54E+01	8.08E-01	8.08E-01
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	1.47E-03	4.54E-02	4.54E-02
			78.34		96.00	3.76E-02		5.23E-02
+		SC-46	889.25		99.98	-6.31E-02	1.34E-01	1.34E-01
			1120.51		99.99	2.58E-01		2.71E-01
+		V-48	983.52		99.98	-1.13E+00	5.68E+00	5.68E+00
			1312.10		97.50	2.01E+00		6.77E+00
+		CR-51	320.08		9.83	-2.44E+00	5.82E+00	5.82E+00
+		MN-54	834.83	*	99.97	5.32E-02	1.01E-01	1.01E-01
+		CO-56	846.75		99.96	9.97E-02	1.68E-01	1.68E-01
			1037.75		14.03	-1.93E-01		1.25E+00
			1238.25		67.00	1.77E-01		4.05E-01
			1771.40		15.51	-1.38E-01		9.15E-01
			2598.48		16.90	-2.26E-01		5.61E-01
+		CO-57	122.06		85.51	-1.10E-03	4.79E-02	4.79E-02
			136.48		10.60	2.28E-01		5.37E-01
+		CO-58	810.76		99.40	2.61E-02	1.83E-01	1.83E-01
+		FE-59	1099.22		56.50	-3.73E-01	6.47E-01	6.47E-01
			1291.56		43.20	-1.98E-01		9.16E-01
+		CO-60	1173.22		100.00	6.42E-03	7.17E-02	8.52E-02
			1332.49		100.00	-1.18E-02		7.17E-02
+		ZN-65	1115.52		50.75	-2.80E-01	2.43E-01	2.43E-01
+		GA-67	93.31		35.70	5.97E+08	2.89E+08	2.89E+08
			208.95		2.24	2.13E+09		5.38E+09
			300.22		16.00	8.38E+07		7.37E+08
+		SE-75	121.11		16.70	3.38E-02	1.26E-01	3.34E-01
			136.00		59.20	-1.44E-02		1.29E-01
			264.65		59.80	-3.22E-02		1.26E-01
			279.53		25.20	-1.36E-02		3.32E-01
			400.65		11.40	-1.61E-01		7.37E-01
+		RB-82	776.52		13.00	-4.73E-01	8.00E+00	8.00E+00
+		RB-83	520.41		46.00	-7.87E-02	2.15E-01	2.15E-01
			529.64		30.30	-1.16E-01		3.63E-01
			552.65		16.40	1.69E-01		6.99E-01
+		KR-85	513.99		0.43	-9.79E+00	1.46E+01	1.46E+01
+		SR-85	513.99		99.27	-1.24E-01	1.85E-01	1.85E-01

Analysis Report for 1707092-08

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02		93.40	-4.28E-03	9.75E-02	1.33E-01
		1836.01		99.38	-2.46E-02		9.75E-02
+	MO-93	263.06		56.72	-1.16E-02	6.14E-02	7.83E-02
		684.67		99.68	-2.12E-02		6.35E-02
		1477.11		99.08	3.47E-03		6.14E-02
+	NB-93M	16.57		9.43	0.00E+00	6.76E+00	6.76E+00
+	NB-94	702.63		100.00	1.59E-02	6.62E-02	7.01E-02
		871.10		100.00	-7.32E-03		6.62E-02
+	NB-95	765.79		99.81	-2.67E-02	5.56E-01	5.56E-01
+	NB-95M	235.69		25.00	-7.37E+08	7.41E+07	7.41E+07
+	ZR-95	724.18		43.70	3.19E-01	3.75E-01	5.83E-01
		756.72		55.30	1.71E-01		3.75E-01
+	MO-99	181.06		6.20	5.00E+10	6.36E+10	9.37E+10
		739.58		12.80	2.15E+10		6.36E+10
		778.00		4.50	-3.57E+10		1.77E+11
+	RU-103	497.08		89.00	2.74E-02	3.09E-01	3.09E-01
+	RU-106	621.84		9.80	-1.98E-01	7.43E-01	7.43E-01
+	AG-108M	433.93		89.90	1.39E-02	5.28E-02	5.28E-02
		614.37		90.40	8.99E-03		7.34E-02
		722.95		90.50	-1.24E-01		8.07E-02
+	CD-109	88.03	*	3.72	1.18E+00	1.43E+00	1.43E+00
+	AG-110M	657.75		93.14	-6.94E-02	8.56E-02	8.56E-02
		677.61		10.53	3.05E-01		8.52E-01
		706.67		16.46	1.27E-01		5.70E-01
		763.93		21.98	-1.33E-01		4.25E-01
		884.67		71.63	-2.04E-02		1.12E-01
		1384.27		23.94	-4.03E-02		2.99E-01
+	CD-113M	263.70		0.02	1.14E+02	1.97E+02	1.97E+02
+	SN-113	255.12		1.93	-1.13E+00	1.42E-01	4.36E+00
		391.69		64.90	-4.96E-02		1.42E-01
+	TE123M	159.00		84.10	6.35E-02	9.59E-02	9.59E-02
+	SB-124	602.71		97.87	-2.86E-03	1.81E-01	1.81E-01
		645.85		7.26	1.13E+00		2.87E+00
		722.78		11.10	-6.24E-01		1.89E+00
		1691.02		49.00	1.41E-02		2.95E-01
+	I-125	35.49		6.49	-3.73E+01	6.42E+00	6.42E+00
+	SB-125	176.33		6.89	-5.25E-01	1.69E-01	6.96E-01
		427.89		29.33	2.54E-02		1.69E-01
		463.38		10.35	4.44E-01		5.84E-01
		600.56		17.80	6.97E-02		3.56E-01
		635.90		11.32	7.14E-02		5.37E-01
+	SB-126	414.70		83.30	1.64E-01	1.65E+01	1.65E+01
		666.33		99.60	-6.19E+00		1.86E+01
		695.00		99.60	8.46E+00		2.02E+01
		720.50		53.80	-1.60E+01		3.59E+01
+	SN-126	87.57	*	37.00	1.02E-01	1.24E-01	1.24E-01
+	SB-127	473.00		25.00	1.04E+06	1.50E+07	1.64E+07
		685.20		35.70	-2.02E+06		1.50E+07

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-127	783.80	14.70	2.35E+07	1.50E+07	4.55E+07
+	I-129	29.78	57.00	1.06E-01	4.10E-01	4.10E-01
		33.60	13.20	8.12E+00		2.01E+00
		39.58	7.52	9.24E-01		1.22E+00
+	I-131	284.30	6.05	1.23E+03	3.43E+02	4.73E+03
		364.48	81.20	1.16E+02		3.43E+02
		636.97	7.26	5.92E+02		4.80E+03
		722.89	1.80	-3.89E+04		2.52E+04
+	TE-132	49.72	13.10	4.49E+07	1.27E+08	8.50E+08
		228.16	88.00	-8.42E+06		1.27E+08
+	BA-133	81.00	33.00	8.91E-03	7.13E-02	1.12E-01
		302.84	17.80	-7.52E-03		2.83E-01
		356.01	60.00	5.92E-03		7.13E-02
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	5.00E+03	6.29E+04	6.29E+04
+	CS-134	563.23	8.38	-8.27E-02	6.50E-02	6.89E-01
		569.32	15.43	1.95E-02		3.64E-01
		604.70	97.60	2.46E-03		6.50E-02
		795.84	85.40	6.87E-02		1.05E-01
		801.93	8.73	-1.92E-01		8.53E-01
+	CS-135	268.24	16.00	-3.51E-02	3.19E-01	3.19E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	1.49E+02	1.33E+01	1.32E+02
		163.89	4.61	6.07E+01		1.89E+02
		176.55	13.56	-5.18E+01		6.87E+01
		273.65	12.66	-9.53E+01		7.64E+01
		340.57	48.50	2.34E-01		2.51E+01
		818.50	99.70	-2.49E+00		1.33E+01
		1048.07	79.60	-6.51E+00		1.91E+01
		1235.34	19.70	4.15E+01		1.21E+02
+	CS-137	661.65	85.12	-8.20E-03	7.77E-02	7.77E-02
+	LA-138	788.74	34.00	1.40E-02	9.32E-02	2.17E-01
		1435.80	66.00	-3.24E-02		9.32E-02
+	CE-139	165.85	80.35	-2.99E-02	8.68E-02	8.68E-02
+	BA-140	162.64	6.70	-8.99E+01	5.05E+01	1.52E+02
		304.84	4.50	-1.30E+01		2.47E+02
		423.70	3.20	5.33E+01		3.53E+02
		437.55	2.00	1.01E+02		6.13E+02
		537.32	25.00	1.09E+01		5.05E+01
+	LA-140	328.77	20.50	4.36E+01	2.01E+01	6.35E+01
		487.03	45.50	6.30E+00		2.62E+01
		815.85	23.50	-1.93E+01		6.42E+01
		1596.49	95.49	-9.18E-01		2.01E+01
+	CE-141	145.44	48.40	-6.44E-02	8.22E-01	8.22E-01
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CE-144	133.54		10.80	-3.70E-02	3.75E-01	3.75E-01
+	PM-144	476.78		42.00	-4.84E-02	8.19E-02	1.43E-01
		618.01		98.60	5.30E-02		8.19E-02
		696.49		99.49	1.47E-02		8.49E-02
+	PM-145	36.85		21.70	-1.05E-01	2.66E-01	5.17E-01
		37.36		39.70	-2.10E-01		2.66E-01
		42.30		15.10	-1.17E-01		4.38E-01
		72.40		2.31	-8.47E+00		1.90E+00
+	PM-146	453.90		39.94	-1.70E-02	1.26E-01	1.26E-01
		735.90		14.01	-2.79E-01		4.40E-01
		747.13		13.10	-7.86E-03		5.20E-01
+	ND-147	91.11		28.90	-9.75E+01	8.53E+01	8.53E+01
		531.02		13.10	-8.05E+00		2.28E+02
+	PM-149	285.90		3.10	1.58E+12	9.38E+13	9.38E+13
+	EU-152	121.78		20.50	-3.59E-03	1.56E-01	1.56E-01
		244.69		5.40	-1.58E+00		8.71E-01
		344.27		19.13	5.36E-02		2.48E-01
		778.89		9.20	-1.44E-01		7.15E-01
		964.01		10.40	-6.21E-02		7.64E-01
		1085.78		7.22	-3.95E-01		9.36E-01
		1112.02		9.60	-2.20E-01		8.82E-01
		1407.95		14.94	-1.36E-02		4.81E-01
+	GD-153	97.43		31.30	-4.71E-02	1.39E-01	1.39E-01
		103.18		22.20	5.67E-02		1.99E-01
+	EU-154	123.07		40.50	-2.12E-02	8.23E-02	8.23E-02
		723.30		19.70	-5.84E-01		3.78E-01
		873.19		11.50	2.87E-01		6.19E-01
		996.32		10.30	-4.85E-01		7.27E-01
		1004.76		17.90	-2.87E-02		4.56E-01
		1274.45		35.50	8.72E-02		2.50E-01
+	EU-155	86.50	*	30.90	1.27E-01	1.54E-01	1.54E-01
		105.30		20.70	5.44E-02		1.73E-01
+	EU-156	811.77		10.40	3.30E+00	6.62E+01	6.62E+01
		1153.47		7.20	5.70E+01		1.37E+02
		1230.71		8.90	3.07E+00		1.26E+02
+	HO-166M	184.41		72.60	1.25E-01	7.90E-02	7.90E-02
		280.45		29.60	-1.76E-02		1.52E-01
		410.94		11.10	-6.93E-03		4.72E-01
		711.69		54.10	-4.46E-03		1.20E-01
+	TM-171	66.72		0.14	1.73E+01	3.47E+01	3.47E+01
+	HF-172	67.35		5.31	2.91E-02	3.47E-01	8.97E-01
		125.81		11.30	1.14E-01		3.47E-01
+	LU-172	181.53		20.60	1.30E+03	4.40E+03	8.19E+03
		900.72		29.81	-4.52E+02		7.49E+03
		1093.66		62.50	1.04E+03		4.40E+03
+	LU-173	100.72		5.24	-2.28E-01	2.81E-01	7.13E-01
		272.11		21.20	3.53E-01		2.81E-01
+	HF-175	343.40		84.00	-1.17E-01	1.50E-01	1.50E-01
+	LU-176	88.34		13.30	1.72E-01	4.78E-02	3.33E-01

Analysis Report for 1707092-08

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-176	201.83		86.00	-5.60E-03	4.78E-02	5.74E-02
		306.78		94.00	-3.63E-02		4.78E-02
+	HF-181	133.02		41.70	-9.51E-02	3.10E-01	4.04E-01
		345.85		17.20	1.32E+00		1.44E+00
		482.03		82.80	-1.64E-02		3.10E-01
+	TA-182	67.75		41.20	6.23E-03	1.92E-01	1.92E-01
		1121.30		34.90	6.49E-01		6.19E-01
		1189.05		16.23	1.56E-01		1.10E+00
		1221.41		26.98	-9.56E-02		6.55E-01
		1231.02		11.44	4.33E-02		1.78E+00
+	IR-192	308.46		29.68	6.69E-02	2.57E-01	4.13E-01
		468.07		48.10	1.30E-01		2.57E-01
+	HG-203	279.19		77.30	6.15E-02	2.84E-01	2.84E-01
+	TL-204	374.74		94.11	2.56E-03	4.95E-02	4.95E-02
		899.15		99.16	-8.54E-03		6.55E-02
		911.74		91.10	3.62E-01		1.60E-01
+	BI-207	569.67		97.72	2.82E-03	5.27E-02	5.27E-02
		1063.62		74.90	-1.00E-02		1.02E-01
+	TL-208	583.14	*	30.22	1.25E+00	2.28E-01	3.05E-01
		860.37	*	4.48	1.52E+00		2.29E+00
		2614.66	*	35.85	8.51E-01		2.28E-01
+	BI-210M	262.00		45.00	1.67E-03	9.76E-02	9.76E-02
		300.00		23.00	2.58E-02		2.27E-01
+	PB-210	46.50		4.25	7.73E-02	1.37E+00	1.37E+00
+	PB-211	404.84		2.90	-3.09E-01	1.67E+00	1.67E+00
		831.96		2.90	-3.61E+00		2.29E+00
+	BI-212	727.17	*	11.80	8.36E-01	9.74E-01	9.74E-01
		1620.62		2.75	7.96E-01		2.55E+00
+	PB-212	238.63	*	44.60	1.35E+00	2.11E-01	2.11E-01
		300.09	*	3.41	1.17E+00		1.64E+00
+	BI-214	609.31	*	46.30	9.62E-01	1.67E-01	1.67E-01
		1120.29	*	15.10	1.07E+00		9.70E-01
		1764.49	*	15.80	8.85E-01		3.89E-01
		2204.22		4.98	5.23E-01		1.60E+00
+	PB-214	295.21	*	19.19	1.01E+00	1.38E-01	3.41E-01
		351.92	*	37.19	9.02E-01		1.38E-01
+	RN-219	401.80		6.50	7.88E-02	7.25E-01	7.25E-01
+	RA-223	323.87		3.88	6.02E-02	1.22E+00	1.22E+00
+	RA-224	240.98	*	3.95	3.73E+00	2.43E+00	2.43E+00
+	RA-225	40.00		31.00	2.51E+01	3.32E+01	3.32E+01
+	RA-226	186.21	*	3.28	2.35E+00	1.95E+00	1.95E+00
+	TH-227	50.10		8.40	3.00E-02	5.68E-01	5.68E-01
		236.00		11.50	-5.69E+00		5.71E-01
		256.20		6.30	1.56E-01		7.43E-01
+	AC-228	338.32	*	11.40	1.23E+00	3.77E-01	7.76E-01
		911.07	*	27.70	1.32E+00		3.77E-01
		969.11	*	16.60	1.45E+00		5.80E-01
+	TH-230	48.44		16.90	-2.37E-01	2.91E-01	2.91E-01

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-230	62.85		4.60	3.24E-01	2.91E-01	1.02E+00
		67.67		0.37	3.76E-01		1.16E+01
+	PA-231	283.67		1.60	7.46E-01	2.15E+00	2.87E+00
		302.67		2.30	-5.71E-02		2.15E+00
+	TH-231	25.64		14.70	0.00E+00	1.20E-01	1.20E-01
		84.21		6.40	4.42E-01		6.18E-01
+	PA-233	311.98		38.60	6.90E-01	1.71E+00	1.71E+00
+	PA-234	131.20		20.40	-4.85E-03	1.69E-01	1.69E-01
		733.99		8.80	-7.40E-02		6.81E-01
		946.00		12.00	-1.82E-01		5.75E-01
+	PA-234M	1001.03		0.92	1.20E+00	8.79E+00	8.79E+00
+	TH-234	63.29		3.80	6.41E-01	1.24E+00	1.24E+00
+	U-235	143.76		10.50	3.84E-01	4.45E-01	4.45E-01
		163.35		4.70	2.86E-01		8.89E-01
		205.31		4.70	5.38E-01		1.07E+00
+	NP-237	86.50	*	12.60	3.00E-01	3.64E-01	3.64E-01
+	NP-239	106.10		22.70	4.30E+11	1.36E+12	1.36E+12
		228.18		10.70	-2.70E+11		4.06E+12
		277.60		14.10	1.30E+12		3.21E+12
+	AM-241	59.54		35.90	6.96E-02	1.30E-01	1.30E-01
+	AM-243	74.67		66.00	-1.57E-01	8.66E-02	8.66E-02
+	CM-243	209.75	*	3.29	2.07E+00	4.33E-01	1.43E+00
		228.14		10.60	-3.06E-02		4.59E-01
		277.60	*	14.00	2.61E-01		4.33E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	1.77E+00	1.77E+00	-5.99E-01	8.31E-01
	NA-22	1274.54		99.94	9.37E-02	9.37E-02	3.26E-02	4.33E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	6.31E-02	6.31E-02	6.28E-03	2.73E-02
+	K-40	1460.81	*	10.67	8.08E-01	8.08E-01	2.54E+01	3.69E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	4.54E-02	4.54E-02	1.47E-03	2.21E-02
		78.34		96.00	5.23E-02		3.76E-02	2.56E-02
	SC-46	889.25		99.98	1.34E-01	1.34E-01	-6.31E-02	6.13E-02
		1120.51		99.99	2.71E-01		2.58E-01	1.29E-01
	V-48	983.52		99.98	5.68E+00	5.68E+00	-1.13E+00	2.62E+00
		1312.10		97.50	6.77E+00		2.01E+00	3.10E+00
	CR-51	320.08		9.83	5.82E+00	5.82E+00	-2.44E+00	2.77E+00
+	MN-54	834.83	*	99.97	1.01E-01	1.01E-01	5.32E-02	4.77E-02
	CO-56	846.75		99.96	1.68E-01	1.68E-01	9.97E-02	7.83E-02
		1037.75		14.03	1.25E+00		-1.93E-01	5.74E-01
		1238.25		67.00	4.05E-01		1.77E-01	1.91E-01
		1771.40		15.51	9.15E-01		-1.38E-01	3.92E-01
		2598.48		16.90	5.61E-01		-2.26E-01	2.10E-01
	CO-57	122.06		85.51	4.79E-02	4.79E-02	-1.10E-03	2.30E-02
		136.48		10.60	5.37E-01		2.28E-01	2.60E-01
	CO-58	810.76		99.40	1.83E-01	1.83E-01	2.61E-02	8.54E-02
	FE-59	1099.22		56.50	6.47E-01	6.47E-01	-3.73E-01	2.99E-01
		1291.56		43.20	9.16E-01		-1.98E-01	4.21E-01
	CO-60	1173.22		100.00	8.52E-02	7.17E-02	6.42E-03	3.94E-02
		1332.49		100.00	7.17E-02		-1.18E-02	3.23E-02
	ZN-65	1115.52		50.75	2.43E-01	2.43E-01	-2.80E-01	1.14E-01
	GA-67	93.31		35.70	2.89E+08	2.89E+08	5.97E+08	1.41E+08
		208.95		2.24	5.38E+09		2.13E+09	2.61E+09
		300.22		16.00	7.37E+08		8.38E+07	3.54E+08
	SE-75	121.11		16.70	3.34E-01	1.26E-01	3.38E-02	1.60E-01
		136.00		59.20	1.29E-01		-1.44E-02	6.26E-02
		264.65		59.80	1.26E-01		-3.22E-02	6.02E-02
		279.53		25.20	3.32E-01		-1.36E-02	1.59E-01
		400.65		11.40	7.37E-01		-1.61E-01	3.48E-01
	RB-82	776.52		13.00	8.00E+00	8.00E+00	-4.73E-01	3.74E+00
	RB-83	520.41		46.00	2.15E-01	2.15E-01	-7.87E-02	9.97E-02
		529.64		30.30	3.63E-01		-1.16E-01	1.70E-01
		552.65		16.40	6.99E-01		1.69E-01	3.26E-01
	KR-85	513.99		0.43	1.46E+01	1.46E+01	-9.79E+00	6.91E+00
	SR-85	513.99		99.27	1.85E-01	1.85E-01	-1.24E-01	8.77E-02
	Y-88	898.02		93.40	1.33E-01	9.75E-02	-4.28E-03	6.13E-02
		1836.01		99.38	9.75E-02		-2.46E-02	4.04E-02
	MO-93	263.06		56.72	7.83E-02	6.14E-02	-1.16E-02	3.74E-02
		684.67		99.68	6.35E-02		-2.12E-02	2.97E-02
		1477.11		99.08	6.14E-02		3.47E-03	2.69E-02
	NB-93M	16.57		9.43	6.76E+00	6.76E+00	0.00E+00	0.00E+00
	NB-94	702.63		100.00	7.01E-02	6.62E-02	1.59E-02	3.30E-02
		871.10		100.00	6.62E-02		-7.32E-03	3.07E-02
	NB-95	765.79		99.81	5.56E-01	5.56E-01	-2.67E-02	2.62E-01
	NB-95M	235.69		25.00	7.41E+07	7.41E+07	-7.37E+08	3.60E+07
	ZR-95	724.18		43.70	5.83E-01	3.75E-01	3.19E-01	2.77E-01

Analysis Report for 1707092-08

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	ZR-95	756.72		55.30	3.75E-01	3.75E-01	1.71E-01	1.76E-01
	MO-99	181.06		6.20	9.37E+10	6.36E+10	5.00E+10	4.54E+10
		739.58		12.80	6.36E+10		2.15E+10	2.97E+10
		778.00		4.50	1.77E+11		-3.57E+10	8.25E+10
	RU-103	497.08		89.00	3.09E-01	3.09E-01	2.74E-02	1.44E-01
	RU-106	621.84		9.80	7.43E-01	7.43E-01	-1.98E-01	3.49E-01
	AG-108M	433.93		89.90	5.28E-02	5.28E-02	1.39E-02	2.48E-02
		614.37		90.40	7.34E-02		8.99E-03	3.47E-02
		722.95		90.50	8.07E-02		-1.24E-01	3.80E-02
+	CD-109	88.03	*	3.72	1.43E+00	1.43E+00	1.18E+00	6.99E-01
	AG-110M	657.75		93.14	8.56E-02	8.56E-02	-6.94E-02	4.01E-02
		677.61		10.53	8.52E-01		3.05E-01	4.01E-01
		706.67		16.46	5.70E-01		1.27E-01	2.69E-01
		763.93		21.98	4.25E-01		-1.33E-01	1.99E-01
		884.67		71.63	1.12E-01		-2.04E-02	5.12E-02
		1384.27		23.94	2.99E-01		-4.03E-02	1.30E-01
	CD-113M	263.70		0.02	1.97E+02	1.97E+02	1.14E+02	9.41E+01
	SN-113	255.12		1.93	4.36E+00	1.42E-01	-1.13E+00	2.09E+00
		391.69		64.90	1.42E-01		-4.96E-02	6.74E-02
	TE123M	159.00		84.10	9.59E-02	9.59E-02	6.35E-02	4.65E-02
	SB-124	602.71		97.87	1.81E-01	1.81E-01	-2.86E-03	8.44E-02
		645.85		7.26	2.87E+00		1.13E+00	1.35E+00
		722.78		11.10	1.89E+00		-6.24E-01	8.86E-01
		1691.02		49.00	2.95E-01		1.41E-02	1.21E-01
	I-125	35.49		6.49	6.42E+00	6.42E+00	-3.73E+01	3.11E+00
	SB-125	176.33		6.89	6.96E-01	1.69E-01	-5.25E-01	3.36E-01
		427.89		29.33	1.69E-01		2.54E-02	7.97E-02
		463.38		10.35	5.84E-01		4.44E-01	2.77E-01
		600.56		17.80	3.56E-01		6.97E-02	1.67E-01
		635.90		11.32	5.37E-01		7.14E-02	2.51E-01
	SB-126	414.70		83.30	1.65E+01	1.65E+01	1.64E-01	7.76E+00
		666.33		99.60	1.86E+01		-6.19E+00	8.75E+00
		695.00		99.60	2.02E+01		8.46E+00	9.54E+00
		720.50		53.80	3.59E+01		-1.60E+01	1.68E+01
+	SN-126	87.57	*	37.00	1.24E-01	1.24E-01	1.02E-01	6.04E-02
	SB-127	473.00		25.00	1.64E+07	1.50E+07	1.04E+06	7.70E+06
		685.20		35.70	1.50E+07		-2.02E+06	7.03E+06
		783.80		14.70	4.55E+07		2.35E+07	2.15E+07
	I-129	29.78		57.00	4.10E-01	4.10E-01	1.06E-01	1.98E-01
		33.60		13.20	2.01E+00		8.12E+00	9.84E-01
		39.58		7.52	1.22E+00		9.24E-01	5.92E-01
	I-131	284.30		6.05	4.73E+03	3.43E+02	1.23E+03	2.26E+03
		364.48		81.20	3.43E+02		1.16E+02	1.62E+02
		636.97		7.26	4.80E+03		5.92E+02	2.24E+03
		722.89		1.80	2.52E+04		-3.89E+04	1.19E+04
	TE-132	49.72		13.10	8.50E+08	1.27E+08	4.49E+07	4.10E+08
		228.16		88.00	1.27E+08		-8.42E+06	6.10E+07
	BA-133	81.00		33.00	1.12E-01	7.13E-02	8.91E-03	5.42E-02
		302.84		17.80	2.83E-01		-7.52E-03	1.35E-01
		356.01		60.00	7.13E-02		5.92E-03	3.36E-02
	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	6.29E+04	6.29E+04	5.00E+03	3.04E+04
	CS-134	563.23		8.38	6.89E-01	6.50E-02	-8.27E-02	3.22E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	569.32	15.43	3.64E-01	6.50E-02	1.95E-02	1.70E-01
	604.70	97.60	6.50E-02		2.46E-03	3.05E-02
	795.84	85.40	1.05E-01		6.87E-02	4.95E-02
	801.93	8.73	8.53E-01		-1.92E-01	3.98E-01
CS-135	268.24	16.00	3.19E-01	3.19E-01	-3.51E-02	1.54E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.32E+02	1.33E+01	1.49E+02	6.40E+01
	163.89	4.61	1.89E+02		6.07E+01	9.12E+01
	176.55	13.56	6.87E+01		-5.18E+01	3.32E+01
	273.65	12.66	7.64E+01		-9.53E+01	3.65E+01
	340.57	48.50	2.51E+01		2.34E-01	1.20E+01
	818.50	99.70	1.33E+01		-2.49E+00	6.19E+00
	1048.07	79.60	1.91E+01		-6.51E+00	8.79E+00
	1235.34	19.70	1.21E+02		4.15E+01	5.71E+01
CS-137	661.65	85.12	7.77E-02	7.77E-02	-8.20E-03	3.66E-02
LA-138	788.74	34.00	2.17E-01	9.32E-02	1.40E-02	1.02E-01
	1435.80	66.00	9.32E-02		-3.24E-02	4.11E-02
CE-139	165.85	80.35	8.68E-02	8.68E-02	-2.99E-02	4.19E-02
BA-140	162.64	6.70	1.52E+02	5.05E+01	-8.99E+01	7.34E+01
	304.84	4.50	2.47E+02		-1.30E+01	1.17E+02
	423.70	3.20	3.53E+02		5.33E+01	1.66E+02
	437.55	2.00	6.13E+02		1.01E+02	2.89E+02
	537.32	25.00	5.05E+01		1.09E+01	2.37E+01
LA-140	328.77	20.50	6.35E+01	2.01E+01	4.36E+01	3.04E+01
	487.03	45.50	2.62E+01		6.30E+00	1.23E+01
	815.85	23.50	6.42E+01		-1.93E+01	2.97E+01
	1596.49	95.49	2.01E+01		-9.18E-01	9.04E+00
CE-141	145.44	48.40	8.22E-01	8.22E-01	-6.44E-02	3.99E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	3.75E-01	3.75E-01	-3.70E-02	1.80E-01
PM-144	476.78	42.00	1.43E-01	8.19E-02	-4.84E-02	6.71E-02
	618.01	98.60	8.19E-02		5.30E-02	3.87E-02
	696.49	99.49	8.49E-02		1.47E-02	4.00E-02
PM-145	36.85	21.70	5.17E-01	2.66E-01	-1.05E-01	2.50E-01
	37.36	39.70	2.66E-01		-2.10E-01	1.29E-01
	42.30	15.10	4.38E-01		-1.17E-01	2.11E-01
	72.40	2.31	1.90E+00		-8.47E+00	9.22E-01
PM-146	453.90	39.94	1.26E-01	1.26E-01	-1.70E-02	5.94E-02
	735.90	14.01	4.40E-01		-2.79E-01	2.05E-01
	747.13	13.10	5.20E-01		-7.86E-03	2.43E-01
ND-147	91.11	28.90	8.53E+01	8.53E+01	-9.75E+01	4.15E+01
	531.02	13.10	2.28E+02		-8.05E+00	1.07E+02
PM-149	285.90	3.10	9.38E+13	9.38E+13	1.58E+12	4.49E+13
EU-152	121.78	20.50	1.56E-01	1.56E-01	-3.59E-03	7.51E-02
	244.69	5.40	8.71E-01		-1.58E+00	4.18E-01
	344.27	19.13	2.48E-01		5.36E-02	1.18E-01
	778.89	9.20	7.15E-01		-1.44E-01	3.33E-01
	964.01	10.40	7.64E-01		-6.21E-02	3.56E-01
	1085.78	7.22	9.36E-01		-3.95E-01	4.27E-01

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-152	1112.02		9.60	8.82E-01	1.56E-01	-2.20E-01	4.10E-01
		1407.95		14.94	4.81E-01		-1.36E-02	2.16E-01
	GD-153	97.43		31.30	1.39E-01	1.39E-01	-4.71E-02	6.71E-02
		103.18		22.20	1.99E-01		5.67E-02	9.58E-02
	EU-154	123.07		40.50	8.23E-02	8.23E-02	-2.12E-02	3.96E-02
		723.30		19.70	3.78E-01		-5.84E-01	1.78E-01
		873.19		11.50	6.19E-01		2.87E-01	2.88E-01
		996.32		10.30	7.27E-01		-4.85E-01	3.36E-01
		1004.76		17.90	4.56E-01		-2.87E-02	2.13E-01
		1274.45		35.50	2.50E-01		8.72E-02	1.16E-01
+	EU-155	86.50	*	30.90	1.54E-01	1.54E-01	1.27E-01	7.52E-02
		105.30		20.70	1.73E-01		5.44E-02	8.34E-02
	EU-156	811.77		10.40	6.62E+01	6.62E+01	3.30E+00	3.09E+01
		1153.47		7.20	1.37E+02		5.70E+01	6.43E+01
		1230.71		8.90	1.26E+02		3.07E+00	5.94E+01
	HO-166M	184.41		72.60	7.90E-02	7.90E-02	1.25E-01	3.84E-02
		280.45		29.60	1.52E-01		-1.76E-02	7.25E-02
		410.94		11.10	4.72E-01		-6.93E-03	2.24E-01
		711.69		54.10	1.20E-01		-4.46E-03	5.63E-02
	TM-171	66.72		0.14	3.47E+01	3.47E+01	1.73E+01	1.68E+01
	HF-172	67.35		5.31	8.97E-01	3.47E-01	2.91E-02	4.35E-01
		125.81		11.30	3.47E-01		1.14E-01	1.67E-01
	LU-172	181.53		20.60	8.19E+03	4.40E+03	1.30E+03	3.96E+03
		900.72		29.81	7.49E+03		-4.52E+02	3.45E+03
		1093.66		62.50	4.40E+03		1.04E+03	2.03E+03
	LU-173	100.72		5.24	7.13E-01	2.81E-01	-2.28E-01	3.43E-01
		272.11		21.20	2.81E-01		3.53E-01	1.35E-01
	HF-175	343.40		84.00	1.50E-01	1.50E-01	-1.17E-01	7.13E-02
	LU-176	88.34		13.30	3.33E-01	4.78E-02	1.72E-01	1.62E-01
		201.83		86.00	5.74E-02		-5.60E-03	2.77E-02
		306.78		94.00	4.78E-02		-3.63E-02	2.28E-02
	HF-181	133.02		41.70	4.04E-01	3.10E-01	-9.51E-02	1.94E-01
		345.85		17.20	1.44E+00		1.32E+00	6.84E-01
		482.03		82.80	3.10E-01		-1.64E-02	1.46E-01
	TA-182	67.75		41.20	1.92E-01	1.92E-01	6.23E-03	9.32E-02
		1121.30		34.90	6.19E-01		6.49E-01	2.94E-01
		1189.05		16.23	1.10E+00		1.56E-01	5.12E-01
		1221.41		26.98	6.55E-01		-9.56E-02	3.06E-01
		1231.02		11.44	1.78E+00		4.33E-02	8.37E-01
	IR-192	308.46		29.68	4.13E-01	2.57E-01	6.69E-02	1.97E-01
		468.07		48.10	2.57E-01		1.30E-01	1.21E-01
	HG-203	279.19		77.30	2.84E-01	2.84E-01	6.15E-02	1.36E-01
	TL-204	374.74		94.11	4.95E-02	4.95E-02	2.56E-03	2.34E-02
		899.15		99.16	6.55E-02		-8.54E-03	3.01E-02
		911.74		91.10	1.60E-01		3.62E-01	7.70E-02
	BI-207	569.67		97.72	5.27E-02	5.27E-02	2.82E-03	2.46E-02
		1063.62		74.90	1.02E-01		-1.00E-02	4.71E-02
+	TL-208	583.14	*	30.22	3.05E-01	2.28E-01	1.25E+00	1.47E-01
		860.37	*	4.48	2.29E+00		1.52E+00	1.09E+00
		2614.66	*	35.85	2.28E-01		8.51E-01	1.00E-01
	BI-210M	262.00		45.00	9.76E-02	9.76E-02	1.67E-03	4.66E-02
		300.00		23.00	2.27E-01		2.58E-02	1.09E-01
	PB-210	46.50		4.25	1.37E+00	1.37E+00	7.73E-02	6.60E-01

Analysis Report for 1707092-08

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PB-211	404.84		2.90	1.67E+00	1.67E+00	-3.09E-01	7.91E-01
		831.96		2.90	2.29E+00		-3.61E+00	1.06E+00
+	BI-212	727.17	*	11.80	9.74E-01	9.74E-01	8.36E-01	4.69E-01
		1620.62		2.75	2.55E+00		7.96E-01	1.13E+00
+	PB-212	238.63	*	44.60	2.11E-01	2.11E-01	1.35E+00	1.04E-01
		300.09	*	3.41	1.64E+00		1.17E+00	7.88E-01
+	BI-214	609.31	*	46.30	1.67E-01	1.67E-01	9.62E-01	7.94E-02
		1120.29	*	15.10	9.70E-01		1.07E+00	4.65E-01
		1764.49	*	15.80	3.89E-01		8.85E-01	1.68E-01
		2204.22		4.98	1.60E+00		5.23E-01	7.04E-01
+	PB-214	295.21	*	19.19	3.41E-01	1.38E-01	1.01E+00	1.65E-01
		351.92	*	37.19	1.38E-01		9.02E-01	6.58E-02
	RN-219	401.80		6.50	7.25E-01	7.25E-01	7.88E-02	3.42E-01
	RA-223	323.87		3.88	1.22E+00	1.22E+00	6.02E-02	5.82E-01
+	RA-224	240.98	*	3.95	2.43E+00	2.43E+00	3.73E+00	1.19E+00
	RA-225	40.00		31.00	3.32E+01	3.32E+01	2.51E+01	1.61E+01
+	RA-226	186.21	*	3.28	1.95E+00	1.95E+00	2.35E+00	9.52E-01
	TH-227	50.10		8.40	5.68E-01	5.68E-01	3.00E-02	2.74E-01
		236.00		11.50	5.71E-01		-5.69E+00	2.78E-01
		256.20		6.30	7.43E-01		1.56E-01	3.57E-01
+	AC-228	338.32	*	11.40	7.76E-01	3.77E-01	1.23E+00	3.78E-01
		911.07	*	27.70	3.77E-01		1.32E+00	1.79E-01
		969.11	*	16.60	5.80E-01		1.45E+00	2.74E-01
	TH-230	48.44		16.90	2.91E-01	2.91E-01	-2.37E-01	1.40E-01
		62.85		4.60	1.02E+00		3.24E-01	4.95E-01
		67.67		0.37	1.16E+01		3.76E-01	5.62E+00
	PA-231	283.67		1.60	2.87E+00	2.15E+00	7.46E-01	1.37E+00
		302.67		2.30	2.15E+00		-5.71E-02	1.03E+00
	TH-231	25.64		14.70	1.20E-01	1.20E-01	0.00E+00	0.00E+00
		84.21		6.40	6.18E-01		4.42E-01	3.00E-01
	PA-233	311.98		38.60	1.71E+00	1.71E+00	6.90E-01	8.17E-01
	PA-234	131.20		20.40	1.69E-01	1.69E-01	-4.85E-03	8.15E-02
		733.99		8.80	6.81E-01		-7.40E-02	3.17E-01
		946.00		12.00	5.75E-01		-1.82E-01	2.66E-01
	PA-234M	1001.03		0.92	8.79E+00	8.79E+00	1.20E+00	4.10E+00
	TH-234	63.29		3.80	1.24E+00	1.24E+00	6.41E-01	6.00E-01
	U-235	143.76		10.50	4.45E-01	4.45E-01	3.84E-01	2.16E-01
		163.35		4.70	8.89E-01		2.86E-01	4.29E-01
		205.31		4.70	1.07E+00		5.38E-01	5.15E-01
+	NP-237	86.50	*	12.60	3.64E-01	3.64E-01	3.00E-01	1.77E-01
	NP-239	106.10		22.70	1.36E+12	1.36E+12	4.30E+11	6.59E+11
		228.18		10.70	4.06E+12		-2.70E+11	1.96E+12
		277.60		14.10	3.21E+12		1.30E+12	1.54E+12
	AM-241	59.54		35.90	1.30E-01	1.30E-01	6.96E-02	6.30E-02
	AM-243	74.67		66.00	8.66E-02	8.66E-02	-1.57E-01	4.24E-02
+	CM-243	209.75	*	3.29	1.43E+00	4.33E-01	2.07E+00	6.88E-01
		228.14		10.60	4.59E-01		-3.06E-02	2.21E-01
		277.60	*	14.00	4.33E-01		2.61E-01	2.09E-01

Analysis Report for 1707092-08

HTC-A08-S001-2430-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: HTC-A08-S001-2430-01

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	57	85	122	139
33:	158	683	120	114	98	98	104	126
41:	95	81	73	75	77	75	127	66
49:	93	67	79	84	87	83	81	87
57:	74	88	107	119	133	112	112	178
65:	118	123	135	127	110	123	120	128
73:	145	137	364	239	435	364	115	104
81:	106	95	92	126	140	103	181	212
89:	97	161	121	120	202	183	112	82
97:	78	85	83	103	67	72	91	85
105:	80	102	86	79	83	58	73	81
113:	71	71	87	71	87	77	56	61
121:	61	76	68	73	87	69	96	77
129:	127	89	59	83	54	60	76	78
137:	63	67	82	69	59	89	66	75
145:	83	82	65	70	83	62	85	80
153:	63	82	68	50	55	70	66	70
161:	64	56	45	59	51	61	39	58
169:	68	54	61	51	53	65	62	60
177:	54	45	64	72	54	63	56	62
185:	70	165	96	53	53	50	49	46
193:	44	44	54	64	50	58	62	57
201:	57	61	61	57	59	70	48	44
209:	102	83	50	50	35	51	58	51
217:	44	51	55	44	47	45	51	49
225:	49	42	55	54	45	41	48	42
233:	52	35	52	49	48	242	616	110
241:	101	121	67	39	31	24	36	37
249:	44	47	40	32	36	39	35	41
257:	29	44	34	33	26	45	20	35
265:	30	33	25	38	43	72	57	21
273:	43	19	41	44	43	42	38	27
281:	29	27	30	33	29	36	27	35
289:	33	32	31	37	34	38	168	129
297:	42	22	37	50	48	29	31	27
305:	29	24	27	28	24	40	28	30
313:	35	21	27	17	28	20	29	30
321:	26	21	31	24	35	25	23	61
329:	42	26	20	26	24	36	34	33
337:	30	108	87	28	32	26	22	14
345:	24	34	27	23	15	17	83	264
353:	103	14	19	16	16	26	34	31
361:	23	20	21	28	17	14	24	21

369:	33	23	19	16	12	24	17	23

Sample Title: HTC-A08-S001-2430-01

Channel								
377:	18	20	22	19	18	19	25	17
385:	13	18	20	19	29	30	25	20
393:	14	25	25	25	26	25	17	13
401:	22	19	24	18	19	17	23	24
409:	26	31	20	21	18	23	18	20
417:	14	17	17	23	20	21	12	16
425:	19	18	13	18	18	17	13	14
433:	19	20	16	17	16	22	26	16
441:	22	21	15	20	19	10	16	18
449:	23	16	18	16	19	22	10	18
457:	23	15	19	19	19	26	37	19
465:	11	10	14	22	19	13	12	12
473:	18	25	13	19	11	19	19	13
481:	22	9	15	19	17	11	23	13
489:	13	8	14	15	11	13	14	11
497:	11	10	19	14	11	9	20	19
505:	21	15	8	23	20	66	87	50
513:	18	18	16	14	13	13	10	10
521:	12	9	17	10	22	12	15	12
529:	13	11	15	20	10	14	15	23
537:	10	14	12	9	18	12	15	13
545:	8	12	12	9	15	11	13	15
553:	13	15	11	11	16	12	13	17
561:	15	14	20	8	13	15	15	7
569:	14	12	17	12	11	15	15	16
577:	12	15	21	16	21	62	157	94
585:	11	10	10	15	13	16	10	8
593:	16	13	12	15	14	15	11	12
601:	15	10	4	8	9	13	17	52
609:	179	98	15	16	10	8	17	17
617:	16	15	11	11	12	11	9	13
625:	12	6	16	16	12	12	9	8
633:	12	9	11	7	8	13	7	10
641:	8	7	11	14	16	13	11	7
649:	15	11	12	9	12	13	7	13
657:	9	12	6	12	18	19	12	7
665:	15	14	11	9	13	11	9	13
673:	8	15	12	16	12	9	11	13
681:	8	12	13	11	10	11	7	12
689:	13	12	11	9	16	14	17	10
697:	12	12	8	10	15	14	13	15
705:	14	5	16	13	14	7	11	8
713:	10	11	7	15	13	10	5	10
721:	17	15	7	8	11	24	45	30
729:	13	11	8	11	8	5	12	9
737:	6	9	9	13	14	12	7	9
745:	13	9	11	11	9	8	12	9
753:	13	11	13	10	16	4	9	3
761:	10	10	12	12	16	6	12	20
769:	17	20	7	14	15	8	9	7
777:	6	8	14	7	12	7	17	13
785:	21	20	12	7	7	6	8	9
793:	10	24	20	10	15	11	12	11

801:	8	4	14	6	5	14	9	10

Sample Title: HTC-A08-S001-2430-01

Channel								
809:	10	8	12	6	9	9	6	8
817:	9	6	6	11	10	8	10	7
825:	7	9	12	13	15	9	7	8
833:	2	5	20	20	8	16	8	12
841:	9	5	10	8	12	8	8	6
849:	10	6	3	8	9	10	7	11
857:	12	9	6	26	17	9	13	8
865:	7	6	9	4	8	10	5	11
873:	6	10	8	10	6	6	5	7
881:	8	9	8	6	8	1	3	9
889:	6	5	5	10	11	6	6	8
897:	6	5	6	11	5	3	9	6
905:	7	11	8	13	20	55	81	55
913:	9	4	6	14	11	9	10	6
921:	9	7	9	9	7	8	2	7
929:	4	12	7	8	9	16	11	5
937:	5	11	5	9	11	7	5	7
945:	7	9	9	7	7	9	15	12
953:	10	11	10	8	4	7	6	4
961:	9	6	12	11	15	8	16	52
969:	57	22	5	6	6	10	14	8
977:	11	4	12	5	5	11	8	10
985:	6	4	9	7	7	8	9	6
993:	8	8	9	8	6	7	7	13
1001:	14	10	8	13	4	8	6	9
1009:	9	3	7	6	13	12	4	7
1017:	7	8	7	8	9	9	9	7
1025:	6	12	7	8	4	4	6	6
1033:	11	4	12	3	3	7	12	6
1041:	9	9	7	5	9	5	10	5
1049:	6	8	7	11	9	6	9	10
1057:	6	8	6	9	4	5	6	9
1065:	7	11	10	7	7	5	7	11
1073:	4	12	8	8	10	12	9	17
1081:	5	8	6	6	5	3	6	3
1089:	4	6	3	10	6	11	9	5
1097:	6	10	4	6	6	11	7	12
1105:	10	8	12	6	9	6	13	5
1113:	8	11	11	10	12	15	21	29
1121:	23	8	10	11	7	8	14	6
1129:	9	7	11	11	8	11	6	12
1137:	9	7	10	6	14	6	7	7
1145:	6	8	11	10	8	11	9	11
1153:	12	7	13	12	7	8	9	9
1161:	13	8	15	10	13	9	7	5
1169:	11	6	5	11	5	4	9	8
1177:	7	11	11	10	10	10	14	6
1185:	9	11	7	16	8	6	13	8
1193:	9	8	9	9	8	7	10	7
1201:	8	6	12	5	8	16	10	5
1209:	8	8	6	15	21	12	11	6
1217:	8	9	6	8	16	8	6	13
1225:	17	9	7	15	15	10	19	8

1233:	14	9	16	11	17	20	13	3

Sample Title: HTC-A08-S001-2430-01

Channel								
1241:	10	8	15	13	11	8	8	12
1249:	6	10	10	11	4	10	7	6
1257:	6	7	5	4	10	7	6	5
1265:	6	7	7	12	3	11	8	9
1273:	11	6	9	5	2	5	4	8
1281:	6	10	8	5	6	7	0	6
1289:	5	9	8	8	4	3	9	10
1297:	6	3	4	4	5	6	5	5
1305:	2	5	5	6	5	3	3	7
1313:	12	5	4	4	12	8	3	5
1321:	4	6	5	4	3	4	3	5
1329:	5	4	5	8	1	2	3	5
1337:	5	1	4	10	2	1	8	8
1345:	2	2	4	3	2	0	4	7
1353:	1	2	3	6	0	2	2	2
1361:	3	2	3	4	1	2	0	2
1369:	6	9	2	5	2	4	2	8
1377:	10	6	1	3	1	4	3	2
1385:	0	2	0	4	3	3	2	4
1393:	2	2	5	4	5	1	0	7
1401:	2	8	4	1	3	2	2	7
1409:	3	4	1	2	1	3	2	3
1417:	0	3	5	3	3	3	3	3
1425:	2	3	3	3	3	3	5	4
1433:	3	2	0	2	3	0	0	4
1441:	2	2	3	2	2	0	0	2
1449:	2	5	5	3	2	5	4	8
1457:	15	56	169	355	313	91	4	1
1465:	0	0	2	2	0	0	3	2
1473:	1	2	2	1	0	3	5	1
1481:	0	4	4	1	2	1	1	2
1489:	1	0	1	4	3	2	1	1
1497:	3	3	1	3	2	2	0	3
1505:	2	4	3	5	3	3	2	1
1513:	3	2	2	1	5	0	1	3
1521:	0	2	2	2	1	2	0	1
1529:	3	2	3	1	1	3	3	3
1537:	3	2	3	1	0	0	2	1
1545:	0	1	1	0	0	2	1	4
1553:	3	1	0	4	0	2	1	3
1561:	4	0	0	1	0	2	1	2
1569:	1	0	2	2	4	2	3	1
1577:	3	1	2	2	4	1	2	3
1585:	2	1	6	6	6	6	7	7
1593:	2	3	1	2	1	3	2	4
1601:	2	1	2	1	0	3	4	1
1609:	2	0	2	0	1	2	1	2
1617:	1	2	5	3	4	1	2	1
1625:	2	1	1	2	2	2	6	1
1633:	2	1	1	2	4	2	1	0
1641:	3	2	1	0	1	1	0	1
1649:	0	0	2	1	2	1	0	2
1657:	0	1	4	3	2	0	0	2

1665:	0	2	1	0	0	2	4	1

Sample Title: HTC-A08-S001-2430-01

Channel								
1673:	1	2	0	2	1	1	0	0
1681:	0	0	0	1	0	0	1	0
1689:	0	0	2	1	1	2	1	2
1697:	1	2	0	1	0	0	2	3
1705:	0	1	1	1	0	1	1	2
1713:	2	0	2	0	3	1	0	3
1721:	1	1	3	3	1	0	3	3
1729:	8	2	2	1	1	0	2	1
1737:	1	1	1	0	0	0	3	1
1745:	0	0	0	1	0	0	0	1
1753:	1	0	0	1	1	1	0	1
1761:	2	2	13	29	9	0	3	1
1769:	0	2	0	2	3	1	0	0
1777:	0	0	3	0	0	0	2	1
1785:	2	1	1	2	2	1	1	0
1793:	0	0	0	3	1	1	0	2
1801:	1	0	1	1	4	0	0	2
1809:	1	4	1	2	1	0	0	1
1817:	1	0	0	3	1	2	1	1
1825:	1	1	2	2	3	0	0	0
1833:	1	0	2	0	0	2	3	0
1841:	0	2	1	0	1	4	1	3
1849:	2	1	1	0	0	0	0	0
1857:	0	1	2	1	0	1	1	2
1865:	0	0	0	1	0	1	4	0
1873:	0	1	0	0	1	0	1	0
1881:	0	1	3	2	2	2	2	0
1889:	0	0	2	2	2	1	2	1
1897:	3	0	1	1	0	0	2	2
1905:	2	0	0	1	0	0	0	0
1913:	0	1	0	4	2	1	0	2
1921:	1	1	0	1	0	2	3	1
1929:	1	1	1	0	2	2	2	0
1937:	0	1	0	1	0	0	2	2
1945:	1	2	0	1	1	0	2	1
1953:	1	2	0	1	0	1	0	1
1961:	0	1	5	0	0	3	0	1
1969:	3	0	0	0	1	0	0	1
1977:	0	1	1	0	0	0	1	0
1985:	1	0	1	1	0	1	3	1
1993:	0	1	1	0	0	2	1	0
2001:	3	0	1	3	1	1	1	3
2009:	1	0	2	0	0	0	1	2
2017:	2	1	0	2	1	1	1	1
2025:	2	2	2	1	0	3	1	0
2033:	0	2	0	2	0	0	2	2
2041:	1	2	0	1	0	0	1	1
2049:	1	2	2	1	0	1	1	0
2057:	1	1	1	0	0	1	0	0
2065:	0	0	0	1	2	2	0	2
2073:	2	0	1	0	0	2	0	2
2081:	1	1	2	0	0	3	2	1
2089:	1	1	1	0	0	0	0	0

2097:	1	0	1	1	6	4	5	6

Sample Title: HTC-A08-S001-2430-01

Channel								
2105:	3	1	2	0	0	0	1	2
2113:	1	2	2	0	2	1	2	2
2121:	2	0	3	0	1	2	0	2
2129:	1	0	1	1	1	2	0	0
2137:	2	0	0	2	1	2	1	3
2145:	1	1	0	2	1	2	0	1
2153:	2	1	0	0	1	2	1	0
2161:	0	2	0	1	1	1	0	3
2169:	4	1	3	1	2	1	1	0
2177:	1	0	2	1	1	2	0	0
2185:	1	4	1	0	1	1	4	2
2193:	0	1	2	2	2	2	1	1
2201:	1	5	3	4	1	2	1	0
2209:	1	1	0	0	1	3	0	0
2217:	0	1	0	3	0	0	1	0
2225:	1	1	0	0	1	3	2	3
2233:	1	0	1	0	1	3	3	1
2241:	1	1	1	0	1	1	0	1
2249:	0	0	0	2	0	0	1	1
2257:	0	3	0	0	0	1	0	0
2265:	0	1	0	1	0	0	2	0
2273:	0	1	1	0	1	0	2	0
2281:	2	1	2	1	3	1	2	0
2289:	3	1	1	2	2	1	0	3
2297:	1	0	2	1	2	1	0	1
2305:	1	1	2	0	0	0	1	1
2313:	1	1	0	1	1	1	0	1
2321:	0	1	1	0	2	3	0	2
2329:	2	0	1	2	0	1	1	4
2337:	3	0	2	2	2	1	0	1
2345:	1	0	1	0	0	0	2	1
2353:	2	2	1	0	1	0	2	1
2361:	2	1	0	2	2	2	0	1
2369:	1	1	1	4	2	1	1	0
2377:	1	2	1	1	1	0	2	1
2385:	3	0	0	2	0	1	2	1
2393:	2	0	1	0	0	0	0	0
2401:	0	0	1	1	0	1	1	1
2409:	0	0	3	0	1	0	2	0
2417:	1	0	0	0	1	0	0	0
2425:	2	2	0	1	0	0	1	0
2433:	2	2	3	2	0	1	0	1
2441:	1	0	1	0	1	2	0	0
2449:	2	1	0	1	0	0	0	1
2457:	1	1	0	1	1	0	0	0
2465:	0	0	0	0	1	0	2	0
2473:	0	0	2	0	2	1	0	0
2481:	0	1	0	3	1	0	0	0
2489:	1	0	0	0	0	0	0	1
2497:	0	0	1	0	0	1	2	0
2505:	0	0	1	1	0	1	0	1
2513:	0	0	0	0	1	0	0	0
2521:	1	0	0	0	0	1	0	1

2529:	0	0	0	0	1	0	0	0

Sample Title: HTC-A08-S001-2430-01

Channel								
2537:	1	0	0	0	0	0	0	0
2545:	0	0	0	0	0	2	1	0
2553:	0	1	0	0	0	1	2	0
2561:	1	0	0	1	0	2	0	0
2569:	1	1	1	1	1	0	0	2
2577:	1	2	0	3	1	1	1	0
2585:	1	1	0	0	0	0	2	0
2593:	0	0	0	1	1	1	0	0
2601:	0	0	0	1	1	1	1	2
2609:	4	1	10	15	21	26	12	1
2617:	1	1	0	0	0	0	0	0
2625:	1	0	0	0	0	0	0	0
2633:	0	0	0	0	0	1	2	0
2641:	1	0	0	0	1	0	1	1
2649:	0	1	0	0	0	0	0	1
2657:	0	0	0	0	0	0	1	0
2665:	0	1	0	2	1	0	0	0
2673:	0	0	0	0	0	0	0	0
2681:	0	0	0	0	1	0	0	0
2689:	1	1	0	0	1	0	1	0
2697:	0	1	0	0	1	0	0	1
2705:	1	1	0	0	1	0	0	1
2713:	0	1	1	1	0	0	0	0
2721:	0	0	0	1	0	0	1	0
2729:	0	0	0	0	0	0	0	0
2737:	0	0	0	0	0	0	0	0
2745:	0	0	0	0	0	1	0	0
2753:	0	0	0	0	0	1	0	0
2761:	0	0	0	0	0	0	1	0
2769:	0	0	0	0	0	1	0	0
2777:	1	0	0	0	0	0	1	0
2785:	0	0	1	0	0	0	0	0
2793:	1	0	0	0	0	1	0	0
2801:	0	0	0	0	0	0	0	0
2809:	2	0	0	0	0	0	2	0
2817:	0	1	0	0	0	0	0	0
2825:	0	0	0	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	2	0	0	1	1	1	0
2849:	0	1	0	0	0	0	0	0
2857:	2	1	0	1	1	0	2	0
2865:	1	0	0	0	0	0	0	0
2873:	0	1	0	1	0	0	0	0
2881:	1	0	1	0	0	0	0	0
2889:	0	0	0	0	1	0	2	0
2897:	0	1	0	1	0	2	0	1
2905:	1	0	0	0	0	0	0	0
2913:	1	0	0	0	0	1	0	0
2921:	0	1	0	0	0	1	0	2
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	1	0	0	0	0	0	1
2953:	1	1	0	0	0	0	0	0

2961:	0	1	0	0	1	0	0	2

Sample Title: HTC-A08-S001-2430-01

Channel								
2969:	0	1	0	0	0	0	0	0
2977:	0	0	0	1	0	0	0	0
2985:	1	0	1	0	1	0	2	0
2993:	1	0	0	0	0	0	0	1
3001:	1	0	0	0	0	0	0	0
3009:	0	0	0	0	1	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	1	0	0
3033:	0	0	1	0	0	1	0	0
3041:	1	0	0	0	0	0	1	0
3049:	0	0	2	0	0	1	0	0
3057:	0	1	0	0	0	0	0	0
3065:	0	1	1	0	0	1	0	0
3073:	0	0	0	0	0	0	0	0
3081:	0	0	1	0	0	0	1	0
3089:	0	0	0	0	1	0	0	0
3097:	1	0	0	0	0	1	0	0
3105:	2	0	1	0	0	0	0	0
3113:	0	0	0	0	0	1	0	0
3121:	1	0	1	0	0	0	0	0
3129:	0	0	0	0	0	1	0	0
3137:	0	0	0	0	0	0	0	0
3145:	1	1	0	0	0	0	1	1
3153:	1	0	0	0	1	0	0	0
3161:	0	1	1	0	0	0	0	0
3169:	0	0	1	1	0	0	0	0
3177:	0	1	0	0	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	0	1	0	0	0
3201:	0	0	0	0	0	0	0	1
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	0	0	0	0	1	0
3241:	1	0	0	0	0	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	1	0	0	0	0
3273:	0	0	1	0	0	0	0	0
3281:	0	0	0	0	0	0	1	0
3289:	0	1	0	1	0	0	0	0
3297:	1	0	1	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	1	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	0	1	0	0
3337:	0	0	1	0	0	0	0	0
3345:	0	1	0	2	0	0	0	0
3353:	0	0	1	0	0	1	0	0
3361:	0	1	0	0	0	0	1	0
3369:	0	0	0	0	1	0	0	0
3377:	0	1	0	1	0	0	0	0
3385:	1	0	0	0	0	0	0	0

3393:	0	0	1	0	0	0	0	0

Sample Title: HTC-A08-S001-2430-01

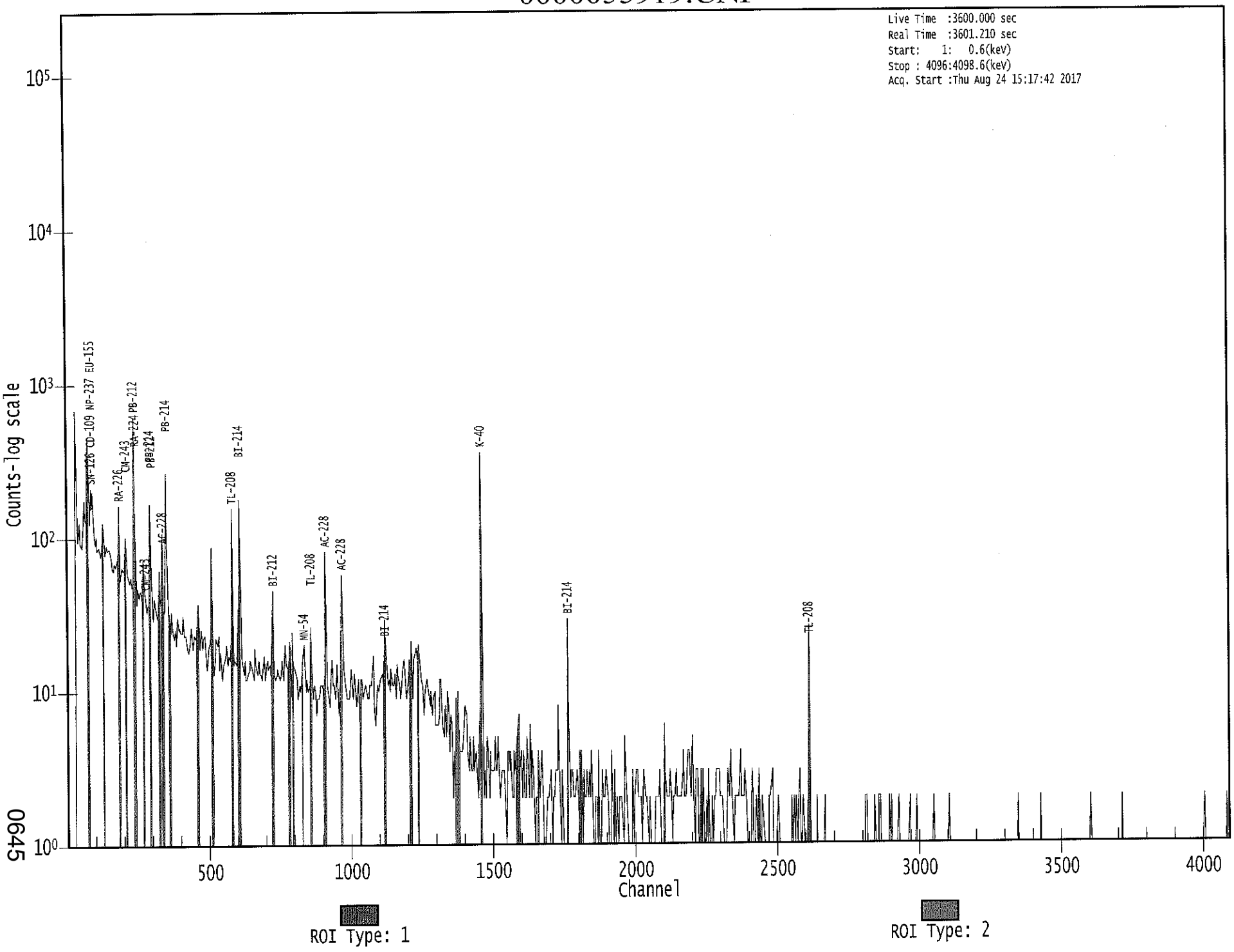
Channel								
3401:	0	1	0	0	0	1	0	0
3409:	0	0	0	0	0	0	1	1
3417:	0	0	0	0	0	0	0	0
3425:	0	0	2	0	0	1	0	0
3433:	1	0	0	0	0	0	0	0
3441:	1	0	0	0	1	1	0	0
3449:	1	0	0	0	0	0	0	1
3457:	0	1	1	0	0	0	1	0
3465:	1	0	0	0	0	0	0	0
3473:	0	0	0	1	0	0	0	0
3481:	0	0	0	0	1	0	0	0
3489:	0	0	0	0	1	0	0	0
3497:	0	0	0	0	0	0	0	1
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	1	1	1	0	0
3521:	1	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	1
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	1	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	1
3593:	0	1	1	0	0	0	0	1
3601:	0	0	2	0	0	0	0	1
3609:	0	0	0	0	0	0	0	0
3617:	0	1	0	0	0	0	0	0
3625:	0	0	0	1	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	1	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	1	0	0	0	0	0
3689:	0	0	0	1	0	1	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	2	0	0	0	0	0	0
3721:	0	0	0	0	1	0	0	0
3729:	0	0	0	0	0	0	1	0
3737:	0	0	0	0	0	1	0	1
3745:	0	1	0	0	1	1	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	1	0	1	0	0	0	0
3777:	0	0	0	0	0	0	1	0
3785:	0	0	1	0	0	0	0	0
3793:	0	0	0	0	1	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	1	1	0	0	0
3817:	0	0	0	0	1	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-S001-2430-01

Channel								
3833:	0	0	0	0	1	0	1	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	1	0
3857:	0	1	0	0	0	0	1	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	1
3881:	0	0	0	0	0	0	0	0
3889:	0	1	0	0	0	0	0	0
3897:	0	1	0	0	0	0	0	0
3905:	0	0	0	1	0	0	1	1
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	1	0
3937:	0	0	0	0	0	0	1	0
3945:	1	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	1	0	0	0
3993:	0	0	0	0	0	0	0	1
4001:	0	1	0	0	2	0	1	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	1	0	1	0	0	0
4025:	0	1	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	1
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	1	1	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	2	0	0	1	0	0
4089:	1	0	0	0	0	0	0	1

0000055919.CNF



0645

WB 8/24/17

Apex-Gamma

Analysis Report for 1707092-09
HTC-A08-S001-3036-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-09
Sample Description	: HTC-A08-S001-3036-01
Sample Type	: SOIL
Sample Size	: 6.131E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 7:40:47AM
Acquisition Started	: 8/24/2017 3:17:48PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3608.4 seconds
Dead Time	: 0.23 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 9 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55920

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 4:18:47PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	41.03	41.34	0.0000	0.00
2	64.41	64.71	0.0000	0.00
3	76.28	76.58	0.0000	0.00
4	87.16	87.46	0.0000	0.00
5	143.89	144.17	0.0000	0.00
6	186.26	186.53	0.0000	0.00
7	189.75	190.01	0.0000	0.00
8	210.38	210.64	0.0000	0.00
9	238.98	239.23	0.0000	0.00
10	241.62	241.86	0.0000	0.00
11	295.56	295.79	0.0000	0.00
12	338.92	339.13	0.0000	0.00
13	352.23	352.44	0.0000	0.00
14	511.24	511.39	0.0000	0.00
15	583.52	583.65	0.0000	0.00
16	609.66	609.78	0.0000	0.00
17	662.99	663.09	0.0000	0.00
18	727.15	727.23	0.0000	0.00
19	730.81	730.90	0.0000	0.00
20	785.98	786.04	0.0000	0.00
21	795.45	795.51	0.0000	0.00
22	840.78	840.82	0.0000	0.00
23	860.61	860.65	0.0000	0.00
24	911.48	911.50	0.0000	0.00
25	969.72	969.72	0.0000	0.00
26	1120.47	1120.42	0.0000	0.00
27	1408.74	1408.59	0.0000	0.00
28	1452.19	1452.03	0.0000	0.00
29	1461.09	1460.92	0.0000	0.00
30	1479.41	1479.24	0.0000	0.00
31	1498.11	1497.93	0.0000	0.00
32	1520.01	1519.83	0.0000	0.00
33	1631.10	1630.88	0.0000	0.00
34	1764.50	1764.23	0.0000	0.00
35	1846.59	1846.29	0.0000	0.00
36	2204.12	2203.70	0.0000	0.00
37	2272.73	2272.29	0.0000	0.00
38	2301.91	2301.46	0.0000	0.00
39	2364.29	2363.82	0.0000	0.00
40	2614.46	2613.91	0.0000	0.00

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 4:18:47PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	41.03	39 -	44	41.34	7.47E+01	73.12	1.02E+03	2.01
	2	64.41	61 -	70	64.71	1.57E+02	133.90	2.48E+03	2.98
	3	76.28	71 -	80	76.58	1.08E+03	144.84	2.38E+03	3.82
	4	87.16	83 -	91	87.46	2.58E+02	122.12	2.14E+03	2.05
	5	143.89	141 -	148	144.17	8.41E+01	81.22	1.05E+03	3.78
M	6	186.26	183 -	192	186.53	1.97E+02	62.12	6.45E+02	2.14
m	7	189.75	183 -	192	190.01	4.45E+01	59.29	5.63E+02	1.87
	8	210.38	207 -	214	210.64	8.94E+01	68.56	7.07E+02	4.67
M	9	238.98	234 -	246	239.23	7.08E+02	73.99	4.67E+02	2.06
m	10	241.62	234 -	246	241.86	1.46E+02	73.12	4.45E+02	2.06
	11	295.56	292 -	299	295.79	1.95E+02	60.73	4.87E+02	2.16
	12	338.92	335 -	343	339.13	1.55E+02	58.20	4.22E+02	1.80
	13	352.23	348 -	356	352.44	3.69E+02	61.54	3.56E+02	2.28
	14	511.24	507 -	515	511.39	1.03E+02	46.20	2.64E+02	1.71
	15	583.52	580 -	588	583.65	1.93E+02	45.11	1.96E+02	1.99
	16	609.66	606 -	614	609.78	2.31E+02	47.41	2.06E+02	2.23
	17	662.99	659 -	667	663.09	4.65E+01	30.57	1.11E+02	2.57
M	18	727.15	724 -	733	727.23	4.51E+01	25.92	1.02E+02	2.57
m	19	730.81	724 -	733	730.90	1.35E+01	19.80	6.50E+01	2.91
	20	785.98	782 -	791	786.04	2.88E+01	34.63	1.54E+02	3.41
	21	795.45	791 -	799	795.51	4.04E+01	30.31	1.15E+02	2.79
	22	840.78	838 -	844	840.82	3.11E+01	23.79	7.39E+01	2.73
	23	860.61	857 -	865	860.65	4.95E+01	28.59	9.71E+01	5.11
	24	911.48	908 -	916	911.50	1.49E+02	33.95	8.64E+01	3.09
	25	969.72	966 -	972	969.72	4.59E+01	33.47	1.62E+02	2.15
	26	1120.47	1117 -	1125	1120.42	4.93E+01	30.03	1.10E+02	3.77
	27	1408.74	1405 -	1411	1408.59	1.18E+01	11.88	1.65E+01	2.78
M	28	1452.19	1446 -	1467	1452.03	1.73E+01	12.81	3.15E+01	2.57
m	29	1461.09	1446 -	1467	1460.92	7.00E+02	54.41	1.93E+01	2.57
	30	1479.41	1475 -	1484	1479.24	1.60E+01	11.58	1.00E+01	4.35
	31	1498.11	1492 -	1507	1497.93	2.20E+01	18.00	2.20E+01	11.77
	32	1520.01	1517 -	1522	1519.83	7.67E+00	6.71	2.67E+00	2.85
	33	1631.10	1628 -	1633	1630.88	7.40E+00	10.25	1.52E+01	1.87
	34	1764.50	1760 -	1768	1764.23	3.15E+01	17.36	2.70E+01	2.09
	35	1846.59	1842 -	1850	1846.29	8.73E+00	8.02	4.55E+00	1.51
	36	2204.12	2200 -	2209	2203.70	1.09E+01	13.71	2.22E+01	3.00
	37	2272.73	2268 -	2276	2272.29	8.91E+00	8.02	4.18E+00	5.87
	38	2301.91	2298 -	2304	2301.46	6.60E+00	8.03	6.80E+00	3.55
	39	2364.29	2361 -	2366	2363.82	6.67E+00	7.35	4.67E+00	1.47
	40	2614.46	2607 -	2617	2613.91	7.40E+01	17.20	0.00E+00	3.26

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 4:18:47PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	41.03	39 -	44	7.47E+01	73.12	1.02E+03	5.84E+01
	2	64.41	61 -	70	1.57E+02	133.90	2.48E+03	1.08E+02
	3	76.28	71 -	80	1.08E+03	144.84	2.38E+03	1.06E+02
	4	87.16	83 -	91	2.58E+02	122.12	2.14E+03	9.68E+01
	5	143.89	141 -	148	8.41E+01	81.22	1.05E+03	6.50E+01
M	6	186.26	183 -	192	1.97E+02	62.12	6.45E+02	4.18E+01
m	7	189.75	183 -	192	4.45E+01	59.29	5.63E+02	3.90E+01
	8	210.38	207 -	214	8.94E+01	68.56	7.07E+02	5.42E+01
M	9	238.98	234 -	246	7.08E+02	73.99	4.67E+02	3.55E+01
m	10	241.62	234 -	246	1.46E+02	73.12	4.45E+02	3.47E+01
	11	295.56	292 -	299	1.95E+02	60.73	4.87E+02	4.43E+01
	12	338.92	335 -	343	1.55E+02	58.20	4.22E+02	4.33E+01
	13	352.23	348 -	356	3.69E+02	61.54	3.56E+02	3.95E+01
	14	511.24	507 -	515	1.03E+02	46.20	2.64E+02	3.41E+01
	15	583.52	580 -	588	1.93E+02	45.11	1.96E+02	2.92E+01
	16	609.66	606 -	614	2.31E+02	47.41	2.06E+02	2.99E+01
	17	662.99	659 -	667	4.65E+01	30.57	1.11E+02	2.25E+01
M	18	727.15	724 -	733	4.51E+01	25.92	1.02E+02	1.66E+01
m	19	730.81	724 -	733	1.35E+01	19.80	6.50E+01	1.33E+01
	20	785.98	782 -	791	2.88E+01	34.63	1.54E+02	2.71E+01
	21	795.45	791 -	799	4.04E+01	30.31	1.15E+02	2.26E+01
	22	840.78	838 -	844	3.11E+01	23.79	7.39E+01	1.73E+01
	23	860.61	857 -	865	4.95E+01	28.59	9.71E+01	2.05E+01
	24	911.48	908 -	916	1.49E+02	33.95	8.64E+01	1.94E+01
	25	969.72	966 -	972	4.59E+01	33.47	1.62E+02	2.52E+01
	26	1120.47	1117 -	1125	4.93E+01	30.03	1.10E+02	2.18E+01
	27	1408.74	1405 -	1411	1.18E+01	11.88	1.65E+01	7.98E+00
M	28	1452.19	1446 -	1467	1.73E+01	12.81	3.15E+01	9.22E+00
m	29	1461.09	1446 -	1467	7.00E+02	54.41	1.93E+01	7.22E+00
	30	1479.41	1475 -	1484	1.60E+01	11.58	1.00E+01	6.88E+00
	31	1498.11	1492 -	1507	2.20E+01	18.00	2.20E+01	1.26E+01

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	1520.01	1517 -	1522	7.67E+00	6.71	2.67E+00	3.11E+00
33	1631.10	1628 -	1633	7.40E+00	10.25	1.52E+01	7.14E+00
34	1764.50	1760 -	1768	3.15E+01	17.36	2.70E+01	1.09E+01
35	1846.59	1842 -	1850	8.73E+00	8.02	4.55E+00	4.45E+00
36	2204.12	2200 -	2209	1.09E+01	13.71	2.22E+01	9.88E+00
37	2272.73	2268 -	2276	8.91E+00	8.02	4.18E+00	4.40E+00
38	2301.91	2298 -	2304	6.60E+00	8.03	6.80E+00	5.07E+00
39	2364.29	2361 -	2366	6.67E+00	7.35	4.67E+00	4.30E+00
40	2614.46	2607 -	2617	7.40E+01	17.20	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 4:18:47PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	41.03	39 -	44	41.34	7.47E+01	73.12	1.02E+03	.....
	2	64.41	61 -	70	64.71	1.57E+02	133.90	2.48E+03	.....
	3	76.28	71 -	80	76.58	1.08E+03	144.84	2.38E+03	.....
	4	87.16	83 -	91	87.46	2.58E+02	122.12	2.14E+03	SN-126
									NP-237
									EU-155
									CD-109
	5	143.89	141 -	148	144.17	8.41E+01	81.22	1.05E+03	U-235
M	6	186.26	183 -	192	186.53	1.97E+02	62.12	6.45E+02	RA-226
m	7	189.75	183 -	192	190.01	4.45E+01	59.29	5.63E+02	.....
	8	210.38	207 -	214	210.64	8.94E+01	68.56	7.07E+02	CM-243
M	9	238.98	234 -	246	239.23	7.08E+02	73.99	4.67E+02	PB-212
m	10	241.62	234 -	246	241.86	1.46E+02	73.12	4.45E+02	RA-224
	11	295.56	292 -	299	295.79	1.95E+02	60.73	4.87E+02	PB-214
	12	338.92	335 -	343	339.13	1.55E+02	58.20	4.22E+02	AC-228
	13	352.23	348 -	356	352.44	3.69E+02	61.54	3.56E+02	PB-214
	14	511.24	507 -	515	511.39	1.03E+02	46.20	2.64E+02	.....

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	15	583.52	580 -	588	583.65	1.93E+02	45.11	1.96E+02	TL-208
	16	609.66	606 -	614	609.78	2.31E+02	47.41	2.06E+02	BI-214
	17	662.99	659 -	667	663.09	4.65E+01	30.57	1.11E+02	.....
M	18	727.15	724 -	733	727.23	4.51E+01	25.92	1.02E+02	BI-212
m	19	730.81	724 -	733	730.90	1.35E+01	19.80	6.50E+01	.....
	20	785.98	782 -	791	786.04	2.88E+01	34.63	1.54E+02	.....
	21	795.45	791 -	799	795.51	4.04E+01	30.31	1.15E+02	CS-134
	22	840.78	838 -	844	840.82	3.11E+01	23.79	7.39E+01	.....
	23	860.61	857 -	865	860.65	4.95E+01	28.59	9.71E+01	TL-208
	24	911.48	908 -	916	911.50	1.49E+02	33.95	8.64E+01	TL-204 AC-228
	25	969.72	966 -	972	969.72	4.59E+01	33.47	1.62E+02	AC-228
	26	1120.47	1117 -	1125	1120.42	4.93E+01	30.03	1.10E+02	SC-46 BI-214 TA-182
	27	1408.74	1405 -	1411	1408.59	1.18E+01	11.88	1.65E+01	EU-152
M	28	1452.19	1446 -	1467	1452.03	1.73E+01	12.81	3.15E+01	.....
m	29	1461.09	1446 -	1467	1460.92	7.00E+02	54.41	1.93E+01	K-40
	30	1479.41	1475 -	1484	1479.24	1.60E+01	11.58	1.00E+01	.....
	31	1498.11	1492 -	1507	1497.93	2.20E+01	18.00	2.20E+01	.....
	32	1520.01	1517 -	1522	1519.83	7.67E+00	6.71	2.67E+00	.....
	33	1631.10	1628 -	1633	1630.88	7.40E+00	10.25	1.52E+01	.....
	34	1764.50	1760 -	1768	1764.23	3.15E+01	17.36	2.70E+01	BI-214
	35	1846.59	1842 -	1850	1846.29	8.73E+00	8.02	4.55E+00	.....
	36	2204.12	2200 -	2209	2203.70	1.09E+01	13.71	2.22E+01	BI-214
	37	2272.73	2268 -	2276	2272.29	8.91E+00	8.02	4.18E+00	.....
	38	2301.91	2298 -	2304	2301.46	6.60E+00	8.03	6.80E+00	.....
	39	2364.29	2361 -	2366	2363.82	6.67E+00	7.35	4.67E+00	.....
	40	2614.46	2607 -	2617	2613.91	7.40E+01	17.20	0.00E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 4:18:47PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	41.03	7.47E+01	73.12	1.37E-02	1.73E-03

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	2	64.41	1.57E+02	133.90	2.47E-02	1.82E-03
	3	76.28	1.08E+03	144.84	2.66E-02	2.04E-03
	4	87.16	2.58E+02	122.12	2.71E-02	2.24E-03
	5	143.89	8.41E+01	81.22	2.32E-02	1.88E-03
M	6	186.26	1.97E+02	62.12	1.96E-02	1.55E-03
m	7	189.75	4.45E+01	59.29	1.93E-02	1.53E-03
	8	210.38	8.94E+01	68.56	1.78E-02	1.45E-03
M	9	238.98	7.08E+02	73.99	1.61E-02	1.34E-03
m	10	241.62	1.46E+02	73.12	1.60E-02	1.33E-03
	11	295.56	1.95E+02	60.73	1.35E-02	1.15E-03
	12	338.92	1.55E+02	58.20	1.19E-02	1.06E-03
	13	352.23	3.69E+02	61.54	1.15E-02	1.03E-03
	14	511.24	1.03E+02	46.20	8.25E-03	7.94E-04
	15	583.52	1.93E+02	45.11	7.32E-03	6.98E-04
	16	609.66	2.31E+02	47.41	7.04E-03	6.64E-04
	17	662.99	4.65E+01	30.57	6.53E-03	5.93E-04
M	18	727.15	4.51E+01	25.92	6.01E-03	5.37E-04
m	19	730.81	1.35E+01	19.80	5.98E-03	5.34E-04
	20	785.98	2.88E+01	34.63	5.61E-03	4.85E-04
	21	795.45	4.04E+01	30.31	5.55E-03	4.77E-04
	22	840.78	3.11E+01	23.79	5.28E-03	4.37E-04
	23	860.61	4.95E+01	28.59	5.17E-03	4.19E-04
	24	911.48	1.49E+02	33.95	4.92E-03	3.84E-04
	25	969.72	4.59E+01	33.47	4.66E-03	3.74E-04
	26	1120.47	4.93E+01	30.03	4.12E-03	3.50E-04
	27	1408.74	1.18E+01	11.88	3.41E-03	2.83E-04
M	28	1452.19	1.73E+01	12.81	3.32E-03	2.76E-04
m	29	1461.09	7.00E+02	54.41	3.31E-03	2.75E-04
	30	1479.41	1.60E+01	11.58	3.28E-03	2.72E-04
	31	1498.11	2.20E+01	18.00	3.24E-03	2.69E-04
	32	1520.01	7.67E+00	6.71	3.21E-03	2.66E-04
	33	1631.10	7.40E+00	10.25	3.04E-03	2.48E-04
	34	1764.50	3.15E+01	17.36	2.87E-03	2.26E-04
	35	1846.59	8.73E+00	8.02	2.77E-03	2.15E-04
	36	2204.12	1.09E+01	13.71	2.46E-03	2.15E-04
	37	2272.73	8.91E+00	8.02	2.42E-03	2.15E-04
	38	2301.91	6.60E+00	8.03	2.40E-03	2.15E-04
	39	2364.29	6.67E+00	7.35	2.36E-03	2.15E-04
	40	2614.46	7.40E+01	17.20	2.24E-03	2.15E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 4:18:47PM

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	41.03	7.47E+01	73.12			7.47E+01	7.31E+01
	2	64.41	1.57E+02	133.90	4.12E+01	5.67E+00	1.16E+02	1.34E+02
	3	76.28	1.08E+03	144.84			1.08E+03	1.45E+02
	4	87.16	2.58E+02	122.12			2.58E+02	1.22E+02
	5	143.89	8.41E+01	81.22			8.41E+01	8.12E+01
M	6	186.26	1.97E+02	62.12	3.06E+01	5.82E+00	1.66E+02	6.24E+01
m	7	189.75	4.45E+01	59.29			4.45E+01	5.93E+01
	8	210.38	8.94E+01	68.56			8.94E+01	6.86E+01
M	9	238.98	7.08E+02	73.99	1.40E+01	2.71E+00	6.94E+02	7.40E+01
m	10	241.62	1.46E+02	73.12			1.46E+02	7.31E+01
	11	295.56	1.95E+02	60.73			1.95E+02	6.07E+01
	12	338.92	1.55E+02	58.20			1.55E+02	5.82E+01
	13	352.23	3.69E+02	61.54	6.53E+00	4.43E+00	3.62E+02	6.17E+01
	14	511.24	1.03E+02	46.20	5.21E+01	4.74E+00	5.11E+01	4.64E+01
	15	583.52	1.93E+02	45.11			1.93E+02	4.51E+01
	16	609.66	2.31E+02	47.41	3.25E+00	2.97E+00	2.28E+02	4.75E+01
	17	662.99	4.65E+01	30.57			4.65E+01	3.06E+01
M	18	727.15	4.51E+01	25.92			4.51E+01	2.59E+01
m	19	730.81	1.35E+01	19.80			1.35E+01	1.98E+01
	20	785.98	2.88E+01	34.63			2.88E+01	3.46E+01
	21	795.45	4.04E+01	30.31	0.00E+00	0.00E+00	4.04E+01	3.03E+01
	22	840.78	3.11E+01	23.79			3.11E+01	2.38E+01
	23	860.61	4.95E+01	28.59			4.95E+01	2.86E+01
	24	911.48	1.49E+02	33.95	2.85E+00	2.76E+00	1.46E+02	3.41E+01
	25	969.72	4.59E+01	33.47			4.59E+01	3.35E+01
	26	1120.47	4.93E+01	30.03			4.93E+01	3.00E+01
	27	1408.74	1.18E+01	11.88			1.18E+01	1.19E+01
M	28	1452.19	1.73E+01	12.81			1.73E+01	1.28E+01
m	29	1461.09	7.00E+02	54.41	1.00E+00	1.77E+00	6.99E+02	5.44E+01
	30	1479.41	1.60E+01	11.58			1.60E+01	1.16E+01
	31	1498.11	2.20E+01	18.00			2.20E+01	1.80E+01
	32	1520.01	7.67E+00	6.71			7.67E+00	6.71E+00
	33	1631.10	7.40E+00	10.25			7.40E+00	1.02E+01
	34	1764.50	3.15E+01	17.36			3.15E+01	1.74E+01
	35	1846.59	8.73E+00	8.02			8.73E+00	8.02E+00
	36	2204.12	1.09E+01	13.71			1.09E+01	1.37E+01
	37	2272.73	8.91E+00	8.02			8.91E+00	8.02E+00
	38	2301.91	6.60E+00	8.03			6.60E+00	8.03E+00
	39	2364.29	6.67E+00	7.35			6.67E+00	7.35E+00
	40	2614.46	7.40E+01	17.20	1.86E+00	1.12E+00	7.21E+01	1.72E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 4:18:47PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	41.03	7.47E+01	73.12			7.47E+01	7.31E+01
	2	64.41	1.57E+02	133.90	4.12E+01	5.67E+00	1.16E+02	1.34E+02
	3	76.28	1.08E+03	144.84			1.08E+03	1.45E+02
	4	87.16	2.58E+02	122.12			2.58E+02	1.22E+02
	5	143.89	8.41E+01	81.22			8.41E+01	8.12E+01
M	6	186.26	1.97E+02	62.12	3.06E+01	5.82E+00	1.66E+02	6.24E+01
m	7	189.75	4.45E+01	59.29			4.45E+01	5.93E+01
	8	210.38	8.94E+01	68.56			8.94E+01	6.86E+01
M	9	238.98	7.08E+02	73.99	1.40E+01	2.71E+00	6.94E+02	7.40E+01
m	10	241.62	1.46E+02	73.12			1.46E+02	7.31E+01
	11	295.56	1.95E+02	60.73			1.95E+02	6.07E+01
	12	338.92	1.55E+02	58.20			1.55E+02	5.82E+01
	13	352.23	3.69E+02	61.54	6.53E+00	4.43E+00	3.62E+02	6.17E+01
	14	511.24	1.03E+02	46.20	5.21E+01	4.74E+00	5.11E+01	4.64E+01
	15	583.52	1.93E+02	45.11			1.93E+02	4.51E+01
	16	609.66	2.31E+02	47.41	3.25E+00	2.97E+00	2.28E+02	4.75E+01
	17	662.99	4.65E+01	30.57			4.65E+01	3.06E+01
M	18	727.15	4.51E+01	25.92			4.51E+01	2.59E+01
m	19	730.81	1.35E+01	19.80			1.35E+01	1.98E+01
	20	785.98	2.88E+01	34.63			2.88E+01	3.46E+01
	21	795.45	4.04E+01	30.31	0.00E+00	0.00E+00	4.04E+01	3.03E+01
	22	840.78	3.11E+01	23.79			3.11E+01	2.38E+01
	23	860.61	4.95E+01	28.59			4.95E+01	2.86E+01
	24	911.48	1.49E+02	33.95	2.85E+00	2.76E+00	1.46E+02	3.41E+01
	25	969.72	4.59E+01	33.47			4.59E+01	3.35E+01
	26	1120.47	4.93E+01	30.03			4.93E+01	3.00E+01
	27	1408.74	1.18E+01	11.88			1.18E+01	1.19E+01
M	28	1452.19	1.73E+01	12.81			1.73E+01	1.28E+01
m	29	1461.09	7.00E+02	54.41	1.00E+00	1.77E+00	6.99E+02	5.44E+01
	30	1479.41	1.60E+01	11.58			1.60E+01	1.16E+01
	31	1498.11	2.20E+01	18.00			2.20E+01	1.80E+01
	32	1520.01	7.67E+00	6.71			7.67E+00	6.71E+00
	33	1631.10	7.40E+00	10.25			7.40E+00	1.02E+01
	34	1764.50	3.15E+01	17.36			3.15E+01	1.74E+01
	35	1846.59	8.73E+00	8.02			8.73E+00	8.02E+00
	36	2204.12	1.09E+01	13.71			1.09E+01	1.37E+01
	37	2272.73	8.91E+00	8.02			8.91E+00	8.02E+00
	38	2301.91	6.60E+00	8.03			6.60E+00	8.03E+00
	39	2364.29	6.67E+00	7.35			6.67E+00	7.35E+00
	40	2614.46	7.40E+01	17.20	1.86E+00	1.12E+00	7.21E+01	1.72E+01

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.987	1460.81	*	10.67	2.42E+01	2.81E+00
CD-109	0.885	88.03	*	3.72	3.64E+00	1.76E+00
SN-126	0.974	87.57	*	37.00	3.15E-01	1.51E-01
EU-155	0.322	86.50	*	30.90	3.92E-01	1.88E-01
		105.30		20.70		
TL-208	0.986	583.14	*	30.22	1.07E+00	2.70E-01
		860.37	*	4.48	2.61E+00	1.52E+00
		2614.66	*	35.85	1.10E+00	2.84E-01
BI-212	0.772	727.17	*	11.80	7.79E-01	4.53E-01
		1620.62		2.75		
PB-212	0.878	238.63	*	44.60	1.18E+00	1.60E-01
		300.09		3.41		
BI-214	0.988	609.31	*	46.30	8.55E-01	1.96E-01
		1120.29	*	15.10	9.70E-01	5.97E-01
		1764.49	*	15.80	8.52E-01	4.75E-01
		2204.22	*	4.98	1.09E+00	1.37E+00
PB-214	0.983	295.21	*	19.19	9.23E-01	2.99E-01
		351.92	*	37.19	1.04E+00	1.99E-01
RA-224	0.938	240.98	*	3.95	2.83E+00	1.44E+00
RA-226	1.000	186.21	*	3.28	3.17E+00	5.93E+00
AC-228	0.958	338.32	*	11.40	1.39E+00	5.38E-01
		911.07	*	27.70	1.31E+00	3.23E-01
		969.11	*	16.60	7.26E-01	5.33E-01
NP-237	0.933	86.50	*	12.60	9.25E-01	4.44E-01

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 4:18:47PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	41.03	2.07411E-02	48.97		
	2	64.41	3.21826E-02	57.84		
	3	76.28	3.00230E-01	6.70		
	5	143.89	2.33675E-02	48.27	Tol.	U-235
m	7	189.75	1.23716E-02	66.56		
	8	210.38	2.48225E-02	38.36	Tol.	CM-243
	14	511.24	1.41811E-02	45.49		
	17	662.99	1.29112E-02	32.88		
m	19	730.81	3.74820E-03	73.36		
	20	785.98	8.00970E-03	60.04		
	21	795.45	1.12103E-02	37.55	Sum	
	22	840.78	8.63154E-03	38.28		
	27	1408.74	3.27083E-03	50.47	Tol.	EU-152
M	28	1452.19	4.79604E-03	37.09		
	30	1479.41	4.44444E-03	36.17		
	31	1498.11	6.11111E-03	40.91		
	32	1520.01	2.12963E-03	43.75		
	33	1631.10	2.05556E-03	69.24		
	35	1846.59	2.42424E-03	45.92		
	37	2272.73	2.47475E-03	44.99		
	38	2301.91	1.83333E-03	60.84		
	39	2364.29	1.85185E-03	55.11		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.98	1460.81	*	10.67	2.42E+01	2.81E+00
CD-109	0.88	88.03	*	3.72	3.64E+00	1.76E+00
SN-126	0.97	87.57	*	37.00	3.15E-01	1.51E-01
EU-155	0.32	86.50	*	30.90	3.92E-01	1.88E-01
		105.30		20.70		
TL-208	0.98	583.14	*	30.22	1.07E+00	2.70E-01
		860.37	*	4.48	2.61E+00	1.52E+00
		2614.66	*	35.85	1.10E+00	2.84E-01
BI-212	0.77	727.17	*	11.80	7.79E-01	4.53E-01
		1620.62		2.75		
PB-212	0.87	238.63	*	44.60	1.18E+00	1.60E-01
		300.09		3.41		
BI-214	0.98	609.31	*	46.30	8.55E-01	1.96E-01
		1120.29	*	15.10	9.70E-01	5.97E-01
		1764.49	*	15.80	8.52E-01	4.75E-01
		2204.22	*	4.98	1.09E+00	1.37E+00
PB-214	0.98	295.21	*	19.19	9.23E-01	2.99E-01
		351.92	*	37.19	1.04E+00	1.99E-01
RA-224	0.93	240.98	*	3.95	2.83E+00	1.44E+00
RA-226	1.00	186.21	*	3.28	3.17E+00	5.93E+00
AC-228	0.95	338.32	*	11.40	1.39E+00	5.38E-01
		911.07	*	27.70	1.31E+00	3.23E-01
		969.11	*	16.60	7.26E-01	5.33E-01
NP-237	0.93	86.50	*	12.60	9.25E-01	4.44E-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.987	2.42E+01	2.81E+00	

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
?	CD-109	0.885	3.64E+00	1.76E+00	
?	SN-126	0.974	3.15E-01	1.51E-01	
?	EU-155	0.322	3.92E-01	1.88E-01	
	TL-208	0.986	1.11E+00	1.94E-01	
	BI-212	0.772	7.79E-01	4.53E-01	
	PB-212	0.878	1.18E+00	1.60E-01	
	BI-214	0.988	8.68E-01	1.72E-01	
	PB-214	0.983	1.00E+00	1.66E-01	
	RA-224	0.938	2.83E+00	1.44E+00	
	RA-226	1.000	3.17E+00	5.93E+00	
	AC-228	0.958	1.20E+00	2.46E-01	
?	NP-237	0.933	9.25E-01	4.44E-01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 4:18:47PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	41.03	2.07411E-02	48.97		
	2	64.41	3.21826E-02	57.84		
	3	76.28	3.00230E-01	6.70		
	5	143.89	2.33675E-02	48.27	Tol.	U-235
m	7	189.75	1.23716E-02	66.56		
	8	210.38	2.48225E-02	38.36	Tol.	CM-243
	14	511.24	1.41811E-02	45.49		
	17	662.99	1.29112E-02	32.88		
m	19	730.81	3.74820E-03	73.36		
	20	785.98	8.00970E-03	60.04		
	21	795.45	1.12103E-02	37.55	Sum	
	22	840.78	8.63154E-03	38.28		
	27	1408.74	3.27083E-03	50.47	Tol.	EU-152
M	28	1452.19	4.79604E-03	37.09		
	30	1479.41	4.44444E-03	36.17		
	31	1498.11	6.11111E-03	40.91		
	32	1520.01	2.12963E-03	43.75		
	33	1631.10	2.05556E-03	69.24		
	35	1846.59	2.42424E-03	45.92		
	37	2272.73	2.47475E-03	44.99		
	38	2301.91	1.83333E-03	60.84		
	39	2364.29	1.85185E-03	55.11		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	1.87E+00	2.71E+00	2.71E+00
+	NA-22	1274.54		99.94	-6.81E-03	1.20E-01	1.20E-01
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	1.09E-02	6.55E-02	6.55E-02
+	K-40	1460.81	*	10.67	2.42E+01	1.55E+00	1.55E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-3.93E-02	6.24E-02	6.24E-02
		78.34		96.00	1.83E-01		7.78E-02
+	SC-46	889.25		99.98	2.85E-02	1.95E-01	1.95E-01
		1120.51		99.99	2.16E-01		3.22E-01
+	V-48	983.52		99.98	-9.00E-01	7.18E+00	7.18E+00
		1312.10		97.50	5.01E+00		8.78E+00
+	CR-51	320.08		9.83	-3.57E+00	7.69E+00	7.69E+00
+	MN-54	834.83		99.97	-1.24E-02	1.16E-01	1.16E-01
+	CO-56	846.75		99.96	5.85E-02	1.97E-01	1.97E-01
		1037.75		14.03	-4.64E-01		1.64E+00
		1238.25		67.00	5.20E-02		4.94E-01
		1771.40		15.51	1.65E-01		1.36E+00
		2598.48		16.90	1.57E-01		1.03E+00
+	CO-57	122.06		85.51	1.18E-02	7.04E-02	7.04E-02
		136.48		10.60	1.89E-01		5.64E-01
+	CO-58	810.76		99.40	2.86E-02	2.45E-01	2.45E-01
+	FE-59	1099.22		56.50	-1.18E-01	9.46E-01	9.46E-01
		1291.56		43.20	9.35E-02		1.22E+00
+	CO-60	1173.22		100.00	-1.84E-02	1.16E-01	1.23E-01
		1332.49		100.00	6.35E-02		1.16E-01
+	ZN-65	1115.52		50.75	-3.31E-02	3.13E-01	3.13E-01
+	GA-67	93.31		35.70	4.36E+08	3.61E+08	3.61E+08
		208.95		2.24	3.13E+09		6.66E+09
		300.22		16.00	4.72E+08		1.03E+09
+	SE-75	121.11		16.70	7.61E-02	1.39E-01	4.96E-01
		136.00		59.20	1.68E-02		1.39E-01
		264.65		59.80	-2.08E-01		1.71E-01
		279.53		25.20	1.94E-01		4.59E-01
		400.65		11.40	-4.63E-01		1.04E+00
+	RB-82	776.52		13.00	-1.14E+00	9.16E+00	9.16E+00
+	RB-83	520.41		46.00	1.26E-01	3.65E-01	3.65E-01
		529.64		30.30	-3.20E-02		5.12E-01
		552.65		16.40	-5.65E-01		1.03E+00
+	KR-85	513.99		0.43	5.83E-02	2.30E+01	2.30E+01
+	SR-85	513.99		99.27	7.40E-04	2.91E-01	2.91E-01
+	Y-88	898.02		93.40	4.22E-02	1.28E-01	1.72E-01
		1836.01		99.38	3.67E-02		1.28E-01
+	MO-93	263.06		56.72	-3.11E-02	9.21E-02	1.03E-01
		684.67		99.68	3.03E-02		9.33E-02
		1477.11		99.08	0.00E+00		9.21E-02

Analysis Report for 1707092-09

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-93M	16.57		9.43	3.03E+01	7.08E+01	7.08E+01
+	NB-94	702.63		100.00	-8.50E-03	8.76E-02	8.76E-02
		871.10		100.00	3.11E-02		9.69E-02
+	NB-95	765.79		99.81	2.26E-04	6.60E-01	6.60E-01
+	NB-95M	235.69		25.00	6.88E+07	1.11E+08	1.11E+08
+	ZR-95	724.18		43.70	1.00E-01	4.76E-01	6.72E-01
		756.72		55.30	2.00E-01		4.76E-01
+	MO-99	181.06		6.20	1.88E+10	8.27E+10	1.01E+11
		739.58		12.80	-2.68E+10		8.27E+10
		778.00		4.50	-4.35E+10		2.11E+11
+	RU-103	497.08		89.00	-1.50E-01	4.61E-01	4.61E-01
+	RU-106	621.84		9.80	4.61E-01	1.03E+00	1.03E+00
+	AG-108M	433.93		89.90	-2.01E-02	7.22E-02	7.22E-02
		614.37		90.40	-1.11E-02		1.11E-01
		722.95		90.50	3.27E-03		9.59E-02
+	CD-109	88.03	*	3.72	3.64E+00	2.77E+00	2.77E+00
+	AG-110M	657.75		93.14	2.57E-02	1.15E-01	1.15E-01
		677.61		10.53	-2.53E-01		1.06E+00
		706.67		16.46	1.30E-02		6.92E-01
		763.93		21.98	-1.02E-01		5.01E-01
		884.67		71.63	4.79E-02		1.63E-01
		1384.27		23.94	-2.94E-02		5.53E-01
+	CD-113M	263.70		0.02	-2.26E+02	2.48E+02	2.48E+02
+	SN-113	255.12		1.93	-5.94E-01	2.03E-01	5.92E+00
		391.69		64.90	5.96E-02		2.03E-01
+	TE123M	159.00		84.10	4.95E-03	1.10E-01	1.10E-01
+	SB-124	602.71		97.87	-5.52E-02	2.56E-01	2.56E-01
		645.85		7.26	-1.62E-01		3.63E+00
		722.78		11.10	8.56E-02		2.51E+00
		1691.02		49.00	-1.59E-01		4.31E-01
+	I-125	35.49		6.49	-1.01E+00	6.16E+00	6.16E+00
+	SB-125	176.33		6.89	-1.98E-01	2.45E-01	7.49E-01
		427.89		29.33	2.51E-02		2.45E-01
		463.38		10.35	2.14E-01		8.18E-01
		600.56		17.80	2.27E-01		5.11E-01
		635.90		11.32	-1.50E-01		7.72E-01
+	SB-126	414.70		83.30	-1.62E+01	2.21E+01	2.23E+01
		666.33		99.60	-3.59E+00		2.21E+01
		695.00		99.60	-3.59E+00		2.44E+01
		720.50		53.80	-1.02E+01		4.17E+01
+	SN-126	87.57	*	37.00	3.15E-01	2.40E-01	2.40E-01
+	SB-127	473.00		25.00	-2.69E+06	2.15E+07	2.45E+07
		685.20		35.70	6.99E+06		2.15E+07
		783.80		14.70	2.89E+07		5.54E+07
+	I-129	29.78		57.00	-1.44E-01	3.82E-01	3.82E-01
		33.60		13.20	9.31E-04		1.13E+00
		39.58		7.52	5.13E-01		1.34E+00
+	I-131	284.30		6.05	-2.27E+03	5.11E+02	6.26E+03

Analysis Report for 1707092-09

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-131	364.48	81.20	1.69E+02	5.11E+02	5.11E+02
		636.97	7.26	-1.17E+03		6.92E+03
		722.89	1.80	1.02E+03		3.00E+04
+	TE-132	49.72	13.10	-9.59E+08	1.70E+08	1.20E+09
		228.16	88.00	2.80E+07		1.70E+08
+	BA-133	81.00	33.00	-2.99E-02	1.56E-01	1.72E-01
		302.84	17.80	7.08E-02		3.77E-01
		356.01	60.00	-9.79E-03		1.56E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-1.68E+04	9.67E+04	9.67E+04
+	CS-134	563.23	8.38	3.10E-01	9.43E-02	1.08E+00
		569.32	15.43	-8.31E-02		5.28E-01
		604.70	97.60	5.01E-03		9.43E-02
		795.84	85.40	8.05E-02		1.28E-01
		801.93	8.73	-2.28E-01		1.06E+00
+	CS-135	268.24	16.00	4.80E-01	4.13E-01	4.13E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	4.22E+01	1.79E+01	1.42E+02
		163.89	4.61	8.95E+00		2.25E+02
		176.55	13.56	-1.96E+01		7.39E+01
		273.65	12.66	-3.35E+01		1.07E+02
		340.57	48.50	6.05E+01		3.76E+01
		818.50	99.70	2.36E+00		1.79E+01
		1048.07	79.60	-8.08E-01		2.49E+01
		1235.34	19.70	1.91E+01		1.50E+02
+	CS-137	661.65	85.12	4.51E-02	1.02E-01	1.02E-01
+	LA-138	788.74	34.00	-3.97E-03	1.30E-01	2.74E-01
		1435.80	66.00	-4.42E-02		1.30E-01
+	CE-139	165.85	80.35	2.53E-02	1.02E-01	1.02E-01
+	BA-140	162.64	6.70	-4.55E+01	6.24E+01	1.80E+02
		304.84	4.50	3.56E+01		3.46E+02
		423.70	3.20	-6.99E+00		5.34E+02
		437.55	2.00	1.88E+02		8.30E+02
		537.32	25.00	-3.39E+01		6.24E+01
+	LA-140	328.77	20.50	1.64E+01	2.57E+01	8.03E+01
		487.03	45.50	1.22E+01		3.66E+01
		815.85	23.50	2.68E+01		8.89E+01
		1596.49	95.49	8.34E+00		2.57E+01
+	CE-141	145.44	48.40	2.91E-01	9.07E-01	9.07E-01
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	-3.51E-01	5.33E-01	5.33E-01
+	PM-144	476.78	42.00	2.13E-01	1.03E-01	2.28E-01
		618.01	98.60	4.53E-02		1.05E-01
		696.49	99.49	-1.18E-02		1.03E-01
+	PM-145	36.85	21.70	2.94E-02	2.83E-01	5.29E-01

Analysis Report for 1707092-09

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-145	37.36		39.70	1.50E-02	2.83E-01	2.83E-01
		42.30		15.10	8.52E-02		5.95E-01
		72.40		2.31	-4.91E+00		2.91E+00
+	PM-146	453.90		39.94	-1.10E-02	1.62E-01	1.62E-01
		735.90		14.01	2.69E-01		6.34E-01
		747.13		13.10	3.08E-02		6.68E-01
+	ND-147	91.11		28.90	-8.42E+00	1.21E+02	1.21E+02
		531.02		13.10	2.73E+01		3.21E+02
+	PM-149	285.90		3.10	4.03E+13	1.26E+14	1.26E+14
+	EU-152	121.78		20.50	3.84E-02	2.29E-01	2.29E-01
		244.69		5.40	-2.54E-02		1.38E+00
		344.27		19.13	1.07E-01		3.45E-01
		778.89		9.20	-4.47E-01		8.10E-01
		964.01		10.40	1.76E-01		1.15E+00
		1085.78		7.22	1.08E-02		1.41E+00
		1112.02		9.60	8.80E-01		1.30E+00
		1407.95		14.94	3.64E-01		5.74E-01
+	GD-153	97.43		31.30	-2.00E-01	1.97E-01	1.97E-01
		103.18		22.20	-2.20E-01		2.60E-01
+	EU-154	123.07		40.50	1.56E-02	1.18E-01	1.18E-01
		723.30		19.70	1.54E-02		4.50E-01
		873.19		11.50	-3.09E-01		7.86E-01
		996.32		10.30	-2.93E-01		9.85E-01
		1004.76		17.90	4.51E-02		6.18E-01
		1274.45		35.50	-1.82E-02		3.20E-01
+	EU-155	86.50	*	30.90	3.92E-01	2.28E-01	2.98E-01
		105.30		20.70	-2.45E-02		2.28E-01
+	EU-156	811.77		10.40	-1.51E+01	8.40E+01	8.40E+01
		1153.47		7.20	2.05E+01		1.62E+02
		1230.71		8.90	4.78E+01		1.59E+02
+	HO-166M	184.41		72.60	1.35E-01	8.58E-02	8.58E-02
		280.45		29.60	-1.09E-01		2.08E-01
		410.94		11.10	-1.03E-01		5.85E-01
		711.69		54.10	-6.11E-02		1.46E-01
+	TM-171	66.72		0.14	1.33E+01	4.84E+01	4.84E+01
+	HF-172	67.35		5.31	-7.74E-01	4.60E-01	1.23E+00
		125.81		11.30	-2.20E-01		4.60E-01
+	LU-172	181.53		20.60	1.89E+03	6.65E+03	8.94E+03
		900.72		29.81	-1.45E+03		1.10E+04
		1093.66		62.50	7.95E+02		6.65E+03
+	LU-173	100.72		5.24	6.72E-02	3.62E-01	9.80E-01
		272.11		21.20	7.10E-02		3.62E-01
+	HF-175	343.40		84.00	6.51E-02	2.11E-01	2.11E-01
+	LU-176	88.34		13.30	3.00E-01	6.34E-02	4.59E-01
		201.83		86.00	2.49E-03		6.34E-02
		306.78		94.00	-2.65E-02		6.43E-02
+	HF-181	133.02		41.70	-2.85E-01	4.24E-01	5.75E-01
		345.85		17.20	6.15E-01		1.90E+00
		482.03		82.80	-1.29E-01		4.24E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TA-182	67.75		41.20	-1.66E-01	2.63E-01	2.63E-01
		1121.30		34.90	8.07E-01		7.53E-01
		1189.05		16.23	-2.16E-01		1.27E+00
		1221.41		26.98	9.10E-03		9.18E-01
		1231.02		11.44	6.75E-01		2.24E+00
+	IR-192	308.46		29.68	1.67E-01	4.13E-01	5.28E-01
		468.07		48.10	1.46E-01		4.13E-01
+	HG-203	279.19		77.30	1.37E-01	3.78E-01	3.78E-01
+	TL-204	374.74		94.11	-5.98E-03	7.20E-02	7.20E-02
		899.15		99.16	-8.10E-02		8.29E-02
		911.74		91.10	4.44E-01		1.91E-01
+	BI-207	569.67		97.72	-3.26E-02	7.55E-02	7.55E-02
		1063.62		74.90	2.30E-02		1.41E-01
+	TL-208	583.14	*	30.22	1.07E+00	1.15E-01	3.38E-01
		860.37	*	4.48	2.61E+00		2.31E+00
		2614.66	*	35.85	1.10E+00		1.15E-01
+	BI-210M	262.00		45.00	1.16E-02	1.31E-01	1.31E-01
		300.00		23.00	1.45E-01		3.16E-01
+	PB-210	46.50		4.25	1.12E+00	1.86E+00	1.86E+00
+	PB-211	404.84		2.90	-2.17E+00	2.23E+00	2.23E+00
		831.96		2.90	2.00E+00		3.32E+00
+	BI-212	727.17	*	11.80	7.79E-01	9.46E-01	9.46E-01
		1620.62		2.75	9.70E-01		3.43E+00
+	PB-212	238.63	*	44.60	1.18E+00	2.47E-01	2.47E-01
		300.09		3.41	9.78E-01		2.13E+00
+	BI-214	609.31	*	46.30	8.55E-01	2.37E-01	2.37E-01
		1120.29	*	15.10	9.70E-01		9.14E-01
		1764.49	*	15.80	8.52E-01		6.63E-01
		2204.22	*	4.98	1.09E+00		2.24E+00
+	PB-214	295.21	*	19.19	9.23E-01	2.36E-01	4.34E-01
		351.92	*	37.19	1.04E+00		2.36E-01
+	RN-219	401.80		6.50	-4.92E-02	1.05E+00	1.05E+00
+	RA-223	323.87		3.88	-6.35E-01	1.60E+00	1.60E+00
+	RA-224	240.98	*	3.95	2.83E+00	2.80E+00	2.80E+00
+	RA-225	40.00		31.00	1.40E+01	3.65E+01	3.65E+01
+	RA-226	186.21	*	3.28	3.17E+00	2.60E+00	2.60E+00
+	TH-227	50.10		8.40	-6.43E-01	8.07E-01	8.07E-01
		236.00		11.50	5.31E-01		8.57E-01
		256.20		6.30	5.69E-01		1.01E+00
+	AC-228	338.32	*	11.40	1.39E+00	3.79E-01	8.03E-01
		911.07	*	27.70	1.31E+00		3.79E-01
		969.11	*	16.60	7.26E-01		8.40E-01
+	TH-230	48.44		16.90	2.16E-01	4.38E-01	4.38E-01
		62.85		4.60	1.03E+00		1.41E+00
		67.67		0.37	-1.00E+01		1.59E+01
+	PA-231	283.67		1.60	-1.01E+00	2.87E+00	3.87E+00
		302.67		2.30	5.38E-01		2.87E+00
+	TH-231	25.64		14.70	1.68E-01	8.81E-01	2.87E+00

Analysis Report for 1707092-09

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-231	84.21		6.40	-5.29E-01	8.81E-01	8.81E-01
+	PA-233	311.98		38.60	-1.49E+00	2.06E+00	2.06E+00
+	PA-234	131.20		20.40	1.27E-01	2.39E-01	2.39E-01
		733.99		8.80	7.17E-02		9.46E-01
		946.00		12.00	-6.61E-01		7.77E-01
+	PA-234M	1001.03		0.92	2.92E+00	1.13E+01	1.13E+01
+	TH-234	63.29		3.80	1.06E+00	1.72E+00	1.72E+00
+	U-235	143.76		10.50	3.55E-01	4.85E-01	4.85E-01
		163.35		4.70	4.21E-02		1.06E+00
		205.31		4.70	2.79E-01		1.37E+00
+	NP-237	86.50	*	12.60	9.25E-01	7.03E-01	7.03E-01
+	NP-239	106.10		22.70	-1.94E+11	1.80E+12	1.80E+12
		228.18		10.70	9.00E+11		5.45E+12
		277.60		14.10	1.82E+12		4.18E+12
+	AM-241	59.54		35.90	4.00E-02	1.72E-01	1.72E-01
+	AM-243	74.67		66.00	7.34E-02	1.18E-01	1.18E-01
+	CM-243	209.75		3.29	2.08E+00	4.71E-01	2.02E+00
		228.14		10.60	1.02E-01		6.16E-01
		277.60		14.00	2.05E-01		4.71E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59	10.42	2.71E+00	2.71E+00	1.87E+00	1.29E+00
	NA-22	1274.54	99.94	1.20E-01	1.20E-01	-6.81E-03	5.51E-02
@	NA-24	1368.53	99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20

Analysis Report for 1707092-09

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@	NA-24	2754.09		99.86	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	AL-26	1808.65		99.76	6.55E-02	6.55E-02	1.09E-02	2.68E-02
+	K-40	1460.81	*	10.67	1.55E+00	1.55E+00	2.42E+01	7.28E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	6.24E-02	6.24E-02	-3.93E-02	3.05E-02
		78.34		96.00	7.78E-02		1.83E-01	3.83E-02
	SC-46	889.25		99.98	1.95E-01	1.95E-01	2.85E-02	8.98E-02
		1120.51		99.99	3.22E-01		2.16E-01	1.52E-01
	V-48	983.52		99.98	7.18E+00	7.18E+00	-9.00E-01	3.30E+00
		1312.10		97.50	8.78E+00		5.01E+00	4.01E+00
	CR-51	320.08		9.83	7.69E+00	7.69E+00	-3.57E+00	3.68E+00
	MN-54	834.83		99.97	1.16E-01	1.16E-01	-1.24E-02	5.41E-02
	CO-56	846.75		99.96	1.97E-01	1.97E-01	5.85E-02	9.08E-02
		1037.75		14.03	1.64E+00		-4.64E-01	7.56E-01
		1238.25		67.00	4.94E-01		5.20E-02	2.31E-01
		1771.40		15.51	1.36E+00		1.65E-01	5.87E-01
		2598.48		16.90	1.03E+00		1.57E-01	4.10E-01
	CO-57	122.06		85.51	7.04E-02	7.04E-02	1.18E-02	3.42E-02
		136.48		10.60	5.64E-01		1.89E-01	2.74E-01
	CO-58	810.76		99.40	2.45E-01	2.45E-01	2.86E-02	1.14E-01
	FE-59	1099.22		56.50	9.46E-01	9.46E-01	-1.18E-01	4.39E-01
		1291.56		43.20	1.22E+00		9.35E-02	5.57E-01
	CO-60	1173.22		100.00	1.23E-01	1.16E-01	-1.84E-02	5.73E-02
		1332.49		100.00	1.16E-01		6.35E-02	5.31E-02
	ZN-65	1115.52		50.75	3.13E-01	3.13E-01	-3.31E-02	1.46E-01
	GA-67	93.31		35.70	3.61E+08	3.61E+08	4.36E+08	1.77E+08
		208.95		2.24	6.66E+09		3.13E+09	3.24E+09
		300.22		16.00	1.03E+09		4.72E+08	4.96E+08
	SE-75	121.11		16.70	4.96E-01	1.39E-01	7.61E-02	2.41E-01
		136.00		59.20	1.39E-01		1.68E-02	6.75E-02
		264.65		59.80	1.71E-01		-2.08E-01	8.21E-02
		279.53		25.20	4.59E-01		1.94E-01	2.21E-01
		400.65		11.40	1.04E+00		-4.63E-01	4.94E-01
	RB-82	776.52		13.00	9.16E+00	9.16E+00	-1.14E+00	4.23E+00
	RB-83	520.41		46.00	3.65E-01	3.65E-01	1.26E-01	1.72E-01
		529.64		30.30	5.12E-01		-3.20E-02	2.41E-01
		552.65		16.40	1.03E+00		-5.65E-01	4.84E-01
	KR-85	513.99		0.43	2.30E+01	2.30E+01	5.83E-02	1.10E+01
	SR-85	513.99		99.27	2.91E-01	2.91E-01	7.40E-04	1.40E-01
	Y-88	898.02		93.40	1.72E-01	1.28E-01	4.22E-02	7.93E-02
		1836.01		99.38	1.28E-01		3.67E-02	5.26E-02
	MO-93	263.06		56.72	1.03E-01	9.21E-02	-3.11E-02	4.96E-02
		684.67		99.68	9.33E-02		3.03E-02	4.40E-02
		1477.11		99.08	9.21E-02		0.00E+00	4.09E-02
	NB-93M	16.57		9.43	7.08E+01	7.08E+01	3.03E+01	3.45E+01
	NB-94	702.63		100.00	8.76E-02	8.76E-02	-8.50E-03	4.11E-02
		871.10		100.00	9.69E-02		3.11E-02	4.52E-02
	NB-95	765.79		99.81	6.60E-01	6.60E-01	2.26E-04	3.09E-01
	NB-95M	235.69		25.00	1.11E+08	1.11E+08	6.88E+07	5.44E+07
	ZR-95	724.18		43.70	6.72E-01	4.76E-01	1.00E-01	3.17E-01
		756.72		55.30	4.76E-01		2.00E-01	2.23E-01
	MO-99	181.06		6.20	1.01E+11	8.27E+10	1.88E+10	4.89E+10
		739.58		12.80	8.27E+10		-2.68E+10	3.87E+10

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	MO-99	778.00		4.50	2.11E+11	8.27E+10	-4.35E+10	9.73E+10
	RU-103	497.08		89.00	4.61E-01	4.61E-01	-1.50E-01	2.17E-01
	RU-106	621.84		9.80	1.03E+00	1.03E+00	4.61E-01	4.85E-01
	AG-108M	433.93		89.90	7.22E-02	7.22E-02	-2.01E-02	3.42E-02
		614.37		90.40	1.11E-01		-1.11E-02	5.29E-02
		722.95		90.50	9.59E-02		3.27E-03	4.49E-02
+	CD-109	88.03	*	3.72	2.77E+00	2.77E+00	3.64E+00	1.37E+00
	AG-110M	657.75		93.14	1.15E-01	1.15E-01	2.57E-02	5.41E-02
		677.61		10.53	1.06E+00		-2.53E-01	4.98E-01
		706.67		16.46	6.92E-01		1.30E-02	3.24E-01
		763.93		21.98	5.01E-01		-1.02E-01	2.33E-01
		884.67		71.63	1.63E-01		4.79E-02	7.52E-02
		1384.27		23.94	5.53E-01		-2.94E-02	2.50E-01
	CD-113M	263.70		0.02	2.48E+02	2.48E+02	-2.26E+02	1.19E+02
	SN-113	255.12		1.93	5.92E+00	2.03E-01	-5.94E-01	2.85E+00
		391.69		64.90	2.03E-01		5.96E-02	9.68E-02
	TE123M	159.00		84.10	1.10E-01	1.10E-01	4.95E-03	5.32E-02
	SB-124	602.71		97.87	2.56E-01	2.56E-01	-5.52E-02	1.20E-01
		645.85		7.26	3.63E+00		-1.62E-01	1.71E+00
		722.78		11.10	2.51E+00		8.56E-02	1.17E+00
		1691.02		49.00	4.31E-01		-1.59E-01	1.79E-01
	I-125	35.49		6.49	6.16E+00	6.16E+00	-1.01E+00	2.99E+00
	SB-125	176.33		6.89	7.49E-01	2.45E-01	-1.98E-01	3.62E-01
		427.89		29.33	2.45E-01		2.51E-02	1.16E-01
		463.38		10.35	8.18E-01		2.14E-01	3.90E-01
		600.56		17.80	5.11E-01		2.27E-01	2.42E-01
		635.90		11.32	7.72E-01		-1.50E-01	3.63E-01
	SB-126	414.70		83.30	2.23E+01	2.21E+01	-1.62E+01	1.06E+01
		666.33		99.60	2.21E+01		-3.59E+00	1.03E+01
		695.00		99.60	2.44E+01		-3.59E+00	1.14E+01
		720.50		53.80	4.17E+01		-1.02E+01	1.94E+01
+	SN-126	87.57	*	37.00	2.40E-01	2.40E-01	3.15E-01	1.18E-01
	SB-127	473.00		25.00	2.45E+07	2.15E+07	-2.69E+06	1.16E+07
		685.20		35.70	2.15E+07		6.99E+06	1.01E+07
		783.80		14.70	5.54E+07		2.89E+07	2.60E+07
	I-129	29.78		57.00	3.82E-01	3.82E-01	-1.44E-01	1.86E-01
		33.60		13.20	1.13E+00		9.31E-04	5.50E-01
		39.58		7.52	1.34E+00		5.13E-01	6.51E-01
	I-131	284.30		6.05	6.26E+03	5.11E+02	-2.27E+03	3.01E+03
		364.48		81.20	5.11E+02		1.69E+02	2.44E+02
		636.97		7.26	6.92E+03		-1.17E+03	3.25E+03
		722.89		1.80	3.00E+04		1.02E+03	1.40E+04
	TE-132	49.72		13.10	1.20E+09	1.70E+08	-9.59E+08	5.87E+08
		228.16		88.00	1.70E+08		2.80E+07	8.23E+07
	BA-133	81.00		33.00	1.72E-01	1.56E-01	-2.99E-02	8.43E-02
		302.84		17.80	3.77E-01		7.08E-02	1.81E-01
		356.01		60.00	1.56E-01		-9.79E-03	7.56E-02
@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	9.67E+04	9.67E+04	-1.68E+04	4.73E+04
	CS-134	563.23		8.38	1.08E+00	9.43E-02	3.10E-01	5.11E-01
		569.32		15.43	5.28E-01		-8.31E-02	2.48E-01
		604.70		97.60	9.43E-02		5.01E-03	4.45E-02
		795.84		85.40	1.28E-01		8.05E-02	6.02E-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	801.93	8.73	1.06E+00	9.43E-02	-2.28E-01	4.91E-01
CS-135	268.24	16.00	4.13E-01	4.13E-01	4.80E-01	2.00E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.42E+02	1.79E+01	4.22E+01	6.91E+01
	163.89	4.61	2.25E+02		8.95E+00	1.09E+02
	176.55	13.56	7.39E+01		-1.96E+01	3.57E+01
	273.65	12.66	1.07E+02		-3.35E+01	5.18E+01
	340.57	48.50	3.76E+01		6.05E+01	1.82E+01
	818.50	99.70	1.79E+01		2.36E+00	8.30E+00
	1048.07	79.60	2.49E+01		-8.08E-01	1.15E+01
	1235.34	19.70	1.50E+02		1.91E+01	7.05E+01
CS-137	661.65	85.12	1.02E-01	1.02E-01	4.51E-02	4.80E-02
LA-138	788.74	34.00	2.74E-01	1.30E-01	-3.97E-03	1.28E-01
	1435.80	66.00	1.30E-01		-4.42E-02	5.75E-02
CE-139	165.85	80.35	1.02E-01	1.02E-01	2.53E-02	4.92E-02
BA-140	162.64	6.70	1.80E+02	6.24E+01	-4.55E+01	8.73E+01
	304.84	4.50	3.46E+02		3.56E+01	1.66E+02
	423.70	3.20	5.34E+02		-6.99E+00	2.54E+02
	437.55	2.00	8.30E+02		1.88E+02	3.94E+02
	537.32	25.00	6.24E+01		-3.39E+01	2.91E+01
LA-140	328.77	20.50	8.03E+01	2.57E+01	1.64E+01	3.85E+01
	487.03	45.50	3.66E+01		1.22E+01	1.73E+01
	815.85	23.50	8.89E+01		2.68E+01	4.13E+01
	1596.49	95.49	2.57E+01		8.34E+00	1.15E+01
CE-141	145.44	48.40	9.07E-01	9.07E-01	2.91E-01	4.40E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	5.33E-01	5.33E-01	-3.51E-01	2.59E-01
PM-144	476.78	42.00	2.28E-01	1.03E-01	2.13E-01	1.08E-01
	618.01	98.60	1.05E-01		4.53E-02	4.97E-02
	696.49	99.49	1.03E-01		-1.18E-02	4.82E-02
PM-145	36.85	21.70	5.29E-01	2.83E-01	2.94E-02	2.57E-01
	37.36	39.70	2.83E-01		1.50E-02	1.37E-01
	42.30	15.10	5.95E-01		8.52E-02	2.90E-01
	72.40	2.31	2.91E+00		-4.91E+00	1.43E+00
PM-146	453.90	39.94	1.62E-01	1.62E-01	-1.10E-02	7.63E-02
	735.90	14.01	6.34E-01		2.69E-01	2.96E-01
	747.13	13.10	6.68E-01		3.08E-02	3.12E-01
ND-147	91.11	28.90	1.21E+02	1.21E+02	-8.42E+00	5.91E+01
	531.02	13.10	3.21E+02		2.73E+01	1.51E+02
PM-149	285.90	3.10	1.26E+14	1.26E+14	4.03E+13	6.07E+13
EU-152	121.78	20.50	2.29E-01	2.29E-01	3.84E-02	1.11E-01
	244.69	5.40	1.38E+00		-2.54E-02	6.69E-01
	344.27	19.13	3.45E-01		1.07E-01	1.65E-01
	778.89	9.20	8.10E-01		-4.47E-01	3.73E-01
	964.01	10.40	1.15E+00		1.76E-01	5.40E-01
	1085.78	7.22	1.41E+00		1.08E-02	6.49E-01
	1112.02	9.60	1.30E+00		8.80E-01	6.08E-01
	1407.95	14.94	5.74E-01		3.64E-01	2.54E-01
GD-153	97.43	31.30	1.97E-01	1.97E-01	-2.00E-01	9.59E-02

Analysis Report for 1707092-09

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	GD-153	103.18		22.20	2.60E-01	1.97E-01	-2.20E-01	1.26E-01
	EU-154	123.07		40.50	1.18E-01	1.18E-01	1.56E-02	5.74E-02
		723.30		19.70	4.50E-01		1.54E-02	2.11E-01
		873.19		11.50	7.86E-01		-3.09E-01	3.64E-01
		996.32		10.30	9.85E-01		-2.93E-01	4.56E-01
		1004.76		17.90	6.18E-01		4.51E-02	2.88E-01
		1274.45		35.50	3.20E-01		-1.82E-02	1.47E-01
+	EU-155	86.50	*	30.90	2.98E-01	2.28E-01	3.92E-01	1.47E-01
		105.30		20.70	2.28E-01		-2.45E-02	1.11E-01
	EU-156	811.77		10.40	8.40E+01	8.40E+01	-1.51E+01	3.90E+01
		1153.47		7.20	1.62E+02		2.05E+01	7.51E+01
		1230.71		8.90	1.59E+02		4.78E+01	7.43E+01
	HO-166M	184.41		72.60	8.58E-02	8.58E-02	1.35E-01	4.17E-02
		280.45		29.60	2.08E-01		-1.09E-01	9.98E-02
		410.94		11.10	5.85E-01		-1.03E-01	2.78E-01
		711.69		54.10	1.46E-01		-6.11E-02	6.82E-02
	TM-171	66.72		0.14	4.84E+01	4.84E+01	1.33E+01	2.37E+01
	HF-172	67.35		5.31	1.23E+00	4.60E-01	-7.74E-01	6.01E-01
		125.81		11.30	4.60E-01		-2.20E-01	2.24E-01
	LU-172	181.53		20.60	8.94E+03	6.65E+03	1.89E+03	4.33E+03
		900.72		29.81	1.10E+04		-1.45E+03	5.09E+03
		1093.66		62.50	6.65E+03		7.95E+02	3.10E+03
	LU-173	100.72		5.24	9.80E-01	3.62E-01	6.72E-02	4.76E-01
		272.11		21.20	3.62E-01		7.10E-02	1.75E-01
	HF-175	343.40		84.00	2.11E-01	2.11E-01	6.51E-02	1.01E-01
	LU-176	88.34		13.30	4.59E-01	6.34E-02	3.00E-01	2.25E-01
		201.83		86.00	6.34E-02		2.49E-03	3.07E-02
		306.78		94.00	6.43E-02		-2.65E-02	3.08E-02
	HF-181	133.02		41.70	5.75E-01	4.24E-01	-2.85E-01	2.79E-01
		345.85		17.20	1.90E+00		6.15E-01	9.05E-01
		482.03		82.80	4.24E-01		-1.29E-01	2.00E-01
	TA-182	67.75		41.20	2.63E-01	2.63E-01	-1.66E-01	1.29E-01
		1121.30		34.90	7.53E-01		8.07E-01	3.55E-01
		1189.05		16.23	1.27E+00		-2.16E-01	5.86E-01
		1221.41		26.98	9.18E-01		9.10E-03	4.29E-01
		1231.02		11.44	2.24E+00		6.75E-01	1.05E+00
	IR-192	308.46		29.68	5.28E-01	4.13E-01	1.67E-01	2.53E-01
		468.07		48.10	4.13E-01		1.46E-01	1.97E-01
	HG-203	279.19		77.30	3.78E-01	3.78E-01	1.37E-01	1.82E-01
	TL-204	374.74		94.11	7.20E-02	7.20E-02	-5.98E-03	3.43E-02
		899.15		99.16	8.29E-02		-8.10E-02	3.79E-02
		911.74		91.10	1.91E-01		4.44E-01	9.17E-02
	BI-207	569.67		97.72	7.55E-02	7.55E-02	-3.26E-02	3.55E-02
		1063.62		74.90	1.41E-01		2.30E-02	6.53E-02
+	TL-208	583.14	*	30.22	3.38E-01	1.15E-01	1.07E+00	1.62E-01
		860.37	*	4.48	2.31E+00		2.61E+00	1.08E+00
		2614.66	*	35.85	1.15E-01		1.10E+00	3.70E-02
	BI-210M	262.00		45.00	1.31E-01	1.31E-01	1.16E-02	6.32E-02
		300.00		23.00	3.16E-01		1.45E-01	1.52E-01
	PB-210	46.50		4.25	1.86E+00	1.86E+00	1.12E+00	9.06E-01
	PB-211	404.84		2.90	2.23E+00	2.23E+00	-2.17E+00	1.06E+00
		831.96		2.90	3.32E+00		2.00E+00	1.55E+00
+	BI-212	727.17	*	11.80	9.46E-01	9.46E-01	7.79E-01	4.50E-01

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-212	1620.62		2.75	3.43E+00	9.46E-01	9.70E-01	1.52E+00
+	PB-212	238.63	*	44.60	2.47E-01	2.47E-01	1.18E+00	1.21E-01
		300.09		3.41	2.13E+00		9.78E-01	1.03E+00
+	BI-214	609.31	*	46.30	2.37E-01	2.37E-01	8.55E-01	1.13E-01
		1120.29	*	15.10	9.14E-01		9.70E-01	4.30E-01
		1764.49	*	15.80	6.63E-01		8.52E-01	2.95E-01
		2204.22	*	4.98	2.24E+00		1.09E+00	9.86E-01
+	PB-214	295.21	*	19.19	4.34E-01	2.36E-01	9.23E-01	2.10E-01
		351.92	*	37.19	2.36E-01		1.04E+00	1.14E-01
	RN-219	401.80		6.50	1.05E+00	1.05E+00	-4.92E-02	4.99E-01
	RA-223	323.87		3.88	1.60E+00	1.60E+00	-6.35E-01	7.66E-01
+	RA-224	240.98	*	3.95	2.80E+00	2.80E+00	2.83E+00	1.37E+00
	RA-225	40.00		31.00	3.65E+01	3.65E+01	1.40E+01	1.78E+01
+	RA-226	186.21	*	3.28	2.60E+00	2.60E+00	3.17E+00	1.28E+00
	TH-227	50.10		8.40	8.07E-01	8.07E-01	-6.43E-01	3.93E-01
		236.00		11.50	8.57E-01		5.31E-01	4.20E-01
		256.20		6.30	1.01E+00		5.69E-01	4.87E-01
+	AC-228	338.32	*	11.40	8.03E-01	3.79E-01	1.39E+00	3.90E-01
		911.07	*	27.70	3.79E-01		1.31E+00	1.77E-01
		969.11	*	16.60	8.40E-01		7.26E-01	3.98E-01
	TH-230	48.44		16.90	4.38E-01	4.38E-01	2.16E-01	2.14E-01
		62.85		4.60	1.41E+00		1.03E+00	6.92E-01
		67.67		0.37	1.59E+01		-1.00E+01	7.77E+00
	PA-231	283.67		1.60	3.87E+00	2.87E+00	-1.01E+00	1.86E+00
		302.67		2.30	2.87E+00		5.38E-01	1.38E+00
	TH-231	25.64		14.70	2.87E+00	8.81E-01	1.68E-01	1.40E+00
		84.21		6.40	8.81E-01		-5.29E-01	4.31E-01
	PA-233	311.98		38.60	2.06E+00	2.06E+00	-1.49E+00	9.87E-01
	PA-234	131.20		20.40	2.39E-01	2.39E-01	1.27E-01	1.16E-01
		733.99		8.80	9.46E-01		7.17E-02	4.41E-01
		946.00		12.00	7.77E-01		-6.61E-01	3.59E-01
	PA-234M	1001.03		0.92	1.13E+01	1.13E+01	2.92E+00	5.25E+00
	TH-234	63.29		3.80	1.72E+00	1.72E+00	1.06E+00	8.41E-01
	U-235	143.76		10.50	4.85E-01	4.85E-01	3.55E-01	2.36E-01
		163.35		4.70	1.06E+00		4.21E-02	5.13E-01
		205.31		4.70	1.37E+00		2.79E-01	6.67E-01
+	NP-237	86.50	*	12.60	7.03E-01	7.03E-01	9.25E-01	3.47E-01
	NP-239	106.10		22.70	1.80E+12	1.80E+12	-1.94E+11	8.74E+11
		228.18		10.70	5.45E+12		9.00E+11	2.64E+12
		277.60		14.10	4.18E+12		1.82E+12	2.01E+12
	AM-241	59.54		35.90	1.72E-01	1.72E-01	4.00E-02	8.42E-02
	AM-243	74.67		66.00	1.18E-01	1.18E-01	7.34E-02	5.78E-02
	CM-243	209.75		3.29	2.02E+00	4.71E-01	2.08E+00	9.82E-01
		228.14		10.60	6.16E-01		1.02E-01	2.99E-01
		277.60		14.00	4.71E-01		2.05E-01	2.27E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

Analysis Report for 1707092-09

HTC-A08-S001-3036-01

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: HTC-A08-S001-3036-01

Elapsed Live time: 3600
Elapsed Real Time: 3608

Channel								
1:	0	0	0	0	0	0	0	0
9:	5	170	179	146	146	110	105	103
17:	97	110	93	81	79	96	96	96
25:	100	93	96	73	87	80	85	92
33:	87	78	80	100	89	69	86	91
41:	110	115	84	97	83	97	142	119
49:	93	91	98	98	101	108	124	91
57:	82	117	116	120	122	136	150	163
65:	166	135	142	132	132	117	135	146
73:	136	208	273	305	337	407	221	102
81:	122	117	107	133	153	122	174	204
89:	153	149	134	116	183	199	120	84
97:	92	92	84	99	75	79	79	70
105:	81	101	86	83	95	88	89	81
113:	89	81	70	76	78	66	76	73
121:	90	79	76	80	77	83	77	79
129:	90	101	79	64	76	67	69	66
137:	74	73	70	62	57	76	81	90
145:	80	80	77	68	73	66	71	64
153:	78	77	88	73	68	72	73	72
161:	79	65	67	67	53	77	62	54
169:	54	53	70	63	47	61	58	54
177:	54	56	54	79	47	63	56	60
185:	70	123	131	59	57	70	54	42
193:	46	48	58	43	60	63	64	62
201:	55	53	55	66	46	61	49	53
209:	71	75	53	45	60	37	36	45
217:	53	47	49	42	48	49	40	59
225:	46	44	60	47	55	45	44	50
233:	39	43	44	52	63	142	377	276
241:	112	119	71	35	51	32	40	42
249:	45	39	28	33	40	35	41	41
257:	37	30	44	38	28	25	19	29
265:	39	30	28	31	37	57	47	32
273:	21	46	27	42	38	33	35	32
281:	41	19	38	15	36	30	33	33
289:	32	27	25	32	29	31	98	122
297:	69	34	23	41	32	41	27	23
305:	27	24	32	26	18	25	26	24
313:	14	26	29	36	24	21	23	21
321:	26	21	23	14	31	30	23	34
329:	30	27	35	17	32	25	27	25
337:	26	54	102	62	29	23	18	25
345:	20	30	20	18	18	34	62	159
353:	148	59	31	18	23	20	20	26
361:	18	21	24	22	28	16	23	22

369:	20	15	23	20	18	19	18	17

Sample Title: HTC-A08-S001-3036-01

Channel								
377:	27	19	22	21	11	25	17	21
385:	32	15	19	21	16	27	20	24
393:	26	18	27	17	23	20	18	27
401:	18	12	16	17	28	18	19	11
409:	23	30	15	13	13	13	23	13
417:	16	23	21	21	26	17	13	17
425:	22	18	19	15	20	12	11	19
433:	14	16	21	15	10	16	20	18
441:	17	12	18	15	24	15	14	15
449:	10	13	6	14	14	7	18	17
457:	14	13	17	17	15	19	24	23
465:	20	23	18	20	18	18	15	11
473:	11	20	17	24	20	12	14	27
481:	9	15	5	17	6	13	17	20
489:	8	15	13	12	19	17	8	20
497:	12	10	14	12	11	20	13	16
505:	20	18	14	18	17	30	61	37
513:	25	16	17	10	17	13	11	11
521:	22	11	18	14	10	11	10	12
529:	5	17	10	16	12	13	14	11
537:	4	9	8	10	8	17	12	8
545:	12	9	6	16	20	13	18	10
553:	9	16	11	13	16	15	16	13
561:	14	17	21	16	13	13	16	7
569:	9	21	9	9	11	13	18	10
577:	18	13	10	10	12	24	74	102
585:	34	13	10	12	11	14	12	8
593:	12	22	12	17	11	17	19	14
601:	11	13	13	14	10	9	14	24
609:	74	112	61	15	13	12	14	12
617:	10	13	16	16	16	8	11	8
625:	16	7	11	8	10	9	15	18
633:	9	3	16	17	10	16	12	7
641:	13	11	16	9	11	11	14	12
649:	9	8	16	14	7	14	16	9
657:	17	7	10	9	9	21	16	13
665:	9	10	5	4	9	9	13	9
673:	7	8	16	12	10	15	7	10
681:	9	19	13	7	12	11	15	15
689:	11	13	9	17	7	12	14	7
697:	9	9	14	10	14	8	11	9
705:	11	17	17	8	10	4	12	11
713:	8	11	7	7	14	12	3	6
721:	9	9	13	7	13	17	28	22
729:	9	15	8	10	6	6	12	13
737:	11	10	12	6	9	12	10	11
745:	12	9	12	5	9	8	10	6
753:	9	8	17	9	15	7	9	5
761:	8	7	12	7	10	10	7	11
769:	13	11	13	8	6	8	12	9
777:	4	2	6	8	9	7	11	9
785:	14	15	16	12	7	8	7	8
793:	11	9	19	17	14	7	6	5

801:	11	12	12	7	4	13	11	13

Sample Title: HTC-A08-S001-3036-01

Channel								
809:	11	8	8	7	12	6	6	7
817:	8	11	8	9	3	11	10	7
825:	7	9	8	4	11	7	13	8
833:	6	7	19	8	6	11	8	14
841:	16	11	7	1	6	5	8	13
849:	8	6	10	5	4	10	9	4
857:	4	10	14	12	18	13	15	6
865:	6	7	10	11	15	8	7	10
873:	6	9	8	6	6	9	5	2
881:	6	11	6	8	10	6	9	2
889:	11	3	5	11	2	5	10	4
897:	4	7	6	9	5	4	9	15
905:	16	10	7	2	9	33	54	46
913:	29	8	9	2	8	4	5	8
921:	12	9	6	6	6	6	10	11
929:	7	6	7	7	6	11	16	2
937:	9	8	6	3	14	12	7	8
945:	9	8	5	8	7	14	8	6
953:	5	14	4	7	5	6	7	16
961:	6	10	11	11	24	14	7	17
969:	35	36	16	2	10	12	6	3
977:	5	8	9	5	7	4	3	5
985:	10	6	8	7	6	5	7	11
993:	6	15	4	3	8	8	10	10
1001:	9	10	5	7	7	9	15	11
1009:	8	8	5	9	8	5	10	4
1017:	5	7	4	9	10	11	7	10
1025:	9	11	10	8	10	5	10	6
1033:	8	7	10	2	5	10	9	4
1041:	5	5	11	7	6	4	5	12
1049:	3	6	9	3	6	11	6	8
1057:	8	9	14	5	4	8	8	8
1065:	9	8	9	4	5	9	9	4
1073:	10	9	5	7	13	7	6	8
1081:	2	5	8	8	9	5	9	5
1089:	3	10	7	8	12	10	7	13
1097:	7	10	10	6	3	8	8	10
1105:	14	4	6	7	5	13	11	8
1113:	6	13	14	6	5	13	13	20
1121:	17	12	10	9	5	8	9	5
1129:	9	14	13	6	10	4	7	8
1137:	9	6	9	4	11	4	5	7
1145:	10	7	10	11	9	8	7	8
1153:	6	6	9	12	6	4	13	7
1161:	8	10	5	7	10	6	7	14
1169:	5	4	10	4	12	8	8	13
1177:	6	12	2	9	8	8	8	10
1185:	10	6	8	6	7	11	6	6
1193:	6	7	8	7	9	7	9	11
1201:	7	13	7	6	6	9	9	5
1209:	9	7	10	10	11	8	11	12
1217:	7	15	8	5	13	11	8	11
1225:	14	7	7	7	8	13	13	9

1233:	13	12	9	12	12	12	11	6

Sample Title: HTC-A08-S001-3036-01

Channel								
1241:	9	5	10	6	8	9	7	16
1249:	8	8	6	12	14	8	8	5
1257:	8	7	6	4	5	6	7	5
1265:	2	5	6	4	10	2	4	5
1273:	9	7	7	8	4	9	5	8
1281:	6	8	7	4	5	5	6	5
1289:	8	6	5	6	4	7	6	5
1297:	4	8	9	4	6	4	4	3
1305:	5	0	4	4	6	5	8	5
1313:	6	4	3	2	2	8	5	4
1321:	5	4	7	4	8	8	6	5
1329:	5	4	7	5	7	9	4	2
1337:	1	3	1	5	2	6	3	5
1345:	3	4	6	3	2	1	2	2
1353:	4	4	3	2	0	2	5	0
1361:	2	5	2	2	6	2	3	3
1369:	4	4	9	6	3	8	4	4
1377:	8	4	6	3	3	4	5	2
1385:	4	7	5	6	3	1	3	2
1393:	2	3	4	1	2	0	0	3
1401:	3	4	0	2	2	0	3	7
1409:	4	4	0	1	0	2	2	1
1417:	4	2	2	3	0	2	3	1
1425:	1	5	2	1	3	4	2	9
1433:	1	5	6	1	2	2	3	2
1441:	4	0	7	2	3	1	4	2
1449:	2	1	3	9	1	1	2	5
1457:	2	7	65	179	248	172	44	3
1465:	3	1	0	1	0	0	2	3
1473:	3	0	1	2	3	0	4	5
1481:	3	1	1	1	0	1	1	0
1489:	3	4	0	2	3	2	5	4
1497:	1	3	1	3	2	1	1	1
1505:	1	3	0	1	2	2	1	0
1513:	1	1	2	0	1	0	3	2
1521:	3	0	0	1	0	1	1	1
1529:	2	1	1	0	2	1	2	1
1537:	5	2	2	0	1	2	0	2
1545:	1	0	4	3	4	1	0	1
1553:	2	2	1	1	1	1	2	0
1561:	1	3	2	4	2	2	1	4
1569:	2	0	2	1	1	1	1	1
1577:	0	1	0	2	3	3	1	3
1585:	1	2	5	4	4	6	2	5
1593:	3	4	3	1	1	3	2	2
1601:	0	1	2	1	2	3	0	2
1609:	0	1	0	1	0	1	3	2
1617:	1	2	1	3	4	3	3	1
1625:	0	2	2	0	2	3	6	4
1633:	0	3	1	2	0	1	2	1
1641:	0	0	0	2	1	1	1	0
1649:	1	1	0	1	0	3	0	1
1657:	2	0	4	1	4	2	1	2

1665:	0	3	2	0	1	1	0	1

Sample Title: HTC-A08-S001-3036-01

Channel								
1673:	0	1	3	2	1	0	1	1
1681:	0	1	0	3	3	2	0	2
1689:	1	1	2	1	1	0	0	1
1697:	1	0	2	2	0	1	1	1
1705:	1	1	0	2	0	0	0	0
1713:	0	1	1	2	2	0	0	1
1721:	1	1	2	0	0	2	0	2
1729:	2	3	2	0	1	0	2	0
1737:	0	2	1	1	1	1	0	2
1745:	0	2	0	1	2	3	2	3
1753:	2	0	1	0	1	3	3	0
1761:	4	2	5	15	12	4	3	0
1769:	3	1	1	1	1	0	4	2
1777:	0	1	0	1	2	0	1	1
1785:	2	0	1	1	0	1	1	0
1793:	0	0	1	1	2	0	0	0
1801:	3	0	1	1	0	2	1	0
1809:	1	1	0	1	0	1	1	0
1817:	0	1	0	2	2	1	2	3
1825:	0	1	0	0	2	2	0	2
1833:	1	0	2	0	1	0	1	0
1841:	0	0	1	1	1	1	4	2
1849:	1	0	1	0	2	0	0	0
1857:	1	1	0	2	1	0	0	0
1865:	1	1	1	0	2	0	0	0
1873:	2	1	0	1	0	3	1	0
1881:	0	3	0	1	2	1	2	1
1889:	2	1	1	1	1	1	2	0
1897:	1	2	1	0	1	1	0	1
1905:	1	1	1	3	1	1	2	0
1913:	0	1	2	0	0	0	0	1
1921:	1	0	0	1	2	0	2	1
1929:	0	1	2	1	1	1	2	1
1937:	1	0	2	0	0	1	1	1
1945:	2	3	0	0	1	0	1	1
1953:	1	0	1	0	0	2	2	1
1961:	0	0	0	1	1	0	0	2
1969:	1	0	1	0	1	1	0	1
1977:	0	1	1	0	0	1	0	0
1985:	0	0	0	2	1	0	3	0
1993:	0	3	1	0	2	0	1	1
2001:	0	0	1	0	0	1	2	1
2009:	0	2	0	1	0	0	1	0
2017:	3	0	0	0	0	1	2	0
2025:	1	0	1	1	0	1	1	1
2033:	1	0	2	0	0	3	0	1
2041:	2	2	0	0	0	1	2	0
2049:	0	1	0	1	0	1	2	1
2057:	0	2	0	2	0	0	1	1
2065:	0	0	0	2	2	1	0	1
2073:	1	0	4	1	0	0	0	0
2081:	0	1	0	2	0	0	0	0
2089:	1	1	2	0	1	0	3	0

2097:	0	1	0	5	1	2	4	7

Sample Title: HTC-A08-S001-3036-01

Channel								
2105:	2	1	1	1	1	1	1	2
2113:	0	0	0	1	1	2	0	1
2121:	1	1	3	0	0	3	1	0
2129:	0	2	0	3	0	0	0	1
2137:	1	1	2	2	2	0	0	2
2145:	1	1	1	1	1	1	1	2
2153:	1	0	2	0	0	0	1	0
2161:	0	1	0	0	1	1	0	0
2169:	0	0	0	1	1	0	0	2
2177:	2	0	1	2	0	0	0	2
2185:	0	0	2	1	0	0	0	2
2193:	1	1	0	0	0	1	0	0
2201:	1	1	6	3	7	1	1	1
2209:	1	3	1	0	3	0	4	2
2217:	1	1	1	1	1	0	3	0
2225:	1	1	0	1	0	1	1	0
2233:	0	0	0	2	1	1	0	0
2241:	1	0	1	0	0	0	1	0
2249:	1	1	1	1	0	1	2	1
2257:	2	1	0	0	1	2	0	0
2265:	3	0	1	0	3	0	0	3
2273:	0	4	1	0	0	1	2	2
2281:	1	0	2	1	1	0	0	3
2289:	2	2	3	0	1	1	0	3
2297:	0	0	0	2	3	2	3	0
2305:	2	0	2	0	0	0	1	1
2313:	1	0	0	0	0	1	2	1
2321:	1	0	1	1	2	1	3	2
2329:	1	1	1	1	1	1	0	0
2337:	0	3	2	1	0	1	0	2
2345:	0	0	1	3	2	0	1	0
2353:	3	2	0	0	1	2	1	1
2361:	1	1	2	4	1	0	0	0
2369:	1	2	2	0	0	1	0	2
2377:	1	0	1	2	2	1	0	1
2385:	2	0	1	1	0	1	0	1
2393:	0	0	3	0	0	1	1	2
2401:	0	0	0	0	1	0	0	0
2409:	0	2	0	0	0	1	1	0
2417:	0	1	0	0	1	2	1	0
2425:	1	1	2	0	0	1	1	0
2433:	1	0	0	0	0	0	0	0
2441:	0	2	1	1	1	3	0	4
2449:	0	1	1	1	0	0	0	2
2457:	0	0	1	0	0	0	0	1
2465:	1	2	1	1	2	1	0	1
2473:	1	0	0	1	0	1	0	1
2481:	1	1	1	0	0	0	0	0
2489:	1	0	1	0	0	0	2	1
2497:	0	0	0	2	2	0	0	0
2505:	0	1	1	0	0	0	0	1
2513:	0	0	1	1	0	0	0	1
2521:	0	1	2	1	1	0	0	1

2529:	0	0	1	0	0	1	0	2

Sample Title: HTC-A08-S001-3036-01

Channel								
2537:	0	1	2	0	0	0	1	0
2545:	1	0	0	0	0	0	1	0
2553:	0	0	0	0	0	0	1	0
2561:	1	1	0	1	0	0	0	0
2569:	0	0	0	0	0	0	1	0
2577:	0	0	0	1	0	0	0	0
2585:	0	1	0	0	0	1	0	0
2593:	1	0	1	1	0	1	1	0
2601:	1	0	0	1	0	0	0	2
2609:	1	1	2	3	15	19	21	10
2617:	0	0	1	1	0	0	0	0
2625:	1	0	0	0	0	0	0	1
2633:	2	0	0	1	0	0	0	0
2641:	0	0	1	0	1	1	0	0
2649:	0	0	0	0	0	0	1	0
2657:	0	0	0	0	1	1	0	0
2665:	0	0	3	0	1	0	0	0
2673:	0	0	0	0	0	0	0	0
2681:	0	0	0	0	0	1	0	0
2689:	0	1	0	0	1	0	0	1
2697:	3	0	0	0	0	0	0	0
2705:	0	0	0	0	0	0	0	0
2713:	0	0	0	1	1	0	0	0
2721:	1	0	1	0	0	1	1	0
2729:	0	1	0	1	0	2	0	1
2737:	0	0	0	0	0	0	0	0
2745:	1	0	1	1	0	0	1	0
2753:	0	0	0	0	0	0	0	1
2761:	0	0	0	0	0	0	1	0
2769:	0	0	0	0	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	0	0	1	0
2793:	0	0	1	0	0	0	0	0
2801:	0	0	0	0	0	0	0	0
2809:	0	0	1	0	0	1	1	0
2817:	0	1	0	0	0	0	0	0
2825:	1	0	0	0	0	0	1	2
2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	0	1	0	0	0
2849:	0	0	0	0	0	0	0	0
2857:	0	0	2	0	0	0	0	0
2865:	0	0	0	0	1	0	1	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	0	1	1	0	0
2897:	0	0	0	1	0	0	0	0
2905:	1	0	1	0	0	1	0	0
2913:	0	1	0	0	0	0	1	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	1	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	1	0	0	0	0	0	0	0

2961:	0	0	0	0	0	0	1	0

Sample Title: HTC-A08-S001-3036-01

Channel								
2969:	0	0	2	0	1	1	1	0
2977:	0	0	0	0	0	0	0	0
2985:	0	0	0	1	0	0	0	0
2993:	0	0	1	0	0	0	0	0
3001:	1	0	0	0	0	0	0	0
3009:	0	0	1	0	0	0	0	0
3017:	0	0	0	0	1	0	0	0
3025:	1	1	0	0	0	0	0	0
3033:	0	1	0	0	1	0	0	0
3041:	0	1	0	1	0	0	0	0
3049:	0	0	0	1	0	0	0	0
3057:	0	0	0	0	0	0	0	1
3065:	0	0	1	0	0	0	0	0
3073:	0	0	0	1	1	0	0	0
3081:	0	2	0	0	0	0	1	0
3089:	0	0	0	0	0	0	0	0
3097:	1	0	0	1	0	0	0	0
3105:	0	1	2	1	0	0	0	0
3113:	0	0	0	0	0	0	0	0
3121:	1	0	0	1	0	0	0	0
3129:	2	0	0	0	0	0	0	1
3137:	0	0	0	0	0	0	0	0
3145:	0	0	1	0	0	0	0	0
3153:	0	0	0	0	1	0	0	0
3161:	0	0	0	0	0	1	0	0
3169:	0	0	1	0	0	0	1	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	1	0	0	0	0	0	0	0
3201:	0	0	0	0	0	0	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	0	0	0	0	0	1
3233:	0	0	0	1	0	1	0	0
3241:	0	1	0	0	0	0	0	0
3249:	1	0	0	0	1	0	0	0
3257:	0	0	0	0	1	0	0	0
3265:	1	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	1	0	0
3305:	0	0	0	1	0	0	1	1
3313:	0	0	0	0	0	0	0	1
3321:	1	1	0	0	1	0	0	0
3329:	0	0	0	1	0	0	0	0
3337:	0	1	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	1
3353:	0	1	1	0	0	0	0	0
3361:	0	0	0	0	0	1	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	0	0	0	1	0
3385:	0	0	0	0	0	0	0	0

3393:	0	1	0	0	0	0	0	1

Sample Title: HTC-A08-S001-3036-01

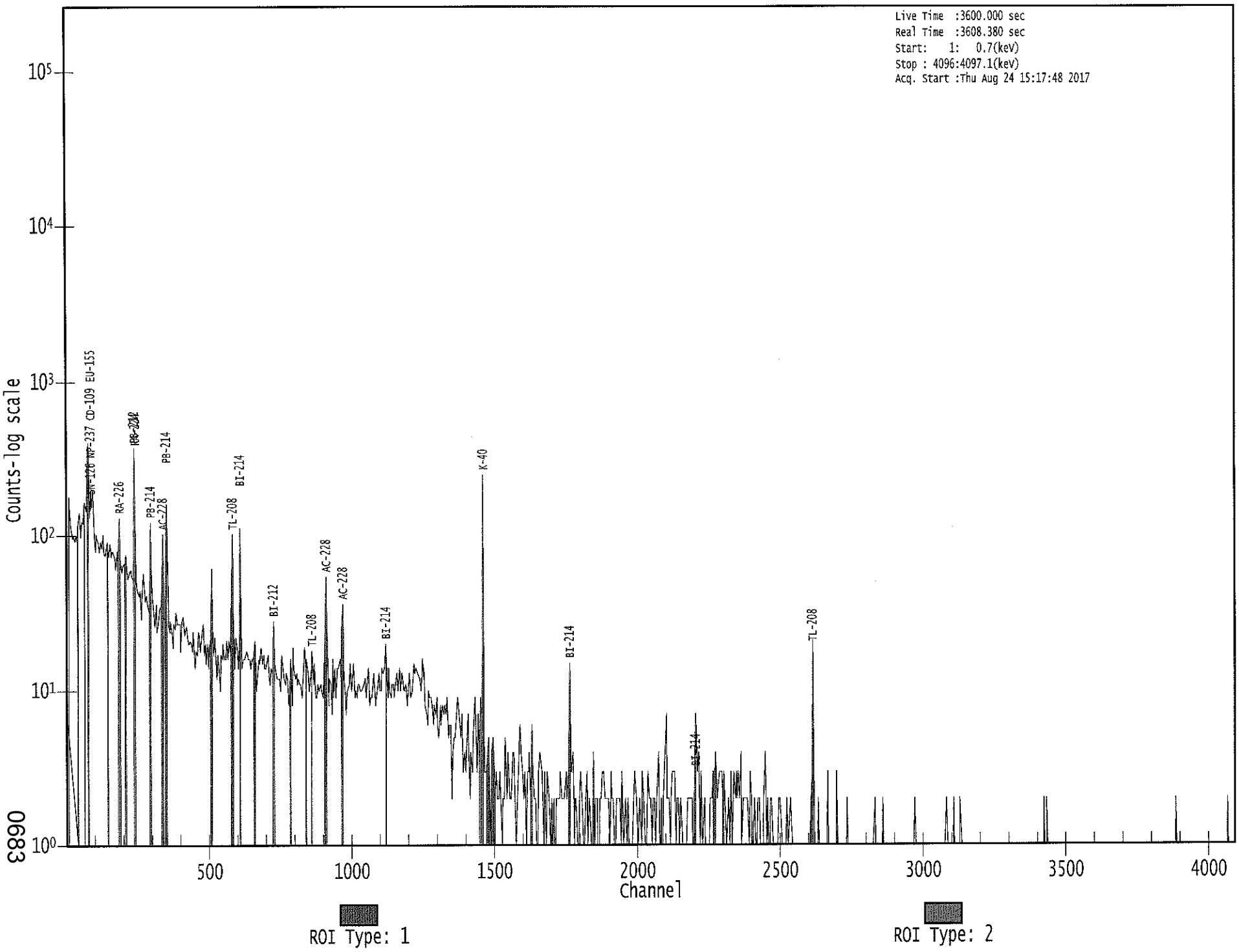
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	2	0
3425:	0	0	0	0	0	0	0	0
3433:	2	1	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	1
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	1	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	1
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	1	0	0	0	0
3537:	0	1	0	0	1	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	1	0	1
3577:	0	0	0	0	0	0	0	0
3585:	0	0	1	0	1	1	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	1	1	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	1	0	0	0
3641:	0	0	0	0	1	0	1	0
3649:	0	0	1	1	1	0	1	0
3657:	0	1	0	0	0	0	0	0
3665:	1	0	0	0	0	0	0	0
3673:	0	0	0	1	0	0	0	0
3681:	0	1	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	1
3697:	0	1	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	1	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	1	0	0	0	0	0	1	0
3737:	0	0	1	0	1	0	0	0
3745:	0	0	0	0	0	0	0	1
3753:	0	0	0	0	1	1	0	0
3761:	1	0	0	0	0	0	0	1
3769:	0	0	0	0	0	0	0	0
3777:	0	0	1	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	1	0	0	0	0
3801:	1	1	0	0	1	1	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	1

3825:	1	1	0	0	1	0	0	0

Sample Title: HTC-A08-S001-3036-01

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	1	0	0	1	0	0
3849:	1	0	1	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	1	0	0
3881:	0	0	0	0	0	2	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	1	0
3913:	0	0	0	0	0	0	0	0
3921:	0	1	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	1	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	1	0	1	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	1	0	0
3993:	0	0	0	0	0	0	1	0
4001:	0	0	0	0	1	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	1	0	0	0	0	1	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	2	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000055920.CNF



0683

Apex-Gamma

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-10
Sample Description	: HTC-A08-S001-3642-01
Sample Type	: SOIL
Sample Size	: 6.633E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 7:41:12AM
Acquisition Started	: 8/24/2017 4:07:17PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.8 seconds
Dead Time	: 0.05 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 15 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55922

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 5:07:21PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	76.13	75.19	0.0000	0.00
2	87.49	86.55	0.0000	0.00
3	93.56	92.63	0.0000	0.00
4	128.51	127.58	0.0000	0.00
5	145.57	144.65	0.0000	0.00
6	185.59	184.68	0.0000	0.00
7	208.91	208.01	0.0000	0.00
8	238.80	237.91	0.0000	0.00
9	241.93	241.04	0.0000	0.00
10	257.68	256.79	0.0000	0.00
11	270.68	269.80	0.0000	0.00
12	295.26	294.39	0.0000	0.00
13	338.29	337.43	0.0000	0.00
14	352.29	351.44	0.0000	0.00
15	403.61	402.78	0.0000	0.00
16	408.69	407.85	0.0000	0.00
17	462.23	461.42	0.0000	0.00
18	504.09	503.29	0.0000	0.00
19	510.81	510.01	0.0000	0.00
20	583.08	582.31	0.0000	0.00
21	609.37	608.61	0.0000	0.00
22	647.19	646.45	0.0000	0.00
23	665.06	664.32	0.0000	0.00
24	677.74	677.00	0.0000	0.00
25	794.91	794.23	0.0000	0.00
26	910.93	910.29	0.0000	0.00
27	934.71	934.09	0.0000	0.00
28	969.24	968.63	0.0000	0.00
29	1119.25	1118.71	0.0000	0.00
30	1240.71	1240.23	0.0000	0.00
31	1460.68	1460.30	0.0000	0.00
32	1591.83	1591.52	0.0000	0.00
33	1614.27	1613.98	0.0000	0.00
34	1620.54	1620.25	0.0000	0.00
35	1640.86	1640.57	0.0000	0.00
36	1764.11	1763.90	0.0000	0.00
37	1872.19	1872.03	0.0000	0.00
38	2032.02	2031.96	0.0000	0.00
39	2053.13	2053.08	0.0000	0.00
40	2102.70	2102.68	0.0000	0.00
41	2376.18	2376.34	0.0000	0.00
42	2399.53	2399.70	0.0000	0.00

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	2613.99	2614.31	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 5:07:21PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	76.13	69 -	80	75.19	9.51E+02	158.00	2.64E+03	4.29
	2	87.49	82 -	90	86.55	1.47E+02	121.10	2.17E+03	2.56
	3	93.56	90 -	96	92.63	1.25E+02	93.73	1.46E+03	1.87
	4	128.51	124 -	132	127.58	1.21E+02	89.87	1.17E+03	3.03
	5	145.57	142 -	148	144.65	5.74E+01	71.18	8.81E+02	2.21
	6	185.59	181 -	188	184.68	1.24E+02	71.81	7.78E+02	2.52
	7	208.91	204 -	212	208.01	1.00E+02	74.32	7.79E+02	3.52
M	8	238.80	233 -	245	237.91	7.06E+02	76.30	5.36E+02	2.49
m	9	241.93	233 -	245	241.04	1.29E+02	72.12	4.93E+02	2.32
	10	257.68	252 -	260	256.79	7.08E+01	56.86	4.42E+02	4.00
	11	270.68	267 -	272	269.80	5.17E+01	42.67	3.17E+02	2.09
	12	295.26	291 -	299	294.39	1.15E+02	66.07	6.07E+02	2.21
	13	338.29	333 -	342	337.43	1.28E+02	60.99	4.54E+02	2.44
	14	352.29	347 -	357	351.44	2.76E+02	69.27	4.86E+02	2.32
	15	403.61	400 -	405	402.78	4.05E+01	29.15	1.37E+02	1.58
	16	408.69	406 -	411	407.85	2.85E+01	30.07	1.61E+02	3.08
	17	462.23	458 -	464	461.42	4.69E+01	31.86	1.50E+02	2.20
M	18	504.09	498 -	520	503.29	2.45E+01	36.25	1.69E+02	3.02
m	19	510.81	498 -	520	510.01	1.13E+02	40.77	1.81E+02	3.02
	20	583.08	578 -	585	582.31	1.33E+02	39.04	2.01E+02	2.22
	21	609.37	604 -	613	608.61	1.76E+02	46.63	2.09E+02	2.37
	22	647.19	642 -	650	646.45	2.64E+01	31.81	1.39E+02	1.26
	23	665.06	662 -	668	664.32	2.43E+01	26.76	1.13E+02	2.85
	24	677.74	674 -	680	677.00	3.52E+01	23.26	7.15E+01	3.64
	25	794.91	791 -	797	794.23	2.36E+01	20.40	5.68E+01	1.99
	26	910.93	904 -	916	910.29	9.20E+01	40.39	1.46E+02	2.33
	27	934.71	930 -	938	934.09	2.05E+01	25.15	8.30E+01	4.00
	28	969.24	965 -	972	968.63	4.15E+01	28.71	1.05E+02	1.34
	29	1119.25	1115 -	1123	1118.71	2.64E+01	27.89	1.03E+02	1.57
	30	1240.71	1230 -	1249	1240.23	6.38E+01	54.52	2.08E+02	14.22
	31	1460.68	1453 -	1467	1460.30	5.13E+02	47.59	2.17E+01	3.05
	32	1591.83	1587 -	1595	1591.52	1.85E+01	14.60	1.89E+01	3.56
	33	1614.27	1610 -	1616	1613.98	5.50E+00	6.34	3.00E+00	1.07
	34	1620.54	1617 -	1624	1620.25	7.00E+00	8.72	8.00E+00	1.45
	35	1640.86	1637 -	1644	1640.57	8.30E+00	7.48	3.40E+00	2.91
	36	1764.11	1760 -	1767	1763.90	3.51E+01	12.81	3.84E+00	3.15
	37	1872.19	1869 -	1875	1872.03	5.50E+00	6.34	3.00E+00	1.84
	38	2032.02	2029 -	2037	2031.96	8.93E+00	9.82	1.01E+01	1.89
	39	2053.13	2049 -	2056	2053.08	1.20E+01	6.93	0.00E+00	3.12
	40	2102.70	2099 -	2105	2102.68	8.75E+00	8.51	6.50E+00	3.64

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2376.18	2374 -	2380	2376.34	7.80E+00	7.23	4.40E+00	1.91
42	2399.53	2395 -	2404	2399.70	1.00E+01	6.32	0.00E+00	6.00
43	2613.99	2610 -	2618	2614.31	5.87E+01	16.26	4.66E+00	3.04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 5:07:21PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	76.13	69 -	80	9.51E+02	158.00	2.64E+03	1.20E+02
	2	87.49	82 -	90	1.47E+02	121.10	2.17E+03	9.75E+01
	3	93.56	90 -	96	1.25E+02	93.73	1.46E+03	7.48E+01
	4	128.51	124 -	132	1.21E+02	89.87	1.17E+03	7.16E+01
	5	145.57	142 -	148	5.74E+01	71.18	8.81E+02	5.72E+01
	6	185.59	181 -	188	1.24E+02	71.81	7.78E+02	5.61E+01
	7	208.91	204 -	212	1.00E+02	74.32	7.79E+02	5.88E+01
M	8	238.80	233 -	245	7.06E+02	76.30	5.36E+02	3.81E+01
m	9	241.93	233 -	245	1.29E+02	72.12	4.93E+02	3.65E+01
	10	257.68	252 -	260	7.08E+01	56.86	4.42E+02	4.46E+01
	11	270.68	267 -	272	5.17E+01	42.67	3.17E+02	3.30E+01
	12	295.26	291 -	299	1.15E+02	66.07	6.07E+02	5.14E+01
	13	338.29	333 -	342	1.28E+02	60.99	4.54E+02	4.66E+01
	14	352.29	347 -	357	2.76E+02	69.27	4.86E+02	5.00E+01
	15	403.61	400 -	405	4.05E+01	29.15	1.37E+02	2.16E+01
	16	408.69	406 -	411	2.85E+01	30.07	1.61E+02	2.31E+01
	17	462.23	458 -	464	4.69E+01	31.86	1.50E+02	2.36E+01
M	18	504.09	498 -	520	2.45E+01	36.25	1.69E+02	2.14E+01
m	19	510.81	498 -	520	1.13E+02	40.77	1.81E+02	2.21E+01
	20	583.08	578 -	585	1.33E+02	39.04	2.01E+02	3.21E+01
	21	609.37	604 -	613	1.76E+02	46.63	2.09E+02	3.15E+01
	22	647.19	642 -	650	2.64E+01	31.81	1.39E+02	2.47E+01
	23	665.06	662 -	668	2.43E+01	26.76	1.13E+02	2.04E+01
	24	677.74	674 -	680	3.52E+01	23.26	7.15E+01	1.64E+01

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
25	794.91	791 -	797	2.36E+01	20.40	5.68E+01	1.47E+01
26	910.93	904 -	916	9.20E+01	40.39	1.46E+02	2.92E+01
27	934.71	930 -	938	2.05E+01	25.15	8.30E+01	1.93E+01
28	969.24	965 -	972	4.15E+01	28.71	1.05E+02	2.11E+01
29	1119.25	1115 -	1123	2.64E+01	27.89	1.03E+02	2.13E+01
30	1240.71	1230 -	1249	6.38E+01	54.52	2.08E+02	4.28E+01
31	1460.68	1453 -	1467	5.13E+02	47.59	2.17E+01	1.20E+01
32	1591.83	1587 -	1595	1.85E+01	14.60	1.89E+01	9.70E+00
33	1614.27	1610 -	1616	5.50E+00	6.34	3.00E+00	3.51E+00
34	1620.54	1617 -	1624	7.00E+00	8.72	8.00E+00	5.70E+00
35	1640.86	1637 -	1644	8.30E+00	7.48	3.40E+00	3.93E+00
36	1764.11	1760 -	1767	3.51E+01	12.81	3.84E+00	4.00E+00
37	1872.19	1869 -	1875	5.50E+00	6.34	3.00E+00	3.51E+00
38	2032.02	2029 -	2037	8.93E+00	9.82	1.01E+01	6.41E+00
39	2053.13	2049 -	2056	1.20E+01	6.93	0.00E+00	0.00E+00
40	2102.70	2099 -	2105	8.75E+00	8.51	6.50E+00	5.03E+00
41	2376.18	2374 -	2380	7.80E+00	7.23	4.40E+00	3.77E+00
42	2399.53	2395 -	2404	1.00E+01	6.32	0.00E+00	0.00E+00
43	2613.99	2610 -	2618	5.87E+01	16.26	4.66E+00	4.47E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 5:07:21PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	76.13	69 -	80	75.19	9.51E+02	158.00	2.64E+03	.....
2	87.49	82 -	90	86.55	1.47E+02	121.10	2.17E+03	SN-126
								CD-109
								LU-176
								NP-237
								EU-155

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	3	93.56	90 -	96	92.63	1.25E+02	93.73	1.46E+03	GA-67
	4	128.51	124 -	132	127.58	1.21E+02	89.87	1.17E+03	.....
	5	145.57	142 -	148	144.65	5.74E+01	71.18	8.81E+02	CE-141
	6	185.59	181 -	188	184.68	1.24E+02	71.81	7.78E+02	RA-226
	7	208.91	204 -	212	208.01	1.00E+02	74.32	7.79E+02	GA-67
									CM-243
M	8	238.80	233 -	245	237.91	7.06E+02	76.30	5.36E+02	PB-212
m	9	241.93	233 -	245	241.04	1.29E+02	72.12	4.93E+02	RA-224
	10	257.68	252 -	260	256.79	7.08E+01	56.86	4.42E+02	.....
	11	270.68	267 -	272	269.80	5.17E+01	42.67	3.17E+02	.....
	12	295.26	291 -	299	294.39	1.15E+02	66.07	6.07E+02	PB-214
	13	338.29	333 -	342	337.43	1.28E+02	60.99	4.54E+02	AC-228
	14	352.29	347 -	357	351.44	2.76E+02	69.27	4.86E+02	PB-214
	15	403.61	400 -	405	402.78	4.05E+01	29.15	1.37E+02	.....
	16	408.69	406 -	411	407.85	2.85E+01	30.07	1.61E+02	.....
	17	462.23	458 -	464	461.42	4.69E+01	31.86	1.50E+02	.....
M	18	504.09	498 -	520	503.29	2.45E+01	36.25	1.69E+02	.....
m	19	510.81	498 -	520	510.01	1.13E+02	40.77	1.81E+02	.....
	20	583.08	578 -	585	582.31	1.33E+02	39.04	2.01E+02	TL-208
	21	609.37	604 -	613	608.61	1.76E+02	46.63	2.09E+02	BI-214
	22	647.19	642 -	650	646.45	2.64E+01	31.81	1.39E+02	.....
	23	665.06	662 -	668	664.32	2.43E+01	26.76	1.13E+02	CE-143
	24	677.74	674 -	680	677.00	3.52E+01	23.26	7.15E+01	AG-110M
	25	794.91	791 -	797	794.23	2.36E+01	20.40	5.68E+01	CS-134
	26	910.93	904 -	916	910.29	9.20E+01	40.39	1.46E+02	AC-228
									TL-204
	27	934.71	930 -	938	934.09	2.05E+01	25.15	8.30E+01	.....
	28	969.24	965 -	972	968.63	4.15E+01	28.71	1.05E+02	AC-228
	29	1119.25	1115 -	1123	1118.71	2.64E+01	27.89	1.03E+02	.....
	30	1240.71	1230 -	1249	1240.23	6.38E+01	54.52	2.08E+02	.....
	31	1460.68	1453 -	1467	1460.30	5.13E+02	47.59	2.17E+01	K-40
	32	1591.83	1587 -	1595	1591.52	1.85E+01	14.60	1.89E+01	.....
	33	1614.27	1610 -	1616	1613.98	5.50E+00	6.34	3.00E+00	.....
	34	1620.54	1617 -	1624	1620.25	7.00E+00	8.72	8.00E+00	BI-212
	35	1640.86	1637 -	1644	1640.57	8.30E+00	7.48	3.40E+00	.....
	36	1764.11	1760 -	1767	1763.90	3.51E+01	12.81	3.84E+00	BI-214
	37	1872.19	1869 -	1875	1872.03	5.50E+00	6.34	3.00E+00	.....
	38	2032.02	2029 -	2037	2031.96	8.93E+00	9.82	1.01E+01	.....
	39	2053.13	2049 -	2056	2053.08	1.20E+01	6.93	0.00E+00	.....
	40	2102.70	2099 -	2105	2102.68	8.75E+00	8.51	6.50E+00	.....
	41	2376.18	2374 -	2380	2376.34	7.80E+00	7.23	4.40E+00	.....
	42	2399.53	2395 -	2404	2399.70	1.00E+01	6.32	0.00E+00	.....
	43	2613.99	2610 -	2618	2614.31	5.87E+01	16.26	4.66E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 5:07:21PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.13	9.51E+02	158.00	2.32E-02	1.91E-03
	2	87.49	1.47E+02	121.10	2.37E-02	2.15E-03
	3	93.56	1.25E+02	93.73	2.36E-02	2.08E-03
	4	128.51	1.21E+02	89.87	2.16E-02	1.63E-03
	5	145.57	5.74E+01	71.18	2.02E-02	1.57E-03
	6	185.59	1.24E+02	71.81	1.70E-02	1.40E-03
	7	208.91	1.00E+02	74.32	1.53E-02	1.29E-03
M	8	238.80	7.06E+02	76.30	1.36E-02	1.14E-03
m	9	241.93	1.29E+02	72.12	1.34E-02	1.13E-03
	10	257.68	7.08E+01	56.86	1.26E-02	1.05E-03
	11	270.68	5.17E+01	42.67	1.20E-02	9.88E-04
	12	295.26	1.15E+02	66.07	1.10E-02	9.13E-04
	13	338.29	1.28E+02	60.99	9.60E-03	8.23E-04
	14	352.29	2.76E+02	69.27	9.21E-03	7.93E-04
	15	403.61	4.05E+01	29.15	8.00E-03	7.06E-04
	16	408.69	2.85E+01	30.07	7.90E-03	7.04E-04
	17	462.23	4.69E+01	31.86	6.96E-03	6.81E-04
M	18	504.09	2.45E+01	36.25	6.37E-03	6.64E-04
m	19	510.81	1.13E+02	40.77	6.28E-03	6.61E-04
	20	583.08	1.33E+02	39.04	5.51E-03	6.31E-04
	21	609.37	1.76E+02	46.63	5.27E-03	6.20E-04
	22	647.19	2.64E+01	31.81	4.97E-03	6.05E-04
	23	665.06	2.43E+01	26.76	4.84E-03	5.94E-04
	24	677.74	3.52E+01	23.26	4.76E-03	5.79E-04
	25	794.91	2.36E+01	20.40	4.10E-03	4.31E-04
	26	910.93	9.20E+01	40.39	3.62E-03	2.99E-04
	27	934.71	2.05E+01	25.15	3.54E-03	2.93E-04
	28	969.24	4.15E+01	28.71	3.42E-03	2.85E-04
	29	1119.25	2.64E+01	27.89	3.02E-03	2.50E-04
	30	1240.71	6.38E+01	54.52	2.76E-03	2.33E-04
	31	1460.68	5.13E+02	47.59	2.38E-03	2.08E-04
	32	1591.83	1.85E+01	14.60	2.20E-03	1.88E-04
	33	1614.27	5.50E+00	6.34	2.18E-03	1.85E-04
	34	1620.54	7.00E+00	8.72	2.17E-03	1.84E-04
	35	1640.86	8.30E+00	7.48	2.14E-03	1.81E-04
	36	1764.11	3.51E+01	12.81	2.00E-03	1.62E-04
	37	1872.19	5.50E+00	6.34	1.88E-03	1.51E-04
	38	2032.02	8.93E+00	9.82	1.73E-03	1.51E-04
	39	2053.13	1.20E+01	6.93	1.71E-03	1.51E-04
	40	2102.70	8.75E+00	8.51	1.67E-03	1.51E-04
	41	2376.18	7.80E+00	7.23	1.45E-03	1.51E-04
	42	2399.53	1.00E+01	6.32	1.43E-03	1.51E-04
	43	2613.99	5.87E+01	16.26	1.28E-03	1.51E-04

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 5:07:21PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.13	9.51E+02	158.00			9.51E+02	1.58E+02
	2	87.49	1.47E+02	121.10			1.47E+02	1.21E+02
	3	93.56	1.25E+02	93.73			1.25E+02	9.37E+01
	4	128.51	1.21E+02	89.87			1.21E+02	8.99E+01
	5	145.57	5.74E+01	71.18			5.74E+01	7.12E+01
	6	185.59	1.24E+02	71.81	2.43E+01	7.50E+00	9.98E+01	7.22E+01
	7	208.91	1.00E+02	74.32			1.00E+02	7.43E+01
M	8	238.80	7.06E+02	76.30	1.06E+01	6.01E+00	6.96E+02	7.65E+01
m	9	241.93	1.29E+02	72.12			1.29E+02	7.21E+01
	10	257.68	7.08E+01	56.86			7.08E+01	5.69E+01
	11	270.68	5.17E+01	42.67			5.17E+01	4.27E+01
	12	295.26	1.15E+02	66.07			1.15E+02	6.61E+01
	13	338.29	1.28E+02	60.99			1.28E+02	6.10E+01
	14	352.29	2.76E+02	69.27			2.76E+02	6.93E+01
	15	403.61	4.05E+01	29.15			4.05E+01	2.92E+01
	16	408.69	2.85E+01	30.07			2.85E+01	3.01E+01
	17	462.23	4.69E+01	31.86			4.69E+01	3.19E+01
M	18	504.09	2.45E+01	36.25			2.45E+01	3.62E+01
m	19	510.81	1.13E+02	40.77	4.55E+01	4.99E+00	6.70E+01	4.11E+01
	20	583.08	1.33E+02	39.04			1.33E+02	3.90E+01
	21	609.37	1.76E+02	46.63			1.76E+02	4.66E+01
	22	647.19	2.64E+01	31.81			2.64E+01	3.18E+01
	23	665.06	2.43E+01	26.76			2.43E+01	2.68E+01
	24	677.74	3.52E+01	23.26			3.52E+01	2.33E+01
	25	794.91	2.36E+01	20.40			2.36E+01	2.04E+01
	26	910.93	9.20E+01	40.39			9.20E+01	4.04E+01
	27	934.71	2.05E+01	25.15			2.05E+01	2.52E+01
	28	969.24	4.15E+01	28.71			4.15E+01	2.87E+01
	29	1119.25	2.64E+01	27.89			2.64E+01	2.79E+01
	30	1240.71	6.38E+01	54.52			6.38E+01	5.45E+01
	31	1460.68	5.13E+02	47.59			5.13E+02	4.76E+01
	32	1591.83	1.85E+01	14.60			1.85E+01	1.46E+01
	33	1614.27	5.50E+00	6.34			5.50E+00	6.34E+00
	34	1620.54	7.00E+00	8.72			7.00E+00	8.72E+00
	35	1640.86	8.30E+00	7.48			8.30E+00	7.48E+00

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
36	1764.11	3.51E+01	12.81			3.51E+01	1.28E+01
37	1872.19	5.50E+00	6.34			5.50E+00	6.34E+00
38	2032.02	8.93E+00	9.82			8.93E+00	9.82E+00
39	2053.13	1.20E+01	6.93			1.20E+01	6.93E+00
40	2102.70	8.75E+00	8.51			8.75E+00	8.51E+00
41	2376.18	7.80E+00	7.23			7.80E+00	7.23E+00
42	2399.53	1.00E+01	6.32			1.00E+01	6.32E+00
43	2613.99	5.87E+01	16.26			5.87E+01	1.63E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 5:07:21PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	76.13	9.51E+02	158.00			9.51E+02	1.58E+02
	2	87.49	1.47E+02	121.10			1.47E+02	1.21E+02
	3	93.56	1.25E+02	93.73			1.25E+02	9.37E+01
	4	128.51	1.21E+02	89.87			1.21E+02	8.99E+01
	5	145.57	5.74E+01	71.18			5.74E+01	7.12E+01
	6	185.59	1.24E+02	71.81	2.43E+01	7.50E+00	9.98E+01	7.22E+01
	7	208.91	1.00E+02	74.32			1.00E+02	7.43E+01
M	8	238.80	7.06E+02	76.30	1.06E+01	6.01E+00	6.96E+02	7.65E+01
m	9	241.93	1.29E+02	72.12			1.29E+02	7.21E+01
	10	257.68	7.08E+01	56.86			7.08E+01	5.69E+01
	11	270.68	5.17E+01	42.67			5.17E+01	4.27E+01
	12	295.26	1.15E+02	66.07			1.15E+02	6.61E+01
	13	338.29	1.28E+02	60.99			1.28E+02	6.10E+01
	14	352.29	2.76E+02	69.27			2.76E+02	6.93E+01
	15	403.61	4.05E+01	29.15			4.05E+01	2.92E+01
	16	408.69	2.85E+01	30.07			2.85E+01	3.01E+01
	17	462.23	4.69E+01	31.86			4.69E+01	3.19E+01
M	18	504.09	2.45E+01	36.25			2.45E+01	3.62E+01
m	19	510.81	1.13E+02	40.77	4.55E+01	4.99E+00	6.70E+01	4.11E+01
	20	583.08	1.33E+02	39.04			1.33E+02	3.90E+01

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
21	609.37	1.76E+02	46.63			1.76E+02	4.66E+01
22	647.19	2.64E+01	31.81			2.64E+01	3.18E+01
23	665.06	2.43E+01	26.76			2.43E+01	2.68E+01
24	677.74	3.52E+01	23.26			3.52E+01	2.33E+01
25	794.91	2.36E+01	20.40			2.36E+01	2.04E+01
26	910.93	9.20E+01	40.39			9.20E+01	4.04E+01
27	934.71	2.05E+01	25.15			2.05E+01	2.52E+01
28	969.24	4.15E+01	28.71			4.15E+01	2.87E+01
29	1119.25	2.64E+01	27.89			2.64E+01	2.79E+01
30	1240.71	6.38E+01	54.52			6.38E+01	5.45E+01
31	1460.68	5.13E+02	47.59			5.13E+02	4.76E+01
32	1591.83	1.85E+01	14.60			1.85E+01	1.46E+01
33	1614.27	5.50E+00	6.34			5.50E+00	6.34E+00
34	1620.54	7.00E+00	8.72			7.00E+00	8.72E+00
35	1640.86	8.30E+00	7.48			8.30E+00	7.48E+00
36	1764.11	3.51E+01	12.81			3.51E+01	1.28E+01
37	1872.19	5.50E+00	6.34			5.50E+00	6.34E+00
38	2032.02	8.93E+00	9.82			8.93E+00	9.82E+00
39	2053.13	1.20E+01	6.93			1.20E+01	6.93E+00
40	2102.70	8.75E+00	8.51			8.75E+00	8.51E+00
41	2376.18	7.80E+00	7.23			7.80E+00	7.23E+00
42	2399.53	1.00E+01	6.32			1.00E+01	6.32E+00
43	2613.99	5.87E+01	16.26			5.87E+01	1.63E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.997	1460.81	*	10.67	2.28E+01	2.94E+00
CD-109	0.953	88.03	*	3.72	2.19E+00	1.83E+00
SN-126	0.999	87.57	*	37.00	1.89E-01	1.57E-01
CE-141	0.950	145.44	*	48.40	5.79E-01	7.88E-01
TL-208	0.848	583.14	*	30.22	9.02E-01	2.85E-01
		860.37		4.48		
		2614.66	*	35.85	1.45E+00	4.36E-01
PB-212	0.893	238.63	*	44.60	1.30E+00	1.80E-01

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-212	0.893	300.09		3.41		
BI-214	0.673	609.31	*	46.30	8.18E-01	2.37E-01
		1120.29		15.10		
		1764.49	*	15.80	1.26E+00	4.70E-01
		2204.22		4.98		
PB-214	0.986	295.21	*	19.19	6.13E-01	3.57E-01
		351.92	*	37.19	9.12E-01	2.42E-01
RA-224	0.865	240.98	*	3.95	2.75E+00	1.56E+00
RA-226	0.941	186.21	*	3.28	2.03E+00	4.00E+00
AC-228	0.998	338.32	*	11.40	1.32E+00	6.41E-01
		911.07	*	27.70	1.04E+00	4.64E-01
		969.11	*	16.60	8.25E-01	5.76E-01
NP-237	0.857	86.50	*	12.60	5.56E-01	4.62E-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 5:07:21PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.13	2.64180E-01	8.31		
	3	93.56	3.46842E-02	37.53	Tol.	GA-67
	4	128.51	3.36970E-02	37.04		
	7	208.91	2.79082E-02	36.99	Tol.	GA-67 CM-243
	10	257.68	1.96785E-02	40.13		
	11	270.68	1.43671E-02	41.25		
	15	403.61	1.12462E-02	36.01		
	16	408.69	7.91794E-03	52.74		
	17	462.23	1.30373E-02	33.94		
M	18	504.09	6.80328E-03	74.00		
m	19	510.81	1.86175E-02	30.64		
	22	647.19	7.33652E-03	60.22	Sum	
	23	665.06	6.76097E-03	54.97	Tol.	CE-143
	24	677.74	9.78678E-03	33.02		
	25	794.91	6.55449E-03	43.23	Sum	

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
27	934.71	5.69668E-03	61.33	Sum	
29	1119.25	7.33796E-03	52.79		
30	1240.71	1.77356E-02	42.69		
32	1591.83	5.14881E-03	39.39	D-Esc	
33	1614.27	1.52778E-03	57.68		
34	1620.54	1.94444E-03	62.27	Tol.	BI-212
35	1640.86	2.30556E-03	45.08		
37	1872.19	1.52778E-03	57.68		
38	2032.02	2.48016E-03	55.01		
39	2053.13	3.33333E-03	28.87		
40	2102.70	2.43056E-03	48.66	S-Esc	
41	2376.18	2.16667E-03	46.34		
42	2399.53	2.77778E-03	31.62		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81	*	10.67	2.28E+01	2.94E+00
CD-109	0.95	88.03	*	3.72	2.19E+00	1.83E+00
SN-126	0.99	87.57	*	37.00	1.89E-01	1.57E-01
CE-141	0.95	145.44	*	48.40	5.79E-01	7.88E-01
TL-208	0.84	583.14	*	30.22	9.02E-01	2.85E-01
		860.37		4.48		
		2614.66	*	35.85	1.45E+00	4.36E-01
PB-212	0.89	238.63	*	44.60	1.30E+00	1.80E-01
		300.09		3.41		
BI-214	0.67	609.31	*	46.30	8.18E-01	2.37E-01
		1120.29		15.10		
		1764.49	*	15.80	1.26E+00	4.70E-01
		2204.22		4.98		
PB-214	0.98	295.21	*	19.19	6.13E-01	3.57E-01
		351.92	*	37.19	9.12E-01	2.42E-01

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
RA-224	0.86	240.98	*	3.95	2.75E+00	1.56E+00
RA-226	0.94	186.21	*	3.28	2.03E+00	4.00E+00
AC-228	0.99	338.32	*	11.40	1.32E+00	6.41E-01
		911.07	*	27.70	1.04E+00	4.64E-01
		969.11	*	16.60	8.25E-01	5.76E-01
NP-237	0.85	86.50	*	12.60	5.56E-01	4.62E-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.997	2.28E+01	2.94E+00	
?	CD-109	0.953	2.19E+00	1.83E+00	
?	SN-126	0.999	1.89E-01	1.57E-01	
	CE-141	0.950	5.79E-01	7.88E-01	
	TL-208	0.848	1.07E+00	2.39E-01	
	PB-212	0.893	1.30E+00	1.80E-01	
	BI-214	0.673	9.07E-01	2.11E-01	
	PB-214	0.986	8.18E-01	2.00E-01	
	RA-224	0.865	2.75E+00	1.56E+00	
	RA-226	0.941	2.03E+00	4.00E+00	
	AC-228	0.998	1.04E+00	3.15E-01	
?	NP-237	0.857	5.56E-01	4.62E-01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 5:07:21PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.13	2.64180E-01	8.31		
	3	93.56	3.46842E-02	37.53	Tol.	GA-67
	4	128.51	3.36970E-02	37.04		
	7	208.91	2.79082E-02	36.99	Tol.	GA-67 CM-243
	10	257.68	1.96785E-02	40.13		
	11	270.68	1.43671E-02	41.25		
	15	403.61	1.12462E-02	36.01		
	16	408.69	7.91794E-03	52.74		
	17	462.23	1.30373E-02	33.94		
M	18	504.09	6.80328E-03	74.00		
m	19	510.81	1.86175E-02	30.64		
	22	647.19	7.33652E-03	60.22	Sum	
	23	665.06	6.76097E-03	54.97	Tol.	CE-143
	24	677.74	9.78678E-03	33.02		
	25	794.91	6.55449E-03	43.23	Sum	
	27	934.71	5.69668E-03	61.33	Sum	
	29	1119.25	7.33796E-03	52.79		
	30	1240.71	1.77356E-02	42.69		
	32	1591.83	5.14881E-03	39.39	D-Esc	
	33	1614.27	1.52778E-03	57.68		
	34	1620.54	1.94444E-03	62.27	Tol.	BI-212
	35	1640.86	2.30556E-03	45.08		
	37	1872.19	1.52778E-03	57.68		
	38	2032.02	2.48016E-03	55.01		
	39	2053.13	3.33333E-03	28.87		
	40	2102.70	2.43056E-03	48.66	S-Esc	
	41	2376.18	2.16667E-03	46.34		
	42	2399.53	2.77778E-03	31.62		

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		BE-7	477.59		10.42	-9.44E-01	3.15E+00	3.15E+00
+		NA-22	1274.54		99.94	2.38E-02	1.66E-01	1.66E-01
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	-1.74E-02	6.26E-02	6.26E-02
+		K-40	1460.81	*	10.67	2.28E+01	1.19E+00	1.19E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	-2.35E-02	7.41E-02	7.41E-02
			78.34		96.00	3.02E-01		9.43E-02
+		SC-46	889.25		99.98	2.67E-02	2.59E-01	2.59E-01
			1120.51		99.99	3.39E-01		3.94E-01
+		V-48	983.52		99.98	-7.24E-01	9.25E+00	9.25E+00
			1312.10		97.50	-5.68E+00		1.03E+01
+		CR-51	320.08		9.83	7.87E-01	9.25E+00	9.25E+00
+		MN-54	834.83		99.97	1.81E-03	1.36E-01	1.36E-01
+		CO-56	846.75		99.96	-1.58E-02	2.68E-01	2.68E-01
			1037.75		14.03	-4.60E-01		2.31E+00
			1238.25		67.00	-8.06E-02		6.69E-01
			1771.40		15.51	-2.06E+00		1.26E+00
			2598.48		16.90	2.53E-01		1.18E+00
+		CO-57	122.06		85.51	-2.14E-02	8.02E-02	8.02E-02
			136.48		10.60	9.84E-02		6.91E-01
+		CO-58	810.76		99.40	3.88E-02	3.34E-01	3.34E-01
+		FE-59	1099.22		56.50	1.00E-01	1.17E+00	1.17E+00
			1291.56		43.20	1.62E-01		1.44E+00
+		CO-60	1173.22		100.00	-1.97E-02	1.16E-01	1.57E-01
			1332.49		100.00	-7.33E-02		1.16E-01
+		ZN-65	1115.52		50.75	-3.57E-02	3.78E-01	3.78E-01
+		GA-67	93.31		35.70	4.02E+08	4.35E+08	4.35E+08
			208.95		2.24	7.64E+09		7.22E+09
			300.22		16.00	3.78E+07		1.09E+09
+		SE-75	121.11		16.70	-2.44E-02	1.69E-01	5.79E-01

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	-4.26E-02	1.69E-01	1.69E-01
		264.65		59.80	5.49E-02		1.95E-01
		279.53		25.20	2.51E-01		5.06E-01
		400.65		11.40	-2.83E-01		1.15E+00
+	RB-82	776.52		13.00	-1.34E+00	1.33E+01	1.33E+01
+	RB-83	520.41		46.00	-9.01E-03	3.90E-01	3.90E-01
		529.64		30.30	4.12E-02		6.66E-01
		552.65		16.40	3.77E-01		1.13E+00
+	KR-85	513.99		0.43	1.84E+01	2.56E+01	2.56E+01
+	SR-85	513.99		99.27	2.33E-01	3.25E-01	3.25E-01
+	Y-88	898.02		93.40	-5.01E-02	1.38E-01	2.23E-01
		1836.01		99.38	1.72E-02		1.38E-01
+	MO-93	263.06		56.72	1.99E-02	1.08E-01	1.11E-01
		684.67		99.68	3.31E-02		1.08E-01
		1477.11		99.08	5.42E-02		1.16E-01
+	NB-93M	16.57		9.43	1.28E+01	7.57E+00	7.57E+00
+	NB-94	702.63		100.00	-9.62E-04	1.14E-01	1.14E-01
		871.10		100.00	4.31E-02		1.16E-01
+	NB-95	765.79		99.81	3.02E-01	9.10E-01	9.10E-01
+	NB-95M	235.69		25.00	2.38E+08	1.24E+08	1.24E+08
+	ZR-95	724.18		43.70	1.07E+00	6.59E-01	9.32E-01
		756.72		55.30	3.22E-02		6.59E-01
+	MO-99	181.06		6.20	-5.33E+09	1.13E+11	1.21E+11
		739.58		12.80	2.75E+10		1.13E+11
		778.00		4.50	-1.77E+11		2.94E+11
+	RU-103	497.08		89.00	4.95E-02	5.02E-01	5.02E-01
+	RU-106	621.84		9.80	-1.86E-01	1.13E+00	1.13E+00
+	AG-108M	433.93		89.90	-3.49E-02	8.40E-02	8.40E-02
		614.37		90.40	1.01E-02		1.00E-01
		722.95		90.50	3.86E-02		1.41E-01
+	CD-109	88.03	*	3.72	2.19E+00	2.96E+00	2.96E+00
+	AG-110M	657.75		93.14	-4.30E-02	1.50E-01	1.50E-01
		677.61		10.53	-5.08E-01		1.33E+00
		706.67		16.46	5.54E-02		9.43E-01
		763.93		21.98	-1.42E-01		7.07E-01
		884.67		71.63	6.44E-02		2.22E-01
		1384.27		23.94	3.41E-01		6.73E-01
+	CD-113M	263.70		0.02	8.02E+01	2.75E+02	2.75E+02
+	SN-113	255.12		1.93	2.16E+00	2.07E-01	6.42E+00
		391.69		64.90	-2.93E-02		2.07E-01
+	TE123M	159.00		84.10	-4.87E-03	1.23E-01	1.23E-01
+	SB-124	602.71		97.87	5.45E-03	3.00E-01	3.00E-01
		645.85		7.26	4.36E-01		4.35E+00
		722.78		11.10	1.01E+00		3.69E+00
		1691.02		49.00	-2.97E-03		5.65E-01
+	I-125	35.49		6.49	-2.93E+00	5.27E+00	5.27E+00
+	SB-125	176.33		6.89	-6.73E-02	2.79E-01	9.44E-01
		427.89		29.33	7.73E-03		2.79E-01

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	463.38		10.35	2.34E-02	2.79E-01	9.14E-01
		600.56		17.80	1.15E-01		5.61E-01
		635.90		11.32	-1.15E-01		8.82E-01
+	SB-126	414.70		83.30	1.77E+01	2.80E+01	2.80E+01
		666.33		99.60	-1.25E+00		3.33E+01
		695.00		99.60	-1.82E+01		3.15E+01
		720.50		53.80	-7.86E+01		5.82E+01
+	SN-126	87.57	*	37.00	1.89E-01	2.56E-01	2.56E-01
+	SB-127	473.00		25.00	7.78E+06	2.50E+07	2.97E+07
		685.20		35.70	7.67E+06		2.50E+07
		783.80		14.70	6.12E+06		6.94E+07
+	I-129	29.78		57.00	-6.23E-02	2.64E-01	2.64E-01
		33.60		13.20	1.75E-01		8.83E-01
		39.58		7.52	-2.90E-01		1.23E+00
+	I-131	284.30		6.05	-1.99E+03	5.32E+02	7.09E+03
		364.48		81.20	-1.14E+02		5.32E+02
		636.97		7.26	1.18E+03		8.08E+03
		722.89		1.80	1.21E+04		4.42E+04
+	TE-132	49.72		13.10	4.61E+08	1.80E+08	1.35E+09
		228.16		88.00	6.20E+07		1.80E+08
+	BA-133	81.00		33.00	-5.72E-01	1.65E-01	2.22E-01
		302.84		17.80	1.12E-02		4.19E-01
		356.01		60.00	-2.70E-02		1.65E-01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-3.23E+05	1.25E+05	1.25E+05
+	CS-134	563.23		8.38	3.33E-02	1.13E-01	1.17E+00
		569.32		15.43	-8.12E-02		6.62E-01
		604.70		97.60	4.50E-03		1.13E-01
		795.84		85.40	-5.01E-02		1.34E-01
		801.93		8.73	-6.29E-02		1.44E+00
+	CS-135	268.24		16.00	2.03E-02	4.49E-01	4.49E-01
+	@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41		28.60	1.00E+26		1.00E+26
	@	1678.03		9.54	1.00E+26		1.00E+26
+	CS-136	153.22		7.46	6.31E+01	2.28E+01	1.68E+02
		163.89		4.61	2.32E+01		2.57E+02
		176.55		13.56	3.05E+01		9.38E+01
		273.65		12.66	-7.55E+00		1.14E+02
		340.57		48.50	4.27E+01		3.94E+01
		818.50		99.70	-1.02E+01		2.28E+01
		1048.07		79.60	2.46E+00		3.59E+01
		1235.34		19.70	8.75E-01		2.02E+02
+	CS-137	661.65		85.12	1.78E-02	1.39E-01	1.39E-01
+	LA-138	788.74		34.00	1.04E-01	1.55E-01	3.38E-01
		1435.80		66.00	4.44E-02		1.55E-01
+	CE-139	165.85		80.35	-7.57E-02	1.18E-01	1.18E-01
+	BA-140	162.64		6.70	-5.82E+01	7.63E+01	2.05E+02
		304.84		4.50	-1.60E+02		3.73E+02
		423.70		3.20	1.98E+02		5.88E+02

Analysis Report for 1707092-10

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	437.55		2.00	2.83E+02	7.63E+01	1.00E+03
		537.32		25.00	-5.14E+01		7.63E+01
+	LA-140	328.77		20.50	2.38E+01	2.47E+01	9.15E+01
		487.03		45.50	-7.35E+00		4.41E+01
		815.85		23.50	1.41E+01		1.20E+02
		1596.49		95.49	-6.12E+00		2.47E+01
+	CE-141	145.44	*	48.40	5.79E-01	1.18E+00	1.18E+00
+	@ CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26		42.00	1.00E+26		1.00E+26
	@	664.55		5.20	1.00E+26		1.00E+26
+	CE-144	133.54		10.80	1.20E-01	6.60E-01	6.60E-01
+	PM-144	476.78		42.00	-1.13E-01	1.14E-01	2.52E-01
		618.01		98.60	1.07E-02		1.14E-01
		696.49		99.49	7.00E-02		1.40E-01
+	PM-145	36.85		21.70	-2.93E-01	2.51E-01	4.70E-01
		37.36		39.70	-1.57E-01		2.51E-01
		42.30		15.10	-1.30E-01		5.80E-01
		72.40		2.31	-7.18E+00		3.45E+00
+	PM-146	453.90		39.94	7.18E-02	2.03E-01	2.03E-01
		735.90		14.01	-3.23E-01		7.86E-01
		747.13		13.10	-2.12E-01		9.56E-01
+	ND-147	91.11		28.90	1.13E+02	1.48E+02	1.48E+02
		531.02		13.10	2.07E+01		3.96E+02
+	PM-149	285.90		3.10	4.10E+12	1.44E+14	1.44E+14
+	EU-152	121.78		20.50	-6.97E-02	2.61E-01	2.61E-01
		244.69		5.40	5.14E-02		1.41E+00
		344.27		19.13	3.94E-02		3.81E-01
		778.89		9.20	-3.38E-01		1.21E+00
		964.01		10.40	3.24E-01		1.38E+00
		1085.78		7.22	-4.64E-01		1.88E+00
		1112.02		9.60	5.14E-01		1.48E+00
		1407.95		14.94	2.76E-01		8.52E-01
+	GD-153	97.43		31.30	4.97E-02	2.59E-01	2.59E-01
		103.18		22.20	7.94E-02		3.37E-01
+	EU-154	123.07		40.50	-7.01E-04	1.36E-01	1.36E-01
		723.30		19.70	8.11E-01		7.05E-01
		873.19		11.50	1.70E-01		1.03E+00
		996.32		10.30	-5.70E-01		1.23E+00
		1004.76		17.90	3.43E-01		8.27E-01
		1274.45		35.50	6.35E-02		4.43E-01
+	EU-155	86.50		30.90	2.30E-01	2.39E-01	2.39E-01
		105.30		20.70	7.87E-02		2.80E-01
+	EU-156	811.77		10.40	2.24E+01	1.17E+02	1.17E+02
		1153.47		7.20	1.33E+01		2.23E+02
		1230.71		8.90	9.83E+00		2.13E+02
+	HO-166M	184.41		72.60	1.01E-01	9.45E-02	9.45E-02
		280.45		29.60	7.73E-02		2.36E-01
		410.94		11.10	1.60E-01		7.37E-01
		711.69		54.10	1.70E-01		2.15E-01

Analysis Report for 1707092-10

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TM-171	66.72		0.14	9.80E+00	5.66E+01	5.66E+01
+	HF-172	67.35		5.31	2.58E-01	5.65E-01	1.49E+00
		125.81		11.30	-7.90E-03		5.65E-01
+	LU-172	181.53		20.60	-2.93E+02	7.78E+03	1.10E+04
		900.72		29.81	-9.35E+02		1.34E+04
		1093.66		62.50	-2.28E+03		7.78E+03
+	LU-173	100.72		5.24	-5.30E-01	3.83E-01	1.21E+00
		272.11		21.20	-1.00E-02		3.83E-01
+	HF-175	343.40		84.00	2.41E-02	2.33E-01	2.33E-01
+	LU-176	88.34		13.30	5.50E-01	7.33E-02	5.39E-01
		201.83		86.00	7.56E-03		7.61E-02
		306.78		94.00	-2.20E-02		7.33E-02
+	HF-181	133.02		41.70	2.90E-01	5.89E-01	7.32E-01
		345.85		17.20	2.28E-01		2.18E+00
		482.03		82.80	2.37E-01		5.89E-01
+	TA-182	67.75		41.20	-9.94E-02	3.13E-01	3.13E-01
		1121.30		34.90	-5.54E-02		8.92E-01
		1189.05		16.23	-5.45E-01		1.72E+00
		1221.41		26.98	-1.75E-02		1.19E+00
		1231.02		11.44	1.32E-01		3.02E+00
+	IR-192	308.46		29.68	-1.61E-01	4.42E-01	6.10E-01
		468.07		48.10	-1.13E-01		4.42E-01
+	HG-203	279.19		77.30	-3.98E-02	4.03E-01	4.03E-01
+	TL-204	374.74		94.11	-2.15E-02	8.20E-02	8.20E-02
		899.15		99.16	-9.84E-04		1.17E-01
		911.74		91.10	3.23E-01		2.09E-01
+	BI-207	569.67		97.72	-1.17E-02	9.58E-02	9.58E-02
		1063.62		74.90	-5.94E-02		1.79E-01
+	TL-208	583.14	*	30.22	9.02E-01	2.87E-01	4.56E-01
		860.37		4.48	4.64E-01		2.59E+00
		2614.66	*	35.85	1.45E+00		2.87E-01
+	BI-210M	262.00		45.00	-4.66E-03	1.37E-01	1.37E-01
		300.00		23.00	1.15E-02		3.34E-01
+	PB-210	46.50		4.25	9.54E-01	1.93E+00	1.93E+00
+	PB-211	404.84		2.90	3.50E-01	2.74E+00	2.74E+00
		831.96		2.90	2.71E-01		3.60E+00
+	BI-212	727.17		11.80	5.79E-01	1.12E+00	1.12E+00
		1620.62		2.75	-1.32E-01		3.44E+00
+	PB-212	238.63	*	44.60	1.30E+00	2.71E-01	2.71E-01
		300.09		3.41	7.78E-02		2.25E+00
+	BI-214	609.31	*	46.30	8.18E-01	3.05E-01	3.05E-01
		1120.29		15.10	9.71E-01		1.13E+00
		1764.49	*	15.80	1.26E+00		3.84E-01
		2204.22		4.98	1.26E+00		2.50E+00
+	PB-214	295.21	*	19.19	6.13E-01	3.39E-01	5.64E-01
		351.92	*	37.19	9.12E-01		3.39E-01
+	RN-219	401.80		6.50	-1.73E-01	1.20E+00	1.20E+00
+	RA-223	323.87		3.88	-1.73E+00	1.83E+00	1.83E+00

Analysis Report for 1707092-10

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-224	240.98	*	3.95	2.75E+00	3.06E+00	3.06E+00
+	RA-225	40.00		31.00	-7.99E+00	3.40E+01	3.40E+01
+	RA-226	186.21	*	3.28	2.03E+00	2.38E+00	2.38E+00
+	TH-227	50.10		8.40	3.07E-01	9.01E-01	9.01E-01
		236.00		11.50	1.83E+00		9.54E-01
		256.20		6.30	7.55E-01		1.07E+00
+	AC-228	338.32	*	11.40	1.32E+00	6.91E-01	9.91E-01
		911.07	*	27.70	1.04E+00		6.91E-01
		969.11	*	16.60	8.25E-01		8.94E-01
+	TH-230	48.44		16.90	3.95E-02	4.58E-01	4.58E-01
		62.85		4.60	1.07E+00		1.62E+00
		67.67		0.37	-6.00E+00		1.89E+01
+	PA-231	283.67		1.60	-1.20E+00	3.18E+00	4.28E+00
		302.67		2.30	8.50E-02		3.18E+00
+	TH-231	25.64		14.70	7.36E-01	1.06E+00	1.51E+00
		84.21		6.40	-5.38E-01		1.06E+00
+	PA-233	311.98		38.60	1.53E-01	2.51E+00	2.51E+00
+	PA-234	131.20		20.40	1.12E-01	2.95E-01	2.95E-01
		733.99		8.80	-6.17E-01		1.22E+00
		946.00		12.00	-2.99E-01		1.04E+00
+	PA-234M	1001.03		0.92	-4.16E-01	1.48E+01	1.48E+01
+	TH-234	63.29		3.80	1.29E+00	1.96E+00	1.96E+00
+	U-235	143.76		10.50	-9.65E-03	5.68E-01	5.68E-01
		163.35		4.70	-3.42E-01		1.20E+00
		205.31		4.70	1.92E-01		1.45E+00
+	NP-237	86.50	*	12.60	5.56E-01	7.51E-01	7.51E-01
+	NP-239	106.10		22.70	3.59E+11	2.21E+12	2.21E+12
		228.18		10.70	2.00E+12		5.78E+12
		277.60		14.10	1.79E+12		4.45E+12
+	AM-241	59.54		35.90	-4.68E-02	2.05E-01	2.05E-01
+	AM-243	74.67		66.00	6.27E-01	1.44E-01	1.44E-01
+	CM-243	209.75		3.29	1.30E+00	4.97E-01	2.13E+00
		228.14		10.60	2.23E-01		6.47E-01
		277.60		14.00	2.00E-01		4.97E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1707092-10

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NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	3.15E+00	3.15E+00	-9.44E-01	1.49E+00
	NA-22	1274.54		99.94	1.66E-01	1.66E-01	2.38E-02	7.67E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	6.26E-02	6.26E-02	-1.74E-02	2.34E-02
+	K-40	1460.81	*	10.67	1.19E+00	1.19E+00	2.28E+01	5.33E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	7.41E-02	7.41E-02	-2.35E-02	3.63E-02
		78.34		96.00	9.43E-02		3.02E-01	4.65E-02
	SC-46	889.25		99.98	2.59E-01	2.59E-01	2.67E-02	1.20E-01
		1120.51		99.99	3.94E-01		3.39E-01	1.85E-01
	V-48	983.52		99.98	9.25E+00	9.25E+00	-7.24E-01	4.26E+00
		1312.10		97.50	1.03E+01		-5.68E+00	4.67E+00
	CR-51	320.08		9.83	9.25E+00	9.25E+00	7.87E-01	4.43E+00
	MN-54	834.83		99.97	1.36E-01	1.36E-01	1.81E-03	6.30E-02
	CO-56	846.75		99.96	2.68E-01	2.68E-01	-1.58E-02	1.24E-01
		1037.75		14.03	2.31E+00		-4.60E-01	1.07E+00
		1238.25		67.00	6.69E-01		-8.06E-02	3.14E-01
		1771.40		15.51	1.26E+00		-2.06E+00	5.10E-01
		2598.48		16.90	1.18E+00		2.53E-01	4.17E-01
	CO-57	122.06		85.51	8.02E-02	8.02E-02	-2.14E-02	3.90E-02
		136.48		10.60	6.91E-01		9.84E-02	3.37E-01
	CO-58	810.76		99.40	3.34E-01	3.34E-01	3.88E-02	1.57E-01
	FE-59	1099.22		56.50	1.17E+00	1.17E+00	1.00E-01	5.44E-01
		1291.56		43.20	1.44E+00		1.62E-01	6.54E-01
	CO-60	1173.22		100.00	1.57E-01	1.16E-01	-1.97E-02	7.31E-02
		1332.49		100.00	1.16E-01		-7.33E-02	5.17E-02
	ZN-65	1115.52		50.75	3.78E-01	3.78E-01	-3.57E-02	1.76E-01
	GA-67	93.31		35.70	4.35E+08	4.35E+08	4.02E+08	2.13E+08
		208.95		2.24	7.22E+09		7.64E+09	3.51E+09
		300.22		16.00	1.09E+09		3.78E+07	5.27E+08
	SE-75	121.11		16.70	5.79E-01	1.69E-01	-2.44E-02	2.82E-01
		136.00		59.20	1.69E-01		-4.26E-02	8.23E-02
		264.65		59.80	1.95E-01		5.49E-02	9.39E-02
		279.53		25.20	5.06E-01		2.51E-01	2.43E-01
		400.65		11.40	1.15E+00		-2.83E-01	5.45E-01
	RB-82	776.52		13.00	1.33E+01	1.33E+01	-1.34E+00	6.20E+00
	RB-83	520.41		46.00	3.90E-01	3.90E-01	-9.01E-03	1.83E-01
		529.64		30.30	6.66E-01		4.12E-02	3.14E-01
		552.65		16.40	1.13E+00		3.77E-01	5.30E-01
	KR-85	513.99		0.43	2.56E+01	2.56E+01	1.84E+01	1.22E+01
	SR-85	513.99		99.27	3.25E-01	3.25E-01	2.33E-01	1.55E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	Y-88	898.02		93.40	2.23E-01	1.38E-01	-5.01E-02	1.03E-01
		1836.01		99.38	1.38E-01		1.72E-02	5.33E-02
	MO-93	263.06		56.72	1.11E-01	1.08E-01	1.99E-02	5.33E-02
		684.67		99.68	1.08E-01		3.31E-02	5.07E-02
		1477.11		99.08	1.16E-01		5.42E-02	5.12E-02
	NB-93M	16.57		9.43	7.57E+00	7.57E+00	1.28E+01	3.67E+00
	NB-94	702.63		100.00	1.14E-01	1.14E-01	-9.62E-04	5.34E-02
		871.10		100.00	1.16E-01		4.31E-02	5.41E-02
	NB-95	765.79		99.81	9.10E-01	9.10E-01	3.02E-01	4.28E-01
	NB-95M	235.69		25.00	1.24E+08	1.24E+08	2.38E+08	6.10E+07
	ZR-95	724.18		43.70	9.32E-01	6.59E-01	1.07E+00	4.43E-01
		756.72		55.30	6.59E-01		3.22E-02	3.10E-01
	MO-99	181.06		6.20	1.21E+11	1.13E+11	-5.33E+09	5.89E+10
		739.58		12.80	1.13E+11		2.75E+10	5.30E+10
		778.00		4.50	2.94E+11		-1.77E+11	1.37E+11
	RU-103	497.08		89.00	5.02E-01	5.02E-01	4.95E-02	2.35E-01
	RU-106	621.84		9.80	1.13E+00	1.13E+00	-1.86E-01	5.30E-01
	AG-108M	433.93		89.90	8.40E-02	8.40E-02	-3.49E-02	3.97E-02
		614.37		90.40	1.00E-01		1.01E-02	4.70E-02
		722.95		90.50	1.41E-01		3.86E-02	6.67E-02
+	CD-109	88.03	*	3.72	2.96E+00	2.96E+00	2.19E+00	1.46E+00
	AG-110M	657.75		93.14	1.50E-01	1.50E-01	-4.30E-02	7.05E-02
		677.61		10.53	1.33E+00		-5.08E-01	6.23E-01
		706.67		16.46	9.43E-01		5.54E-02	4.45E-01
		763.93		21.98	7.07E-01		-1.42E-01	3.32E-01
		884.67		71.63	2.22E-01		6.44E-02	1.03E-01
		1384.27		23.94	6.73E-01		3.41E-01	3.03E-01
	CD-113M	263.70		0.02	2.75E+02	2.75E+02	8.02E+01	1.32E+02
	SN-113	255.12		1.93	6.42E+00	2.07E-01	2.16E+00	3.10E+00
		391.69		64.90	2.07E-01		-2.93E-02	9.83E-02
	TE123M	159.00		84.10	1.23E-01	1.23E-01	-4.87E-03	5.99E-02
	SB-124	602.71		97.87	3.00E-01	3.00E-01	5.45E-03	1.40E-01
		645.85		7.26	4.35E+00		4.36E-01	2.04E+00
		722.78		11.10	3.69E+00		1.01E+00	1.74E+00
		1691.02		49.00	5.65E-01		-2.97E-03	2.34E-01
	I-125	35.49		6.49	5.27E+00	5.27E+00	-2.93E+00	2.57E+00
	SB-125	176.33		6.89	9.44E-01	2.79E-01	-6.73E-02	4.59E-01
		427.89		29.33	2.79E-01		7.73E-03	1.32E-01
		463.38		10.35	9.14E-01		2.34E-02	4.34E-01
		600.56		17.80	5.61E-01		1.15E-01	2.63E-01
		635.90		11.32	8.82E-01		-1.15E-01	4.12E-01
	SB-126	414.70		83.30	2.80E+01	2.80E+01	1.77E+01	1.33E+01
		666.33		99.60	3.33E+01		-1.25E+00	1.57E+01
		695.00		99.60	3.15E+01		-1.82E+01	1.48E+01
		720.50		53.80	5.82E+01		-7.86E+01	2.73E+01
+	SN-126	87.57	*	37.00	2.56E-01	2.56E-01	1.89E-01	1.26E-01
	SB-127	473.00		25.00	2.97E+07	2.50E+07	7.78E+06	1.41E+07
		685.20		35.70	2.50E+07		7.67E+06	1.17E+07
		783.80		14.70	6.94E+07		6.12E+06	3.26E+07
	I-129	29.78		57.00	2.64E-01	2.64E-01	-6.23E-02	1.28E-01
		33.60		13.20	8.83E-01		1.75E-01	4.30E-01
		39.58		7.52	1.23E+00		-2.90E-01	6.02E-01
	I-131	284.30		6.05	7.09E+03	5.32E+02	-1.99E+03	3.40E+03

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	I-131	364.48		81.20	5.32E+02	5.32E+02	-1.14E+02	2.53E+02
		636.97		7.26	8.08E+03		1.18E+03	3.78E+03
		722.89		1.80	4.42E+04		1.21E+04	2.09E+04
	TE-132	49.72		13.10	1.35E+09	1.80E+08	4.61E+08	6.60E+08
		228.16		88.00	1.80E+08		6.20E+07	8.69E+07
	BA-133	81.00		33.00	2.22E-01	1.65E-01	-5.72E-01	1.09E-01
		302.84		17.80	4.19E-01		1.12E-02	2.01E-01
		356.01		60.00	1.65E-01		-2.70E-02	7.97E-02
	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	1.25E+05	1.25E+05	-3.23E+05	6.13E+04
	CS-134	563.23		8.38	1.17E+00	1.13E-01	3.33E-02	5.48E-01
		569.32		15.43	6.62E-01		-8.12E-02	3.12E-01
		604.70		97.60	1.13E-01		4.50E-03	5.32E-02
		795.84		85.40	1.34E-01		-5.01E-02	6.24E-02
		801.93		8.73	1.44E+00		-6.29E-02	6.72E-01
	CS-135	268.24		16.00	4.49E-01	4.49E-01	2.03E-02	2.16E-01
	@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	1260.41		28.60	1.00E+26		1.00E+26	1.00E+20
	@	1678.03		9.54	1.00E+26		1.00E+26	1.00E+20
	CS-136	153.22		7.46	1.68E+02	2.28E+01	6.31E+01	8.18E+01
		163.89		4.61	2.57E+02		2.32E+01	1.25E+02
		176.55		13.56	9.38E+01		3.05E+01	4.56E+01
		273.65		12.66	1.14E+02		-7.55E+00	5.49E+01
		340.57		48.50	3.94E+01		4.27E+01	1.90E+01
		818.50		99.70	2.28E+01		-1.02E+01	1.06E+01
		1048.07		79.60	3.59E+01		2.46E+00	1.67E+01
		1235.34		19.70	2.02E+02		8.75E-01	9.49E+01
	CS-137	661.65		85.12	1.39E-01	1.39E-01	1.78E-02	6.58E-02
	LA-138	788.74		34.00	3.38E-01	1.55E-01	1.04E-01	1.58E-01
		1435.80		66.00	1.55E-01		4.44E-02	6.79E-02
	CE-139	165.85		80.35	1.18E-01	1.18E-01	-7.57E-02	5.73E-02
	BA-140	162.64		6.70	2.05E+02	7.63E+01	-5.82E+01	9.93E+01
		304.84		4.50	3.73E+02		-1.60E+02	1.79E+02
		423.70		3.20	5.88E+02		1.98E+02	2.78E+02
		437.55		2.00	1.00E+03		2.83E+02	4.75E+02
		537.32		25.00	7.63E+01		-5.14E+01	3.56E+01
	LA-140	328.77		20.50	9.15E+01	2.47E+01	2.38E+01	4.39E+01
		487.03		45.50	4.41E+01		-7.35E+00	2.08E+01
		815.85		23.50	1.20E+02		1.41E+01	5.62E+01
		1596.49		95.49	2.47E+01		-6.12E+00	1.06E+01
+	CE-141	145.44	*	48.40	1.18E+00	1.18E+00	5.79E-01	5.76E-01
	@ CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	293.26		42.00	1.00E+26		1.00E+26	1.00E+20
	@	664.55		5.20	1.00E+26		1.00E+26	1.00E+20
	CE-144	133.54		10.80	6.60E-01	6.60E-01	1.20E-01	3.22E-01
	PM-144	476.78		42.00	2.52E-01	1.14E-01	-1.13E-01	1.19E-01
		618.01		98.60	1.14E-01		1.07E-02	5.36E-02
		696.49		99.49	1.40E-01		7.00E-02	6.61E-02
	PM-145	36.85		21.70	4.70E-01	2.51E-01	-2.93E-01	2.29E-01
		37.36		39.70	2.51E-01		-1.57E-01	1.22E-01
		42.30		15.10	5.80E-01		-1.30E-01	2.83E-01
		72.40		2.31	3.45E+00		-7.18E+00	1.69E+00
	PM-146	453.90		39.94	2.03E-01	2.03E-01	7.18E-02	9.58E-02

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-146	735.90	14.01	7.86E-01	2.03E-01	-3.23E-01	3.67E-01
	747.13	13.10	9.56E-01		-2.12E-01	4.50E-01
ND-147	91.11	28.90	1.48E+02	1.48E+02	1.13E+02	7.29E+01
	531.02	13.10	3.96E+02		2.07E+01	1.87E+02
PM-149	285.90	3.10	1.44E+14	1.44E+14	4.10E+12	6.91E+13
EU-152	121.78	20.50	2.61E-01	2.61E-01	-6.97E-02	1.27E-01
	244.69	5.40	1.41E+00		5.14E-02	6.83E-01
	344.27	19.13	3.81E-01		3.94E-02	1.82E-01
	778.89	9.20	1.21E+00		-3.38E-01	5.65E-01
	964.01	10.40	1.38E+00		3.24E-01	6.46E-01
	1085.78	7.22	1.88E+00		-4.64E-01	8.69E-01
	1112.02	9.60	1.48E+00		5.14E-01	6.86E-01
	1407.95	14.94	8.52E-01		2.76E-01	3.84E-01
GD-153	97.43	31.30	2.59E-01	2.59E-01	4.97E-02	1.27E-01
	103.18	22.20	3.37E-01		7.94E-02	1.65E-01
EU-154	123.07	40.50	1.36E-01	1.36E-01	-7.01E-04	6.63E-02
	723.30	19.70	7.05E-01		8.11E-01	3.35E-01
	873.19	11.50	1.03E+00		1.70E-01	4.78E-01
	996.32	10.30	1.23E+00		-5.70E-01	5.69E-01
	1004.76	17.90	8.27E-01		3.43E-01	3.87E-01
	1274.45	35.50	4.43E-01		6.35E-02	2.05E-01
EU-155	86.50	30.90	2.39E-01	2.39E-01	2.30E-01	1.18E-01
	105.30	20.70	2.80E-01		7.87E-02	1.37E-01
EU-156	811.77	10.40	1.17E+02	1.17E+02	2.24E+01	5.49E+01
	1153.47	7.20	2.23E+02		1.33E+01	1.04E+02
	1230.71	8.90	2.13E+02		9.83E+00	1.00E+02
HO-166M	184.41	72.60	9.45E-02	9.45E-02	1.01E-01	4.60E-02
	280.45	29.60	2.36E-01		7.73E-02	1.13E-01
	410.94	11.10	7.37E-01		1.60E-01	3.51E-01
	711.69	54.10	2.15E-01		1.70E-01	1.01E-01
TM-171	66.72	0.14	5.66E+01	5.66E+01	9.80E+00	2.78E+01
HF-172	67.35	5.31	1.49E+00	5.65E-01	2.58E-01	7.31E-01
	125.81	11.30	5.65E-01		-7.90E-03	2.76E-01
LU-172	181.53	20.60	1.10E+04	7.78E+03	-2.93E+02	5.32E+03
	900.72	29.81	1.34E+04		-9.35E+02	6.19E+03
	1093.66	62.50	7.78E+03		-2.28E+03	3.61E+03
LU-173	100.72	5.24	1.21E+00	3.83E-01	-5.30E-01	5.92E-01
	272.11	21.20	3.83E-01		-1.00E-02	1.85E-01
HF-175	343.40	84.00	2.33E-01	2.33E-01	2.41E-02	1.11E-01
LU-176	88.34	13.30	5.39E-01	7.33E-02	5.50E-01	2.64E-01
	201.83	86.00	7.61E-02		7.56E-03	3.69E-02
	306.78	94.00	7.33E-02		-2.20E-02	3.51E-02
HF-181	133.02	41.70	7.32E-01	5.89E-01	2.90E-01	3.57E-01
	345.85	17.20	2.18E+00		2.28E-01	1.04E+00
	482.03	82.80	5.89E-01		2.37E-01	2.80E-01
TA-182	67.75	41.20	3.13E-01	3.13E-01	-9.94E-02	1.53E-01
	1121.30	34.90	8.92E-01		-5.54E-02	4.19E-01
	1189.05	16.23	1.72E+00		-5.45E-01	7.98E-01
	1221.41	26.98	1.19E+00		-1.75E-02	5.59E-01
	1231.02	11.44	3.02E+00		1.32E-01	1.42E+00
IR-192	308.46	29.68	6.10E-01	4.42E-01	-1.61E-01	2.92E-01
	468.07	48.10	4.42E-01		-1.13E-01	2.09E-01
HG-203	279.19	77.30	4.03E-01	4.03E-01	-3.98E-02	1.94E-01

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-204	374.74		94.11	8.20E-02	8.20E-02	-2.15E-02	3.90E-02
		899.15		99.16	1.17E-01		-9.84E-04	5.39E-02
		911.74		91.10	2.09E-01		3.23E-01	9.95E-02
	BI-207	569.67		97.72	9.58E-02	9.58E-02	-1.17E-02	4.51E-02
		1063.62		74.90	1.79E-01		-5.94E-02	8.31E-02
+	TL-208	583.14	*	30.22	4.56E-01	2.87E-01	9.02E-01	2.19E-01
		860.37		4.48	2.59E+00		4.64E-01	1.20E+00
		2614.66	*	35.85	2.87E-01		1.45E+00	1.10E-01
	BI-210M	262.00		45.00	1.37E-01	1.37E-01	-4.66E-03	6.59E-02
		300.00		23.00	3.34E-01		1.15E-02	1.61E-01
	PB-210	46.50		4.25	1.93E+00	1.93E+00	9.54E-01	9.41E-01
	PB-211	404.84		2.90	2.74E+00	2.74E+00	3.50E-01	1.30E+00
		831.96		2.90	3.60E+00		2.71E-01	1.67E+00
	BI-212	727.17		11.80	1.12E+00	1.12E+00	5.79E-01	5.31E-01
		1620.62		2.75	3.44E+00		-1.32E-01	1.46E+00
+	PB-212	238.63	*	44.60	2.71E-01	2.71E-01	1.30E+00	1.33E-01
		300.09		3.41	2.25E+00		7.78E-02	1.08E+00
+	BI-214	609.31	*	46.30	3.05E-01	3.05E-01	8.18E-01	1.46E-01
		1120.29		15.10	1.13E+00		9.71E-01	5.30E-01
		1764.49	*	15.80	3.84E-01		1.26E+00	1.43E-01
		2204.22		4.98	2.50E+00		1.26E+00	1.06E+00
+	PB-214	295.21	*	19.19	5.64E-01	3.39E-01	6.13E-01	2.75E-01
		351.92	*	37.19	3.39E-01		9.12E-01	1.65E-01
	RN-219	401.80		6.50	1.20E+00	1.20E+00	-1.73E-01	5.70E-01
	RA-223	323.87		3.88	1.83E+00	1.83E+00	-1.73E+00	8.74E-01
+	RA-224	240.98	*	3.95	3.06E+00	3.06E+00	2.75E+00	1.50E+00
	RA-225	40.00		31.00	3.40E+01	3.40E+01	-7.99E+00	1.66E+01
+	RA-226	186.21	*	3.28	2.38E+00	2.38E+00	2.03E+00	1.16E+00
	TH-227	50.10		8.40	9.01E-01	9.01E-01	3.07E-01	4.40E-01
		236.00		11.50	9.54E-01		1.83E+00	4.67E-01
		256.20		6.30	1.07E+00		7.55E-01	5.17E-01
+	AC-228	338.32	*	11.40	9.91E-01	6.91E-01	1.32E+00	4.82E-01
		911.07	*	27.70	6.91E-01		1.04E+00	3.30E-01
		969.11	*	16.60	8.94E-01		8.25E-01	4.20E-01
	TH-230	48.44		16.90	4.58E-01	4.58E-01	3.95E-02	2.24E-01
		62.85		4.60	1.62E+00		1.07E+00	7.97E-01
		67.67		0.37	1.89E+01		-6.00E+00	9.25E+00
	PA-231	283.67		1.60	4.28E+00	3.18E+00	-1.20E+00	2.06E+00
		302.67		2.30	3.18E+00		8.50E-02	1.53E+00
	TH-231	25.64		14.70	1.51E+00	1.06E+00	7.36E-01	7.37E-01
		84.21		6.40	1.06E+00		-5.38E-01	5.19E-01
	PA-233	311.98		38.60	2.51E+00	2.51E+00	1.53E-01	1.20E+00
	PA-234	131.20		20.40	2.95E-01	2.95E-01	1.12E-01	1.44E-01
		733.99		8.80	1.22E+00		-6.17E-01	5.71E-01
		946.00		12.00	1.04E+00		-2.99E-01	4.82E-01
	PA-234M	1001.03		0.92	1.48E+01	1.48E+01	-4.16E-01	6.88E+00
	TH-234	63.29		3.80	1.96E+00	1.96E+00	1.29E+00	9.60E-01
	U-235	143.76		10.50	5.68E-01	5.68E-01	-9.65E-03	2.77E-01
		163.35		4.70	1.20E+00		-3.42E-01	5.84E-01
		205.31		4.70	1.45E+00		1.92E-01	7.03E-01
+	NP-237	86.50	*	12.60	7.51E-01	7.51E-01	5.56E-01	3.70E-01
	NP-239	106.10		22.70	2.21E+12	2.21E+12	3.59E+11	1.08E+12
		228.18		10.70	5.78E+12		2.00E+12	2.80E+12

Analysis Report for 1707092-10

HTC-A08-S001-3642-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NP-239	277.60	14.10	4.45E+12	2.21E+12	1.79E+12	2.14E+12
AM-241	59.54	35.90	2.05E-01	2.05E-01	-4.68E-02	1.00E-01
AM-243	74.67	66.00	1.44E-01	1.44E-01	6.27E-01	7.10E-02
CM-243	209.75	3.29	2.13E+00	4.97E-01	1.30E+00	1.03E+00
	228.14	10.60	6.47E-01		2.23E-01	3.13E-01
	277.60	14.00	4.97E-01		2.00E-01	2.39E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

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***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: HTC-A08-S001-3642-01

Elapsed Live time: 3600
Elapsed Real Time: 3602

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	17	84
17:	105	81	89	88	79	62	75	90
25:	66	82	80	60	53	53	76	68
33:	61	71	59	75	67	70	80	88
41:	79	57	86	87	89	91	94	90
49:	76	85	90	103	84	78	97	105
57:	92	121	105	103	122	154	157	135
65:	115	107	133	120	108	121	123	141
73:	218	302	276	342	292	128	129	92
81:	121	114	116	126	148	171	158	132
89:	136	130	116	171	149	109	90	90
97:	82	87	97	65	86	78	81	83
105:	95	70	82	76	74	86	69	65
113:	81	70	66	79	78	63	60	75
121:	73	74	64	58	79	78	89	100
129:	103	73	65	63	74	75	70	56
137:	56	72	76	77	59	64	71	75
145:	85	72	66	65	63	63	69	73
153:	63	65	76	54	64	49	58	48
161:	62	46	66	40	59	60	58	48
169:	72	64	60	56	56	63	50	57
177:	52	57	60	46	49	62	48	80
185:	96	80	53	45	54	47	61	49
193:	52	51	47	49	48	61	58	33
201:	52	62	50	48	58	44	68	72
209:	65	58	39	38	40	45	42	46
217:	45	45	48	50	46	39	42	58
225:	42	41	40	45	50	39	37	45
233:	37	42	42	86	221	313	198	94
241:	94	67	44	31	37	31	32	29
249:	28	31	36	29	24	34	37	43
257:	44	36	31	14	23	26	37	29
265:	35	33	30	32	44	52	35	17
273:	29	30	23	41	35	37	28	26
281:	26	35	32	24	26	37	35	29
289:	34	35	24	26	55	79	94	43
297:	26	37	34	40	24	28	34	21
305:	25	23	25	22	27	25	34	29
313:	29	20	29	26	23	29	28	18
321:	22	31	23	26	18	29	39	32
329:	20	26	29	25	26	19	26	47
337:	76	50	47	23	20	21	20	19
345:	21	27	23	17	26	67	140	112
353:	56	19	19	18	22	18	24	15
361:	15	13	20	21	8	24	22	19

369:	19	28	13	19	20	14	25	18

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Channel								
377:	22	19	18	18	31	16	23	21
385:	17	17	16	15	21	17	17	12
393:	17	19	17	21	14	19	8	16
401:	19	13	23	30	8	14	24	18
409:	26	14	13	17	23	9	19	28
417:	20	12	15	12	20	17	12	14
425:	16	21	14	13	15	14	16	15
433:	9	14	16	17	19	21	23	9
441:	18	16	15	12	18	13	16	13
449:	12	13	19	8	11	18	13	17
457:	10	12	19	13	18	27	23	10
465:	11	20	16	12	17	17	19	18
473:	18	14	13	16	14	15	22	20
481:	20	18	15	15	17	12	16	11
489:	9	12	12	17	9	15	7	14
497:	13	5	11	14	11	18	16	20
505:	8	16	12	22	38	50	29	20
513:	18	13	9	14	12	8	9	7
521:	15	15	10	20	12	18	11	19
529:	9	12	10	15	11	11	9	5
537:	12	11	13	8	9	20	15	12
545:	6	15	14	7	10	8	14	10
553:	6	10	14	6	7	14	8	12
561:	4	16	13	16	13	10	15	11
569:	9	17	16	10	13	12	6	8
577:	11	8	11	12	33	74	61	29
585:	5	13	10	16	10	11	11	14
593:	8	15	9	11	13	11	9	13
601:	7	15	11	11	9	15	23	78
609:	78	39	8	9	11	9	10	14
617:	10	10	9	12	12	8	13	7
625:	5	16	5	9	7	13	8	7
633:	12	9	12	8	11	11	8	14
641:	7	9	7	13	4	19	13	11
649:	11	9	6	19	9	9	6	10
657:	14	5	11	10	11	4	15	18
665:	18	11	9	6	11	7	10	11
673:	3	9	9	12	12	15	11	3
681:	6	12	10	12	3	12	8	13
689:	9	8	7	11	11	14	8	9
697:	4	9	10	15	7	8	15	12
705:	2	9	11	13	12	10	9	9
713:	9	6	10	5	7	5	8	12
721:	12	11	12	3	15	27	20	10
729:	4	10	8	7	9	7	8	9
737:	9	5	7	12	11	12	10	7
745:	9	13	13	8	12	4	10	11
753:	11	11	14	8	9	10	6	7
761:	12	10	3	9	11	13	8	9
769:	11	11	7	11	4	7	6	5
777:	9	11	7	7	6	8	12	7
785:	15	11	7	10	4	7	4	6
793:	10	14	8	6	4	2	3	10

801:	13	8	10	12	6	13	10	5

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Channel								
809:	10	7	11	9	9	4	8	7
817:	4	8	8	7	5	8	8	8
825:	8	6	4	5	4	7	4	5
833:	10	9	4	4	4	9	7	8
841:	9	2	6	12	3	6	4	6
849:	7	10	6	3	8	5	7	4
857:	3	5	10	9	9	5	9	7
865:	2	10	3	7	6	6	7	13
873:	4	4	5	6	8	8	5	10
881:	7	9	8	4	2	8	5	9
889:	3	7	6	8	5	4	6	5
897:	3	8	7	2	8	4	7	7
905:	6	9	10	6	21	36	40	11
913:	10	3	3	3	6	3	4	3
921:	7	4	4	3	4	2	10	7
929:	4	7	6	6	9	10	9	9
937:	5	1	7	7	6	7	6	5
945:	7	6	5	6	11	7	10	8
953:	5	11	7	5	10	5	12	3
961:	8	9	6	12	7	5	13	19
969:	36	7	5	2	7	3	6	5
977:	3	7	8	5	6	3	3	5
985:	6	5	4	5	6	7	8	7
993:	4	5	9	6	3	5	5	9
1001:	5	11	11	9	6	9	6	7
1009:	6	8	6	0	3	3	3	9
1017:	6	4	4	3	5	10	3	8
1025:	5	4	13	6	6	8	8	2
1033:	5	10	8	8	5	8	8	3
1041:	2	9	8	9	7	5	6	4
1049:	6	12	3	7	7	5	3	8
1057:	8	8	5	3	6	7	5	11
1065:	5	7	6	8	6	5	10	3
1073:	2	3	10	3	5	9	5	6
1081:	5	7	3	10	7	4	6	4
1089:	7	7	9	8	5	6	6	3
1097:	3	8	9	8	5	4	9	8
1105:	4	5	13	5	9	8	5	8
1113:	3	2	3	7	4	9	18	11
1121:	7	10	9	9	5	11	5	9
1129:	11	6	5	5	10	6	2	8
1137:	9	7	4	7	6	10	9	6
1145:	5	6	8	10	6	4	9	6
1153:	8	3	11	9	11	7	4	8
1161:	4	7	3	8	6	6	6	5
1169:	6	9	8	7	5	8	4	6
1177:	7	10	7	8	3	8	3	8
1185:	2	7	10	7	9	6	4	5
1193:	8	10	7	10	7	9	5	6
1201:	6	6	7	5	5	7	9	10
1209:	9	5	5	9	11	10	8	5
1217:	11	11	4	4	10	9	5	12
1225:	9	8	5	14	12	7	7	15

1233:	12	5	9	11	14	10	6	6

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Channel								
1241:	8	13	7	9	9	7	4	6
1249:	3	1	1	9	4	3	8	7
1257:	2	7	5	3	4	2	4	7
1265:	6	14	5	5	3	3	2	6
1273:	6	8	9	4	8	7	7	5
1281:	7	4	3	2	3	4	1	3
1289:	7	1	5	7	2	5	4	2
1297:	5	5	7	6	3	3	2	8
1305:	7	2	8	2	2	4	0	3
1313:	8	2	6	4	3	5	6	5
1321:	4	3	3	8	1	4	7	2
1329:	2	1	1	2	4	6	3	3
1337:	4	4	7	2	4	3	4	0
1345:	2	5	2	4	6	6	6	4
1353:	3	2	0	3	5	2	3	4
1361:	4	5	8	4	1	2	2	1
1369:	1	1	5	4	0	3	2	5
1377:	0	3	2	4	3	0	4	2
1385:	6	2	3	3	2	1	1	3
1393:	5	3	2	2	5	4	2	4
1401:	1	3	3	3	3	3	7	4
1409:	3	2	2	1	0	4	2	1
1417:	2	1	1	1	3	0	1	2
1425:	3	3	1	1	0	2	2	1
1433:	3	3	2	1	1	2	2	1
1441:	3	0	3	3	2	3	2	4
1449:	1	2	1	1	2	3	1	2
1457:	8	26	102	145	156	63	11	3
1465:	1	1	0	0	0	0	2	1
1473:	1	2	2	5	0	5	1	2
1481:	2	1	1	1	1	1	3	0
1489:	1	1	1	3	1	0	3	0
1497:	3	3	3	3	4	2	3	1
1505:	0	3	3	1	2	3	2	1
1513:	4	0	0	0	1	0	0	1
1521:	0	1	2	1	1	2	2	3
1529:	1	1	1	1	2	1	2	3
1537:	1	1	3	0	0	0	2	3
1545:	0	0	0	1	0	0	2	0
1553:	1	1	2	0	3	0	1	0
1561:	0	3	1	0	2	3	2	1
1569:	1	0	1	2	2	1	1	2
1577:	0	1	1	2	2	1	1	2
1585:	1	3	2	4	1	4	7	2
1593:	6	2	0	0	1	0	0	1
1601:	0	0	0	2	0	1	2	0
1609:	0	0	1	0	1	1	4	0
1617:	1	0	2	4	1	2	1	0
1625:	1	0	1	0	2	3	0	1
1633:	3	0	0	1	0	1	2	2
1641:	3	1	1	0	0	2	2	0
1649:	1	1	2	0	2	2	3	0
1657:	2	0	0	0	2	0	2	1

1665:	0	1	0	0	1	4	1	0

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Channel								
1673:	1	0	1	1	0	1	0	1
1681:	0	1	0	2	0	2	2	1
1689:	1	1	0	1	0	2	0	1
1697:	0	1	2	0	0	0	0	0
1705:	1	0	1	0	2	1	0	1
1713:	0	3	0	3	1	0	1	1
1721:	1	1	0	1	1	1	1	2
1729:	3	2	1	0	1	2	3	1
1737:	0	0	1	0	0	1	0	1
1745:	0	0	2	1	1	2	0	0
1753:	0	0	1	0	0	1	1	0
1761:	5	2	6	10	9	5	0	0
1769:	0	0	1	1	1	0	3	2
1777:	1	1	0	0	0	0	3	2
1785:	2	2	0	1	0	1	2	0
1793:	0	0	1	1	1	2	1	1
1801:	0	0	2	0	0	0	1	0
1809:	0	1	0	1	0	1	1	2
1817:	0	0	0	2	1	1	1	3
1825:	1	0	0	0	2	0	0	0
1833:	0	1	2	0	0	0	1	0
1841:	0	0	0	1	1	1	1	1
1849:	1	1	0	1	0	3	2	1
1857:	1	1	0	1	2	0	0	0
1865:	0	0	1	1	0	0	3	2
1873:	1	1	0	0	1	1	0	1
1881:	1	0	1	1	2	0	1	2
1889:	1	2	1	0	0	1	0	0
1897:	1	0	1	0	1	0	1	1
1905:	2	1	0	0	1	0	0	1
1913:	1	0	1	0	0	0	3	1
1921:	1	0	1	2	0	0	0	0
1929:	0	0	2	0	0	0	0	1
1937:	0	1	1	1	1	0	1	0
1945:	0	1	2	0	0	0	1	0
1953:	0	2	0	1	2	2	3	1
1961:	1	0	1	0	2	2	0	0
1969:	1	1	1	0	0	1	0	0
1977:	1	0	0	0	0	0	0	1
1985:	1	1	1	1	0	1	0	0
1993:	1	1	2	0	0	0	1	0
2001:	1	1	0	0	0	1	0	1
2009:	0	1	1	1	2	1	0	1
2017:	1	0	1	0	1	1	1	0
2025:	0	2	0	0	0	0	3	5
2033:	2	1	1	1	1	1	1	0
2041:	0	2	0	0	0	0	1	0
2049:	0	0	1	4	1	5	1	0
2057:	0	1	0	2	0	1	3	1
2065:	0	0	0	0	0	2	0	0
2073:	0	1	0	0	1	1	1	0
2081:	0	1	1	0	2	0	2	3
2089:	1	0	1	0	0	2	2	0

2097:	1	0	0	0	3	2	2	5

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Channel								
2105:	0	2	2	0	1	2	0	2
2113:	3	1	0	0	0	0	1	0
2121:	0	1	0	0	1	2	0	2
2129:	2	2	0	2	1	0	1	1
2137:	1	1	1	0	1	0	0	0
2145:	0	0	2	0	0	1	0	0
2153:	1	1	2	1	1	0	1	0
2161:	0	0	0	0	0	0	3	0
2169:	1	0	1	2	0	0	2	0
2177:	2	1	2	0	0	0	0	0
2185:	0	1	1	0	2	0	1	1
2193:	2	1	1	0	0	0	1	0
2201:	1	3	0	3	2	0	0	1
2209:	0	0	0	0	0	3	1	0
2217:	0	0	1	3	1	0	0	0
2225:	0	1	1	0	1	1	0	1
2233:	2	0	0	1	1	1	1	1
2241:	2	1	1	4	1	1	1	1
2249:	3	1	0	0	1	1	1	1
2257:	0	1	0	0	0	0	1	1
2265:	1	0	0	0	0	2	0	2
2273:	0	0	0	0	0	1	0	2
2281:	0	2	1	1	3	1	0	0
2289:	0	3	0	1	0	1	2	2
2297:	0	0	0	1	1	3	1	0
2305:	1	1	1	0	0	0	1	2
2313:	2	0	1	1	3	1	0	0
2321:	0	1	3	0	1	0	2	1
2329:	1	2	1	1	0	2	0	0
2337:	1	0	0	1	1	0	1	0
2345:	2	2	1	0	0	0	0	0
2353:	1	1	0	0	3	1	0	0
2361:	1	0	0	1	0	2	0	1
2369:	0	2	3	1	0	0	2	4
2377:	2	1	0	1	0	1	3	2
2385:	0	2	2	0	1	0	1	2
2393:	0	0	0	3	0	0	0	1
2401:	4	1	1	0	0	2	1	1
2409:	0	0	0	0	0	1	0	2
2417:	0	0	1	1	0	1	0	3
2425:	1	2	1	2	0	3	1	0
2433:	1	0	0	0	0	0	0	0
2441:	1	0	1	0	1	0	3	2
2449:	1	0	1	0	1	1	0	1
2457:	0	0	2	0	0	0	0	2
2465:	0	0	0	1	0	2	0	0
2473:	0	0	1	1	1	0	0	0
2481:	0	0	0	1	0	0	0	0
2489:	0	0	0	1	3	0	0	1
2497:	2	0	0	0	0	0	0	0
2505:	0	0	0	0	0	0	0	1
2513:	0	0	0	0	1	1	1	3
2521:	0	0	1	0	0	0	0	0

2529:	0	0	0	0	0	0	2	0

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Channel								
2537:	0	0	0	0	2	0	0	0
2545:	1	1	1	0	0	0	0	0
2553:	0	0	1	1	0	0	0	0
2561:	0	1	0	0	1	0	0	0
2569:	0	0	0	0	0	0	1	0
2577:	0	0	0	0	0	0	0	0
2585:	0	1	0	0	0	0	0	0
2593:	0	0	0	1	0	0	1	0
2601:	0	0	0	0	0	0	0	0
2609:	0	0	2	3	10	18	16	9
2617:	3	0	1	1	1	0	0	0
2625:	0	1	0	0	0	1	1	0
2633:	0	0	0	0	0	0	1	0
2641:	0	1	1	0	0	0	0	0
2649:	0	1	0	0	0	0	0	0
2657:	0	0	0	1	0	0	0	0
2665:	0	0	0	0	0	0	1	0
2673:	0	0	0	0	1	0	0	0
2681:	0	0	0	1	0	0	0	0
2689:	0	0	0	0	0	0	0	0
2697:	0	1	0	0	0	1	0	0
2705:	0	0	0	0	0	0	0	1
2713:	0	0	0	0	0	0	1	0
2721:	0	1	0	0	0	0	0	0
2729:	0	1	0	1	0	0	0	0
2737:	0	1	1	0	0	1	0	0
2745:	1	0	0	0	0	1	0	1
2753:	0	0	0	0	0	1	0	1
2761:	0	0	0	0	0	1	0	0
2769:	0	0	0	0	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	1	0	0	0	0	0	0	0
2793:	0	0	1	0	0	0	0	0
2801:	0	0	0	0	1	0	0	0
2809:	1	0	0	0	0	0	1	0
2817:	0	0	0	0	0	0	0	0
2825:	1	0	0	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	1	1	0	2	0	1
2849:	1	0	0	0	0	1	0	0
2857:	0	0	0	1	0	1	0	0
2865:	1	0	0	1	1	0	0	1
2873:	0	0	0	0	0	1	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	0	0	0	1	0
2897:	1	0	0	0	0	1	0	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	1	0	0	0	0	0	0	0
2929:	1	0	0	0	0	0	0	0
2937:	0	1	1	1	0	0	0	0
2945:	0	0	0	0	1	0	0	1
2953:	0	0	0	0	0	0	0	0

2961:	0	0	0	0	1	0	0	1

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Channel								
2969:	1	0	1	0	0	0	0	0
2977:	0	0	0	0	0	0	0	0
2985:	0	1	0	0	0	0	1	1
2993:	1	1	1	1	0	0	0	2
3001:	0	0	0	0	0	0	1	0
3009:	0	0	0	0	0	0	0	0
3017:	0	0	0	0	1	0	0	0
3025:	0	0	0	0	0	1	0	0
3033:	0	0	0	0	0	0	0	0
3041:	0	1	0	1	1	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	1	0	0	0	1	0
3065:	1	0	1	0	0	0	0	0
3073:	0	0	0	0	0	0	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	1	0	0	0	0	0
3097:	0	0	1	1	1	0	0	1
3105:	0	0	0	0	0	0	0	0
3113:	0	0	0	0	0	0	0	1
3121:	0	0	0	0	0	2	0	1
3129:	1	0	0	0	0	0	1	0
3137:	0	0	0	0	0	0	0	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	1	0	0
3161:	0	0	0	0	0	0	0	0
3169:	0	1	0	1	0	0	0	0
3177:	0	1	0	0	0	0	0	0
3185:	0	0	1	0	0	0	0	0
3193:	0	0	1	0	0	0	0	0
3201:	0	0	1	0	2	0	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	0	0	1
3225:	1	0	0	0	1	0	1	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	0	0	1
3249:	0	0	0	0	0	0	0	1
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	1	0	1	0	0	0	0	0
3281:	0	0	1	0	0	0	1	0
3289:	0	0	1	0	0	0	0	0
3297:	0	0	0	0	0	1	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	1	0
3321:	0	0	1	0	1	0	0	0
3329:	0	0	0	1	0	0	1	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	1	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	1	0	0	0	0	0	1
3385:	0	0	0	1	0	0	0	0

3393:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-S001-3642-01

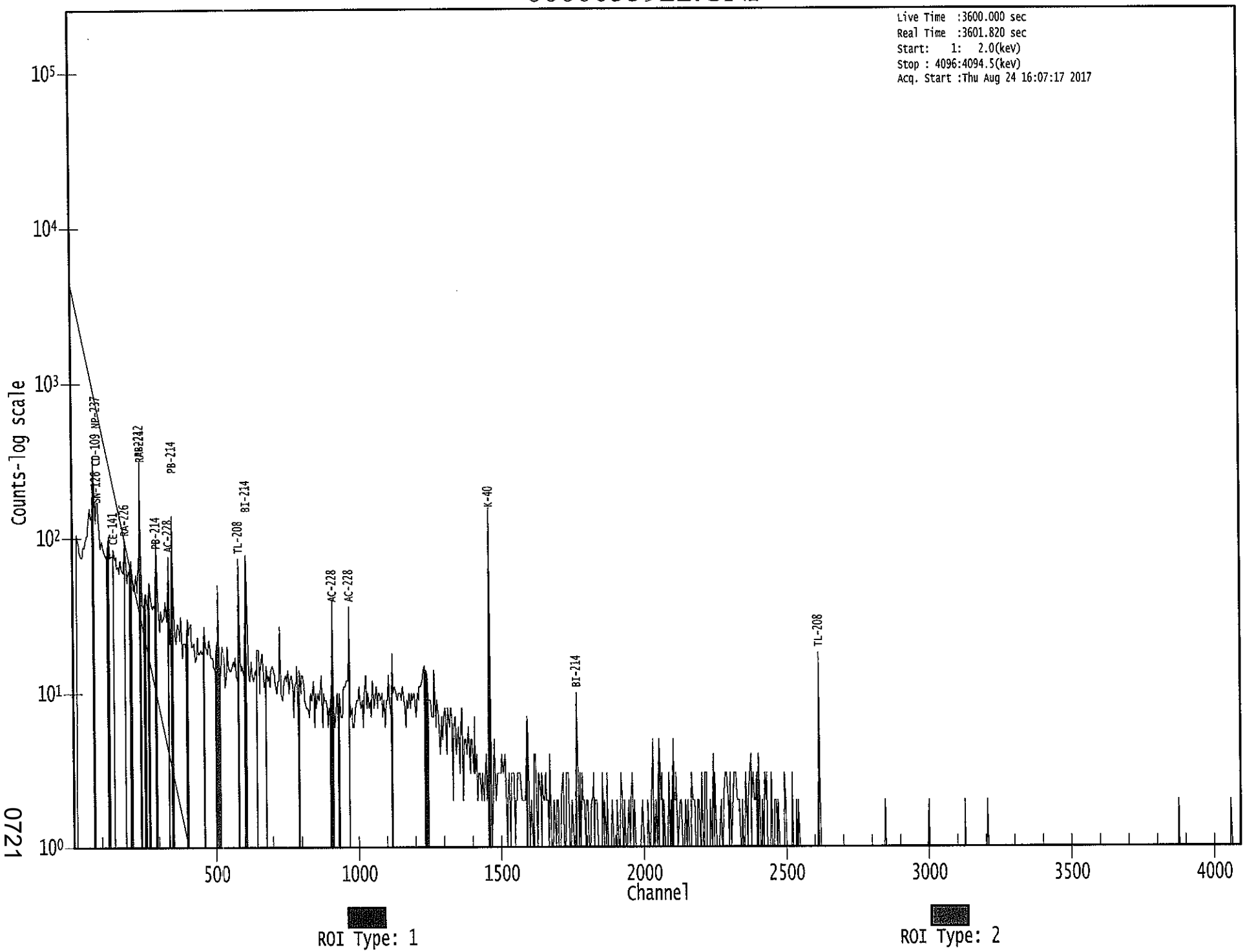
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	1	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	1	0	0	1	0	0	0
3441:	1	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	1	0	0	0	1	0	0
3465:	1	0	0	0	0	0	1	0
3473:	0	0	0	0	0	0	0	0
3481:	0	1	0	0	0	0	0	1
3489:	0	0	0	0	0	0	0	0
3497:	0	1	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	1	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	1	0	0	0	0	0	0	0
3545:	1	1	0	0	0	0	1	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	1	0	0	1	0	0	0	0
3577:	0	0	1	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	1	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	1	0
3641:	0	1	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	1	0	0	1	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	1	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	1	0	0	0	1	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	1	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	1	0	0	0	0	1	0
3769:	0	0	0	0	1	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	1	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	1	1	0

3825:	0	0	0	0	0	1	1	1

Sample Title: HTC-A08-S001-3642-01

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	1	0	0	1	0	0	1	0
3849:	0	0	0	0	0	0	1	0
3857:	0	0	0	1	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	2	0	0	0	0
3881:	0	1	0	0	0	0	0	0
3889:	0	0	0	0	1	0	0	0
3897:	0	0	0	0	0	1	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	1	0	0	0	0	0
3921:	0	0	0	0	0	0	0	1
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	1	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	1	0	0	0	0	0	0
3969:	0	0	0	0	1	0	0	0
3977:	0	0	1	0	1	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	1	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	1	0	0	0	0	0	1
4025:	0	0	0	1	0	0	0	0
4033:	0	0	0	0	0	0	0	1
4041:	0	0	0	0	0	0	0	0
4049:	0	1	0	0	0	0	0	0
4057:	0	2	0	0	0	0	1	0
4065:	0	1	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000055922.CNF



0721

KB 8/24/17

Apex-Gamma

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-11
Sample Description	: HTC-A08-S001-4248-01
Sample Type	: SOIL
Sample Size	: 6.168E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 7:41:38AM
Acquisition Started	: 8/24/2017 4:19:08PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.4 seconds
Dead Time	: 0.04 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 19 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55924

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 5:19:12PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	63.38	63.98	0.0000	0.00
2	74.72	75.31	0.0000	0.00
3	77.16	77.75	0.0000	0.00
4	92.39	92.97	0.0000	0.00
5	127.98	128.52	0.0000	0.00
6	185.64	186.12	0.0000	0.00
7	209.21	209.66	0.0000	0.00
8	238.60	239.02	0.0000	0.00
9	241.74	242.17	0.0000	0.00
10	288.79	289.17	0.0000	0.00
11	295.46	295.83	0.0000	0.00
12	299.58	299.94	0.0000	0.00
13	328.28	328.62	0.0000	0.00
14	338.13	338.46	0.0000	0.00
15	351.92	352.23	0.0000	0.00
16	462.27	462.47	0.0000	0.00
17	511.28	511.43	0.0000	0.00
18	556.10	556.21	0.0000	0.00
19	583.35	583.42	0.0000	0.00
20	609.33	609.38	0.0000	0.00
21	727.69	727.62	0.0000	0.00
22	794.70	794.56	0.0000	0.00
23	814.54	814.39	0.0000	0.00
24	837.62	837.44	0.0000	0.00
25	861.00	860.79	0.0000	0.00
26	911.82	911.56	0.0000	0.00
27	965.15	964.85	0.0000	0.00
28	969.30	968.99	0.0000	0.00
29	1121.15	1120.69	0.0000	0.00
30	1166.95	1166.44	0.0000	0.00
31	1207.79	1207.25	0.0000	0.00
32	1238.11	1237.53	0.0000	0.00
33	1377.96	1377.25	0.0000	0.00
34	1407.99	1407.24	0.0000	0.00
35	1457.01	1456.22	0.0000	0.00
36	1461.36	1460.57	0.0000	0.00
37	1466.12	1465.32	0.0000	0.00
38	1544.21	1543.34	0.0000	0.00
39	1570.53	1569.63	0.0000	0.00
40	1588.95	1588.03	0.0000	0.00
41	1593.84	1592.92	0.0000	0.00
42	1598.15	1597.22	0.0000	0.00

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1621.09	1620.14	0.0000	0.00
44	1631.25	1630.29	0.0000	0.00
45	1680.46	1679.45	0.0000	0.00
46	1688.59	1687.57	0.0000	0.00
47	1727.35	1726.30	0.0000	0.00
48	1730.31	1729.25	0.0000	0.00
49	1765.15	1764.05	0.0000	0.00
50	1837.16	1836.00	0.0000	0.00
51	1843.40	1842.23	0.0000	0.00
52	1931.20	1929.95	0.0000	0.00
53	2102.66	2101.24	0.0000	0.00
54	2284.66	2283.07	0.0000	0.00
55	2296.54	2294.93	0.0000	0.00
56	2615.41	2613.50	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 5:19:12PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	63.38	61 -	67	63.98	1.83E+02	100.02	1.70E+03	1.61
M	2	74.72	71 -	82	75.31	4.01E+02	92.73	1.28E+03	1.81
m	3	77.16	71 -	82	77.75	6.82E+02	99.56	1.24E+03	1.82
	4	92.39	90 -	97	92.97	3.65E+02	109.80	1.72E+03	1.88
	5	127.98	125 -	132	128.52	8.19E+01	87.20	1.21E+03	4.82
	6	185.64	183 -	191	186.12	1.67E+02	87.59	1.09E+03	1.89
	7	209.21	205 -	214	209.66	1.22E+02	86.49	9.95E+02	1.69
M	8	238.60	233 -	246	239.02	9.61E+02	73.78	3.71E+02	1.82
m	9	241.74	233 -	246	242.17	1.69E+02	74.57	3.37E+02	1.82
M	10	288.79	287 -	303	289.17	2.72E+01	33.29	2.51E+02	1.86
m	11	295.46	287 -	303	295.83	2.26E+02	54.01	4.27E+02	1.87
m	12	299.58	287 -	303	299.94	4.86E+01	48.14	4.61E+02	1.87
	13	328.28	325 -	332	328.62	5.66E+01	50.83	3.87E+02	2.02
	14	338.13	334 -	342	338.46	1.97E+02	59.76	4.30E+02	1.68
	15	351.92	348 -	356	352.23	4.70E+02	68.29	4.30E+02	1.87
	16	462.27	458 -	466	462.47	4.53E+01	43.34	2.62E+02	2.18
	17	511.28	506 -	516	511.43	1.38E+02	56.73	3.50E+02	2.28
	18	556.10	553 -	560	556.21	3.04E+01	32.50	1.55E+02	4.41
	19	583.35	579 -	588	583.42	2.69E+02	55.29	2.79E+02	2.07
	20	609.33	604 -	612	609.38	3.66E+02	54.41	2.31E+02	2.20
	21	727.69	724 -	731	727.62	3.71E+01	36.99	2.02E+02	1.81
	22	794.70	790 -	799	794.56	5.62E+01	35.11	1.42E+02	1.48
	23	814.54	811 -	819	814.39	3.31E+01	26.40	8.99E+01	5.00
	24	837.62	832 -	842	837.44	4.07E+01	35.68	1.47E+02	5.02
	25	861.00	857 -	864	860.79	3.28E+01	31.94	1.48E+02	1.43
	26	911.82	908 -	917	911.56	1.77E+02	41.48	1.44E+02	2.04
M	27	965.15	958 -	971	964.85	5.51E+01	29.24	9.87E+01	2.22
m	28	969.30	958 -	971	968.99	1.08E+02	29.17	7.37E+01	1.84
	29	1121.15	1117 -	1125	1120.69	6.83E+01	34.70	1.41E+02	1.67
	30	1166.95	1163 -	1170	1166.44	2.68E+01	28.35	1.16E+02	1.41
	31	1207.79	1205 -	1209	1207.25	1.56E+01	18.45	6.09E+01	1.64
	32	1238.11	1231 -	1245	1237.53	4.52E+01	48.12	2.24E+02	2.62
	33	1377.96	1372 -	1381	1377.25	2.89E+01	20.71	4.41E+01	1.70
	34	1407.99	1404 -	1410	1407.24	2.07E+01	16.45	3.27E+01	2.97
M	35	1457.01	1455 -	1471	1456.22	1.04E+01	9.06	2.08E+01	2.40
m	36	1461.36	1455 -	1471	1460.57	1.05E+03	65.01	2.92E+01	2.38
m	37	1466.12	1455 -	1471	1465.32	3.38E+01	30.89	8.09E+00	2.26
	38	1544.21	1539 -	1549	1543.34	1.28E+01	9.71	6.31E+00	4.95
	39	1570.53	1563 -	1575	1569.63	2.08E+01	11.76	6.33E+00	6.59
M	40	1588.95	1584 -	1611	1588.03	2.01E+01	11.49	8.00E+00	3.26

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
m	41	1593.84	1584 -	1611	1592.92	2.61E+01	13.13	7.00E+00	2.45
m	42	1598.15	1584 -	1611	1597.22	8.17E+00	10.42	7.00E+00	2.45
	43	1621.09	1617 -	1624	1620.14	1.16E+01	12.00	1.68E+01	1.24
	44	1631.25	1627 -	1635	1630.29	1.11E+01	13.90	2.37E+01	2.13
	45	1680.46	1674 -	1683	1679.45	8.15E+00	10.10	9.69E+00	3.27
	46	1688.59	1685 -	1689	1687.57	5.79E+00	5.85	2.43E+00	1.06
M	47	1727.35	1725 -	1733	1726.30	7.48E+00	5.55	1.67E+00	2.94
m	48	1730.31	1725 -	1733	1729.25	8.53E+00	11.52	1.63E+01	3.01
	49	1765.15	1760 -	1769	1764.05	4.11E+01	18.47	2.57E+01	1.89
	50	1837.16	1833 -	1838	1836.00	6.00E+00	4.90	0.00E+00	2.88
	51	1843.40	1840 -	1844	1842.23	6.63E+00	6.18	2.75E+00	2.46
	52	1931.20	1926 -	1934	1929.95	9.57E+00	9.82	8.86E+00	1.27
	53	2102.66	2098 -	2104	2101.24	1.21E+01	8.26	3.71E+00	4.76
	54	2284.66	2280 -	2286	2283.07	5.33E+00	7.78	7.33E+00	2.92
	55	2296.54	2293 -	2297	2294.93	4.50E+00	5.50	3.00E+00	2.70
	56	2615.41	2609 -	2620	2613.50	1.37E+02	23.41	0.00E+00	2.86

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 5:19:12PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	63.38	61 -	67	1.83E+02	100.02	1.70E+03	7.92E+01
M	2	74.72	71 -	82	4.01E+02	92.73	1.28E+03	5.88E+01
m	3	77.16	71 -	82	6.82E+02	99.56	1.24E+03	5.78E+01
	4	92.39	90 -	97	3.65E+02	109.80	1.72E+03	8.46E+01
	5	127.98	125 -	132	8.19E+01	87.20	1.21E+03	7.01E+01
	6	185.64	183 -	191	1.67E+02	87.59	1.09E+03	6.88E+01
	7	209.21	205 -	214	1.22E+02	86.49	9.95E+02	6.87E+01
M	8	238.60	233 -	246	9.61E+02	73.78	3.71E+02	3.17E+01
m	9	241.74	233 -	246	1.69E+02	74.57	3.37E+02	3.02E+01
M	10	288.79	287 -	303	2.72E+01	33.29	2.51E+02	2.61E+01
m	11	295.46	287 -	303	2.26E+02	54.01	4.27E+02	3.40E+01
m	12	299.58	287 -	303	4.86E+01	48.14	4.61E+02	3.53E+01

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	13	328.28	325 -	332	5.66E+01	50.83	3.87E+02	3.99E+01
	14	338.13	334 -	342	1.97E+02	59.76	4.30E+02	4.34E+01
	15	351.92	348 -	356	4.70E+02	68.29	4.30E+02	4.34E+01
	16	462.27	458 -	466	4.53E+01	43.34	2.62E+02	3.39E+01
	17	511.28	506 -	516	1.38E+02	56.73	3.50E+02	4.24E+01
	18	556.10	553 -	560	3.04E+01	32.50	1.55E+02	2.51E+01
	19	583.35	579 -	588	2.69E+02	55.29	2.79E+02	3.66E+01
	20	609.33	604 -	612	3.66E+02	54.41	2.31E+02	1.48E+01
	21	727.69	724 -	731	3.71E+01	36.99	2.02E+02	2.87E+01
	22	794.70	790 -	799	5.62E+01	35.11	1.42E+02	2.61E+01
	23	814.54	811 -	819	3.31E+01	26.40	8.99E+01	1.95E+01
	24	837.62	832 -	842	4.07E+01	35.68	1.47E+02	2.74E+01
	25	861.00	857 -	864	3.28E+01	31.94	1.48E+02	2.45E+01
	26	911.82	908 -	917	1.77E+02	41.48	1.44E+02	2.62E+01
M	27	965.15	958 -	971	5.51E+01	29.24	9.87E+01	1.63E+01
m	28	969.30	958 -	971	1.08E+02	29.17	7.37E+01	1.41E+01
	29	1121.15	1117 -	1125	6.83E+01	34.70	1.41E+02	2.51E+01
	30	1166.95	1163 -	1170	2.68E+01	28.35	1.16E+02	2.17E+01
	31	1207.79	1205 -	1209	1.56E+01	18.45	6.09E+01	1.37E+01
	32	1238.11	1231 -	1245	4.52E+01	48.12	2.24E+02	3.80E+01
	33	1377.96	1372 -	1381	2.89E+01	20.71	4.41E+01	1.45E+01
	34	1407.99	1404 -	1410	2.07E+01	16.45	3.27E+01	1.13E+01
M	35	1457.01	1455 -	1471	1.04E+01	9.06	2.08E+01	7.50E+00
m	36	1461.36	1455 -	1471	1.05E+03	65.01	2.92E+01	8.88E+00
m	37	1466.12	1455 -	1471	3.38E+01	30.89	8.09E+00	4.68E+00
	38	1544.21	1539 -	1549	1.28E+01	9.71	6.31E+00	5.38E+00
	39	1570.53	1563 -	1575	2.08E+01	11.76	6.33E+00	6.09E+00
M	40	1588.95	1584 -	1611	2.01E+01	11.49	8.00E+00	4.65E+00
m	41	1593.84	1584 -	1611	2.61E+01	13.13	7.00E+00	4.35E+00
m	42	1598.15	1584 -	1611	8.17E+00	10.42	7.00E+00	4.35E+00
	43	1621.09	1617 -	1624	1.16E+01	12.00	1.68E+01	8.12E+00
	44	1631.25	1627 -	1635	1.11E+01	13.90	2.37E+01	1.00E+01
	45	1680.46	1674 -	1683	8.15E+00	10.10	9.69E+00	6.85E+00
	46	1688.59	1685 -	1689	5.79E+00	5.85	2.43E+00	2.74E+00
M	47	1727.35	1725 -	1733	7.48E+00	5.55	1.67E+00	2.12E+00
m	48	1730.31	1725 -	1733	8.53E+00	11.52	1.63E+01	6.64E+00
	49	1765.15	1760 -	1769	4.11E+01	18.47	2.57E+01	1.09E+01
	50	1837.16	1833 -	1838	6.00E+00	4.90	0.00E+00	0.00E+00
	51	1843.40	1840 -	1844	6.63E+00	6.18	2.75E+00	2.82E+00
	52	1931.20	1926 -	1934	9.57E+00	9.82	8.86E+00	6.27E+00
	53	2102.66	2098 -	2104	1.21E+01	8.26	3.71E+00	3.65E+00
	54	2284.66	2280 -	2286	5.33E+00	7.78	7.33E+00	5.14E+00
	55	2296.54	2293 -	2297	4.50E+00	5.50	3.00E+00	2.88E+00
	56	2615.41	2609 -	2620	1.37E+02	23.41	0.00E+00	0.00E+00

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 5:19:12PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	63.38	61 -	67	63.98	1.83E+02	100.02	1.70E+03	TH-234
									TH-230
M	2	74.72	71 -	82	75.31	4.01E+02	92.73	1.28E+03	AM-243
m	3	77.16	71 -	82	77.75	6.82E+02	99.56	1.24E+03	.....
	4	92.39	90 -	97	92.97	3.65E+02	109.80	1.72E+03	GA-67
	5	127.98	125 -	132	128.52	8.19E+01	87.20	1.21E+03	.....
	6	185.64	183 -	191	186.12	1.67E+02	87.59	1.09E+03	RA-226
	7	209.21	205 -	214	209.66	1.22E+02	86.49	9.95E+02	GA-67
									CM-243
M	8	238.60	233 -	246	239.02	9.61E+02	73.78	3.71E+02	PB-212
m	9	241.74	233 -	246	242.17	1.69E+02	74.57	3.37E+02	RA-224
M	10	288.79	287 -	303	289.17	2.72E+01	33.29	2.51E+02	.....
m	11	295.46	287 -	303	295.83	2.26E+02	54.01	4.27E+02	PB-214
m	12	299.58	287 -	303	299.94	4.86E+01	48.14	4.61E+02	BI-210M
									PB-212
									GA-67
	13	328.28	325 -	332	328.62	5.66E+01	50.83	3.87E+02	LA-140
	14	338.13	334 -	342	338.46	1.97E+02	59.76	4.30E+02	AC-228
	15	351.92	348 -	356	352.23	4.70E+02	68.29	4.30E+02	PB-214
	16	462.27	458 -	466	462.47	4.53E+01	43.34	2.62E+02	.....
	17	511.28	506 -	516	511.43	1.38E+02	56.73	3.50E+02	.....
	18	556.10	553 -	560	556.21	3.04E+01	32.50	1.55E+02	.....
	19	583.35	579 -	588	583.42	2.69E+02	55.29	2.79E+02	TL-208
	20	609.33	604 -	612	609.38	3.66E+02	54.41	2.31E+02	BI-214
	21	727.69	724 -	731	727.62	3.71E+01	36.99	2.02E+02	BI-212
	22	794.70	790 -	799	794.56	5.62E+01	35.11	1.42E+02	.....
	23	814.54	811 -	819	814.39	3.31E+01	26.40	8.99E+01	.....
	24	837.62	832 -	842	837.44	4.07E+01	35.68	1.47E+02	.....
	25	861.00	857 -	864	860.79	3.28E+01	31.94	1.48E+02	TL-208
	26	911.82	908 -	917	911.56	1.77E+02	41.48	1.44E+02	TL-204

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									AC-228
M	27	965.15	958 -	971	964.85	5.51E+01	29.24	9.87E+01	.....
m	28	969.30	958 -	971	968.99	1.08E+02	29.17	7.37E+01	AC-228
	29	1121.15	1117 -	1125	1120.69	6.83E+01	34.70	1.41E+02	TA-182 SC-46 BI-214
	30	1166.95	1163 -	1170	1166.44	2.68E+01	28.35	1.16E+02	.....
	31	1207.79	1205 -	1209	1207.25	1.56E+01	18.45	6.09E+01	.....
	32	1238.11	1231 -	1245	1237.53	4.52E+01	48.12	2.24E+02	CO-56
	33	1377.96	1372 -	1381	1377.25	2.89E+01	20.71	4.41E+01	.....
	34	1407.99	1404 -	1410	1407.24	2.07E+01	16.45	3.27E+01	EU-152
M	35	1457.01	1455 -	1471	1456.22	1.04E+01	9.06	2.08E+01	.....
m	36	1461.36	1455 -	1471	1460.57	1.05E+03	65.01	2.92E+01	K-40
m	37	1466.12	1455 -	1471	1465.32	3.38E+01	30.89	8.09E+00	.....
	38	1544.21	1539 -	1549	1543.34	1.28E+01	9.71	6.31E+00	.....
	39	1570.53	1563 -	1575	1569.63	2.08E+01	11.76	6.33E+00	.....
M	40	1588.95	1584 -	1611	1588.03	2.01E+01	11.49	8.00E+00	.....
m	41	1593.84	1584 -	1611	1592.92	2.61E+01	13.13	7.00E+00	.....
m	42	1598.15	1584 -	1611	1597.22	8.17E+00	10.42	7.00E+00	.....
	43	1621.09	1617 -	1624	1620.14	1.16E+01	12.00	1.68E+01	BI-212
	44	1631.25	1627 -	1635	1630.29	1.11E+01	13.90	2.37E+01	.....
	45	1680.46	1674 -	1683	1679.45	8.15E+00	10.10	9.69E+00	.....
	46	1688.59	1685 -	1689	1687.57	5.79E+00	5.85	2.43E+00	.....
M	47	1727.35	1725 -	1733	1726.30	7.48E+00	5.55	1.67E+00	.....
m	48	1730.31	1725 -	1733	1729.25	8.53E+00	11.52	1.63E+01	.....
	49	1765.15	1760 -	1769	1764.05	4.11E+01	18.47	2.57E+01	BI-214
	50	1837.16	1833 -	1838	1836.00	6.00E+00	4.90	0.00E+00	.....
	51	1843.40	1840 -	1844	1842.23	6.63E+00	6.18	2.75E+00	.....
	52	1931.20	1926 -	1934	1929.95	9.57E+00	9.82	8.86E+00	.....
	53	2102.66	2098 -	2104	2101.24	1.21E+01	8.26	3.71E+00	.....
	54	2284.66	2280 -	2286	2283.07	5.33E+00	7.78	7.33E+00	.....
	55	2296.54	2293 -	2297	2294.93	4.50E+00	5.50	3.00E+00	.....
	56	2615.41	2609 -	2620	2613.50	1.37E+02	23.41	0.00E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 5:19:12PM

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	63.38	1.83E+02	100.02	2.70E-02	2.26E-03
M	2	74.72	4.01E+02	92.73	2.75E-02	2.38E-03
m	3	77.16	6.82E+02	99.56	2.75E-02	2.40E-03
	4	92.39	3.65E+02	109.80	2.73E-02	2.45E-03
	5	127.98	8.19E+01	87.20	2.54E-02	1.94E-03
	6	185.64	1.67E+02	87.59	2.17E-02	1.68E-03
	7	209.21	1.22E+02	86.49	2.04E-02	1.61E-03
M	8	238.60	9.61E+02	73.78	1.89E-02	1.53E-03
m	9	241.74	1.69E+02	74.57	1.87E-02	1.52E-03
M	10	288.79	2.72E+01	33.29	1.67E-02	1.39E-03
m	11	295.46	2.26E+02	54.01	1.64E-02	1.37E-03
m	12	299.58	4.86E+01	48.14	1.63E-02	1.36E-03
	13	328.28	5.66E+01	50.83	1.53E-02	1.29E-03
	14	338.13	1.97E+02	59.76	1.50E-02	1.27E-03
	15	351.92	4.70E+02	68.29	1.45E-02	1.24E-03
	16	462.27	4.53E+01	43.34	1.19E-02	1.10E-03
	17	511.28	1.38E+02	56.73	1.10E-02	1.07E-03
	18	556.10	3.04E+01	32.50	1.03E-02	1.04E-03
	19	583.35	2.69E+02	55.29	9.96E-03	1.02E-03
	20	609.33	3.66E+02	54.41	9.63E-03	1.01E-03
	21	727.69	3.71E+01	36.99	8.41E-03	8.67E-04
	22	794.70	5.62E+01	35.11	7.86E-03	7.61E-04
	23	814.54	3.31E+01	26.40	7.71E-03	7.29E-04
	24	837.62	4.07E+01	35.68	7.55E-03	6.92E-04
	25	861.00	3.28E+01	31.94	7.40E-03	6.55E-04
	26	911.82	1.77E+02	41.48	7.08E-03	5.91E-04
M	27	965.15	5.51E+01	29.24	6.79E-03	5.71E-04
m	28	969.30	1.08E+02	29.17	6.76E-03	5.69E-04
	29	1121.15	6.83E+01	34.70	6.07E-03	5.11E-04
	30	1166.95	2.68E+01	28.35	5.89E-03	4.93E-04
	31	1207.79	1.56E+01	18.45	5.75E-03	4.83E-04
	32	1238.11	4.52E+01	48.12	5.64E-03	4.76E-04
	33	1377.96	2.89E+01	20.71	5.22E-03	4.44E-04
	34	1407.99	2.07E+01	16.45	5.14E-03	4.37E-04
M	35	1457.01	1.04E+01	9.06	5.02E-03	4.26E-04
m	36	1461.36	1.05E+03	65.01	5.00E-03	4.25E-04
m	37	1466.12	3.38E+01	30.89	4.99E-03	4.24E-04
	38	1544.21	1.28E+01	9.71	4.81E-03	4.05E-04
	39	1570.53	2.08E+01	11.76	4.75E-03	3.99E-04
M	40	1588.95	2.01E+01	11.49	4.71E-03	3.95E-04
m	41	1593.84	2.61E+01	13.13	4.70E-03	3.94E-04
m	42	1598.15	8.17E+00	10.42	4.69E-03	3.93E-04
	43	1621.09	1.16E+01	12.00	4.65E-03	3.88E-04
	44	1631.25	1.11E+01	13.90	4.63E-03	3.85E-04
	45	1680.46	8.15E+00	10.10	4.53E-03	3.74E-04
	46	1688.59	5.79E+00	5.85	4.51E-03	3.72E-04
M	47	1727.35	7.48E+00	5.55	4.44E-03	3.63E-04
m	48	1730.31	8.53E+00	11.52	4.44E-03	3.62E-04
	49	1765.15	4.11E+01	18.47	4.37E-03	3.54E-04
	50	1837.16	6.00E+00	4.90	4.25E-03	3.38E-04
	51	1843.40	6.63E+00	6.18	4.24E-03	3.38E-04
	52	1931.20	9.57E+00	9.82	4.10E-03	3.38E-04
	53	2102.66	1.21E+01	8.26	3.86E-03	3.38E-04

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
54	2284.66	5.33E+00	7.78	3.64E-03	3.38E-04
55	2296.54	4.50E+00	5.50	3.63E-03	3.38E-04
56	2615.41	1.37E+02	23.41	3.31E-03	3.38E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 5:19:12PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	63.38	1.83E+02	100.02	8.94E+01	1.41E+01	9.36E+01	1.01E+02
M	2	74.72	4.01E+02	92.73			4.01E+02	9.27E+01
m	3	77.16	6.82E+02	99.56	7.20E+00	1.47E+00	6.74E+02	9.96E+01
	4	92.39	3.65E+02	109.80	1.38E+02	1.72E+01	2.28E+02	1.11E+02
	5	127.98	8.19E+01	87.20			8.19E+01	8.72E+01
	6	185.64	1.67E+02	87.59	5.22E+01	7.59E+00	1.15E+02	8.79E+01
	7	209.21	1.22E+02	86.49			1.22E+02	8.65E+01
M	8	238.60	9.61E+02	73.78	2.13E+01	6.33E+00	9.40E+02	7.41E+01
m	9	241.74	1.69E+02	74.57			1.69E+02	7.46E+01
M	10	288.79	2.72E+01	33.29			2.72E+01	3.33E+01
m	11	295.46	2.26E+02	54.01			2.26E+02	5.40E+01
m	12	299.58	4.86E+01	48.14			4.86E+01	4.81E+01
	13	328.28	5.66E+01	50.83			5.66E+01	5.08E+01
	14	338.13	1.97E+02	59.76			1.97E+02	5.98E+01
	15	351.92	4.70E+02	68.29	5.79E+00	4.49E+00	4.64E+02	6.84E+01
	16	462.27	4.53E+01	43.34			4.53E+01	4.33E+01
	17	511.28	1.38E+02	56.73	7.28E+01	5.30E+00	6.52E+01	5.70E+01
	18	556.10	3.04E+01	32.50			3.04E+01	3.25E+01
	19	583.35	2.69E+02	55.29	2.72E+00	3.05E+00	2.66E+02	5.54E+01
	20	609.33	3.66E+02	54.41	6.35E+00	4.02E+00	3.60E+02	5.46E+01
	21	727.69	3.71E+01	36.99			3.71E+01	3.70E+01
	22	794.70	5.62E+01	35.11			5.62E+01	3.51E+01
	23	814.54	3.31E+01	26.40			3.31E+01	2.64E+01
	24	837.62	4.07E+01	35.68			4.07E+01	3.57E+01
	25	861.00	3.28E+01	31.94			3.28E+01	3.19E+01
	26	911.82	1.77E+02	41.48	5.31E+00	3.00E+00	1.72E+02	4.16E+01
M	27	965.15	5.51E+01	29.24			5.51E+01	2.92E+01

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	28	969.30	1.08E+02	29.17			1.08E+02	2.92E+01
	29	1121.15	6.83E+01	34.70			6.83E+01	3.47E+01
	30	1166.95	2.68E+01	28.35			2.68E+01	2.84E+01
	31	1207.79	1.56E+01	18.45			1.56E+01	1.84E+01
	32	1238.11	4.52E+01	48.12			4.52E+01	4.81E+01
	33	1377.96	2.89E+01	20.71			2.89E+01	2.07E+01
	34	1407.99	2.07E+01	16.45			2.07E+01	1.64E+01
M	35	1457.01	1.04E+01	9.06			1.04E+01	9.06E+00
m	36	1461.36	1.05E+03	65.01	8.09E+00	2.23E+00	1.05E+03	6.50E+01
m	37	1466.12	3.38E+01	30.89			3.38E+01	3.09E+01
	38	1544.21	1.28E+01	9.71			1.28E+01	9.71E+00
	39	1570.53	2.08E+01	11.76			2.08E+01	1.18E+01
M	40	1588.95	2.01E+01	11.49			2.01E+01	1.15E+01
m	41	1593.84	2.61E+01	13.13			2.61E+01	1.31E+01
m	42	1598.15	8.17E+00	10.42			8.17E+00	1.04E+01
	43	1621.09	1.16E+01	12.00			1.16E+01	1.20E+01
	44	1631.25	1.11E+01	13.90			1.11E+01	1.39E+01
	45	1680.46	8.15E+00	10.10			8.15E+00	1.01E+01
	46	1688.59	5.79E+00	5.85			5.79E+00	5.85E+00
M	47	1727.35	7.48E+00	5.55			7.48E+00	5.55E+00
m	48	1730.31	8.53E+00	11.52			8.53E+00	1.15E+01
	49	1765.15	4.11E+01	18.47			4.11E+01	1.85E+01
	50	1837.16	6.00E+00	4.90			6.00E+00	4.90E+00
	51	1843.40	6.63E+00	6.18			6.63E+00	6.18E+00
	52	1931.20	9.57E+00	9.82			9.57E+00	9.82E+00
	53	2102.66	1.21E+01	8.26			1.21E+01	8.26E+00
	54	2284.66	5.33E+00	7.78			5.33E+00	7.78E+00
	55	2296.54	4.50E+00	5.50			4.50E+00	5.50E+00
	56	2615.41	1.37E+02	23.41	5.63E+00	1.38E+00	1.31E+02	2.35E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 5:19:12PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

Corrected Area is: Original * Peak Ratio - Background

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	63.38	1.83E+02	100.02	8.94E+01	1.41E+01	9.36E+01	1.01E+02
M	2	74.72	4.01E+02	92.73			4.01E+02	9.27E+01
m	3	77.16	6.82E+02	99.56	7.20E+00	1.47E+00	6.74E+02	9.96E+01
	4	92.39	3.65E+02	109.80	1.38E+02	1.72E+01	2.28E+02	1.11E+02
	5	127.98	8.19E+01	87.20			8.19E+01	8.72E+01
	6	185.64	1.67E+02	87.59	5.22E+01	7.59E+00	1.15E+02	8.79E+01
	7	209.21	1.22E+02	86.49			1.22E+02	8.65E+01
M	8	238.60	9.61E+02	73.78	2.13E+01	6.33E+00	9.40E+02	7.41E+01
m	9	241.74	1.69E+02	74.57			1.69E+02	7.46E+01
M	10	288.79	2.72E+01	33.29			2.72E+01	3.33E+01
m	11	295.46	2.26E+02	54.01			2.26E+02	5.40E+01
m	12	299.58	4.86E+01	48.14			4.86E+01	4.81E+01
	13	328.28	5.66E+01	50.83			5.66E+01	5.08E+01
	14	338.13	1.97E+02	59.76			1.97E+02	5.98E+01
	15	351.92	4.70E+02	68.29	5.79E+00	4.49E+00	4.64E+02	6.84E+01
	16	462.27	4.53E+01	43.34			4.53E+01	4.33E+01
	17	511.28	1.38E+02	56.73	7.28E+01	5.30E+00	6.52E+01	5.70E+01
	18	556.10	3.04E+01	32.50			3.04E+01	3.25E+01
	19	583.35	2.69E+02	55.29	2.72E+00	3.05E+00	2.66E+02	5.54E+01
	20	609.33	3.66E+02	54.41	6.35E+00	4.02E+00	3.60E+02	5.46E+01
	21	727.69	3.71E+01	36.99			3.71E+01	3.70E+01
	22	794.70	5.62E+01	35.11			5.62E+01	3.51E+01
	23	814.54	3.31E+01	26.40			3.31E+01	2.64E+01
	24	837.62	4.07E+01	35.68			4.07E+01	3.57E+01
	25	861.00	3.28E+01	31.94			3.28E+01	3.19E+01
	26	911.82	1.77E+02	41.48	5.31E+00	3.00E+00	1.72E+02	4.16E+01
M	27	965.15	5.51E+01	29.24			5.51E+01	2.92E+01
m	28	969.30	1.08E+02	29.17			1.08E+02	2.92E+01
	29	1121.15	6.83E+01	34.70			6.83E+01	3.47E+01
	30	1166.95	2.68E+01	28.35			2.68E+01	2.84E+01
	31	1207.79	1.56E+01	18.45			1.56E+01	1.84E+01
	32	1238.11	4.52E+01	48.12			4.52E+01	4.81E+01
	33	1377.96	2.89E+01	20.71			2.89E+01	2.07E+01
	34	1407.99	2.07E+01	16.45			2.07E+01	1.64E+01
M	35	1457.01	1.04E+01	9.06			1.04E+01	9.06E+00
m	36	1461.36	1.05E+03	65.01	8.09E+00	2.23E+00	1.05E+03	6.50E+01
m	37	1466.12	3.38E+01	30.89			3.38E+01	3.09E+01
	38	1544.21	1.28E+01	9.71			1.28E+01	9.71E+00
	39	1570.53	2.08E+01	11.76			2.08E+01	1.18E+01
M	40	1588.95	2.01E+01	11.49			2.01E+01	1.15E+01
m	41	1593.84	2.61E+01	13.13			2.61E+01	1.31E+01
m	42	1598.15	8.17E+00	10.42			8.17E+00	1.04E+01
	43	1621.09	1.16E+01	12.00			1.16E+01	1.20E+01
	44	1631.25	1.11E+01	13.90			1.11E+01	1.39E+01
	45	1680.46	8.15E+00	10.10			8.15E+00	1.01E+01
	46	1688.59	5.79E+00	5.85			5.79E+00	5.85E+00
M	47	1727.35	7.48E+00	5.55			7.48E+00	5.55E+00
m	48	1730.31	8.53E+00	11.52			8.53E+00	1.15E+01
	49	1765.15	4.11E+01	18.47			4.11E+01	1.85E+01
	50	1837.16	6.00E+00	4.90			6.00E+00	4.90E+00
	51	1843.40	6.63E+00	6.18			6.63E+00	6.18E+00
	52	1931.20	9.57E+00	9.82			9.57E+00	9.82E+00
	53	2102.66	1.21E+01	8.26			1.21E+01	8.26E+00
	54	2284.66	5.33E+00	7.78			5.33E+00	7.78E+00

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
55	2296.54	4.50E+00	5.50			4.50E+00	5.50E+00
56	2615.41	1.37E+02	23.41	5.63E+00	1.38E+00	1.31E+02	2.35E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.952	1460.81	*	10.67	2.38E+01	2.56E+00
TL-208	0.948	583.14	*	30.22	1.07E+00	2.50E-01
		860.37	*	4.48	1.20E+00	1.18E+00
		2614.66	*	35.85	1.35E+00	2.78E-01
BI-212	0.959	727.17	*	11.80	4.55E-01	4.56E-01
		1620.62	*	2.75	1.10E+00	1.15E+00
PB-212	0.997	238.63	*	44.60	1.36E+00	1.54E-01
		300.09	*	3.41	1.07E+00	1.06E+00
BI-214	0.897	609.31	*	46.30	9.83E-01	1.81E-01
		1120.29	*	15.10	9.07E-01	4.67E-01
		1764.49	*	15.80	7.25E-01	3.31E-01
		2204.22		4.98		
PB-214	0.997	295.21	*	19.19	8.71E-01	2.21E-01
		351.92	*	37.19	1.05E+00	1.78E-01
RA-224	0.911	240.98	*	3.95	2.78E+00	1.25E+00
RA-226	0.949	186.21	*	3.28	1.96E+00	3.89E+00
AC-228	0.954	338.32	*	11.40	1.41E+00	4.43E-01
		911.07	*	27.70	1.07E+00	2.73E-01
		969.11	*	16.60	1.17E+00	3.31E-01
TH-234	0.999	63.29	*	3.80	1.11E+00	1.20E+00
AM-243	1.000	74.67	*	66.00	2.69E-01	6.65E-02

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 5:19:12PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	3	77.16	1.87338E-01	7.38		
	4	92.39	6.32578E-02	24.40	Tol.	GA-67
	5	127.98	2.27512E-02	53.23		
	7	209.21	3.40233E-02	35.31	Tol.	GA-67 CM-243
M	10	288.79	7.55503E-03	61.19		
	13	328.28	1.57278E-02	44.89	Tol.	LA-140
	16	462.27	1.25694E-02	47.89		
	17	511.28	1.81163E-02	43.68		
	18	556.10	8.43107E-03	53.53		
	22	794.70	1.56146E-02	31.23	Sum	
	23	814.54	9.18091E-03	39.93		
	24	837.62	1.13036E-02	43.84		
M	27	965.15	1.53065E-02	26.53		
	30	1166.95	7.43301E-03	52.98	Sum	
	31	1207.79	4.32367E-03	59.25	Sum	
	32	1238.11	1.25584E-02	53.22		
	33	1377.96	8.03921E-03	35.78		
	34	1407.99	5.73949E-03	39.80	Tol.	EU-152
M	35	1457.01	2.88154E-03	43.65		
m	37	1466.12	9.37700E-03	45.75		
	38	1544.21	3.56771E-03	37.79		
	39	1570.53	5.78704E-03	28.22		
M	40	1588.95	5.59114E-03	28.54	Sum	
m	41	1593.84	7.24818E-03	25.17	D-Esc	
m	42	1598.15	2.26911E-03	63.76		
	44	1631.25	3.09179E-03	62.45		
	45	1680.46	2.26496E-03	61.93		
	46	1688.59	1.60714E-03	50.58		
M	47	1727.35	2.07752E-03	37.07		
m	48	1730.31	2.36918E-03	67.54	Sum	
	50	1837.16	1.66667E-03	40.82		
	51	1843.40	1.84028E-03	46.68		
	52	1931.20	2.65873E-03	51.32		

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
53	2102.66	3.37302E-03	34.02	Sum	
54	2284.66	1.48148E-03	72.92		
55	2296.54	1.25000E-03	61.11		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.95	1460.81	*	10.67	2.38E+01	2.56E+00
TL-208	0.94	583.14	*	30.22	1.07E+00	2.50E-01
		860.37	*	4.48	1.20E+00	1.18E+00
		2614.66	*	35.85	1.35E+00	2.78E-01
BI-212	0.95	727.17	*	11.80	4.55E-01	4.56E-01
		1620.62	*	2.75	1.10E+00	1.15E+00
PB-212	0.99	238.63	*	44.60	1.36E+00	1.54E-01
		300.09	*	3.41	1.07E+00	1.06E+00
BI-214	0.89	609.31	*	46.30	9.83E-01	1.81E-01
		1120.29	*	15.10	9.07E-01	4.67E-01
		1764.49	*	15.80	7.25E-01	3.31E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	8.71E-01	2.21E-01
		351.92	*	37.19	1.05E+00	1.78E-01
RA-224	0.91	240.98	*	3.95	2.78E+00	1.25E+00
RA-226	0.94	186.21	*	3.28	1.96E+00	3.89E+00
AC-228	0.95	338.32	*	11.40	1.41E+00	4.43E-01
		911.07	*	27.70	1.07E+00	2.73E-01
		969.11	*	16.60	1.17E+00	3.31E-01
TH-234	0.99	63.29	*	3.80	1.11E+00	1.20E+00
AM-243	1.00	74.67	*	66.00	2.69E-01	6.65E-02

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.952	2.38E+01	2.56E+00	
TL-208	0.948	1.20E+00	1.83E-01	
BI-212	0.959	5.44E-01	4.24E-01	
PB-212	0.997	1.35E+00	1.52E-01	
BI-214	0.897	9.22E-01	1.50E-01	
PB-214	0.997	9.77E-01	1.39E-01	
RA-224	0.911	2.78E+00	1.25E+00	
RA-226	0.949	1.96E+00	3.89E+00	
AC-228	0.954	1.16E+00	1.90E-01	
TH-234	0.999	1.11E+00	1.20E+00	
AM-243	1.000	2.69E-01	6.65E-02	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 5:19:12PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	3	77.16	1.87338E-01	7.38		
	4	92.39	6.32578E-02	24.40	Tol.	GA-67
	5	127.98	2.27512E-02	53.23		
	7	209.21	3.40233E-02	35.31	Tol.	GA-67
						CM-243
M	10	288.79	7.55503E-03	61.19		
	13	328.28	1.57278E-02	44.89	Tol.	LA-140
	16	462.27	1.25694E-02	47.89		
	17	511.28	1.81163E-02	43.68		
	18	556.10	8.43107E-03	53.53		
	22	794.70	1.56146E-02	31.23	Sum	
	23	814.54	9.18091E-03	39.93		
	24	837.62	1.13036E-02	43.84		
M	27	965.15	1.53065E-02	26.53		
	30	1166.95	7.43301E-03	52.98	Sum	
	31	1207.79	4.32367E-03	59.25	Sum	
	32	1238.11	1.25584E-02	53.22		
	33	1377.96	8.03921E-03	35.78		
	34	1407.99	5.73949E-03	39.80	Tol.	EU-152
M	35	1457.01	2.88154E-03	43.65		
m	37	1466.12	9.37700E-03	45.75		
	38	1544.21	3.56771E-03	37.79		
	39	1570.53	5.78704E-03	28.22		
M	40	1588.95	5.59114E-03	28.54	Sum	
m	41	1593.84	7.24818E-03	25.17	D-Esc	
m	42	1598.15	2.26911E-03	63.76		
	44	1631.25	3.09179E-03	62.45		
	45	1680.46	2.26496E-03	61.93		
	46	1688.59	1.60714E-03	50.58		
M	47	1727.35	2.07752E-03	37.07		
m	48	1730.31	2.36918E-03	67.54	Sum	
	50	1837.16	1.66667E-03	40.82		
	51	1843.40	1.84028E-03	46.68		
	52	1931.20	2.65873E-03	51.32		
	53	2102.66	3.37302E-03	34.02	Sum	

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
54	2284.66	1.48148E-03	72.92		
55	2296.54	1.25000E-03	61.11		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	-8.07E-01	1.82E+00	1.82E+00
+	NA-22	1274.54		99.94	3.39E-02	8.45E-02	8.45E-02
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	8.51E-03	4.50E-02	4.50E-02
+	K-40	1460.81	*	10.67	2.38E+01	1.03E+00	1.03E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-2.97E-03	5.75E-02	5.75E-02
		78.34		96.00	1.88E-01		7.81E-02
+	SC-46	889.25		99.98	-1.32E-02	1.46E-01	1.46E-01
		1120.51		99.99	2.54E-01		2.50E-01
+	V-48	983.52		99.98	-1.18E+00	5.18E+00	5.18E+00
		1312.10		97.50	1.28E+00		6.44E+00
+	CR-51	320.08		9.83	3.05E-01	7.10E+00	7.10E+00
+	MN-54	834.83		99.97	-2.60E-02	8.55E-02	8.55E-02
+	CO-56	846.75		99.96	4.24E-02	1.72E-01	1.72E-01
		1037.75		14.03	2.48E-01		1.17E+00
		1238.25		67.00	1.48E-01		3.58E-01
		1771.40		15.51	-1.46E-02		6.59E-01
		2598.48		16.90	1.06E-01		4.92E-01
+	CO-57	122.06		85.51	2.34E-02	6.87E-02	6.87E-02
		136.48		10.60	1.24E-01		5.81E-01
+	CO-58	810.76		99.40	5.18E-03	1.60E-01	1.60E-01
+	FE-59	1099.22		56.50	-4.98E-01	6.01E-01	6.01E-01
		1291.56		43.20	-5.08E-01		7.90E-01
+	CO-60	1173.22		100.00	2.74E-02	7.04E-02	8.95E-02
		1332.49		100.00	-3.75E-03		7.04E-02

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	ZN-65	1115.52	50.75	-1.03E-01	1.87E-01	1.87E-01
+	GA-67	93.31	35.70	7.15E+08	3.88E+08	3.88E+08
		208.95	2.24	4.17E+09		5.46E+09
		300.22	16.00	-1.08E+09		8.85E+08
+	SE-75	121.11	16.70	1.95E-01	1.44E-01	5.00E-01
		136.00	59.20	3.08E-02		1.44E-01
		264.65	59.80	-4.82E-02		1.61E-01
		279.53	25.20	-2.49E-02		3.85E-01
		400.65	11.40	-1.37E-01		8.41E-01
+	RB-82	776.52	13.00	-1.32E+00	7.37E+00	7.37E+00
+	RB-83	520.41	46.00	-5.68E-03	2.63E-01	2.63E-01
		529.64	30.30	-1.21E-01		3.99E-01
		552.65	16.40	-1.90E-02		7.80E-01
+	KR-85	513.99	0.43	2.82E+01	1.87E+01	1.87E+01
+	SR-85	513.99	99.27	3.57E-01	2.37E-01	2.37E-01
+	Y-88	898.02	93.40	3.82E-02	7.85E-02	1.46E-01
		1836.01	99.38	2.23E-02		7.85E-02
+	MO-93	263.06	56.72	1.19E-03	5.37E-02	9.66E-02
		684.67	99.68	-9.44E-04		5.91E-02
		1477.11	99.08	1.68E-02		5.37E-02
+	NB-93M	16.57	9.43	-6.08E-02	4.89E-01	4.89E-01
+	NB-94	702.63	100.00	1.32E-02	6.13E-02	6.81E-02
		871.10	100.00	-3.15E-02		6.13E-02
+	NB-95	765.79	99.81	4.91E-01	5.76E-01	5.76E-01
+	NB-95M	235.69	25.00	-4.86E+08	6.94E+07	6.94E+07
+	ZR-95	724.18	43.70	3.57E-02	3.67E-01	5.01E-01
		756.72	55.30	1.70E-01		3.67E-01
+	MO-99	181.06	6.20	-3.65E+09	5.38E+10	9.12E+10
		739.58	12.80	-3.22E+10		5.38E+10
		778.00	4.50	-9.04E+10		1.63E+11
+	RU-103	497.08	89.00	1.93E-01	3.81E-01	3.81E-01
+	RU-106	621.84	9.80	3.28E-01	7.77E-01	7.77E-01
+	AG-108M	433.93	89.90	-3.58E-02	5.58E-02	5.58E-02
		614.37	90.40	-2.66E-02		7.53E-02
		722.95	90.50	2.58E-02		7.31E-02
+	CD-109	88.03	3.72	9.37E-01	1.90E+00	1.90E+00
+	AG-110M	657.75	93.14	2.68E-02	8.55E-02	8.55E-02
		677.61	10.53	1.72E-01		7.82E-01
		706.67	16.46	6.71E-02		5.34E-01
		763.93	21.98	-4.58E-01		3.89E-01
		884.67	71.63	1.44E-02		1.18E-01
		1384.27	23.94	-7.58E-02		2.76E-01
+	CD-113M	263.70	0.02	4.54E+01	2.37E+02	2.37E+02
+	SN-113	255.12	1.93	1.61E+00	1.64E-01	4.57E+00
		391.69	64.90	2.53E-02		1.64E-01
+	TE123M	159.00	84.10	-1.57E-02	9.80E-02	9.80E-02
+	SB-124	602.71	97.87	2.72E-02	2.04E-01	2.04E-01
		645.85	7.26	2.70E-01		2.74E+00

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-124	722.78	11.10	6.75E-01	2.04E-01	1.91E+00
		1691.02	49.00	-3.98E-02		3.08E-01
+	I-125	35.49	6.49	-1.44E+00	2.41E+00	2.41E+00
+	SB-125	176.33	6.89	-7.98E-02	1.91E-01	7.03E-01
		427.89	29.33	4.41E-02		1.91E-01
		463.38	10.35	2.46E-02		6.15E-01
		600.56	17.80	1.86E-01		3.77E-01
		635.90	11.32	8.23E-02		5.35E-01
+	SB-126	414.70	83.30	-9.44E+00	1.82E+01	1.95E+01
		666.33	99.60	2.24E+00		1.82E+01
		695.00	99.60	-3.51E+00		1.83E+01
		720.50	53.80	8.33E+00		3.46E+01
+	SN-126	87.57	37.00	2.65E-02	1.60E-01	1.60E-01
+	SB-127	473.00	25.00	-8.29E+06	1.37E+07	1.74E+07
		685.20	35.70	-2.19E+05		1.37E+07
		783.80	14.70	1.54E+07		4.04E+07
+	I-129	29.78	57.00	2.48E-02	9.99E-02	9.99E-02
		33.60	13.20	-3.54E-02		3.89E-01
		39.58	7.52	1.18E-01		6.67E-01
+	I-131	284.30	6.05	7.44E+02	3.72E+02	5.29E+03
		364.48	81.20	-1.98E+02		3.72E+02
		636.97	7.26	-1.55E+02		4.81E+03
		722.89	1.80	8.10E+03		2.29E+04
+	TE-132	49.72	13.10	-1.51E+09	1.29E+08	8.34E+08
		228.16	88.00	6.32E+07		1.29E+08
+	BA-133	81.00	33.00	-2.46E-02	1.29E-01	1.60E-01
		302.84	17.80	9.09E-02		3.49E-01
		356.01	60.00	1.96E-02		1.29E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-1.39E+04	9.02E+04	9.02E+04
+	CS-134	563.23	8.38	1.78E-01	8.27E-02	7.56E-01
		569.32	15.43	3.42E-02		4.28E-01
		604.70	97.60	1.43E-02		8.27E-02
		795.84	85.40	1.01E-01		9.76E-02
		801.93	8.73	7.68E-02		7.23E-01
+	CS-135	268.24	16.00	9.78E-02	3.62E-01	3.62E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	2.64E+01	1.25E+01	1.31E+02
		163.89	4.61	1.42E+02		2.15E+02
		176.55	13.56	-7.89E+00		6.95E+01
		273.65	12.66	-7.93E+00		9.47E+01
		340.57	48.50	9.20E-01		3.15E+01
		818.50	99.70	-1.34E+00		1.25E+01
		1048.07	79.60	4.69E+00		2.02E+01
		1235.34	19.70	1.15E+02		1.11E+02
+	CS-137	661.65	85.12	-1.70E-02	7.14E-02	7.14E-02
+	LA-138	788.74	34.00	5.00E-02	7.76E-02	1.98E-01

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-138	1435.80	66.00	2.27E-03	7.76E-02	7.76E-02
+	CE-139	165.85	80.35	4.56E-03	9.60E-02	9.60E-02
+	BA-140	162.64	6.70	7.19E+01	5.80E+01	1.73E+02
		304.84	4.50	1.03E+01		2.93E+02
		423.70	3.20	-1.99E+02		3.87E+02
		437.55	2.00	-3.65E+01		6.26E+02
		537.32	25.00	3.65E+01		5.80E+01
+	LA-140	328.77	20.50	5.52E+01	1.77E+01	6.85E+01
		487.03	45.50	-2.10E+00		2.89E+01
		815.85	23.50	3.18E+01		6.62E+01
		1596.49	95.49	1.10E-01		1.77E+01
+	CE-141	145.44	48.40	3.63E-01	8.62E-01	8.62E-01
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	1.63E-01	5.56E-01	5.56E-01
+	PM-144	476.78	42.00	-2.94E-02	7.17E-02	1.47E-01
		618.01	98.60	-2.34E-02		7.17E-02
		696.49	99.49	2.49E-02		8.04E-02
+	PM-145	36.85	21.70	-1.68E-01	1.25E-01	2.23E-01
		37.36	39.70	-4.95E-02		1.25E-01
		42.30	15.10	-2.19E-01		3.30E-01
		72.40	2.31	-4.16E+00		2.82E+00
+	PM-146	453.90	39.94	1.23E-02	1.35E-01	1.35E-01
		735.90	14.01	3.01E-01		4.67E-01
		747.13	13.10	1.28E-01		4.93E-01
+	ND-147	91.11	28.90	2.40E+02	1.34E+02	1.34E+02
		531.02	13.10	5.16E+01		2.58E+02
+	PM-149	285.90	3.10	3.56E+13	1.09E+14	1.09E+14
+	EU-152	121.78	20.50	8.98E-02	2.30E-01	2.30E-01
		244.69	5.40	-5.08E-01		9.57E-01
		344.27	19.13	-3.44E-02		2.78E-01
		778.89	9.20	-1.05E-01		6.52E-01
		964.01	10.40	-1.47E+00		8.92E-01
		1085.78	7.22	1.85E-01		1.08E+00
		1112.02	9.60	-1.40E-01		7.57E-01
		1407.95	14.94	3.23E-01		4.98E-01
+	GD-153	97.43	31.30	8.43E-02	2.02E-01	2.02E-01
		103.18	22.20	-8.08E-02		2.73E-01
+	EU-154	123.07	40.50	2.39E-02	1.16E-01	1.16E-01
		723.30	19.70	1.21E-01		3.43E-01
		873.19	11.50	-1.53E-01		5.36E-01
		996.32	10.30	-8.97E-02		7.01E-01
		1004.76	17.90	-8.40E-02		4.12E-01
		1274.45	35.50	9.07E-02		2.26E-01
+	EU-155	86.50	30.90	1.25E-01	2.01E-01	2.01E-01
		105.30	20.70	8.10E-02		2.35E-01
+	EU-156	811.77	10.40	2.76E+00	6.13E+01	6.13E+01
		1153.47	7.20	5.04E+01		1.23E+02

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-156	1230.71		8.90	1.04E+01	6.13E+01	1.01E+02
+	HO-166M	184.41		72.60	1.55E-01	8.13E-02	8.13E-02
		280.45		29.60	-1.01E-03		1.82E-01
		410.94		11.10	2.59E-01		5.38E-01
		711.69		54.10	-7.84E-03		1.17E-01
+	TM-171	66.72		0.14	1.34E+00	4.37E+01	4.37E+01
+	HF-172	67.35		5.31	-5.85E-02	4.59E-01	1.13E+00
		125.81		11.30	-2.00E-01		4.59E-01
+	LU-172	181.53		20.60	-3.18E+02	4.06E+03	7.94E+03
		900.72		29.81	-4.77E+03		8.19E+03
		1093.66		62.50	-8.59E+02		4.06E+03
+	LU-173	100.72		5.24	-3.01E-01	3.20E-01	1.00E+00
		272.11		21.20	9.83E-02		3.20E-01
+	HF-175	343.40		84.00	-2.11E-02	1.70E-01	1.70E-01
+	LU-176	88.34		13.30	2.25E-01	5.69E-02	4.57E-01
		201.83		86.00	1.02E-02		5.69E-02
		306.78		94.00	9.84E-03		5.86E-02
+	HF-181	133.02		41.70	1.72E-01	3.25E-01	5.89E-01
		345.85		17.20	-1.99E-01		1.57E+00
		482.03		82.80	-1.15E-01		3.25E-01
+	TA-182	67.75		41.20	-1.26E-02	2.43E-01	2.43E-01
		1121.30		34.90	7.30E-01		5.77E-01
		1189.05		16.23	1.32E-02		9.59E-01
		1221.41		26.98	7.09E-02		6.37E-01
		1231.02		11.44	1.47E-01		1.43E+00
+	IR-192	308.46		29.68	-3.55E-01	2.91E-01	4.61E-01
		468.07		48.10	2.37E-02		2.91E-01
+	HG-203	279.19		77.30	-2.04E-02	3.15E-01	3.15E-01
+	TL-204	374.74		94.11	-1.50E-02	5.92E-02	5.92E-02
		899.15		99.16	-1.75E-02		7.26E-02
		911.74		91.10	3.17E-01		1.44E-01
+	BI-207	569.67		97.72	2.17E-02	6.19E-02	6.19E-02
		1063.62		74.90	2.85E-02		1.00E-01
+	TL-208	583.14	*	30.22	1.07E+00	1.11E-01	3.09E-01
		860.37	*	4.48	1.20E+00		1.90E+00
		2614.66	*	35.85	1.35E+00		1.11E-01
+	BI-210M	262.00		45.00	-2.60E-02	1.18E-01	1.18E-01
		300.00		23.00	-8.53E-01		2.66E-01
+	PB-210	46.50		4.25	9.12E-01	1.22E+00	1.22E+00
+	PB-211	404.84		2.90	-9.01E-01	1.91E+00	1.91E+00
		831.96		2.90	7.69E-01		2.22E+00
+	BI-212	727.17	*	11.80	4.55E-01	7.38E-01	7.38E-01
		1620.62	*	2.75	1.10E+00		1.81E+00
+	PB-212	238.63	*	44.60	1.36E+00	2.16E-01	2.16E-01
		300.09	*	3.41	1.07E+00		3.86E+00
+	BI-214	609.31	*	46.30	9.83E-01	1.83E-01	1.83E-01
		1120.29	*	15.10	9.07E-01		7.02E-01
		1764.49	*	15.80	7.25E-01		4.33E-01

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	2204.22		4.98	8.52E-01	1.83E-01	1.82E+00
+	PB-214	295.21	*	19.19	8.71E-01	2.03E-01	6.78E-01
		351.92	*	37.19	1.05E+00		2.03E-01
+	RN-219	401.80		6.50	3.01E-02	8.30E-01	8.30E-01
+	RA-223	323.87		3.88	8.93E-02	1.43E+00	1.43E+00
+	RA-224	240.98	*	3.95	2.78E+00	2.43E+00	2.43E+00
+	RA-225	40.00		31.00	1.24E+01	1.91E+01	1.91E+01
+	RA-226	186.21	*	3.28	1.96E+00	2.44E+00	2.44E+00
+	TH-227	50.10		8.40	-1.22E-01	5.31E-01	5.71E-01
		236.00		11.50	-3.72E+00		5.31E-01
		256.20		6.30	2.13E-01		8.73E-01
+	AC-228	338.32	*	11.40	1.41E+00	3.46E-01	6.39E-01
		911.07	*	27.70	1.07E+00		3.46E-01
		969.11	*	16.60	1.17E+00		7.13E-01
+	TH-230	48.44		16.90	-9.33E-02	2.95E-01	2.95E-01
		62.85		4.60	1.32E+00		1.30E+00
		67.67		0.37	-7.57E-01		1.46E+01
+	PA-231	283.67		1.60	6.12E-01	2.65E+00	3.25E+00
		302.67		2.30	6.91E-01		2.65E+00
+	TH-231	25.64		14.70	-3.19E+00	4.78E-01	4.78E-01
		84.21		6.40	-2.11E-01		8.78E-01
+	PA-233	311.98		38.60	7.17E-02	1.95E+00	1.95E+00
+	PA-234	131.20		20.40	-1.86E-02	2.33E-01	2.33E-01
		733.99		8.80	7.12E-02		7.38E-01
		946.00		12.00	3.20E-01		6.05E-01
+	PA-234M	1001.03		0.92	6.61E+00	8.62E+00	8.62E+00
+	TH-234	63.29	*	3.80	1.11E+00	1.97E+00	1.97E+00
+	U-235	143.76		10.50	7.84E-02	4.54E-01	4.54E-01
		163.35		4.70	6.68E-01		1.01E+00
		205.31		4.70	-1.41E+00		1.02E+00
+	NP-237	86.50		12.60	2.94E-01	4.73E-01	4.73E-01
+	NP-239	106.10		22.70	6.90E+11	1.87E+12	1.87E+12
		228.18		10.70	2.04E+12		4.15E+12
		277.60		14.10	1.08E+12		3.56E+12
+	AM-241	59.54		35.90	5.63E-02	1.44E-01	1.44E-01
+	AM-243	74.67	*	66.00	2.69E-01	1.61E-01	1.61E-01
+	CM-243	209.75		3.29	1.70E+00	3.97E-01	1.66E+00
		228.14		10.60	2.27E-01		4.64E-01
		277.60		14.00	1.20E-01		3.97E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	1.82E+00	1.82E+00	-8.07E-01	8.59E-01
	NA-22	1274.54		99.94	8.45E-02	8.45E-02	3.39E-02	3.90E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	4.50E-02	4.50E-02	8.51E-03	1.87E-02
+	K-40	1460.81	*	10.67	1.03E+00	1.03E+00	2.38E+01	4.87E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	5.75E-02	5.75E-02	-2.97E-03	2.81E-02
		78.34		96.00	7.81E-02		1.88E-01	3.84E-02
	SC-46	889.25		99.98	1.46E-01	1.46E-01	-1.32E-02	6.79E-02
		1120.51		99.99	2.50E-01		2.54E-01	1.19E-01
	V-48	983.52		99.98	5.18E+00	5.18E+00	-1.18E+00	2.39E+00
		1312.10		97.50	6.44E+00		1.28E+00	2.97E+00
	CR-51	320.08		9.83	7.10E+00	7.10E+00	3.05E-01	3.42E+00
	MN-54	834.83		99.97	8.55E-02	8.55E-02	-2.60E-02	4.00E-02
	CO-56	846.75		99.96	1.72E-01	1.72E-01	4.24E-02	8.05E-02
		1037.75		14.03	1.17E+00		2.48E-01	5.42E-01
		1238.25		67.00	3.58E-01		1.48E-01	1.69E-01
		1771.40		15.51	6.59E-01		-1.46E-02	2.70E-01
		2598.48		16.90	4.92E-01		1.06E-01	1.74E-01
	CO-57	122.06		85.51	6.87E-02	6.87E-02	2.34E-02	3.34E-02
		136.48		10.60	5.81E-01		1.24E-01	2.83E-01
	CO-58	810.76		99.40	1.60E-01	1.60E-01	5.18E-03	7.43E-02
	FE-59	1099.22		56.50	6.01E-01	6.01E-01	-4.98E-01	2.78E-01
		1291.56		43.20	7.90E-01		-5.08E-01	3.61E-01
	CO-60	1173.22		100.00	8.95E-02	7.04E-02	2.74E-02	4.19E-02
		1332.49		100.00	7.04E-02		-3.75E-03	3.20E-02
	ZN-65	1115.52		50.75	1.87E-01	1.87E-01	-1.03E-01	8.63E-02
	GA-67	93.31		35.70	3.88E+08	3.88E+08	7.15E+08	1.90E+08
		208.95		2.24	5.46E+09		4.17E+09	2.65E+09
		300.22		16.00	8.85E+08		-1.08E+09	4.28E+08
	SE-75	121.11		16.70	5.00E-01	1.44E-01	1.95E-01	2.43E-01
		136.00		59.20	1.44E-01		3.08E-02	7.01E-02
		264.65		59.80	1.61E-01		-4.82E-02	7.78E-02
		279.53		25.20	3.85E-01		-2.49E-02	1.85E-01
		400.65		11.40	8.41E-01		-1.37E-01	4.01E-01
	RB-82	776.52		13.00	7.37E+00	7.37E+00	-1.32E+00	3.43E+00

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RB-83	520.41	46.00	2.63E-01	2.63E-01	-5.68E-03	1.24E-01
	529.64	30.30	3.99E-01		-1.21E-01	1.88E-01
	552.65	16.40	7.80E-01		-1.90E-02	3.68E-01
KR-85	513.99	0.43	1.87E+01	1.87E+01	2.82E+01	8.98E+00
SR-85	513.99	99.27	2.37E-01	2.37E-01	3.57E-01	1.14E-01
Y-88	898.02	93.40	1.46E-01	7.85E-02	3.82E-02	6.84E-02
	1836.01	99.38	7.85E-02		2.23E-02	3.17E-02
MO-93	263.06	56.72	9.66E-02	5.37E-02	1.19E-03	4.66E-02
	684.67	99.68	5.91E-02		-9.44E-04	2.77E-02
	1477.11	99.08	5.37E-02		1.68E-02	2.34E-02
NB-93M	16.57	9.43	4.89E-01	4.89E-01	-6.08E-02	2.28E-01
NB-94	702.63	100.00	6.81E-02	6.13E-02	1.32E-02	3.21E-02
	871.10	100.00	6.13E-02		-3.15E-02	2.84E-02
NB-95	765.79	99.81	5.76E-01	5.76E-01	4.91E-01	2.73E-01
NB-95M	235.69	25.00	6.94E+07	6.94E+07	-4.86E+08	3.37E+07
ZR-95	724.18	43.70	5.01E-01	3.67E-01	3.57E-02	2.37E-01
	756.72	55.30	3.67E-01		1.70E-01	1.72E-01
MO-99	181.06	6.20	9.12E+10	5.38E+10	-3.65E+09	4.41E+10
	739.58	12.80	5.38E+10		-3.22E+10	2.50E+10
	778.00	4.50	1.63E+11		-9.04E+10	7.58E+10
RU-103	497.08	89.00	3.81E-01	3.81E-01	1.93E-01	1.81E-01
RU-106	621.84	9.80	7.77E-01	7.77E-01	3.28E-01	3.67E-01
AG-108M	433.93	89.90	5.58E-02	5.58E-02	-3.58E-02	2.64E-02
	614.37	90.40	7.53E-02		-2.66E-02	3.57E-02
	722.95	90.50	7.31E-02		2.58E-02	3.44E-02
CD-109	88.03	3.72	1.90E+00	1.90E+00	9.37E-01	9.32E-01
AG-110M	657.75	93.14	8.55E-02	8.55E-02	2.68E-02	4.01E-02
	677.61	10.53	7.82E-01		1.72E-01	3.68E-01
	706.67	16.46	5.34E-01		6.71E-02	2.51E-01
	763.93	21.98	3.89E-01		-4.58E-01	1.82E-01
	884.67	71.63	1.18E-01		1.44E-02	5.46E-02
	1384.27	23.94	2.76E-01		-7.58E-02	1.20E-01
CD-113M	263.70	0.02	2.37E+02	2.37E+02	4.54E+01	1.14E+02
SN-113	255.12	1.93	4.57E+00	1.64E-01	1.61E+00	2.20E+00
	391.69	64.90	1.64E-01		2.53E-02	7.83E-02
TE123M	159.00	84.10	9.80E-02	9.80E-02	-1.57E-02	4.75E-02
SB-124	602.71	97.87	2.04E-01	2.04E-01	2.72E-02	9.67E-02
	645.85	7.26	2.74E+00		2.70E-01	1.29E+00
	722.78	11.10	1.91E+00		6.75E-01	8.99E-01
	1691.02	49.00	3.08E-01		-3.98E-02	1.30E-01
I-125	35.49	6.49	2.41E+00	2.41E+00	-1.44E+00	1.17E+00
SB-125	176.33	6.89	7.03E-01	1.91E-01	-7.98E-02	3.40E-01
	427.89	29.33	1.91E-01		4.41E-02	9.07E-02
	463.38	10.35	6.15E-01		2.46E-02	2.93E-01
	600.56	17.80	3.77E-01		1.86E-01	1.79E-01
	635.90	11.32	5.35E-01		8.23E-02	2.51E-01
SB-126	414.70	83.30	1.95E+01	1.82E+01	-9.44E+00	9.30E+00
	666.33	99.60	1.82E+01		2.24E+00	8.57E+00
	695.00	99.60	1.83E+01		-3.51E+00	8.60E+00
	720.50	53.80	3.46E+01		8.33E+00	1.63E+01
SN-126	87.57	37.00	1.60E-01	1.60E-01	2.65E-02	7.83E-02
SB-127	473.00	25.00	1.74E+07	1.37E+07	-8.29E+06	8.23E+06
	685.20	35.70	1.37E+07		-2.19E+05	6.41E+06

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-127	783.80	14.70	4.04E+07	1.37E+07	1.54E+07	1.90E+07
I-129	29.78	57.00	9.99E-02	9.99E-02	2.48E-02	4.84E-02
	33.60	13.20	3.89E-01		-3.54E-02	1.88E-01
	39.58	7.52	6.67E-01		1.18E-01	3.24E-01
I-131	284.30	6.05	5.29E+03	3.72E+02	7.44E+02	2.54E+03
	364.48	81.20	3.72E+02		-1.98E+02	1.77E+02
	636.97	7.26	4.81E+03		-1.55E+02	2.25E+03
	722.89	1.80	2.29E+04		8.10E+03	1.08E+04
TE-132	49.72	13.10	8.34E+08	1.29E+08	-1.51E+09	4.05E+08
	228.16	88.00	1.29E+08		6.32E+07	6.22E+07
BA-133	81.00	33.00	1.60E-01	1.29E-01	-2.46E-02	7.81E-02
	302.84	17.80	3.49E-01		9.09E-02	1.69E-01
	356.01	60.00	1.29E-01		1.96E-02	6.24E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	9.02E+04	9.02E+04	-1.39E+04	4.41E+04
CS-134	563.23	8.38	7.56E-01	8.27E-02	1.78E-01	3.57E-01
	569.32	15.43	4.28E-01		3.42E-02	2.02E-01
	604.70	97.60	8.27E-02		1.43E-02	3.94E-02
	795.84	85.40	9.76E-02		1.01E-01	4.61E-02
	801.93	8.73	7.23E-01		7.68E-02	3.35E-01
CS-135	268.24	16.00	3.62E-01	3.62E-01	9.78E-02	1.75E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.31E+02	1.25E+01	2.64E+01	6.34E+01
	163.89	4.61	2.15E+02		1.42E+02	1.04E+02
	176.55	13.56	6.95E+01		-7.89E+00	3.36E+01
	273.65	12.66	9.47E+01		-7.93E+00	4.58E+01
	340.57	48.50	3.15E+01		9.20E-01	1.53E+01
	818.50	99.70	1.25E+01		-1.34E+00	5.82E+00
	1048.07	79.60	2.02E+01		4.69E+00	9.44E+00
	1235.34	19.70	1.11E+02		1.15E+02	5.25E+01
CS-137	661.65	85.12	7.14E-02	7.14E-02	-1.70E-02	3.35E-02
LA-138	788.74	34.00	1.98E-01	7.76E-02	5.00E-02	9.30E-02
	1435.80	66.00	7.76E-02		2.27E-03	3.39E-02
CE-139	165.85	80.35	9.60E-02	9.60E-02	4.56E-03	4.65E-02
BA-140	162.64	6.70	1.73E+02	5.80E+01	7.19E+01	8.40E+01
	304.84	4.50	2.93E+02		1.03E+01	1.41E+02
	423.70	3.20	3.87E+02		-1.99E+02	1.83E+02
	437.55	2.00	6.26E+02		-3.65E+01	2.97E+02
	537.32	25.00	5.80E+01		3.65E+01	2.75E+01
LA-140	328.77	20.50	6.85E+01	1.77E+01	5.52E+01	3.30E+01
	487.03	45.50	2.89E+01		-2.10E+00	1.37E+01
	815.85	23.50	6.62E+01		3.18E+01	3.09E+01
	1596.49	95.49	1.77E+01		1.10E-01	7.98E+00
CE-141	145.44	48.40	8.62E-01	8.62E-01	3.63E-01	4.19E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	5.56E-01	5.56E-01	1.63E-01	2.70E-01
PM-144	476.78	42.00	1.47E-01	7.17E-02	-2.94E-02	6.94E-02
	618.01	98.60	7.17E-02		-2.34E-02	3.37E-02
	696.49	99.49	8.04E-02		2.49E-02	3.79E-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-145	36.85	21.70	2.23E-01	1.25E-01	-1.68E-01	1.08E-01
	37.36	39.70	1.25E-01		-4.95E-02	6.08E-02
	42.30	15.10	3.30E-01		-2.19E-01	1.60E-01
	72.40	2.31	2.82E+00		-4.16E+00	1.38E+00
PM-146	453.90	39.94	1.35E-01	1.35E-01	1.23E-02	6.39E-02
	735.90	14.01	4.67E-01		3.01E-01	2.19E-01
	747.13	13.10	4.93E-01		1.28E-01	2.30E-01
ND-147	91.11	28.90	1.34E+02	1.34E+02	2.40E+02	6.56E+01
	531.02	13.10	2.58E+02		5.16E+01	1.22E+02
PM-149	285.90	3.10	1.09E+14	1.09E+14	3.56E+13	5.27E+13
EU-152	121.78	20.50	2.30E-01	2.30E-01	8.98E-02	1.12E-01
	244.69	5.40	9.57E-01		-5.08E-01	4.62E-01
	344.27	19.13	2.78E-01		-3.44E-02	1.33E-01
	778.89	9.20	6.52E-01		-1.05E-01	3.03E-01
	964.01	10.40	8.92E-01		-1.47E+00	4.23E-01
	1085.78	7.22	1.08E+00		1.85E-01	5.04E-01
	1112.02	9.60	7.57E-01		-1.40E-01	3.50E-01
	1407.95	14.94	4.98E-01		3.23E-01	2.27E-01
GD-153	97.43	31.30	2.02E-01	2.02E-01	8.43E-02	9.82E-02
	103.18	22.20	2.73E-01		-8.08E-02	1.33E-01
EU-154	123.07	40.50	1.16E-01	1.16E-01	2.39E-02	5.62E-02
	723.30	19.70	3.43E-01		1.21E-01	1.61E-01
	873.19	11.50	5.36E-01		-1.53E-01	2.48E-01
	996.32	10.30	7.01E-01		-8.97E-02	3.26E-01
	1004.76	17.90	4.12E-01		-8.40E-02	1.92E-01
	1274.45	35.50	2.26E-01		9.07E-02	1.04E-01
EU-155	86.50	30.90	2.01E-01	2.01E-01	1.25E-01	9.83E-02
	105.30	20.70	2.35E-01		8.10E-02	1.15E-01
EU-156	811.77	10.40	6.13E+01	6.13E+01	2.76E+00	2.85E+01
	1153.47	7.20	1.23E+02		5.04E+01	5.73E+01
	1230.71	8.90	1.01E+02		1.04E+01	4.73E+01
HO-166M	184.41	72.60	8.13E-02	8.13E-02	1.55E-01	3.96E-02
	280.45	29.60	1.82E-01		-1.01E-03	8.78E-02
	410.94	11.10	5.38E-01		2.59E-01	2.58E-01
	711.69	54.10	1.17E-01		-7.84E-03	5.48E-02
TM-171	66.72	0.14	4.37E+01	4.37E+01	1.34E+00	2.14E+01
HF-172	67.35	5.31	1.13E+00	4.59E-01	-5.85E-02	5.53E-01
	125.81	11.30	4.59E-01		-2.00E-01	2.23E-01
LU-172	181.53	20.60	7.94E+03	4.06E+03	-3.18E+02	3.84E+03
	900.72	29.81	8.19E+03		-4.77E+03	3.82E+03
	1093.66	62.50	4.06E+03		-8.59E+02	1.88E+03
LU-173	100.72	5.24	1.00E+00	3.20E-01	-3.01E-01	4.88E-01
	272.11	21.20	3.20E-01		9.83E-02	1.55E-01
HF-175	343.40	84.00	1.70E-01	1.70E-01	-2.11E-02	8.15E-02
LU-176	88.34	13.30	4.57E-01	5.69E-02	2.25E-01	2.24E-01
	201.83	86.00	5.69E-02		1.02E-02	2.75E-02
	306.78	94.00	5.86E-02		9.84E-03	2.82E-02
HF-181	133.02	41.70	5.89E-01	3.25E-01	1.72E-01	2.86E-01
	345.85	17.20	1.57E+00		-1.99E-01	7.51E-01
	482.03	82.80	3.25E-01		-1.15E-01	1.53E-01
TA-182	67.75	41.20	2.43E-01	2.43E-01	-1.26E-02	1.19E-01
	1121.30	34.90	5.77E-01		7.30E-01	2.74E-01
	1189.05	16.23	9.59E-01		1.32E-02	4.47E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TA-182	1221.41		26.98	6.37E-01	2.43E-01	7.09E-02	2.99E-01
		1231.02		11.44	1.43E+00		1.47E-01	6.66E-01
	IR-192	308.46		29.68	4.61E-01	2.91E-01	-3.55E-01	2.21E-01
		468.07		48.10	2.91E-01		2.37E-02	1.38E-01
	HG-203	279.19		77.30	3.15E-01	3.15E-01	-2.04E-02	1.52E-01
	TL-204	374.74		94.11	5.92E-02	5.92E-02	-1.50E-02	2.83E-02
		899.15		99.16	7.26E-02		-1.75E-02	3.38E-02
		911.74		91.10	1.44E-01		3.17E-01	6.91E-02
	BI-207	569.67		97.72	6.19E-02	6.19E-02	2.17E-02	2.93E-02
		1063.62		74.90	1.00E-01		2.85E-02	4.67E-02
+	TL-208	583.14	*	30.22	3.09E-01	1.11E-01	1.07E+00	1.49E-01
		860.37	*	4.48	1.90E+00		1.20E+00	9.01E-01
		2614.66	*	35.85	1.11E-01		1.35E+00	4.17E-02
	BI-210M	262.00		45.00	1.18E-01	1.18E-01	-2.60E-02	5.68E-02
		300.00		23.00	2.66E-01		-8.53E-01	1.28E-01
	PB-210	46.50		4.25	1.22E+00	1.22E+00	9.12E-01	5.94E-01
	PB-211	404.84		2.90	1.91E+00	1.91E+00	-9.01E-01	9.14E-01
		831.96		2.90	2.22E+00		7.69E-01	1.04E+00
+	BI-212	727.17	*	11.80	7.38E-01	7.38E-01	4.55E-01	3.52E-01
		1620.62	*	2.75	1.81E+00		1.10E+00	7.74E-01
+	PB-212	238.63	*	44.60	2.16E-01	2.16E-01	1.36E+00	1.06E-01
		300.09	*	3.41	3.86E+00		1.07E+00	1.90E+00
+	BI-214	609.31	*	46.30	1.83E-01	1.83E-01	9.83E-01	8.80E-02
		1120.29	*	15.10	7.02E-01		9.07E-01	3.33E-01
		1764.49	*	15.80	4.33E-01		7.25E-01	1.92E-01
		2204.22		4.98	1.82E+00		8.52E-01	8.20E-01
+	PB-214	295.21	*	19.19	6.78E-01	2.03E-01	8.71E-01	3.34E-01
		351.92	*	37.19	2.03E-01		1.05E+00	9.84E-02
	RN-219	401.80		6.50	8.30E-01	8.30E-01	3.01E-02	3.96E-01
	RA-223	323.87		3.88	1.43E+00	1.43E+00	8.93E-02	6.87E-01
+	RA-224	240.98	*	3.95	2.43E+00	2.43E+00	2.78E+00	1.19E+00
	RA-225	40.00		31.00	1.91E+01	1.91E+01	1.24E+01	9.27E+00
+	RA-226	186.21	*	3.28	2.44E+00	2.44E+00	1.96E+00	1.20E+00
	TH-227	50.10		8.40	5.71E-01	5.31E-01	-1.22E-01	2.78E-01
		236.00		11.50	5.31E-01		-3.72E+00	2.58E-01
		256.20		6.30	8.73E-01		2.13E-01	4.22E-01
+	AC-228	338.32	*	11.40	6.39E-01	3.46E-01	1.41E+00	3.10E-01
		911.07	*	27.70	3.46E-01		1.07E+00	1.65E-01
		969.11	*	16.60	7.13E-01		1.17E+00	3.42E-01
	TH-230	48.44		16.90	2.95E-01	2.95E-01	-9.33E-02	1.44E-01
		62.85		4.60	1.30E+00		1.32E+00	6.34E-01
		67.67		0.37	1.46E+01		-7.57E-01	7.15E+00
	PA-231	283.67		1.60	3.25E+00	2.65E+00	6.12E-01	1.57E+00
		302.67		2.30	2.65E+00		6.91E-01	1.28E+00
	TH-231	25.64		14.70	4.78E-01	4.78E-01	-3.19E+00	2.32E-01
		84.21		6.40	8.78E-01		-2.11E-01	4.30E-01
	PA-233	311.98		38.60	1.95E+00	1.95E+00	7.17E-02	9.38E-01
	PA-234	131.20		20.40	2.33E-01	2.33E-01	-1.86E-02	1.13E-01
		733.99		8.80	7.38E-01		7.12E-02	3.47E-01
		946.00		12.00	6.05E-01		3.20E-01	2.82E-01
	PA-234M	1001.03		0.92	8.62E+00	8.62E+00	6.61E+00	4.04E+00
+	TH-234	63.29	*	3.80	1.97E+00	1.97E+00	1.11E+00	9.68E-01
	U-235	143.76		10.50	4.54E-01	4.54E-01	7.84E-02	2.21E-01

Analysis Report for 1707092-11

HTC-A08-S001-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	U-235	163.35		4.70	1.01E+00	4.54E-01	6.68E-01	4.89E-01
		205.31		4.70	1.02E+00		-1.41E+00	4.93E-01
	NP-237	86.50		12.60	4.73E-01	4.73E-01	2.94E-01	2.32E-01
	NP-239	106.10		22.70	1.87E+12	1.87E+12	6.90E+11	9.11E+11
		228.18		10.70	4.15E+12		2.04E+12	2.00E+12
		277.60		14.10	3.56E+12		1.08E+12	1.72E+12
	AM-241	59.54		35.90	1.44E-01	1.44E-01	5.63E-02	7.04E-02
+	AM-243	74.67	*	66.00	1.61E-01	1.61E-01	2.69E-01	7.94E-02
	CM-243	209.75		3.29	1.66E+00	3.97E-01	1.70E+00	8.07E-01
		228.14		10.60	4.64E-01		2.27E-01	2.24E-01
		277.60		14.00	3.97E-01		1.20E-01	1.92E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: HTC-A08-S001-4248-01

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	65	70	73	159	515	151
25:	63	58	62	74	65	63	68	71
33:	65	73	57	63	67	57	79	81
41:	91	78	79	77	75	100	142	82
49:	76	81	80	98	102	99	101	115
57:	88	110	116	116	105	119	164	227
65:	157	137	122	137	123	130	137	145
73:	151	168	335	326	384	485	162	116
81:	129	107	129	123	171	110	179	234
89:	108	155	156	135	263	216	113	92
97:	96	88	99	109	84	73	82	95
105:	100	87	93	89	90	92	71	76
113:	86	78	82	85	70	85	72	84
121:	84	88	81	88	61	92	91	90
129:	93	105	86	71	83	79	98	76
137:	73	79	86	83	70	75	77	95
145:	81	71	85	68	67	72	64	80
153:	65	70	88	60	67	72	74	61
161:	62	68	66	83	79	56	67	46
169:	67	62	59	64	64	57	56	44
177:	71	64	61	62	61	53	52	65
185:	81	161	131	63	54	50	56	77
193:	51	55	51	53	60	57	72	52
201:	63	66	62	59	46	59	53	67
209:	79	101	50	62	56	47	48	45
217:	49	53	59	49	48	66	46	44
225:	47	55	44	62	58	45	51	43
233:	37	48	48	58	56	186	589	247
241:	117	120	92	63	41	30	34	41
249:	33	36	46	36	51	42	42	51
257:	41	41	35	35	44	25	43	41
265:	35	42	34	41	31	52	64	36
273:	42	40	38	34	34	51	34	35
281:	34	25	32	33	38	33	28	26
289:	47	35	40	30	32	33	118	148
297:	46	35	29	66	53	33	26	54
305:	28	23	27	28	32	33	27	35
313:	33	34	31	33	37	24	26	36
321:	30	27	33	31	26	30	34	40
329:	46	24	26	24	18	23	30	33
337:	28	73	121	49	25	30	24	27
345:	29	17	20	24	23	20	85	267
353:	179	31	31	25	26	29	30	24
361:	19	22	18	25	14	15	23	16

369:	23	26	24	19	19	23	14	30

Sample Title: HTC-A08-S001-4248-01

Channel								
377:	24	25	23	24	23	26	26	30
385:	30	23	26	18	28	26	23	25
393:	18	27	25	20	28	16	20	20
401:	15	30	28	12	19	20	18	24
409:	27	35	22	16	25	23	21	21
417:	20	23	23	23	17	22	17	12
425:	18	18	13	19	19	21	14	18
433:	15	15	14	12	21	20	21	14
441:	12	18	18	22	16	20	19	20
449:	17	9	14	19	17	16	16	12
457:	16	12	21	15	10	31	30	23
465:	17	17	13	20	22	11	14	10
473:	18	14	19	15	16	14	10	9
481:	14	18	17	13	16	16	19	11
489:	13	19	15	14	13	19	19	19
497:	12	12	13	21	11	13	14	12
505:	24	16	19	12	18	43	76	67
513:	18	17	17	10	15	13	10	14
521:	10	16	14	17	18	11	9	17
529:	10	13	14	13	15	19	12	19
537:	17	20	12	13	11	8	13	15
545:	18	17	20	15	16	14	12	11
553:	9	14	18	18	16	16	11	6
561:	13	18	18	15	13	14	14	19
569:	15	12	12	18	14	15	8	17
577:	15	18	15	17	17	41	135	118
585:	30	11	11	13	11	13	11	12
593:	15	12	9	12	11	10	23	17
601:	9	18	15	12	10	21	18	50
609:	159	155	46	11	13	15	11	15
617:	8	10	8	15	18	11	18	15
625:	14	15	11	8	8	17	9	12
633:	13	13	7	12	11	11	9	11
641:	8	11	15	6	13	14	8	20
649:	14	17	12	10	16	7	16	8
657:	14	13	11	9	11	9	8	13
665:	21	13	13	11	9	15	11	9
673:	8	12	14	15	8	10	11	11
681:	15	13	9	17	5	9	10	8
689:	9	8	14	5	13	9	16	17
697:	8	15	13	17	7	12	15	13
705:	12	20	15	7	7	16	11	11
713:	16	8	11	11	14	6	10	16
721:	11	10	15	13	6	15	36	30
729:	11	16	11	12	14	6	10	14
737:	14	8	10	5	2	8	10	17
745:	5	8	9	8	14	11	8	9
753:	12	13	13	15	10	14	8	11
761:	5	11	14	8	14	9	14	27
769:	24	13	9	11	15	11	9	7
777:	8	7	8	10	11	9	12	6
785:	19	18	11	12	9	8	9	11
793:	17	16	32	14	7	8	5	7

801:	4	7	10	8	13	6	11	7

Sample Title: HTC-A08-S001-4248-01

Channel								
809:	13	1	5	7	11	12	14	6
817:	14	5	4	9	5	9	11	10
825:	12	8	7	7	10	10	12	4
833:	7	11	11	18	16	6	14	13
841:	8	6	5	7	11	11	14	11
849:	10	12	15	10	11	4	6	9
857:	9	10	10	19	29	8	13	9
865:	10	15	9	9	12	8	5	9
873:	5	6	5	14	8	7	11	11
881:	10	10	7	6	5	11	8	7
889:	3	14	7	6	14	7	10	10
897:	13	6	14	9	8	5	9	15
905:	13	10	13	2	9	25	89	72
913:	20	7	5	9	11	3	9	10
921:	5	11	11	5	10	1	7	7
929:	8	6	11	8	7	17	10	9
937:	11	11	11	12	4	4	11	12
945:	7	6	10	16	6	9	8	10
953:	6	12	12	5	8	8	7	8
961:	11	8	7	25	33	14	10	34
969:	57	33	4	7	4	8	6	7
977:	8	7	6	4	12	6	8	7
985:	7	4	7	11	10	7	10	6
993:	6	4	7	6	6	14	16	5
1001:	16	10	7	7	9	3	9	8
1009:	11	5	9	5	10	6	8	5
1017:	7	8	10	5	9	6	7	6
1025:	17	4	5	8	6	5	8	8
1033:	2	3	8	8	8	8	7	8
1041:	7	7	8	7	12	11	7	6
1049:	10	12	8	7	10	8	12	8
1057:	9	4	10	6	12	5	9	11
1065:	9	8	8	6	7	2	9	8
1073:	6	4	8	8	16	5	6	13
1081:	5	8	8	8	9	14	2	13
1089:	8	6	8	6	4	7	13	7
1097:	6	7	7	5	9	9	12	13
1105:	8	8	6	8	3	12	15	6
1113:	5	3	7	13	5	11	12	43
1121:	27	14	9	7	11	3	13	8
1129:	15	7	8	8	10	5	9	4
1137:	9	12	8	6	5	9	9	11
1145:	6	11	13	9	10	6	8	8
1153:	9	11	15	15	7	5	10	11
1161:	7	7	7	11	8	18	12	12
1169:	9	8	7	10	14	12	12	7
1177:	4	12	7	11	11	12	14	10
1185:	9	14	11	1	11	11	4	13
1193:	13	5	9	13	9	5	14	12
1201:	12	14	6	5	9	5	14	15
1209:	3	8	8	11	11	14	9	11
1217:	9	13	11	13	13	13	5	9
1225:	15	6	11	6	10	12	4	11

1233:	14	8	7	18	17	23	5	6

Sample Title: HTC-A08-S001-4248-01

Channel								
1241:	9	6	11	12	6	8	8	11
1249:	8	2	5	6	10	6	6	5
1257:	5	5	10	3	10	11	8	7
1265:	10	8	8	14	8	5	7	9
1273:	5	8	5	5	11	7	1	5
1281:	9	6	6	9	6	9	9	5
1289:	6	4	4	3	6	11	9	7
1297:	5	8	10	3	10	4	6	8
1305:	9	7	1	3	7	5	10	8
1313:	7	6	8	6	6	5	0	8
1321:	3	8	5	3	5	5	5	4
1329:	9	2	5	3	4	4	7	4
1337:	7	4	4	3	6	7	1	2
1345:	2	5	5	4	3	4	3	2
1353:	5	0	4	3	3	2	2	7
1361:	1	2	2	2	1	1	5	5
1369:	4	3	3	3	2	5	5	6
1377:	7	13	6	2	2	1	4	5
1385:	1	3	0	4	4	6	1	2
1393:	1	3	0	6	0	4	3	4
1401:	7	4	2	5	2	6	11	5
1409:	7	1	2	2	3	3	1	5
1417:	2	2	4	2	2	0	2	2
1425:	1	1	2	2	3	5	1	1
1433:	4	2	2	2	0	5	2	1
1441:	5	1	4	0	1	3	5	3
1449:	4	2	2	6	1	4	3	8
1457:	5	16	94	359	382	156	20	9
1465:	12	12	3	2	3	4	0	1
1473:	2	4	1	1	1	5	2	2
1481:	2	2	1	3	0	2	1	4
1489:	0	1	0	4	3	2	5	5
1497:	4	2	2	4	2	1	3	2
1505:	3	3	1	1	5	4	1	0
1513:	6	3	0	2	1	1	0	3
1521:	3	1	2	3	2	2	0	2
1529:	2	0	3	1	1	0	2	1
1537:	0	0	0	2	0	3	2	4
1545:	2	1	1	1	0	1	1	0
1553:	1	5	0	2	1	0	1	1
1561:	1	1	0	2	1	1	1	6
1569:	3	2	1	2	2	3	0	0
1577:	1	1	1	0	3	0	1	0
1585:	0	2	7	7	5	2	2	12
1593:	9	6	1	3	4	1	3	3
1601:	2	2	1	1	1	2	3	3
1609:	1	1	0	1	3	0	0	1
1617:	0	3	1	7	3	3	2	1
1625:	2	0	1	1	2	6	5	3
1633:	1	2	2	2	0	3	1	0
1641:	3	1	1	1	1	2	2	1
1649:	0	1	2	1	2	1	1	1
1657:	1	1	2	1	3	1	1	1

1665:	2	0	0	1	1	0	0	1

Sample Title: HTC-A08-S001-4248-01

Channel								
1673:	1	1	0	0	1	3	4	1
1681:	2	1	0	0	0	1	1	5
1689:	0	1	1	1	1	2	0	2
1697:	2	1	2	0	0	2	0	2
1705:	1	2	0	1	0	0	1	1
1713:	1	0	0	0	3	3	0	1
1721:	2	2	1	0	0	4	2	2
1729:	3	5	1	1	0	3	2	2
1737:	2	1	1	0	2	0	0	0
1745:	0	1	0	0	1	2	3	2
1753:	0	2	0	0	0	0	2	0
1761:	1	3	11	21	10	4	1	1
1769:	2	1	1	0	1	1	0	1
1777:	2	2	0	1	1	1	2	1
1785:	0	4	1	0	1	1	0	3
1793:	1	2	1	3	1	3	2	1
1801:	1	1	2	0	0	2	2	1
1809:	1	1	1	0	1	0	0	1
1817:	0	1	1	0	0	0	0	1
1825:	2	1	2	2	0	1	0	0
1833:	0	0	2	2	2	0	0	0
1841:	2	2	4	0	1	3	5	2
1849:	3	2	1	4	0	1	1	1
1857:	1	1	1	0	2	0	1	1
1865:	0	0	2	2	1	1	1	2
1873:	0	2	0	2	1	2	1	1
1881:	1	1	1	0	3	2	1	2
1889:	0	3	1	2	0	1	2	1
1897:	2	1	0	0	0	0	2	0
1905:	0	3	2	0	3	0	2	1
1913:	1	2	0	0	0	0	0	1
1921:	1	0	1	1	0	0	2	0
1929:	2	1	5	2	1	1	1	1
1937:	2	0	0	1	2	0	1	1
1945:	1	2	2	2	2	0	4	1
1953:	1	2	0	1	1	1	1	2
1961:	2	2	2	0	1	2	1	2
1969:	2	1	0	0	2	0	1	1
1977:	1	6	2	1	3	0	2	1
1985:	1	0	0	1	3	0	1	0
1993:	1	1	0	1	2	2	1	0
2001:	0	0	0	0	3	1	0	0
2009:	0	3	0	1	1	0	1	1
2017:	0	3	0	0	1	1	1	3
2025:	1	1	2	2	4	2	1	2
2033:	1	3	2	0	1	4	2	1
2041:	1	1	3	1	0	0	1	1
2049:	0	0	3	0	1	0	1	1
2057:	1	1	3	0	0	2	2	0
2065:	0	3	0	2	0	0	0	1
2073:	0	0	1	1	1	0	3	2
2081:	1	2	1	1	0	0	1	1
2089:	1	1	1	0	0	1	0	0

2097:	0	0	3	1	3	3	4	0

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Channel								
2105:	1	2	2	1	1	1	4	0
2113:	2	1	0	0	1	3	0	0
2121:	0	0	1	0	1	0	1	0
2129:	1	4	0	0	1	1	0	2
2137:	1	0	0	1	1	1	0	1
2145:	0	1	1	0	2	0	2	2
2153:	1	2	1	3	0	2	3	0
2161:	0	0	2	0	1	0	3	2
2169:	1	1	1	1	1	0	0	0
2177:	0	2	1	1	1	1	1	0
2185:	0	1	1	0	4	0	0	2
2193:	0	0	1	1	2	3	0	1
2201:	2	5	6	5	7	0	3	1
2209:	1	0	2	2	1	2	0	0
2217:	2	0	1	0	0	2	1	1
2225:	2	1	1	0	3	0	1	2
2233:	1	0	1	2	1	1	2	1
2241:	1	0	0	4	1	1	1	0
2249:	2	0	3	1	1	1	0	0
2257:	0	2	0	1	3	0	2	1
2265:	0	3	0	0	1	2	1	0
2273:	1	2	0	0	2	0	0	0
2281:	0	3	1	4	1	0	2	1
2289:	1	4	1	0	0	2	2	2
2297:	0	1	0	1	1	0	0	1
2305:	1	1	0	1	0	0	1	1
2313:	1	2	4	2	0	3	1	2
2321:	2	2	2	2	3	1	0	0
2329:	2	2	1	1	1	1	0	2
2337:	1	2	0	1	0	4	0	1
2345:	1	2	1	0	2	3	1	1
2353:	2	1	1	2	0	1	3	2
2361:	1	0	0	1	1	1	2	1
2369:	0	1	1	0	1	1	1	1
2377:	0	1	1	2	1	2	0	1
2385:	0	1	1	0	2	1	0	1
2393:	1	0	0	1	1	1	0	0
2401:	0	0	0	0	1	1	0	3
2409:	2	1	2	1	0	2	0	0
2417:	0	2	1	0	1	2	1	1
2425:	1	1	1	0	0	1	0	0
2433:	1	1	3	0	0	0	0	0
2441:	1	1	2	0	3	1	1	2
2449:	1	0	1	0	1	0	2	2
2457:	0	0	0	0	1	0	0	1
2465:	0	0	1	0	1	0	0	1
2473:	0	0	0	0	1	0	0	0
2481:	1	1	1	1	1	0	1	1
2489:	0	0	0	0	0	0	0	0
2497:	0	0	0	0	2	0	0	0
2505:	0	0	1	0	1	1	0	0
2513:	0	0	0	0	0	0	1	0
2521:	1	1	0	1	0	1	1	0

2529:	0	0	1	1	0	2	2	0

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Channel								
2537:	0	0	0	1	0	1	0	1
2545:	0	2	0	0	0	0	2	1
2553:	1	0	0	1	0	0	0	0
2561:	0	1	0	0	1	0	1	0
2569:	0	1	0	0	0	1	0	0
2577:	0	0	2	2	0	1	0	0
2585:	0	0	0	0	0	0	0	0
2593:	0	0	1	1	0	0	0	0
2601:	0	0	0	0	0	1	1	0
2609:	0	1	3	28	37	46	14	3
2617:	3	1	1	0	0	0	0	0
2625:	2	0	0	0	0	0	0	0
2633:	0	0	0	0	1	0	0	1
2641:	2	1	0	1	0	2	1	0
2649:	1	0	0	0	1	2	0	0
2657:	0	0	0	1	0	0	0	0
2665:	1	0	1	0	0	1	0	1
2673:	0	0	0	0	0	0	0	0
2681:	0	0	0	0	1	0	1	1
2689:	1	1	0	0	0	0	0	1
2697:	0	0	0	0	0	0	0	0
2705:	4	0	0	0	1	0	1	1
2713:	0	0	0	0	0	0	0	1
2721:	0	0	0	0	0	0	0	0
2729:	1	2	1	0	0	0	0	1
2737:	0	0	0	0	0	0	0	0
2745:	0	0	1	1	0	0	0	1
2753:	0	0	0	0	1	1	0	3
2761:	0	0	0	0	0	0	0	0
2769:	0	0	1	0	1	2	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	1	0	1	0	0
2793:	0	1	0	0	0	0	0	0
2801:	0	0	1	0	0	0	1	2
2809:	0	0	0	0	0	1	0	0
2817:	0	1	0	0	0	1	0	0
2825:	1	1	0	0	0	2	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	1	0	0	0	0
2849:	0	0	1	0	0	0	0	0
2857:	0	0	0	0	1	0	0	0
2865:	0	0	1	0	0	1	0	0
2873:	0	0	0	0	0	1	1	0
2881:	0	0	2	0	0	0	0	0
2889:	0	1	2	0	0	0	0	0
2897:	0	1	1	0	0	0	0	0
2905:	0	0	0	1	0	0	0	0
2913:	0	3	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	1	0	0	0	0	0	1	0
2937:	1	0	0	0	1	0	0	1
2945:	1	0	1	0	0	1	0	0
2953:	0	0	1	0	0	1	1	0

2961:	1	0	0	1	1	1	0	0

Sample Title: HTC-A08-S001-4248-01

Channel								
2969:	0	0	0	0	1	0	0	0
2977:	2	0	0	0	0	1	0	1
2985:	1	0	0	0	0	0	0	0
2993:	1	0	0	1	1	1	0	0
3001:	0	1	1	1	0	0	0	0
3009:	1	0	0	0	1	0	0	0
3017:	2	0	0	1	0	0	1	0
3025:	0	0	0	1	0	0	0	0
3033:	0	0	1	0	0	0	1	0
3041:	1	0	0	0	0	0	0	0
3049:	0	0	0	1	0	1	0	0
3057:	0	1	0	0	0	0	0	0
3065:	0	0	1	0	0	0	1	0
3073:	0	0	2	0	0	0	0	0
3081:	2	1	0	0	0	0	0	0
3089:	1	2	0	0	0	0	0	1
3097:	0	0	0	1	1	0	0	0
3105:	0	0	0	0	0	0	0	0
3113:	0	0	0	0	0	0	0	1
3121:	0	1	1	0	2	0	1	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	1	0	0	0	0	0
3145:	1	0	1	0	0	0	0	1
3153:	0	0	0	0	0	0	1	0
3161:	0	3	0	0	0	0	0	0
3169:	1	0	0	0	0	1	1	0
3177:	0	0	0	0	0	0	0	0
3185:	1	0	0	0	0	0	0	1
3193:	0	0	2	1	1	0	0	1
3201:	0	0	0	0	0	0	0	1
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	1	0	1
3225:	0	0	1	0	1	0	0	1
3233:	0	0	1	1	0	0	0	0
3241:	0	0	0	0	0	0	0	1
3249:	0	0	0	0	1	0	0	0
3257:	0	0	0	0	0	2	0	0
3265:	0	0	0	0	1	0	0	0
3273:	1	0	0	0	0	1	1	0
3281:	0	1	0	1	0	0	0	0
3289:	0	1	0	0	0	0	0	0
3297:	0	0	0	0	0	1	0	0
3305:	0	0	0	0	0	0	0	1
3313:	0	0	0	0	0	1	0	0
3321:	0	0	0	0	0	1	0	0
3329:	0	0	0	0	0	0	1	0
3337:	0	0	0	0	0	0	0	0
3345:	0	1	0	1	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	1
3369:	1	0	0	0	0	0	1	2
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	0	1	0	0

3393:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-S001-4248-01

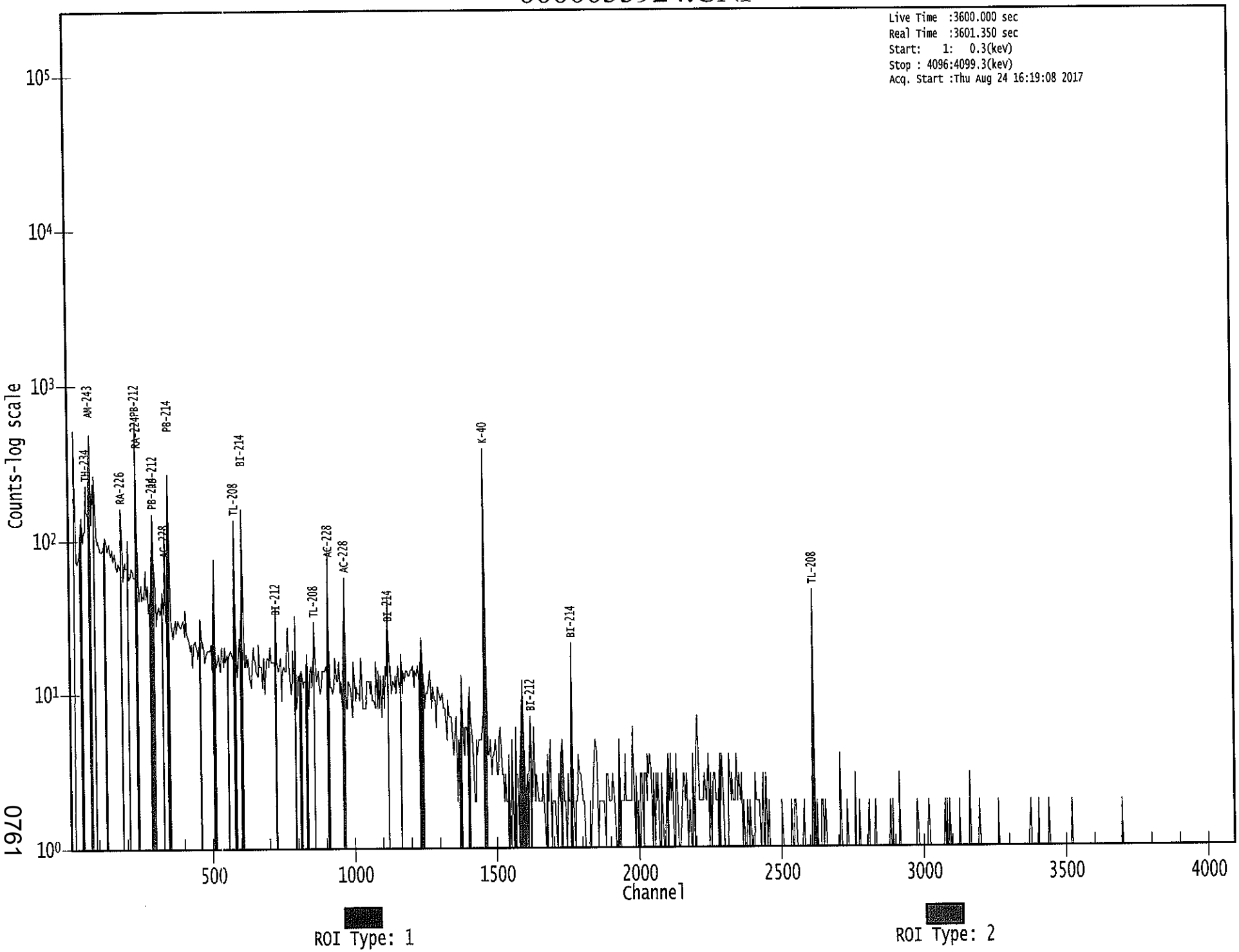
Channel								
3401:	2	0	2	0	0	0	0	0
3409:	0	0	0	1	0	0	0	0
3417:	0	0	0	0	0	0	1	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	2	0
3441:	0	0	1	1	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	1	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	1
3473:	0	0	1	1	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	1	1	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	1	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	2
3521:	1	0	0	1	0	1	0	0
3529:	0	1	0	0	0	0	0	0
3537:	1	0	0	0	0	0	0	0
3545:	0	0	0	0	0	1	0	0
3553:	0	0	0	1	1	0	0	0
3561:	1	0	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0	1
3577:	0	0	0	1	0	0	0	0
3585:	0	0	0	0	0	0	1	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	1	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	1	0	1	0	0	1
3625:	0	0	1	0	0	0	1	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	1	0
3649:	0	0	1	0	0	0	0	0
3657:	0	1	0	0	0	1	0	0
3665:	0	1	0	1	1	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	1	0	0	0	0	1	0	0
3689:	0	0	0	0	0	0	1	2
3697:	0	1	1	0	0	0	0	0
3705:	0	0	1	0	0	0	1	0
3713:	0	1	0	0	0	1	0	1
3721:	0	0	1	0	0	0	0	0
3729:	0	0	1	0	0	0	0	1
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	1	0
3761:	0	0	1	0	1	0	0	0
3769:	0	0	0	0	0	0	0	1
3777:	0	0	0	0	0	0	0	0
3785:	1	0	0	0	0	0	1	0
3793:	0	0	0	0	1	0	0	0
3801:	0	0	0	1	0	0	1	0
3809:	0	0	1	0	0	0	0	0
3817:	0	0	1	1	0	0	0	1

3825:	0	0	0	1	0	0	1	0

Sample Title: HTC-A08-S001-4248-01

Channel								
3833:	0	0	0	1	0	0	1	0
3841:	0	1	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	1	0	0
3865:	0	0	0	0	0	0	0	1
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	1	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	1	1
3929:	0	1	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	1	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	1	0	0	0	0	0	0
3969:	1	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	1
3985:	0	0	0	0	0	1	0	1
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	1	0	1	0	0	0	0	0
4025:	0	1	0	0	0	0	0	0
4033:	1	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	1	1
4049:	0	0	0	0	0	1	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	1	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	1	0

0000055924.CNF



0761

KNB 8/29/17

Apex-Gamma

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-12
Sample Description	: HTC-A09-S001-0006-01
Sample Type	: SOIL
Sample Size	: 7.421E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 7:42:04AM
Acquisition Started	: 8/24/2017 4:19:15PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3613.6 seconds
Dead Time	: 0.38 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 29 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 8/19/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55925

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 5:19:46PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.59	46.94	0.0000	0.00
2	53.33	53.67	0.0000	0.00
3	63.31	63.63	0.0000	0.00
4	76.24	76.55	0.0000	0.00
5	83.90	84.21	0.0000	0.00
6	87.58	87.88	0.0000	0.00
7	92.59	92.89	0.0000	0.00
8	98.58	98.87	0.0000	0.00
9	112.56	112.83	0.0000	0.00
10	121.28	121.54	0.0000	0.00
11	143.77	144.01	0.0000	0.00
12	154.61	154.84	0.0000	0.00
13	163.33	163.54	0.0000	0.00
14	186.02	186.22	0.0000	0.00
15	205.53	205.70	0.0000	0.00
16	235.90	236.04	0.0000	0.00
17	238.89	239.03	0.0000	0.00
18	242.02	242.15	0.0000	0.00
19	256.14	256.26	0.0000	0.00
20	259.01	259.13	0.0000	0.00
21	270.99	271.09	0.0000	0.00
22	295.27	295.34	0.0000	0.00
23	338.66	338.70	0.0000	0.00
24	351.95	351.96	0.0000	0.00
25	388.12	388.10	0.0000	0.00
26	405.73	405.69	0.0000	0.00
27	437.04	436.97	0.0000	0.00
28	444.57	444.49	0.0000	0.00
29	455.05	454.96	0.0000	0.00
30	461.48	461.38	0.0000	0.00
31	480.20	480.09	0.0000	0.00
32	487.16	487.04	0.0000	0.00
33	510.63	510.48	0.0000	0.00
34	543.78	543.60	0.0000	0.00
35	581.90	581.68	0.0000	0.00
36	609.45	609.20	0.0000	0.00
37	665.09	664.79	0.0000	0.00
38	688.64	688.32	0.0000	0.00
39	703.25	702.91	0.0000	0.00
40	720.28	719.93	0.0000	0.00
41	742.26	741.89	0.0000	0.00
42	768.41	768.01	0.0000	0.00

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	778.05	777.64	0.0000	0.00
44	782.80	782.39	0.0000	0.00
45	786.30	785.89	0.0000	0.00
46	806.28	805.85	0.0000	0.00
47	821.31	820.86	0.0000	0.00
48	826.92	826.46	0.0000	0.00
49	839.09	838.62	0.0000	0.00
50	910.62	910.08	0.0000	0.00
51	934.38	933.82	0.0000	0.00
52	964.30	963.72	0.0000	0.00
53	1001.11	1000.49	0.0000	0.00
54	1046.09	1045.43	0.0000	0.00
55	1052.10	1051.44	0.0000	0.00
56	1069.68	1069.00	0.0000	0.00
57	1120.61	1119.88	0.0000	0.00
58	1134.35	1133.61	0.0000	0.00
59	1155.69	1154.93	0.0000	0.00
60	1207.94	1207.13	0.0000	0.00
61	1238.50	1237.66	0.0000	0.00
62	1253.88	1253.03	0.0000	0.00
63	1280.98	1280.11	0.0000	0.00
64	1314.33	1313.43	0.0000	0.00
65	1336.44	1335.52	0.0000	0.00
66	1378.07	1377.11	0.0000	0.00
67	1385.73	1384.77	0.0000	0.00
68	1393.75	1392.78	0.0000	0.00
69	1401.72	1400.75	0.0000	0.00
70	1408.50	1407.52	0.0000	0.00
71	1460.87	1459.85	0.0000	0.00
72	1509.73	1508.66	0.0000	0.00
73	1539.58	1538.49	0.0000	0.00
74	1543.36	1542.27	0.0000	0.00
75	1583.51	1582.38	0.0000	0.00
76	1593.85	1592.71	0.0000	0.00
77	1599.95	1598.81	0.0000	0.00
78	1661.90	1660.71	0.0000	0.00
79	1684.12	1682.91	0.0000	0.00
80	1694.35	1693.13	0.0000	0.00
81	1730.04	1728.80	0.0000	0.00
82	1764.92	1763.65	0.0000	0.00
83	1840.04	1838.71	0.0000	0.00
84	1847.95	1846.61	0.0000	0.00
85	1873.71	1872.35	0.0000	0.00
86	1936.26	1934.86	0.0000	0.00
87	1964.98	1963.56	0.0000	0.00
88	2052.94	2051.45	0.0000	0.00
89	2073.08	2071.58	0.0000	0.00
90	2119.00	2117.47	0.0000	0.00
91	2146.21	2144.66	0.0000	0.00
92	2192.87	2191.28	0.0000	0.00
93	2204.58	2202.98	0.0000	0.00
94	2294.18	2292.53	0.0000	0.00
95	2409.92	2408.18	0.0000	0.00
96	2448.24	2446.48	0.0000	0.00
97	2468.99	2467.22	0.0000	0.00

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
98	2615.40	2613.53	0.0000	0.00
99	2695.26	2693.34	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 5:19:46PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	46.59	44 -	49	46.94	1.27E+03	247.74	1.13E+04	1.06
	2	53.33	52 -	57	53.67	4.15E+02	268.11	1.41E+04	1.43
	3	63.31	61 -	67	63.63	2.35E+03	374.29	2.40E+04	1.43
	4	76.24	72 -	79	76.55	9.23E+03	492.41	4.15E+04	3.62
M	5	83.90	83 -	97	84.21	1.36E+03	192.41	9.61E+03	1.07
m	6	87.58	83 -	97	87.88	2.26E+03	244.26	1.19E+04	1.33
m	7	92.59	83 -	97	92.89	4.37E+03	256.52	1.05E+04	1.33
	8	98.58	98 -	102	98.87	4.38E+02	232.50	1.16E+04	2.67
	9	112.56	112 -	115	112.83	3.01E+02	198.93	9.54E+03	1.23
	10	121.28	120 -	123	121.54	1.92E+02	193.40	9.15E+03	2.69
	11	143.77	141 -	147	144.01	7.77E+02	305.48	1.64E+04	1.24
	12	154.61	153 -	157	154.84	3.38E+02	233.70	1.18E+04	1.39
	13	163.33	162 -	166	163.54	1.92E+02	220.57	1.06E+04	1.66
	14	186.02	182 -	190	186.22	6.25E+03	367.04	1.68E+04	1.60
	15	205.53	204 -	208	205.70	2.32E+02	188.65	7.65E+03	1.70
M	16	235.90	233 -	246	236.04	5.14E+02	147.76	5.10E+03	1.45
m	17	238.89	233 -	246	239.03	3.24E+02	145.62	4.97E+03	1.45
m	18	242.02	233 -	246	242.15	6.06E+03	206.75	4.70E+03	1.44
M	19	256.14	255 -	263	256.26	2.02E+02	82.28	2.17E+03	1.49
m	20	259.01	255 -	263	259.13	4.07E+02	137.38	4.15E+03	1.49
	21	270.99	265 -	276	271.09	1.33E+03	308.54	1.12E+04	3.70
	22	295.27	293 -	298	295.34	1.29E+04	277.42	5.04E+03	1.79
	23	338.66	337 -	341	338.70	1.32E+02	128.09	3.51E+03	1.73
	24	351.95	348 -	355	351.96	2.20E+04	345.94	5.28E+03	1.39
	25	388.12	384 -	392	388.10	3.23E+02	182.03	4.89E+03	3.03
	26	405.73	403 -	408	405.69	1.73E+02	134.31	3.40E+03	1.23
	27	437.04	435 -	440	436.97	1.19E+02	111.18	2.38E+03	4.96
	28	444.57	442 -	447	444.49	1.23E+02	108.03	2.21E+03	1.35
	29	455.05	452 -	458	454.96	1.74E+02	121.29	2.54E+03	1.96
	30	461.48	459 -	464	461.38	1.01E+02	105.36	2.14E+03	1.83
	31	480.20	477 -	483	480.09	2.01E+02	114.77	2.25E+03	2.18
	32	487.16	484 -	490	487.04	2.25E+02	113.86	2.19E+03	2.20
	33	510.63	505 -	517	510.48	5.18E+02	180.54	3.60E+03	3.28
	34	543.78	540 -	546	543.60	9.76E+01	103.76	1.89E+03	3.43
	35	581.90	575 -	586	581.68	3.04E+02	156.05	2.87E+03	4.81
	36	609.45	604 -	614	609.20	1.66E+04	290.43	2.36E+03	1.87
	37	665.09	659 -	669	664.79	5.57E+02	126.47	1.83E+03	2.03
	38	688.64	685 -	691	688.32	7.51E+01	79.74	1.09E+03	1.65
	39	703.25	699 -	706	702.91	2.27E+02	92.67	1.27E+03	2.31
	40	720.28	716 -	723	719.93	1.55E+02	91.13	1.28E+03	2.07

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	742.26	738 -	746	741.89	1.59E+02	99.96	1.44E+03	2.08
	42	768.41	762 -	773	768.01	1.65E+03	146.78	1.87E+03	2.05
	43	778.05	775 -	780	777.64	5.82E+01	68.42	8.88E+02	5.29
M	44	782.80	781 -	790	782.39	5.73E+01	51.19	5.85E+02	1.86
m	45	786.30	781 -	790	785.89	4.01E+02	86.75	1.04E+03	2.24
	46	806.28	801 -	811	805.85	3.84E+02	115.17	1.57E+03	1.81
	47	821.31	819 -	824	820.86	6.30E+01	69.85	9.32E+02	1.87
	48	826.92	824 -	829	826.46	6.90E+01	71.34	9.58E+02	1.32
	49	839.09	835 -	843	838.62	2.07E+02	99.34	1.39E+03	2.12
	50	910.62	908 -	913	910.08	7.25E+01	68.76	8.87E+02	2.35
	51	934.38	929 -	938	933.82	7.91E+02	115.81	1.46E+03	1.77
	52	964.30	960 -	967	963.72	9.38E+01	83.79	1.11E+03	2.01
	53	1001.11	995 -	1005	1000.49	3.08E+02	100.52	1.18E+03	2.32
M	54	1046.09	1043 -	1055	1045.43	4.91E+01	56.28	5.92E+02	2.51
m	55	1052.10	1043 -	1055	1051.44	9.53E+01	72.66	8.31E+02	2.50
	56	1069.68	1065 -	1072	1069.00	1.34E+02	68.53	6.87E+02	1.98
	57	1120.61	1114 -	1125	1119.88	3.66E+03	158.77	1.31E+03	2.09
	58	1134.35	1130 -	1136	1133.61	8.28E+01	59.41	5.76E+02	2.55
	59	1155.69	1151 -	1159	1154.93	3.81E+02	82.42	8.01E+02	2.15
	60	1207.94	1203 -	1211	1207.13	7.55E+01	75.22	8.25E+02	2.07
	61	1238.50	1233 -	1242	1237.66	1.23E+03	103.15	8.12E+02	2.33
	62	1253.88	1250 -	1256	1253.03	6.37E+01	53.72	4.77E+02	2.73
	63	1280.98	1273 -	1286	1280.11	2.82E+02	106.48	1.14E+03	2.45
	64	1314.33	1307 -	1320	1313.43	1.15E+02	90.23	8.52E+02	11.59
	65	1336.44	1332 -	1339	1335.52	4.93E+01	57.76	5.21E+02	3.37
M	66	1378.07	1362 -	1389	1377.11	9.66E+02	81.44	4.09E+02	2.56
m	67	1385.73	1362 -	1389	1384.77	1.94E+02	57.72	3.95E+02	2.57
	68	1393.75	1390 -	1396	1392.78	4.09E+01	48.29	3.98E+02	3.11
M	69	1401.72	1396 -	1411	1400.75	3.43E+02	66.15	4.83E+02	2.84
m	70	1408.50	1396 -	1411	1407.52	4.71E+02	70.46	5.31E+02	2.51
	71	1460.87	1454 -	1464	1459.85	1.05E+02	81.53	8.30E+02	2.99
	72	1509.73	1503 -	1514	1508.66	4.84E+02	93.57	8.54E+02	2.74
M	73	1539.58	1532 -	1547	1538.49	7.97E+01	64.43	5.66E+02	2.95
m	74	1543.36	1532 -	1547	1542.27	8.46E+01	64.12	5.31E+02	3.15
	75	1583.51	1579 -	1586	1582.38	1.26E+02	53.55	3.98E+02	1.99
	76	1593.85	1587 -	1596	1592.71	6.16E+01	59.93	4.73E+02	4.67
	77	1599.95	1597 -	1603	1598.81	5.31E+01	42.81	2.96E+02	2.86
	78	1661.90	1656 -	1664	1660.71	2.28E+02	50.46	2.50E+02	2.57
	79	1684.12	1678 -	1687	1682.91	5.96E+01	45.02	2.57E+02	2.77
	80	1694.35	1689 -	1699	1693.13	4.22E+01	49.50	2.94E+02	3.48
	81	1730.04	1723 -	1732	1728.80	6.03E+02	62.34	2.12E+02	2.51
	82	1764.92	1756 -	1771	1763.65	2.82E+03	125.19	4.36E+02	2.77
M	83	1840.04	1834 -	1852	1838.71	4.73E+01	37.66	1.82E+02	4.23
m	84	1847.95	1834 -	1852	1846.61	3.86E+02	50.60	1.70E+02	2.74
	85	1873.71	1867 -	1878	1872.35	5.19E+01	44.05	2.18E+02	3.34
	86	1936.26	1931 -	1938	1934.86	4.07E+01	29.73	1.21E+02	4.10
	87	1964.98	1961 -	1966	1963.56	1.91E+01	20.05	6.37E+01	1.55
	88	2052.94	2048 -	2055	2051.45	2.26E+01	21.63	6.08E+01	1.56
	89	2073.08	2068 -	2074	2071.58	1.82E+01	18.21	4.36E+01	3.81
	90	2119.00	2110 -	2122	2117.47	1.67E+02	40.90	1.23E+02	2.24
	91	2146.21	2139 -	2149	2144.66	1.60E+01	18.75	3.80E+01	5.66
M	92	2192.87	2186 -	2211	2191.28	2.98E+01	19.66	5.35E+01	3.11
m	93	2204.58	2186 -	2211	2202.98	7.42E+02	58.40	4.53E+01	3.12

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
94	2294.18	2288 -	2297	2292.53	5.76E+01	18.19	1.29E+01	2.25
95	2409.92	2405 -	2411	2408.18	6.91E+00	8.99	8.18E+00	2.42
96	2448.24	2441 -	2450	2446.48	2.27E+02	31.86	1.62E+01	3.66
97	2468.99	2463 -	2471	2467.22	6.72E+00	7.50	4.56E+00	5.49
98	2615.40	2608 -	2617	2613.53	2.64E+01	14.53	1.53E+01	2.36
99	2695.26	2690 -	2696	2693.34	7.22E+00	6.95	3.56E+00	1.88

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 5:19:46PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.59	44 -	49	1.27E+03	247.74	1.13E+04	2.19E+02
	2	53.33	52 -	57	4.15E+02	268.11	1.41E+04	2.18E+02
	3	63.31	61 -	67	2.35E+03	374.29	2.40E+04	2.97E+02
	4	76.24	72 -	79	9.23E+03	492.41	4.15E+04	5.00E+02
M	5	83.90	83 -	97	1.36E+03	192.41	9.61E+03	1.61E+02
m	6	87.58	83 -	97	2.26E+03	244.26	1.19E+04	1.79E+02
m	7	92.59	83 -	97	4.37E+03	256.52	1.05E+04	1.69E+02
	8	98.58	98 -	102	4.38E+02	232.50	1.16E+04	1.88E+02
	9	112.56	112 -	115	3.01E+02	198.93	9.54E+03	1.61E+02
	10	121.28	120 -	123	1.92E+02	193.40	9.15E+03	1.57E+02
	11	143.77	141 -	147	7.77E+02	305.48	1.64E+04	2.47E+02
	12	154.61	153 -	157	3.38E+02	233.70	1.18E+04	1.90E+02
	13	163.33	162 -	166	1.92E+02	220.57	1.06E+04	1.80E+02
	14	186.02	182 -	190	6.25E+03	367.04	1.68E+04	2.72E+02
	15	205.53	204 -	208	2.32E+02	188.65	7.65E+03	1.53E+02
M	16	235.90	233 -	246	5.14E+02	147.76	5.10E+03	1.17E+02
m	17	238.89	233 -	246	3.24E+02	145.62	4.97E+03	1.16E+02
m	18	242.02	233 -	246	6.06E+03	206.75	4.70E+03	1.13E+02
M	19	256.14	255 -	263	2.02E+02	82.28	2.17E+03	7.65E+01
m	20	259.01	255 -	263	4.07E+02	137.38	4.15E+03	1.06E+02
	21	270.99	265 -	276	1.33E+03	308.54	1.12E+04	2.46E+02

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	22	295.27	293 -	298	1.29E+04	277.42	5.04E+03	1.31E+02
	23	338.66	337 -	341	1.32E+02	128.09	3.51E+03	1.04E+02
	24	351.95	348 -	355	2.20E+04	345.94	5.28E+03	1.46E+02
	25	388.12	384 -	392	3.23E+02	182.03	4.89E+03	1.47E+02
	26	405.73	403 -	408	1.73E+02	134.31	3.40E+03	1.08E+02
	27	437.04	435 -	440	1.19E+02	111.18	2.38E+03	8.96E+01
	28	444.57	442 -	447	1.23E+02	108.03	2.21E+03	8.69E+01
	29	455.05	452 -	458	1.74E+02	121.29	2.54E+03	9.73E+01
	30	461.48	459 -	464	1.01E+02	105.36	2.14E+03	8.50E+01
	31	480.20	477 -	483	2.01E+02	114.77	2.25E+03	9.14E+01
	32	487.16	484 -	490	2.25E+02	113.86	2.19E+03	9.03E+01
	33	510.63	505 -	517	5.18E+02	180.54	3.60E+03	1.44E+02
	34	543.78	540 -	546	9.76E+01	103.76	1.89E+03	8.37E+01
	35	581.90	575 -	586	3.04E+02	156.05	2.87E+03	1.25E+02
	36	609.45	604 -	614	1.66E+04	290.43	2.36E+03	1.10E+02
	37	665.09	659 -	669	5.57E+02	126.47	1.83E+03	9.65E+01
	38	688.64	685 -	691	7.51E+01	79.74	1.09E+03	6.40E+01
	39	703.25	699 -	706	2.27E+02	92.67	1.27E+03	7.20E+01
	40	720.28	716 -	723	1.55E+02	91.13	1.28E+03	7.21E+01
	41	742.26	738 -	746	1.59E+02	99.96	1.44E+03	7.95E+01
	42	768.41	762 -	773	1.65E+03	146.78	1.87E+03	1.00E+02
	43	778.05	775 -	780	5.82E+01	68.42	8.88E+02	5.48E+01
M	44	782.80	781 -	790	5.73E+01	51.19	5.85E+02	3.98E+01
m	45	786.30	781 -	790	4.01E+02	86.75	1.04E+03	5.31E+01
	46	806.28	801 -	811	3.84E+02	115.17	1.57E+03	8.90E+01
	47	821.31	819 -	824	6.30E+01	69.85	9.32E+02	5.59E+01
	48	826.92	824 -	829	6.90E+01	71.34	9.58E+02	5.70E+01
	49	839.09	835 -	843	2.07E+02	99.34	1.39E+03	7.82E+01
	50	910.62	908 -	913	7.25E+01	68.76	8.87E+02	5.48E+01
	51	934.38	929 -	938	7.91E+02	115.81	1.46E+03	8.32E+01
	52	964.30	960 -	967	9.38E+01	83.79	1.11E+03	6.70E+01
	53	1001.11	995 -	1005	3.08E+02	100.52	1.18E+03	7.74E+01
M	54	1046.09	1043 -	1055	4.91E+01	56.28	5.92E+02	4.00E+01
m	55	1052.10	1043 -	1055	9.53E+01	72.66	8.31E+02	4.74E+01
	56	1069.68	1065 -	1072	1.34E+02	68.53	6.87E+02	5.30E+01
	57	1120.61	1114 -	1125	3.66E+03	158.77	1.31E+03	8.44E+01
	58	1134.35	1130 -	1136	8.28E+01	59.41	5.76E+02	4.65E+01
	59	1155.69	1151 -	1159	3.81E+02	82.42	8.01E+02	5.97E+01
	60	1207.94	1203 -	1211	7.55E+01	75.22	8.25E+02	6.02E+01
	61	1238.50	1233 -	1242	1.23E+03	103.15	8.12E+02	6.22E+01
	62	1253.88	1250 -	1256	6.37E+01	53.72	4.77E+02	4.22E+01
	63	1280.98	1273 -	1286	2.82E+02	106.48	1.14E+03	8.31E+01
	64	1314.33	1307 -	1320	1.15E+02	90.23	8.52E+02	7.20E+01
	65	1336.44	1332 -	1339	4.93E+01	57.76	5.21E+02	4.61E+01
M	66	1378.07	1362 -	1389	9.66E+02	81.44	4.09E+02	3.32E+01
m	67	1385.73	1362 -	1389	1.94E+02	57.72	3.95E+02	3.27E+01
	68	1393.75	1390 -	1396	4.09E+01	48.29	3.98E+02	3.83E+01
M	69	1401.72	1396 -	1411	3.43E+02	66.15	4.83E+02	3.61E+01
m	70	1408.50	1396 -	1411	4.71E+02	70.46	5.31E+02	3.79E+01
	71	1460.87	1454 -	1464	1.05E+02	81.53	8.30E+02	6.49E+01
	72	1509.73	1503 -	1514	4.84E+02	93.57	8.54E+02	2.36E+01

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	73	1539.58	1532 -	1547	7.97E+01	64.43	5.66E+02	3.91E+01
m	74	1543.36	1532 -	1547	8.46E+01	64.12	5.31E+02	3.79E+01
	75	1583.51	1579 -	1586	1.26E+02	53.55	3.98E+02	4.00E+01
	76	1593.85	1587 -	1596	6.16E+01	59.93	4.73E+02	4.75E+01
	77	1599.95	1597 -	1603	5.31E+01	42.81	2.96E+02	3.31E+01
	78	1661.90	1656 -	1664	2.28E+02	50.46	2.50E+02	3.32E+01
	79	1684.12	1678 -	1687	5.96E+01	45.02	2.57E+02	3.48E+01
	80	1694.35	1689 -	1699	4.22E+01	49.50	2.94E+02	3.93E+01
	81	1730.04	1723 -	1732	6.03E+02	62.34	2.12E+02	3.16E+01
	82	1764.92	1756 -	1771	2.82E+03	125.19	4.36E+02	5.45E+01
M	83	1840.04	1834 -	1852	4.73E+01	37.66	1.82E+02	2.22E+01
m	84	1847.95	1834 -	1852	3.86E+02	50.60	1.70E+02	2.15E+01
	85	1873.71	1867 -	1878	5.19E+01	44.05	2.18E+02	3.42E+01
	86	1936.26	1931 -	1938	4.07E+01	29.73	1.21E+02	2.21E+01
	87	1964.98	1961 -	1966	1.91E+01	20.05	6.37E+01	1.48E+01
	88	2052.94	2048 -	2055	2.26E+01	21.63	6.08E+01	1.60E+01
	89	2073.08	2068 -	2074	1.82E+01	18.21	4.36E+01	1.32E+01
	90	2119.00	2110 -	2122	1.67E+02	40.90	1.23E+02	2.93E+01
	91	2146.21	2139 -	2149	1.60E+01	18.75	3.80E+01	1.39E+01
M	92	2192.87	2186 -	2211	2.98E+01	19.66	5.35E+01	1.20E+01
m	93	2204.58	2186 -	2211	7.42E+02	58.40	4.53E+01	1.11E+01
	94	2294.18	2288 -	2297	5.76E+01	18.19	1.29E+01	8.25E+00
	95	2409.92	2405 -	2411	6.91E+00	8.99	8.18E+00	5.99E+00
	96	2448.24	2441 -	2450	2.27E+02	31.86	1.62E+01	8.52E+00
	97	2468.99	2463 -	2471	6.72E+00	7.50	4.56E+00	4.45E+00
	98	2615.40	2608 -	2617	2.64E+01	14.53	1.53E+01	8.44E+00
	99	2695.26	2690 -	2696	7.22E+00	6.95	3.56E+00	3.62E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 5:19:46PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	46.59	44 -	49	46.94	1.27E+03	247.74	1.13E+04	PB-210
	2	53.33	52 -	57	53.67	4.15E+02	268.11	1.41E+04	.....
	3	63.31	61 -	67	63.63	2.35E+03	374.29	2.40E+04	TH-234
									TH-230
	4	76.24	72 -	79	76.55	9.23E+03	492.41	4.15E+04	.....
M	5	83.90	83 -	97	84.21	1.36E+03	192.41	9.61E+03	TH-231
m	6	87.58	83 -	97	87.88	2.26E+03	244.26	1.19E+04	SN-126
									CD-109
									LU-176
m	7	92.59	83 -	97	92.89	4.37E+03	256.52	1.05E+04	GA-67
	8	98.58	98 -	102	98.87	4.38E+02	232.50	1.16E+04	.....
	9	112.56	112 -	115	112.83	3.01E+02	198.93	9.54E+03	.....
	10	121.28	120 -	123	121.54	1.92E+02	193.40	9.15E+03	SE-75
									EU-152
									CO-57
	11	143.77	141 -	147	144.01	7.77E+02	305.48	1.64E+04	U-235
	12	154.61	153 -	157	154.84	3.38E+02	233.70	1.18E+04	.....
	13	163.33	162 -	166	163.54	1.92E+02	220.57	1.06E+04	U-235
									CS-136
									BA-140
	14	186.02	182 -	190	186.22	6.25E+03	367.04	1.68E+04	RA-226
	15	205.53	204 -	208	205.70	2.32E+02	188.65	7.65E+03	U-235
M	16	235.90	233 -	246	236.04	5.14E+02	147.76	5.10E+03	TH-227
									NB-95M
m	17	238.89	233 -	246	239.03	3.24E+02	145.62	4.97E+03	PB-212
m	18	242.02	233 -	246	242.15	6.06E+03	206.75	4.70E+03	.....
M	19	256.14	255 -	263	256.26	2.02E+02	82.28	2.17E+03	TH-227
m	20	259.01	255 -	263	259.13	4.07E+02	137.38	4.15E+03	.....
	21	270.99	265 -	276	271.09	1.33E+03	308.54	1.12E+04	.....
	22	295.27	293 -	298	295.34	1.29E+04	277.42	5.04E+03	PB-214
	23	338.66	337 -	341	338.70	1.32E+02	128.09	3.51E+03	AC-228
	24	351.95	348 -	355	351.96	2.20E+04	345.94	5.28E+03	PB-214
	25	388.12	384 -	392	388.10	3.23E+02	182.03	4.89E+03	.....
	26	405.73	403 -	408	405.69	1.73E+02	134.31	3.40E+03	PB-211
	27	437.04	435 -	440	436.97	1.19E+02	111.18	2.38E+03	BA-140
	28	444.57	442 -	447	444.49	1.23E+02	108.03	2.21E+03	.....
	29	455.05	452 -	458	454.96	1.74E+02	121.29	2.54E+03	.....
	30	461.48	459 -	464	461.38	1.01E+02	105.36	2.14E+03	.....
	31	480.20	477 -	483	480.09	2.01E+02	114.77	2.25E+03	.....
	32	487.16	484 -	490	487.04	2.25E+02	113.86	2.19E+03	LA-140
	33	510.63	505 -	517	510.48	5.18E+02	180.54	3.60E+03	.....
	34	543.78	540 -	546	543.60	9.76E+01	103.76	1.89E+03	.....
	35	581.90	575 -	586	581.68	3.04E+02	156.05	2.87E+03	.....
	36	609.45	604 -	614	609.20	1.66E+04	290.43	2.36E+03	BI-214
	37	665.09	659 -	669	664.79	5.57E+02	126.47	1.83E+03	CE-143
	38	688.64	685 -	691	688.32	7.51E+01	79.74	1.09E+03	.....
	39	703.25	699 -	706	702.91	2.27E+02	92.67	1.27E+03	NB-94
	40	720.28	716 -	723	719.93	1.55E+02	91.13	1.28E+03	SB-126
	41	742.26	738 -	746	741.89	1.59E+02	99.96	1.44E+03	.....
	42	768.41	762 -	773	768.01	1.65E+03	146.78	1.87E+03	.....
	43	778.05	775 -	780	777.64	5.82E+01	68.42	8.88E+02	MO-99
									EU-152
M	44	782.80	781 -	790	782.39	5.73E+01	51.19	5.85E+02	SB-127
m	45	786.30	781 -	790	785.89	4.01E+02	86.75	1.04E+03	.....

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	46	806.28	801 -	811	805.85	3.84E+02	115.17	1.57E+03	.....
	47	821.31	819 -	824	820.86	6.30E+01	69.85	9.32E+02	.....
	48	826.92	824 -	829	826.46	6.90E+01	71.34	9.58E+02	.....
	49	839.09	835 -	843	838.62	2.07E+02	99.34	1.39E+03	.....
	50	910.62	908 -	913	910.08	7.25E+01	68.76	8.87E+02	AC-228
	51	934.38	929 -	938	933.82	7.91E+02	115.81	1.46E+03	.....
	52	964.30	960 -	967	963.72	9.38E+01	83.79	1.11E+03	EU-152
	53	1001.11	995 -	1005	1000.49	3.08E+02	100.52	1.18E+03	PA-234M
M	54	1046.09	1043 -	1055	1045.43	4.91E+01	56.28	5.92E+02	.....
m	55	1052.10	1043 -	1055	1051.44	9.53E+01	72.66	8.31E+02	.....
	56	1069.68	1065 -	1072	1069.00	1.34E+02	68.53	6.87E+02	.....
	57	1120.61	1114 -	1125	1119.88	3.66E+03	158.77	1.31E+03	SC-46 BI-214 TA-182
	58	1134.35	1130 -	1136	1133.61	8.28E+01	59.41	5.76E+02	.....
	59	1155.69	1151 -	1159	1154.93	3.81E+02	82.42	8.01E+02	.....
	60	1207.94	1203 -	1211	1207.13	7.55E+01	75.22	8.25E+02	.....
	61	1238.50	1233 -	1242	1237.66	1.23E+03	103.15	8.12E+02	CO-56
	62	1253.88	1250 -	1256	1253.03	6.37E+01	53.72	4.77E+02	.....
	63	1280.98	1273 -	1286	1280.11	2.82E+02	106.48	1.14E+03	.....
	64	1314.33	1307 -	1320	1313.43	1.15E+02	90.23	8.52E+02	.....
	65	1336.44	1332 -	1339	1335.52	4.93E+01	57.76	5.21E+02	.....
M	66	1378.07	1362 -	1389	1377.11	9.66E+02	81.44	4.09E+02	.....
m	67	1385.73	1362 -	1389	1384.77	1.94E+02	57.72	3.95E+02	.....
	68	1393.75	1390 -	1396	1392.78	4.09E+01	48.29	3.98E+02	.....
M	69	1401.72	1396 -	1411	1400.75	3.43E+02	66.15	4.83E+02	.....
m	70	1408.50	1396 -	1411	1407.52	4.71E+02	70.46	5.31E+02	EU-152
	71	1460.87	1454 -	1464	1459.85	1.05E+02	81.53	8.30E+02	K-40
	72	1509.73	1503 -	1514	1508.66	4.84E+02	93.57	8.54E+02	.....
M	73	1539.58	1532 -	1547	1538.49	7.97E+01	64.43	5.66E+02	.....
m	74	1543.36	1532 -	1547	1542.27	8.46E+01	64.12	5.31E+02	.....
	75	1583.51	1579 -	1586	1582.38	1.26E+02	53.55	3.98E+02	.....
	76	1593.85	1587 -	1596	1592.71	6.16E+01	59.93	4.73E+02	.....
	77	1599.95	1597 -	1603	1598.81	5.31E+01	42.81	2.96E+02	.....
	78	1661.90	1656 -	1664	1660.71	2.28E+02	50.46	2.50E+02	.....
	79	1684.12	1678 -	1687	1682.91	5.96E+01	45.02	2.57E+02	.....
	80	1694.35	1689 -	1699	1693.13	4.22E+01	49.50	2.94E+02	.....
	81	1730.04	1723 -	1732	1728.80	6.03E+02	62.34	2.12E+02	.....
	82	1764.92	1756 -	1771	1763.65	2.82E+03	125.19	4.36E+02	BI-214
M	83	1840.04	1834 -	1852	1838.71	4.73E+01	37.66	1.82E+02	.....
m	84	1847.95	1834 -	1852	1846.61	3.86E+02	50.60	1.70E+02	.....
	85	1873.71	1867 -	1878	1872.35	5.19E+01	44.05	2.18E+02	.....
	86	1936.26	1931 -	1938	1934.86	4.07E+01	29.73	1.21E+02	.....
	87	1964.98	1961 -	1966	1963.56	1.91E+01	20.05	6.37E+01	.....
	88	2052.94	2048 -	2055	2051.45	2.26E+01	21.63	6.08E+01	.....
	89	2073.08	2068 -	2074	2071.58	1.82E+01	18.21	4.36E+01	.....
	90	2119.00	2110 -	2122	2117.47	1.67E+02	40.90	1.23E+02	.....
	91	2146.21	2139 -	2149	2144.66	1.60E+01	18.75	3.80E+01	.....
M	92	2192.87	2186 -	2211	2191.28	2.98E+01	19.66	5.35E+01	.....
m	93	2204.58	2186 -	2211	2202.98	7.42E+02	58.40	4.53E+01	BI-214
	94	2294.18	2288 -	2297	2292.53	5.76E+01	18.19	1.29E+01	.....
	95	2409.92	2405 -	2411	2408.18	6.91E+00	8.99	8.18E+00	.....
	96	2448.24	2441 -	2450	2446.48	2.27E+02	31.86	1.62E+01	.....
	97	2468.99	2463 -	2471	2467.22	6.72E+00	7.50	4.56E+00	.....

Analysis Report for 1707092-12

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Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
98	2615.40	2608 -	2617	2613.53	2.64E+01	14.53	1.53E+01	TL-208
99	2695.26	2690 -	2696	2693.34	7.22E+00	6.95	3.56E+00	.....

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 5:19:46PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.59	1.27E+03	247.74	1.59E-02	1.67E-03
	2	53.33	4.15E+02	268.11	1.98E-02	1.67E-03
	3	63.31	2.35E+03	374.29	2.38E-02	1.77E-03
	4	76.24	9.23E+03	492.41	2.63E-02	2.11E-03
M	5	83.90	1.36E+03	192.41	2.69E-02	2.32E-03
m	6	87.58	2.26E+03	244.26	2.70E-02	2.41E-03
m	7	92.59	4.37E+03	256.52	2.70E-02	2.34E-03
	8	98.58	4.38E+02	232.50	2.68E-02	2.22E-03
	9	112.56	3.01E+02	198.93	2.60E-02	1.96E-03
	10	121.28	1.92E+02	193.40	2.54E-02	1.79E-03
	11	143.77	7.77E+02	305.48	2.35E-02	1.70E-03
	12	154.61	3.38E+02	233.70	2.27E-02	1.66E-03
	13	163.33	1.92E+02	220.57	2.20E-02	1.63E-03
	14	186.02	6.25E+03	367.04	2.03E-02	1.53E-03
	15	205.53	2.32E+02	188.65	1.91E-02	1.45E-03
M	16	235.90	5.14E+02	147.76	1.74E-02	1.31E-03
m	17	238.89	3.24E+02	145.62	1.72E-02	1.30E-03
m	18	242.02	6.06E+03	206.75	1.71E-02	1.28E-03
M	19	256.14	2.02E+02	82.28	1.64E-02	1.22E-03
m	20	259.01	4.07E+02	137.38	1.63E-02	1.21E-03
	21	270.99	1.33E+03	308.54	1.58E-02	1.15E-03
	22	295.27	1.29E+04	277.42	1.48E-02	1.10E-03
	23	338.66	1.32E+02	128.09	1.34E-02	1.04E-03
	24	351.95	2.20E+04	345.94	1.31E-02	1.02E-03
	25	388.12	3.23E+02	182.03	1.22E-02	9.73E-04
	26	405.73	1.73E+02	134.31	1.18E-02	9.56E-04
	27	437.04	1.19E+02	111.18	1.11E-02	9.29E-04
	28	444.57	1.23E+02	108.03	1.10E-02	9.23E-04

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	29	455.05	1.74E+02	121.29	1.08E-02	9.14E-04
	30	461.48	1.01E+02	105.36	1.07E-02	9.08E-04
	31	480.20	2.01E+02	114.77	1.04E-02	8.92E-04
	32	487.16	2.25E+02	113.86	1.02E-02	8.86E-04
	33	510.63	5.18E+02	180.54	9.88E-03	8.65E-04
	34	543.78	9.76E+01	103.76	9.41E-03	8.37E-04
	35	581.90	3.04E+02	156.05	8.92E-03	8.03E-04
	36	609.45	1.66E+04	290.43	8.60E-03	7.79E-04
	37	665.09	5.57E+02	126.47	8.02E-03	7.31E-04
	38	688.64	7.51E+01	79.74	7.80E-03	7.08E-04
	39	703.25	2.27E+02	92.67	7.67E-03	6.94E-04
	40	720.28	1.55E+02	91.13	7.52E-03	6.78E-04
	41	742.26	1.59E+02	99.96	7.34E-03	6.56E-04
	42	768.41	1.65E+03	146.78	7.14E-03	6.31E-04
	43	778.05	5.82E+01	68.42	7.07E-03	6.22E-04
M	44	782.80	5.73E+01	51.19	7.03E-03	6.17E-04
m	45	786.30	4.01E+02	86.75	7.01E-03	6.14E-04
	46	806.28	3.84E+02	115.17	6.87E-03	5.95E-04
	47	821.31	6.30E+01	69.85	6.76E-03	5.80E-04
	48	826.92	6.90E+01	71.34	6.72E-03	5.75E-04
	49	839.09	2.07E+02	99.34	6.64E-03	5.63E-04
	50	910.62	7.25E+01	68.76	6.21E-03	5.02E-04
	51	934.38	7.91E+02	115.81	6.08E-03	4.93E-04
	52	964.30	9.38E+01	83.79	5.93E-03	4.83E-04
	53	1001.11	3.08E+02	100.52	5.75E-03	4.70E-04
M	54	1046.09	4.91E+01	56.28	5.54E-03	4.54E-04
m	55	1052.10	9.53E+01	72.66	5.52E-03	4.52E-04
	56	1069.68	1.34E+02	68.53	5.44E-03	4.46E-04
	57	1120.61	3.66E+03	158.77	5.24E-03	4.28E-04
	58	1134.35	8.28E+01	59.41	5.19E-03	4.24E-04
	59	1155.69	3.81E+02	82.42	5.11E-03	4.16E-04
	60	1207.94	7.55E+01	75.22	4.94E-03	4.13E-04
	61	1238.50	1.23E+03	103.15	4.84E-03	4.16E-04
	62	1253.88	6.37E+01	53.72	4.79E-03	4.18E-04
	63	1280.98	2.82E+02	106.48	4.71E-03	4.20E-04
	64	1314.33	1.15E+02	90.23	4.62E-03	4.23E-04
	65	1336.44	4.93E+01	57.76	4.56E-03	4.24E-04
M	66	1378.07	9.66E+02	81.44	4.45E-03	4.12E-04
m	67	1385.73	1.94E+02	57.72	4.43E-03	4.09E-04
	68	1393.75	4.09E+01	48.29	4.42E-03	4.07E-04
M	69	1401.72	3.43E+02	66.15	4.40E-03	4.05E-04
m	70	1408.50	4.71E+02	70.46	4.38E-03	4.03E-04
	71	1460.87	1.05E+02	81.53	4.26E-03	3.88E-04
	72	1509.73	4.84E+02	93.57	4.16E-03	3.73E-04
M	73	1539.58	7.97E+01	64.43	4.10E-03	3.65E-04
m	74	1543.36	8.46E+01	64.12	4.10E-03	3.64E-04
	75	1583.51	1.26E+02	53.55	4.02E-03	3.52E-04
	76	1593.85	6.16E+01	59.93	4.01E-03	3.49E-04
	77	1599.95	5.31E+01	42.81	3.99E-03	3.47E-04
	78	1661.90	2.28E+02	50.46	3.89E-03	3.29E-04
	79	1684.12	5.96E+01	45.02	3.86E-03	3.23E-04
	80	1694.35	4.22E+01	49.50	3.84E-03	3.20E-04
	81	1730.04	6.03E+02	62.34	3.79E-03	3.10E-04

Analysis Report for 1707092-12

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	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	82	1764.92	2.82E+03	125.19	3.75E-03	3.00E-04
M	83	1840.04	4.73E+01	37.66	3.65E-03	2.79E-04
m	84	1847.95	3.86E+02	50.60	3.64E-03	2.79E-04
	85	1873.71	5.19E+01	44.05	3.61E-03	2.79E-04
	86	1936.26	4.07E+01	29.73	3.55E-03	2.79E-04
	87	1964.98	1.91E+01	20.05	3.52E-03	2.79E-04
	88	2052.94	2.26E+01	21.63	3.45E-03	2.79E-04
	89	2073.08	1.82E+01	18.21	3.43E-03	2.79E-04
	90	2119.00	1.67E+02	40.90	3.40E-03	2.79E-04
	91	2146.21	1.60E+01	18.75	3.38E-03	2.79E-04
M	92	2192.87	2.98E+01	19.66	3.35E-03	2.79E-04
m	93	2204.58	7.42E+02	58.40	3.34E-03	2.79E-04
	94	2294.18	5.76E+01	18.19	3.29E-03	2.79E-04
	95	2409.92	6.91E+00	8.99	3.25E-03	2.79E-04
	96	2448.24	2.27E+02	31.86	3.23E-03	2.79E-04
	97	2468.99	6.72E+00	7.50	3.23E-03	2.79E-04
	98	2615.40	2.64E+01	14.53	3.20E-03	2.79E-04
	99	2695.26	7.22E+00	6.95	3.19E-03	2.79E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 5:19:46PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.59	1.27E+03	247.74	3.74E+01	5.77E+00	1.24E+03	2.48E+02
	2	53.33	4.15E+02	268.11			4.15E+02	2.68E+02
	3	63.31	2.35E+03	374.29	6.29E+01	1.34E+01	2.29E+03	3.75E+02
	4	76.24	9.23E+03	492.41			9.23E+03	4.92E+02
M	5	83.90	1.36E+03	192.41	2.45E+00	5.90E+00	1.35E+03	1.92E+02
m	6	87.58	2.26E+03	244.26			2.26E+03	2.44E+02
m	7	92.59	4.37E+03	256.52	4.88E+01	1.30E+00	4.32E+03	2.57E+02
	8	98.58	4.38E+02	232.50			4.38E+02	2.32E+02
	9	112.56	3.01E+02	198.93			3.01E+02	1.99E+02
	10	121.28	1.92E+02	193.40			1.92E+02	1.93E+02
	11	143.77	7.77E+02	305.48	1.06E+01	1.02E+01	7.66E+02	3.06E+02
	12	154.61	3.38E+02	233.70			3.38E+02	2.34E+02

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	13	163.33	1.92E+02	220.57			1.92E+02	2.21E+02
	14	186.02	6.25E+03	367.04	3.48E+01	7.32E+00	6.21E+03	3.67E+02
	15	205.53	2.32E+02	188.65			2.32E+02	1.89E+02
M	16	235.90	5.14E+02	147.76			5.14E+02	1.48E+02
m	17	238.89	3.24E+02	145.62	7.09E+00	6.85E+00	3.17E+02	1.46E+02
m	18	242.02	6.06E+03	206.75			6.06E+03	2.07E+02
M	19	256.14	2.02E+02	82.28			2.02E+02	8.23E+01
m	20	259.01	4.07E+02	137.38			4.07E+02	1.37E+02
	21	270.99	1.33E+03	308.54			1.33E+03	3.09E+02
	22	295.27	1.29E+04	277.42			1.29E+04	2.77E+02
	23	338.66	1.32E+02	128.09			1.32E+02	1.28E+02
	24	351.95	2.20E+04	345.94	1.04E+01	5.08E+00	2.20E+04	3.46E+02
	25	388.12	3.23E+02	182.03			3.23E+02	1.82E+02
	26	405.73	1.73E+02	134.31			1.73E+02	1.34E+02
	27	437.04	1.19E+02	111.18			1.19E+02	1.11E+02
	28	444.57	1.23E+02	108.03			1.23E+02	1.08E+02
	29	455.05	1.74E+02	121.29			1.74E+02	1.21E+02
	30	461.48	1.01E+02	105.36			1.01E+02	1.05E+02
	31	480.20	2.01E+02	114.77			2.01E+02	1.15E+02
	32	487.16	2.25E+02	113.86			2.25E+02	1.14E+02
	33	510.63	5.18E+02	180.54	7.08E+01	4.94E+00	4.47E+02	1.81E+02
	34	543.78	9.76E+01	103.76			9.76E+01	1.04E+02
	35	581.90	3.04E+02	156.05			3.04E+02	1.56E+02
	36	609.45	1.66E+04	290.43	1.07E+01	3.96E+00	1.66E+04	2.90E+02
	37	665.09	5.57E+02	126.47			5.57E+02	1.26E+02
	38	688.64	7.51E+01	79.74			7.51E+01	7.97E+01
	39	703.25	2.27E+02	92.67			2.27E+02	9.27E+01
	40	720.28	1.55E+02	91.13			1.55E+02	9.11E+01
	41	742.26	1.59E+02	99.96			1.59E+02	1.00E+02
	42	768.41	1.65E+03	146.78			1.65E+03	1.47E+02
	43	778.05	5.82E+01	68.42			5.82E+01	6.84E+01
M	44	782.80	5.73E+01	51.19			5.73E+01	5.12E+01
m	45	786.30	4.01E+02	86.75			4.01E+02	8.68E+01
	46	806.28	3.84E+02	115.17			3.84E+02	1.15E+02
	47	821.31	6.30E+01	69.85			6.30E+01	6.98E+01
	48	826.92	6.90E+01	71.34			6.90E+01	7.13E+01
	49	839.09	2.07E+02	99.34			2.07E+02	9.93E+01
	50	910.62	7.25E+01	68.76	2.63E+00	2.49E+00	6.99E+01	6.88E+01
	51	934.38	7.91E+02	115.81			7.91E+02	1.16E+02
	52	964.30	9.38E+01	83.79			9.38E+01	8.38E+01
	53	1001.11	3.08E+02	100.52	4.07E+00	2.59E+00	3.04E+02	1.01E+02
M	54	1046.09	4.91E+01	56.28			4.91E+01	5.63E+01
m	55	1052.10	9.53E+01	72.66			9.53E+01	7.27E+01
	56	1069.68	1.34E+02	68.53			1.34E+02	6.85E+01
	57	1120.61	3.66E+03	158.77	2.45E+00	2.38E+00	3.66E+03	1.59E+02
	58	1134.35	8.28E+01	59.41			8.28E+01	5.94E+01
	59	1155.69	3.81E+02	82.42			3.81E+02	8.24E+01
	60	1207.94	7.55E+01	75.22			7.55E+01	7.52E+01
	61	1238.50	1.23E+03	103.15			1.23E+03	1.03E+02
	62	1253.88	6.37E+01	53.72			6.37E+01	5.37E+01
	63	1280.98	2.82E+02	106.48			2.82E+02	1.06E+02
	64	1314.33	1.15E+02	90.23			1.15E+02	9.02E+01
	65	1336.44	4.93E+01	57.76			4.93E+01	5.78E+01
M	66	1378.07	9.66E+02	81.44			9.66E+02	8.14E+01

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	67	1385.73	1.94E+02	57.72			1.94E+02	5.77E+01
	68	1393.75	4.09E+01	48.29			4.09E+01	4.83E+01
M	69	1401.72	3.43E+02	66.15			3.43E+02	6.62E+01
m	70	1408.50	4.71E+02	70.46			4.71E+02	7.05E+01
	71	1460.87	1.05E+02	81.53	5.90E+00	2.63E+00	9.93E+01	8.16E+01
	72	1509.73	4.84E+02	93.57			4.84E+02	9.36E+01
M	73	1539.58	7.97E+01	64.43			7.97E+01	6.44E+01
m	74	1543.36	8.46E+01	64.12			8.46E+01	6.41E+01
	75	1583.51	1.26E+02	53.55			1.26E+02	5.36E+01
	76	1593.85	6.16E+01	59.93			6.16E+01	5.99E+01
	77	1599.95	5.31E+01	42.81			5.31E+01	4.28E+01
	78	1661.90	2.28E+02	50.46			2.28E+02	5.05E+01
	79	1684.12	5.96E+01	45.02			5.96E+01	4.50E+01
	80	1694.35	4.22E+01	49.50			4.22E+01	4.95E+01
	81	1730.04	6.03E+02	62.34			6.03E+02	6.23E+01
	82	1764.92	2.82E+03	125.19	3.33E+00	1.73E+00	2.82E+03	1.25E+02
M	83	1840.04	4.73E+01	37.66			4.73E+01	3.77E+01
m	84	1847.95	3.86E+02	50.60			3.86E+02	5.06E+01
	85	1873.71	5.19E+01	44.05			5.19E+01	4.40E+01
	86	1936.26	4.07E+01	29.73			4.07E+01	2.97E+01
	87	1964.98	1.91E+01	20.05			1.91E+01	2.00E+01
	88	2052.94	2.26E+01	21.63			2.26E+01	2.16E+01
	89	2073.08	1.82E+01	18.21			1.82E+01	1.82E+01
	90	2119.00	1.67E+02	40.90			1.67E+02	4.09E+01
	91	2146.21	1.60E+01	18.75			1.60E+01	1.88E+01
M	92	2192.87	2.98E+01	19.66			2.98E+01	1.97E+01
m	93	2204.58	7.42E+02	58.40			7.42E+02	5.84E+01
	94	2294.18	5.76E+01	18.19			5.76E+01	1.82E+01
	95	2409.92	6.91E+00	8.99			6.91E+00	8.99E+00
	96	2448.24	2.27E+02	31.86			2.27E+02	3.19E+01
	97	2468.99	6.72E+00	7.50			6.72E+00	7.50E+00
	98	2615.40	2.64E+01	14.53	4.77E+00	1.52E+00	2.16E+01	1.46E+01
	99	2695.26	7.22E+00	6.95			7.22E+00	6.95E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 5:19:46PM

Ref. Peak Energy : 0.00 Reference Date :

Peak Ratio : 0.00 Uncertainty : 0.00

Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	46.59	1.27E+03	247.74	3.74E+01	5.77E+00	1.24E+03	2.48E+02
	2	53.33	4.15E+02	268.11			4.15E+02	2.68E+02
	3	63.31	2.35E+03	374.29	6.29E+01	1.34E+01	2.29E+03	3.75E+02
	4	76.24	9.23E+03	492.41			9.23E+03	4.92E+02
M	5	83.90	1.36E+03	192.41	2.45E+00	5.90E+00	1.35E+03	1.92E+02
m	6	87.58	2.26E+03	244.26			2.26E+03	2.44E+02
m	7	92.59	4.37E+03	256.52	4.88E+01	1.30E+00	4.32E+03	2.57E+02
	8	98.58	4.38E+02	232.50			4.38E+02	2.32E+02
	9	112.56	3.01E+02	198.93			3.01E+02	1.99E+02
	10	121.28	1.92E+02	193.40			1.92E+02	1.93E+02
	11	143.77	7.77E+02	305.48	1.06E+01	1.02E+01	7.66E+02	3.06E+02
	12	154.61	3.38E+02	233.70			3.38E+02	2.34E+02
	13	163.33	1.92E+02	220.57			1.92E+02	2.21E+02
	14	186.02	6.25E+03	367.04	3.48E+01	7.32E+00	6.21E+03	3.67E+02
	15	205.53	2.32E+02	188.65			2.32E+02	1.89E+02
M	16	235.90	5.14E+02	147.76			5.14E+02	1.48E+02
m	17	238.89	3.24E+02	145.62	7.09E+00	6.85E+00	3.17E+02	1.46E+02
m	18	242.02	6.06E+03	206.75			6.06E+03	2.07E+02
M	19	256.14	2.02E+02	82.28			2.02E+02	8.23E+01
m	20	259.01	4.07E+02	137.38			4.07E+02	1.37E+02
	21	270.99	1.33E+03	308.54			1.33E+03	3.09E+02
	22	295.27	1.29E+04	277.42			1.29E+04	2.77E+02
	23	338.66	1.32E+02	128.09			1.32E+02	1.28E+02
	24	351.95	2.20E+04	345.94	1.04E+01	5.08E+00	2.20E+04	3.46E+02
	25	388.12	3.23E+02	182.03			3.23E+02	1.82E+02
	26	405.73	1.73E+02	134.31			1.73E+02	1.34E+02
	27	437.04	1.19E+02	111.18			1.19E+02	1.11E+02
	28	444.57	1.23E+02	108.03			1.23E+02	1.08E+02
	29	455.05	1.74E+02	121.29			1.74E+02	1.21E+02
	30	461.48	1.01E+02	105.36			1.01E+02	1.05E+02
	31	480.20	2.01E+02	114.77			2.01E+02	1.15E+02
	32	487.16	2.25E+02	113.86			2.25E+02	1.14E+02
	33	510.63	5.18E+02	180.54	7.08E+01	4.94E+00	4.47E+02	1.81E+02
	34	543.78	9.76E+01	103.76			9.76E+01	1.04E+02
	35	581.90	3.04E+02	156.05			3.04E+02	1.56E+02
	36	609.45	1.66E+04	290.43	1.07E+01	3.96E+00	1.66E+04	2.90E+02
	37	665.09	5.57E+02	126.47			5.57E+02	1.26E+02
	38	688.64	7.51E+01	79.74			7.51E+01	7.97E+01
	39	703.25	2.27E+02	92.67			2.27E+02	9.27E+01
	40	720.28	1.55E+02	91.13			1.55E+02	9.11E+01
	41	742.26	1.59E+02	99.96			1.59E+02	1.00E+02

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	42	768.41	1.65E+03	146.78			1.65E+03	1.47E+02
	43	778.05	5.82E+01	68.42			5.82E+01	6.84E+01
M	44	782.80	5.73E+01	51.19			5.73E+01	5.12E+01
m	45	786.30	4.01E+02	86.75			4.01E+02	8.68E+01
	46	806.28	3.84E+02	115.17			3.84E+02	1.15E+02
	47	821.31	6.30E+01	69.85			6.30E+01	6.98E+01
	48	826.92	6.90E+01	71.34			6.90E+01	7.13E+01
	49	839.09	2.07E+02	99.34			2.07E+02	9.93E+01
	50	910.62	7.25E+01	68.76	2.63E+00	2.49E+00	6.99E+01	6.88E+01
	51	934.38	7.91E+02	115.81			7.91E+02	1.16E+02
	52	964.30	9.38E+01	83.79			9.38E+01	8.38E+01
	53	1001.11	3.08E+02	100.52	4.07E+00	2.59E+00	3.04E+02	1.01E+02
M	54	1046.09	4.91E+01	56.28			4.91E+01	5.63E+01
m	55	1052.10	9.53E+01	72.66			9.53E+01	7.27E+01
	56	1069.68	1.34E+02	68.53			1.34E+02	6.85E+01
	57	1120.61	3.66E+03	158.77	2.45E+00	2.38E+00	3.66E+03	1.59E+02
	58	1134.35	8.28E+01	59.41			8.28E+01	5.94E+01
	59	1155.69	3.81E+02	82.42			3.81E+02	8.24E+01
	60	1207.94	7.55E+01	75.22			7.55E+01	7.52E+01
	61	1238.50	1.23E+03	103.15			1.23E+03	1.03E+02
	62	1253.88	6.37E+01	53.72			6.37E+01	5.37E+01
	63	1280.98	2.82E+02	106.48			2.82E+02	1.06E+02
	64	1314.33	1.15E+02	90.23			1.15E+02	9.02E+01
	65	1336.44	4.93E+01	57.76			4.93E+01	5.78E+01
M	66	1378.07	9.66E+02	81.44			9.66E+02	8.14E+01
m	67	1385.73	1.94E+02	57.72			1.94E+02	5.77E+01
	68	1393.75	4.09E+01	48.29			4.09E+01	4.83E+01
M	69	1401.72	3.43E+02	66.15			3.43E+02	6.62E+01
m	70	1408.50	4.71E+02	70.46			4.71E+02	7.05E+01
	71	1460.87	1.05E+02	81.53	5.90E+00	2.63E+00	9.93E+01	8.16E+01
	72	1509.73	4.84E+02	93.57			4.84E+02	9.36E+01
M	73	1539.58	7.97E+01	64.43			7.97E+01	6.44E+01
m	74	1543.36	8.46E+01	64.12			8.46E+01	6.41E+01
	75	1583.51	1.26E+02	53.55			1.26E+02	5.36E+01
	76	1593.85	6.16E+01	59.93			6.16E+01	5.99E+01
	77	1599.95	5.31E+01	42.81			5.31E+01	4.28E+01
	78	1661.90	2.28E+02	50.46			2.28E+02	5.05E+01
	79	1684.12	5.96E+01	45.02			5.96E+01	4.50E+01
	80	1694.35	4.22E+01	49.50			4.22E+01	4.95E+01
	81	1730.04	6.03E+02	62.34			6.03E+02	6.23E+01
	82	1764.92	2.82E+03	125.19	3.33E+00	1.73E+00	2.82E+03	1.25E+02
M	83	1840.04	4.73E+01	37.66			4.73E+01	3.77E+01
m	84	1847.95	3.86E+02	50.60			3.86E+02	5.06E+01
	85	1873.71	5.19E+01	44.05			5.19E+01	4.40E+01
	86	1936.26	4.07E+01	29.73			4.07E+01	2.97E+01
	87	1964.98	1.91E+01	20.05			1.91E+01	2.00E+01
	88	2052.94	2.26E+01	21.63			2.26E+01	2.16E+01
	89	2073.08	1.82E+01	18.21			1.82E+01	1.82E+01
	90	2119.00	1.67E+02	40.90			1.67E+02	4.09E+01
	91	2146.21	1.60E+01	18.75			1.60E+01	1.88E+01
M	92	2192.87	2.98E+01	19.66			2.98E+01	1.97E+01
m	93	2204.58	7.42E+02	58.40			7.42E+02	5.84E+01
	94	2294.18	5.76E+01	18.19			5.76E+01	1.82E+01
	95	2409.92	6.91E+00	8.99			6.91E+00	8.99E+00

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
96	2448.24	2.27E+02	31.86			2.27E+02	3.19E+01
97	2468.99	6.72E+00	7.50			6.72E+00	7.50E+00
98	2615.40	2.64E+01	14.53	4.77E+00	1.52E+00	2.16E+01	1.46E+01
99	2695.26	7.22E+00	6.95			7.22E+00	6.95E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.999	1460.81	*	10.67	2.21E+00	1.83E+00
CD-109	0.968	88.03	*	3.72	2.65E+01	4.03E+00
SN-126	1.000	87.57	*	37.00	2.29E+00	3.21E-01
EU-152	0.308	121.78	*	20.50	3.79E-01	3.83E-01
		244.69		5.40		
		344.27		19.13		
		778.89	*	9.20	9.19E-01	1.08E+00
		964.01	*	10.40	1.56E+00	1.40E+00
		1085.78		7.22		
		1112.02		9.60		
		1407.95	*	14.94	7.39E+00	1.39E+00
PB-210	0.999	46.50	*	4.25	1.87E+01	4.23E+00
PB-212	0.885	238.63	*	44.60	4.17E-01	1.95E-01
		300.09		3.41		
BI-214	0.988	609.31	*	46.30	4.22E+01	3.90E+00
		1120.29	*	15.10	4.68E+01	4.33E+00
		1764.49	*	15.80	4.82E+01	4.41E+00
		2204.22	*	4.98	4.51E+01	5.18E+00
PB-214	1.000	295.21	*	19.19	4.57E+01	3.52E+00
		351.92	*	37.19	4.57E+01	3.65E+00
RA-226	0.994	186.21	*	3.28	9.43E+01	1.73E+02
TH-227	0.476	50.10		8.40		
		236.00	*	11.50	2.60E+00	7.74E-01
		256.20	*	6.30	1.98E+00	8.18E-01
AC-228	0.553	338.32	*	11.40	8.69E-01	8.48E-01
		911.07	*	27.70	4.11E-01	4.06E-01
		969.11		16.60		

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TH-231	0.995	25.64		14.70		
		84.21	*	6.40	7.97E+00	1.32E+00
PA-234M	0.999	1001.03	*	0.92	5.81E+01	1.98E+01
TH-234	1.000	63.29	*	3.80	2.56E+01	4.60E+00
U-235	0.998	143.76	*	10.50	3.14E+00	1.36E+00
		163.35	*	4.70	1.88E+00	2.19E+00
		205.31	*	4.70	2.62E+00	2.19E+00

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 5:19:46PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	53.33	1.15179E-01	32.33		
	4	76.24	2.56290E+00	2.67		
m	7	92.59	1.19958E+00	2.97	Sum	
	8	98.58	1.21631E-01	26.55	D-Esc	
	9	112.56	8.35964E-02	33.05		
	12	154.61	9.40153E-02	34.52		
m	18	242.02	1.68227E+00	1.71	Sum	
m	20	259.01	1.12940E-01	16.89		
	21	270.99	3.69561E-01	11.60		
	25	388.12	8.96630E-02	28.20		
	26	405.73	4.79598E-02	38.90	Tol.	PB-211
	27	437.04	3.30237E-02	46.76	Tol.	BA-140
	28	444.57	3.41233E-02	43.97	Sum	
	29	455.05	4.84025E-02	34.80		
	30	461.48	2.79689E-02	52.32	Sum	
	31	480.20	5.58258E-02	28.55		
	32	487.16	6.26234E-02	25.25	Tol.	LA-140
	33	510.63	1.24170E-01	20.20		
	34	543.78	2.71163E-02	53.15	Sum	
	35	581.90	8.43741E-02	25.69		
	37	665.09	1.54653E-01	11.36	Tol.	CE-143
	38	688.64	2.08733E-02	53.06		

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	39	703.25	6.30304E-02	20.42	Sum	
	40	720.28	4.29994E-02	29.43		
	41	742.26	4.40376E-02	31.53	D-Esc	
	42	768.41	4.59469E-01	4.44		
M	44	782.80	1.59254E-02	44.64	Tol.	SB-127
m	45	786.30	1.11527E-01	10.80		
	46	806.28	1.06556E-01	15.01		
	47	821.31	1.74940E-02	55.46		
	48	826.92	1.91555E-02	51.73		
	49	839.09	5.76261E-02	23.94		
	51	934.38	2.19635E-01	7.32		
M	54	1046.09	1.36528E-02	57.25		
m	55	1052.10	2.64692E-02	38.13	Sum	
	56	1069.68	3.73559E-02	25.48		
	58	1134.35	2.29919E-02	35.89		
	59	1155.69	1.05962E-01	10.80		
	60	1207.94	2.09620E-02	49.84	Sum	
	61	1238.50	3.41366E-01	4.20	Tol.	CO-56
	62	1253.88	1.76849E-02	42.19	S-Esc	
	63	1280.98	7.83601E-02	18.87		
	64	1314.33	3.19973E-02	39.17		
	65	1336.44	1.36895E-02	58.60		
M	66	1378.07	2.68382E-01	4.21		
m	67	1385.73	5.39015E-02	14.87		
	68	1393.75	1.13634E-02	59.02		
M	69	1401.72	9.52509E-02	9.65		
	72	1509.73	1.34439E-01	9.67		
M	73	1539.58	2.21267E-02	40.44		
m	74	1543.36	2.34949E-02	37.90		
	75	1583.51	3.50641E-02	21.21		
	76	1593.85	1.71029E-02	48.67	Sum	
	77	1599.95	1.47506E-02	40.31		
	78	1661.90	6.33034E-02	11.07		
	79	1684.12	1.65625E-02	37.75		
	80	1694.35	1.17196E-02	58.66	S-Esc	
	81	1730.04	1.67455E-01	5.17	Sum	
M	83	1840.04	1.31342E-02	39.83		
m	84	1847.95	1.07207E-01	6.55	Sum	
	85	1873.71	1.44186E-02	42.43		
	86	1936.26	1.12981E-02	36.55		
	87	1964.98	5.31590E-03	52.38	Sum	
	88	2052.94	6.28407E-03	47.81		
	89	2073.08	5.05556E-03	50.02		
	90	2119.00	4.63107E-02	12.27		
	91	2146.21	4.44048E-03	58.66		
M	92	2192.87	8.27155E-03	33.01		
	94	2294.18	1.59874E-02	15.81		
	95	2409.92	1.91919E-03	65.03	Sum	
	96	2448.24	6.30225E-02	7.02		
	97	2468.99	1.86728E-03	55.79		
	98	2615.40	5.99927E-03	33.81	Tol.	TL-208
	99	2695.26	2.00617E-03	48.09		

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81	*	10.67	2.21E+00	1.83E+00
CD-109	0.96	88.03	*	3.72	2.65E+01	4.03E+00
SN-126	1.00	87.57	*	37.00	2.29E+00	3.21E-01
EU-152	0.30	121.78	*	20.50	3.79E-01	3.83E-01
		244.69		5.40		
		344.27		19.13		
		778.89	*	9.20	9.19E-01	1.08E+00
		964.01	*	10.40	1.56E+00	1.40E+00
		1085.78		7.22		
		1112.02		9.60		
		1407.95	*	14.94	7.39E+00	1.39E+00
PB-210	0.99	46.50	*	4.25	1.87E+01	4.23E+00
PB-212	0.88	238.63	*	44.60	4.17E-01	1.95E-01
		300.09		3.41		
BI-214	0.98	609.31	*	46.30	4.22E+01	3.90E+00
		1120.29	*	15.10	4.68E+01	4.33E+00
		1764.49	*	15.80	4.82E+01	4.41E+00
		2204.22	*	4.98	4.51E+01	5.18E+00
PB-214	1.00	295.21	*	19.19	4.57E+01	3.52E+00
		351.92	*	37.19	4.57E+01	3.65E+00
RA-226	0.99	186.21	*	3.28	9.43E+01	1.73E+02
TH-227	0.47	50.10		8.40		
		236.00	*	11.50	2.60E+00	7.74E-01
		256.20	*	6.30	1.98E+00	8.18E-01
AC-228	0.55	338.32	*	11.40	8.69E-01	8.48E-01
		911.07	*	27.70	4.11E-01	4.06E-01
		969.11		16.60		
TH-231	0.99	25.64		14.70		
		84.21	*	6.40	7.97E+00	1.32E+00
PA-234M	0.99	1001.03	*	0.92	5.81E+01	1.98E+01
TH-234	1.00	63.29	*	3.80	2.56E+01	4.60E+00
U-235	0.99	143.76	*	10.50	3.14E+00	1.36E+00

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Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
U-235	0.99	163.35	*	4.70	1.88E+00	2.19E+00
		205.31	*	4.70	2.62E+00	2.19E+00

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.999	2.21E+00	1.83E+00	
X	CO-57	0.743			
?	CD-109	0.968	2.65E+01	4.03E+00	
?	SN-126	1.000	2.29E+00	3.21E-01	
	EU-152	0.308	9.19E-01	3.39E-01	
	PB-210	0.999	1.87E+01	4.23E+00	
	PB-212	0.885	4.17E-01	1.95E-01	
	BI-214	0.988	4.54E+01	2.19E+00	
	PB-214	1.000	4.57E+01	2.53E+00	
	RA-226	0.994	9.43E+01	1.73E+02	
	TH-227	0.476	2.31E+00	5.62E-01	
	AC-228	0.553	4.96E-01	3.66E-01	
	TH-231	0.995	7.97E+00	1.32E+00	
	PA-234M	0.999	5.81E+01	1.98E+01	
	TH-234	1.000	2.56E+01	4.60E+00	
	U-235	0.998	2.75E+00	1.02E+00	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-12

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 5:19:46PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	53.33	1.15179E-01	32.33		
	4	76.24	2.56290E+00	2.67		
m	7	92.59	1.19958E+00	2.97	Sum	
	8	98.58	1.21631E-01	26.55	D-Esc	
	9	112.56	8.35964E-02	33.05		
	12	154.61	9.40153E-02	34.52		
m	18	242.02	1.68227E+00	1.71	Sum	
m	20	259.01	1.12940E-01	16.89		
	21	270.99	3.69561E-01	11.60		
	25	388.12	8.96630E-02	28.20		
	26	405.73	4.79598E-02	38.90	Tol.	PB-211
	27	437.04	3.30237E-02	46.76	Tol.	BA-140
	28	444.57	3.41233E-02	43.97	Sum	
	29	455.05	4.84025E-02	34.80		
	30	461.48	2.79689E-02	52.32	Sum	
	31	480.20	5.58258E-02	28.55		
	32	487.16	6.26234E-02	25.25	Tol.	LA-140
	33	510.63	1.24170E-01	20.20		
	34	543.78	2.71163E-02	53.15	Sum	
	35	581.90	8.43741E-02	25.69		
	37	665.09	1.54653E-01	11.36	Tol.	CE-143
	38	688.64	2.08733E-02	53.06		
	39	703.25	6.30304E-02	20.42	Sum	
	40	720.28	4.29994E-02	29.43		
	41	742.26	4.40376E-02	31.53	D-Esc	
	42	768.41	4.59469E-01	4.44		
M	44	782.80	1.59254E-02	44.64	Tol.	SB-127
m	45	786.30	1.11527E-01	10.80		
	46	806.28	1.06556E-01	15.01		
	47	821.31	1.74940E-02	55.46		
	48	826.92	1.91555E-02	51.73		
	49	839.09	5.76261E-02	23.94		
	51	934.38	2.19635E-01	7.32		
M	54	1046.09	1.36528E-02	57.25		
m	55	1052.10	2.64692E-02	38.13	Sum	

Analysis Report for 1707092-12

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	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	56	1069.68	3.73559E-02	25.48		
	58	1134.35	2.29919E-02	35.89		
	59	1155.69	1.05962E-01	10.80		
	60	1207.94	2.09620E-02	49.84	Sum	
	61	1238.50	3.41366E-01	4.20	Tol.	CO-56
	62	1253.88	1.76849E-02	42.19	S-Esc	
	63	1280.98	7.83601E-02	18.87		
	64	1314.33	3.19973E-02	39.17		
	65	1336.44	1.36895E-02	58.60		
M	66	1378.07	2.68382E-01	4.21		
m	67	1385.73	5.39015E-02	14.87		
	68	1393.75	1.13634E-02	59.02		
M	69	1401.72	9.52509E-02	9.65		
	72	1509.73	1.34439E-01	9.67		
M	73	1539.58	2.21267E-02	40.44		
m	74	1543.36	2.34949E-02	37.90		
	75	1583.51	3.50641E-02	21.21		
	76	1593.85	1.71029E-02	48.67	Sum	
	77	1599.95	1.47506E-02	40.31		
	78	1661.90	6.33034E-02	11.07		
	79	1684.12	1.65625E-02	37.75		
	80	1694.35	1.17196E-02	58.66	S-Esc	
	81	1730.04	1.67455E-01	5.17	Sum	
M	83	1840.04	1.31342E-02	39.83		
m	84	1847.95	1.07207E-01	6.55	Sum	
	85	1873.71	1.44186E-02	42.43		
	86	1936.26	1.12981E-02	36.55		
	87	1964.98	5.31590E-03	52.38	Sum	
	88	2052.94	6.28407E-03	47.81		
	89	2073.08	5.05556E-03	50.02		
	90	2119.00	4.63107E-02	12.27		
	91	2146.21	4.44048E-03	58.66		
M	92	2192.87	8.27155E-03	33.01		
	94	2294.18	1.59874E-02	15.81		
	95	2409.92	1.91919E-03	65.03	Sum	
	96	2448.24	6.30225E-02	7.02		
	97	2468.99	1.86728E-03	55.79		
	98	2615.40	5.99927E-03	33.81	Tol.	TL-208
	99	2695.26	2.00617E-03	48.09		

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	-3.36E-01	4.83E+00	4.83E+00
+	NA-22	1274.54		99.94	-7.77E-03	1.84E-01	1.84E-01
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	3.92E-02	1.25E-01	1.25E-01
+	K-40	1460.81	*	10.67	2.21E+00	2.95E+00	2.95E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	1.08E-01	1.50E-01	1.50E-01
		78.34		96.00	5.23E-01		1.86E-01
+	SC-46	889.25		99.98	-1.12E-01	4.11E-01	4.11E-01
		1120.51		99.99	1.63E+01		1.32E+00
+	V-48	983.52		99.98	-1.09E+01	1.34E+01	1.34E+01
		1312.10		97.50	-4.13E-01		1.39E+01
+	CR-51	320.08		9.83	3.44E+00	1.82E+01	1.82E+01
+	MN-54	834.83		99.97	8.52E-03	2.24E-01	2.24E-01
+	CO-56	846.75		99.96	-1.59E-01	4.15E-01	4.15E-01
		1037.75		14.03	5.39E-01		3.02E+00
		1238.25		67.00	9.40E+00		1.39E+00
		1771.40		15.51	1.41E-01		2.92E+00
		2598.48		16.90	1.28E-01		5.44E-01
+	CO-57	122.06	*	85.51	1.16E-01	1.91E-01	1.91E-01
		136.48		10.60	1.32E-01		1.82E+00
+	CO-58	810.76		99.40	5.10E-02	4.72E-01	4.72E-01
+	FE-59	1099.22		56.50	-7.27E-01	1.44E+00	1.44E+00
		1291.56		43.20	-2.88E-01		1.87E+00
+	CO-60	1173.22		100.00	-5.27E-02	1.82E-01	1.83E-01
		1332.49		100.00	2.19E-02		1.82E-01
+	ZN-65	1115.52		50.75	-4.17E-02	6.13E-01	6.13E-01
+	GA-67	93.31		35.70	7.71E+09	8.32E+08	8.32E+08
		208.95		2.24	4.06E+09		1.28E+10
		300.22		16.00	1.02E+09		1.72E+09
+	SE-75	121.11		16.70	5.64E-01	4.40E-01	1.20E+00

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	1.82E-01	4.40E-01	4.49E-01
		264.65		59.80	-1.93E-01		4.40E-01
		279.53		25.20	6.62E-01		1.07E+00
		400.65		11.40	3.72E-01		2.50E+00
+	RB-82	776.52		13.00	6.61E+00	1.91E+01	1.91E+01
+	RB-83	520.41		46.00	3.49E-01	6.59E-01	6.59E-01
		529.64		30.30	2.12E-01		1.02E+00
		552.65		16.40	8.76E-01		1.90E+00
+	KR-85	513.99		0.43	-1.82E+01	3.33E+01	3.33E+01
+	SR-85	513.99		99.27	-2.29E-01	4.18E-01	4.18E-01
+	Y-88	898.02		93.40	1.54E-01	3.02E-01	3.97E-01
		1836.01		99.38	-1.50E-03		3.02E-01
+	MO-93	263.06		56.72	-1.69E-01	1.57E-01	2.65E-01
		684.67		99.68	2.29E-02		1.57E-01
		1477.11		99.08	5.31E-02		2.13E-01
+	NB-93M	16.57		9.43	0.00E+00	5.92E+00	5.92E+00
+	NB-94	702.63		100.00	2.81E-01	1.76E-01	1.76E-01
		871.10		100.00	8.88E-02		1.84E-01
+	NB-95	765.79		99.81	5.49E+00	1.99E+00	1.99E+00
+	NB-95M	235.69		25.00	2.90E+07	1.58E+08	1.58E+08
+	ZR-95	724.18		43.70	9.43E-02	8.75E-01	1.10E+00
		756.72		55.30	1.69E-01		8.75E-01
+	MO-99	181.06		6.20	1.90E+08	1.28E+11	2.51E+11
		739.58		12.80	1.56E+09		1.28E+11
		778.00		4.50	-1.39E+11		3.47E+11
+	RU-103	497.08		89.00	-3.07E-01	8.65E-01	8.65E-01
+	RU-106	621.84		9.80	-7.26E-01	1.79E+00	1.79E+00
+	AG-108M	433.93		89.90	-5.32E-02	1.56E-01	1.56E-01
		614.37		90.40	4.39E-02		2.04E-01
		722.95		90.50	-1.49E-03		1.86E-01
+	CD-109	88.03	*	3.72	2.65E+01	1.13E+01	1.13E+01
+	AG-110M	657.75		93.14	-1.77E-02	2.14E-01	2.14E-01
		677.61		10.53	-7.47E-01		1.86E+00
		706.67		16.46	-3.92E-02		1.34E+00
		763.93		21.98	-1.16E+01		1.23E+00
		884.67		71.63	1.40E-02		3.33E-01
		1384.27		23.94	-5.73E+00		1.21E+00
+	CD-113M	263.70		0.02	-1.97E+02	6.50E+02	6.50E+02
+	SN-113	255.12		1.93	3.99E+00	4.14E-01	1.47E+01
		391.69		64.90	6.85E-02		4.14E-01
+	TE123M	159.00		84.10	2.71E-02	3.40E-01	3.40E-01
+	SB-124	602.71		97.87	-2.69E-01	5.18E-01	5.18E-01
		645.85		7.26	1.68E+00		6.71E+00
		722.78		11.10	-1.11E+00		4.86E+00
		1691.02		49.00	-3.01E-01		1.09E+00
+	I-125	35.49		6.49	-3.53E+01	1.47E+01	1.47E+01
+	SB-125	176.33		6.89	-3.65E-01	5.68E-01	2.44E+00
		427.89		29.33	2.63E-01		5.68E-01

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	463.38		10.35	1.10E+00	5.68E-01	1.48E+00
		600.56		17.80	-1.99E-01		9.61E-01
		635.90		11.32	-3.06E-01		1.39E+00
+	SB-126	414.70		83.30	-9.23E+00	4.15E+01	5.05E+01
		666.33		99.60	1.29E+02		5.36E+01
		695.00		99.60	9.91E+00		4.15E+01
		720.50		53.80	1.12E+02		8.70E+01
+	SN-126	87.57	*	37.00	2.29E+00	9.82E-01	9.82E-01
+	SB-127	473.00		25.00	1.37E+07	3.07E+07	3.93E+07
		685.20		35.70	4.67E+06		3.07E+07
		783.80		14.70	1.70E+08		9.85E+07
+	I-129	29.78		57.00	2.85E+00	9.72E-01	9.72E-01
		33.60		13.20	7.85E+00		3.07E+00
		39.58		7.52	-9.95E-02		2.85E+00
+	I-131	284.30		6.05	7.25E+02	1.00E+03	1.44E+04
		364.48		81.20	7.67E+02		1.00E+03
		636.97		7.26	-6.13E+03		1.15E+04
		722.89		1.80	-4.29E+02		5.36E+04
+	TE-132	49.72		13.10	1.22E+09	3.30E+08	2.14E+09
		228.16		88.00	-3.49E+07		3.30E+08
+	BA-133	81.00		33.00	7.97E-01	2.40E-01	4.13E-01
		302.84		17.80	-4.13E-01		8.43E-01
		356.01		60.00	9.45E-02		2.40E-01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	3.94E+05	2.04E+05	2.04E+05
+	CS-134	563.23		8.38	-3.39E-01	2.03E-01	1.72E+00
		569.32		15.43	-4.54E-01		9.59E-01
		604.70		97.60	-3.03E-02		2.03E-01
		795.84		85.40	1.54E-01		2.21E-01
		801.93		8.73	1.40E-01		2.07E+00
+	CS-135	268.24		16.00	-4.02E-01	1.02E+00	1.02E+00
+	@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41		28.60	1.00E+26		1.00E+26
	@	1678.03		9.54	1.00E+26		1.00E+26
+	CS-136	153.22		7.46	4.86E+01	3.40E+01	4.38E+02
		163.89		4.61	1.29E+02		6.88E+02
		176.55		13.56	-3.42E+01		2.29E+02
		273.65		12.66	8.34E+01		2.51E+02
		340.57		48.50	-4.01E+00		6.18E+01
		818.50		99.70	-6.29E+00		3.40E+01
		1048.07		79.60	-4.08E+01		4.31E+01
		1235.34		19.70	1.62E+03		3.59E+02
+	CS-137	661.65		85.12	-9.79E-01	1.92E-01	1.92E-01
+	LA-138	788.74		34.00	1.20E+00	2.99E-01	6.14E-01
		1435.80		66.00	-3.55E-02		2.99E-01
+	CE-139	165.85		80.35	5.13E-02	3.27E-01	3.27E-01
+	BA-140	162.64		6.70	6.13E+02	1.24E+02	5.56E+02
		304.84		4.50	2.51E+02		7.50E+02
		423.70		3.20	-6.29E+02		1.13E+03

Analysis Report for 1707092-12

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		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
		BA-140	437.55		2.00	1.87E+03	1.24E+02	1.66E+03
			537.32		25.00	-5.10E+00		1.24E+02
+		LA-140	328.77		20.50	3.69E+01	5.03E+01	1.68E+02
			487.03		45.50	1.08E+02		7.49E+01
			815.85		23.50	-6.85E+01		1.61E+02
			1596.49		95.49	2.44E+01		5.03E+01
+		CE-141	145.44		48.40	1.98E+00	2.87E+00	2.87E+00
+	@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26
	@		293.26		42.00	1.00E+26		1.00E+26
	@		664.55		5.20	1.00E+26		1.00E+26
+		CE-144	133.54		10.80	-6.19E-02	1.35E+00	1.35E+00
+		PM-144	476.78		42.00	-2.75E-02	1.82E-01	3.94E-01
			618.01		98.60	7.32E-03		1.82E-01
			696.49		99.49	7.97E-02		1.86E-01
+		PM-145	36.85		21.70	-1.39E-01	6.44E-01	1.23E+00
			37.36		39.70	-1.35E-01		6.44E-01
			42.30		15.10	-1.27E-01		1.24E+00
			72.40		2.31	-1.18E+02		6.36E+00
+		PM-146	453.90		39.94	3.31E-01	3.77E-01	3.77E-01
			735.90		14.01	3.55E-01		1.20E+00
			747.13		13.10	-1.05E-01		1.25E+00
+		ND-147	91.11		28.90	-3.54E+03	2.73E+02	2.73E+02
			531.02		13.10	9.51E+01		5.95E+02
+		PM-149	285.90		3.10	1.64E+14	2.26E+14	2.26E+14
+		EU-152	121.78	*	20.50	3.79E-01	6.26E-01	6.26E-01
			244.69		5.40	-4.01E+01		3.45E+00
			344.27		19.13	2.51E-02		7.93E-01
			778.89	*	9.20	9.19E-01		1.77E+00
			964.01	*	10.40	1.56E+00		2.28E+00
			1085.78		7.22	7.79E-01		2.45E+00
			1112.02		9.60	-4.34E-01		1.87E+00
			1407.95	*	14.94	7.39E+00		2.51E+00
+		GD-153	97.43		31.30	1.16E-01	4.64E-01	4.64E-01
			103.18		22.20	9.23E-03		6.29E-01
+		EU-154	123.07		40.50	-5.43E-02	2.80E-01	2.80E-01
			723.30		19.70	-7.00E-03		8.74E-01
			873.19		11.50	4.67E-02		1.62E+00
			996.32		10.30	1.55E-01		1.73E+00
			1004.76		17.90	2.14E-01		1.15E+00
			1274.45		35.50	-2.08E-02		4.92E-01
+		EU-155	86.50		30.90	3.16E+00	5.16E-01	5.16E-01
			105.30		20.70	-1.32E-01		5.29E-01
+		EU-156	811.77		10.40	5.78E+00	1.55E+02	1.55E+02
			1153.47		7.20	9.74E+02		3.38E+02
			1230.71		8.90	-4.57E+01		1.85E+02
+		HO-166M	184.41		72.60	4.03E+00	2.98E-01	3.33E-01
			280.45		29.60	-2.01E-01		5.09E-01
			410.94		11.10	5.85E-02		1.36E+00
			711.69		54.10	2.76E-01		2.98E-01

Analysis Report for 1707092-12

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TM-171	66.72		0.14	2.22E+01	1.11E+02	1.11E+02
+	HF-172	67.35		5.31	2.14E+00	1.10E+00	2.96E+00
		125.81		11.30	3.76E-01		1.10E+00
+	LU-172	181.53		20.60	2.82E+02	8.32E+03	2.54E+04
		900.72		29.81	7.47E+03		2.10E+04
		1093.66		62.50	-2.12E+03		8.32E+03
+	LU-173	100.72		5.24	-1.21E+00	9.23E-01	2.31E+00
		272.11		21.20	-2.44E-02		9.23E-01
+	HF-175	343.40		84.00	9.58E-02	4.84E-01	4.84E-01
+	LU-176	88.34		13.30	1.59E+00	1.55E-01	1.10E+00
		201.83		86.00	1.11E-01		1.85E-01
		306.78		94.00	-8.49E-02		1.55E-01
+	HF-181	133.02		41.70	-3.69E-02	8.96E-01	1.41E+00
		345.85		17.20	-3.37E+00		4.54E+00
		482.03		82.80	2.77E-01		8.96E-01
+	TA-182	67.75		41.20	4.55E-01	6.30E-01	6.30E-01
		1121.30		34.90	3.64E+01		3.01E+00
		1189.05		16.23	-9.84E-01		1.90E+00
		1221.41		26.98	-4.04E-01		1.15E+00
		1231.02		11.44	-6.69E-01		2.71E+00
+	IR-192	308.46		29.68	-2.37E-01	7.35E-01	1.25E+00
		468.07		48.10	1.04E-01		7.35E-01
+	HG-203	279.19		77.30	5.47E-02	8.63E-01	8.63E-01
+	TL-204	374.74		94.11	-6.09E-02	1.60E-01	1.60E-01
		899.15		99.16	1.10E-01		2.07E-01
		911.74		91.10	-1.66E-02		2.17E-01
+	BI-207	569.67		97.72	-6.58E-02	1.39E-01	1.39E-01
		1063.62		74.90	4.96E-02		2.33E-01
+	TL-208	583.14		30.22	4.07E-01	2.63E-01	4.97E-01
		860.37		4.48	1.41E+00		3.90E+00
		2614.66		35.85	2.38E-01		2.63E-01
+	BI-210M	262.00		45.00	-5.85E-01	3.35E-01	3.35E-01
		300.00		23.00	3.83E-01		6.46E-01
+	PB-210	46.50	*	4.25	1.87E+01	6.66E+00	6.66E+00
+	PB-211	404.84		2.90	2.19E+00	5.61E+00	5.61E+00
		831.96		2.90	-1.06E-01		6.07E+00
+	BI-212	727.17		11.80	4.65E-01	1.33E+00	1.33E+00
		1620.62		2.75	-1.71E+00		6.11E+00
+	PB-212	238.63	*	44.60	4.17E-01	7.78E-01	7.78E-01
		300.09		3.41	2.59E+00		4.36E+00
+	BI-214	609.31	*	46.30	4.22E+01	5.65E-01	5.65E-01
		1120.29	*	15.10	4.68E+01		2.20E+00
		1764.49	*	15.80	4.82E+01		1.91E+00
		2204.22	*	4.98	4.51E+01		4.39E+00
+	PB-214	295.21	*	19.19	4.57E+01	6.17E-01	9.42E-01
		351.92	*	37.19	4.57E+01		6.17E-01
+	RN-219	401.80		6.50	1.20E+00	2.48E+00	2.48E+00
+	RA-223	323.87		3.88	1.36E+00	3.80E+00	3.80E+00

Analysis Report for 1707092-12

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-224	240.98		3.95	8.57E+01	6.68E+00	6.68E+00
+	RA-225	40.00		31.00	-2.58E+00	7.39E+01	7.39E+01
+	RA-226	186.21	*	3.28	9.43E+01	8.32E+00	8.32E+00
+	TH-227	50.10		8.40	1.00E+00	1.76E+00	1.76E+00
		236.00	*	11.50	2.60E+00		2.99E+00
		256.20	*	6.30	1.98E+00		3.50E+00
+	AC-228	338.32	*	11.40	8.69E-01	6.61E-01	1.39E+00
		911.07	*	27.70	4.11E-01		6.61E-01
		969.11		16.60	9.42E-01		1.10E+00
+	TH-230	48.44		16.90	-5.15E+00	9.08E-01	9.08E-01
		62.85		4.60	2.52E+01		3.81E+00
		67.67		0.37	2.76E+01		3.82E+01
+	PA-231	283.67		1.60	4.77E-01	6.40E+00	9.46E+00
		302.67		2.30	-3.14E+00		6.40E+00
+	TH-231	25.64		14.70	0.00E+00	1.05E-01	1.05E-01
		84.21	*	6.40	7.97E+00		5.66E+00
+	PA-233	311.98		38.60	-6.93E-01	5.05E+00	5.05E+00
+	PA-234	131.20		20.40	-2.52E-02	5.66E-01	5.66E-01
		733.99		8.80	2.07E-02		1.80E+00
		946.00		12.00	1.49E-01		1.47E+00
+	PA-234M	1001.03	*	0.92	5.81E+01	3.02E+01	3.02E+01
+	TH-234	63.29	*	3.80	2.56E+01	6.69E+00	6.69E+00
+	U-235	143.76	*	10.50	3.14E+00	2.04E+00	2.04E+00
		163.35	*	4.70	1.88E+00		3.55E+00
		205.31	*	4.70	2.62E+00		3.49E+00
+	NP-237	86.50		12.60	7.47E+00	1.22E+00	1.22E+00
+	NP-239	106.10		22.70	-7.89E+11	3.15E+12	3.15E+12
		228.18		10.70	-1.04E+12		9.78E+12
		277.60		14.10	-2.47E+12		7.18E+12
+	AM-241	59.54		35.90	-2.44E-01	3.90E-01	3.90E-01
+	AM-243	74.67		66.00	-2.18E+00	2.93E-01	2.93E-01
+	CM-243	209.75		3.29	3.64E+00	1.07E+00	4.73E+00
		228.14		10.60	-1.55E-01		1.47E+00
		277.60		14.00	-3.69E-01		1.07E+00

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1707092-12

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NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	4.83E+00	4.83E+00	-3.36E-01	2.37E+00
	NA-22	1274.54		99.94	1.84E-01	1.84E-01	-7.77E-03	8.90E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	1.25E-01	1.25E-01	3.92E-02	5.89E-02
+	K-40	1460.81	*	10.67	2.95E+00	2.95E+00	2.21E+00	1.45E+00
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	1.50E-01	1.50E-01	1.08E-01	7.44E-02
		78.34		96.00	1.86E-01		5.23E-01	9.23E-02
	SC-46	889.25		99.98	4.11E-01	4.11E-01	-1.12E-01	2.01E-01
		1120.51		99.99	1.32E+00		1.63E+01	6.54E-01
	V-48	983.52		99.98	1.34E+01	1.34E+01	-1.09E+01	6.51E+00
		1312.10		97.50	1.39E+01		-4.13E-01	6.73E+00
	CR-51	320.08		9.83	1.82E+01	1.82E+01	3.44E+00	8.96E+00
	MN-54	834.83		99.97	2.24E-01	2.24E-01	8.52E-03	1.10E-01
	CO-56	846.75		99.96	4.15E-01	4.15E-01	-1.59E-01	2.02E-01
		1037.75		14.03	3.02E+00		5.39E-01	1.47E+00
		1238.25		67.00	1.39E+00		9.40E+00	6.86E-01
		1771.40		15.51	2.92E+00		1.41E-01	1.40E+00
		2598.48		16.90	5.44E-01		1.28E-01	2.11E-01
	CO-57	122.06	*	85.51	1.91E-01	1.91E-01	1.16E-01	9.49E-02
		136.48		10.60	1.82E+00		1.32E-01	9.01E-01
	CO-58	810.76		99.40	4.72E-01	4.72E-01	5.10E-02	2.30E-01
	FE-59	1099.22		56.50	1.44E+00	1.44E+00	-7.27E-01	7.01E-01
		1291.56		43.20	1.87E+00		-2.88E-01	9.04E-01
	CO-60	1173.22		100.00	1.83E-01	1.82E-01	-5.27E-02	8.87E-02
		1332.49		100.00	1.82E-01		2.19E-02	8.77E-02
	ZN-65	1115.52		50.75	6.13E-01	6.13E-01	-4.17E-02	3.00E-01
	GA-67	93.31		35.70	8.32E+08	8.32E+08	7.71E+09	4.13E+08
		208.95		2.24	1.28E+10		4.06E+09	6.32E+09
		300.22		16.00	1.72E+09		1.02E+09	8.47E+08
	SE-75	121.11		16.70	1.20E+00	4.40E-01	5.64E-01	5.95E-01
		136.00		59.20	4.49E-01		1.82E-01	2.23E-01
		264.65		59.80	4.40E-01		-1.93E-01	2.18E-01
		279.53		25.20	1.07E+00		6.62E-01	5.28E-01
		400.65		11.40	2.50E+00		3.72E-01	1.23E+00
	RB-82	776.52		13.00	1.91E+01	1.91E+01	6.61E+00	9.32E+00
	RB-83	520.41		46.00	6.59E-01	6.59E-01	3.49E-01	3.23E-01
		529.64		30.30	1.02E+00		2.12E-01	4.99E-01
		552.65		16.40	1.90E+00		8.76E-01	9.31E-01
	KR-85	513.99		0.43	3.33E+01	3.33E+01	-1.82E+01	1.63E+01
	SR-85	513.99		99.27	4.18E-01	4.18E-01	-2.29E-01	2.05E-01

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	Y-88	898.02		93.40	3.97E-01	3.02E-01	1.54E-01	1.94E-01
		1836.01		99.38	3.02E-01		-1.50E-03	1.44E-01
	MO-93	263.06		56.72	2.65E-01	1.57E-01	-1.69E-01	1.31E-01
		684.67		99.68	1.57E-01		2.29E-02	7.68E-02
		1477.11		99.08	2.13E-01		5.31E-02	1.03E-01
	NB-93M	16.57		9.43	5.92E+00	5.92E+00	0.00E+00	0.00E+00
	NB-94	702.63		100.00	1.76E-01	1.76E-01	2.81E-01	8.62E-02
		871.10		100.00	1.84E-01		8.88E-02	8.97E-02
	NB-95	765.79		99.81	1.99E+00	1.99E+00	5.49E+00	9.81E-01
	NB-95M	235.69		25.00	1.58E+08	1.58E+08	2.90E+07	7.81E+07
	ZR-95	724.18		43.70	1.10E+00	8.75E-01	9.43E-02	5.38E-01
		756.72		55.30	8.75E-01		1.69E-01	4.27E-01
	MO-99	181.06		6.20	2.51E+11	1.28E+11	1.90E+08	1.24E+11
		739.58		12.80	1.28E+11		1.56E+09	6.28E+10
		778.00		4.50	3.47E+11		-1.39E+11	1.70E+11
	RU-103	497.08		89.00	8.65E-01	8.65E-01	-3.07E-01	4.24E-01
	RU-106	621.84		9.80	1.79E+00	1.79E+00	-7.26E-01	8.76E-01
	AG-108M	433.93		89.90	1.56E-01	1.56E-01	-5.32E-02	7.66E-02
		614.37		90.40	2.04E-01		4.39E-02	1.00E-01
		722.95		90.50	1.86E-01		-1.49E-03	9.11E-02
+	CD-109	88.03	*	3.72	1.13E+01	1.13E+01	2.65E+01	5.65E+00
	AG-110M	657.75		93.14	2.14E-01	2.14E-01	-1.77E-02	1.04E-01
		677.61		10.53	1.86E+00		-7.47E-01	9.07E-01
		706.67		16.46	1.34E+00		-3.92E-02	6.56E-01
		763.93		21.98	1.23E+00		-1.16E+01	6.05E-01
		884.67		71.63	3.33E-01		1.40E-02	1.62E-01
		1384.27		23.94	1.21E+00		-5.73E+00	5.87E-01
	CD-113M	263.70		0.02	6.50E+02	6.50E+02	-1.97E+02	3.21E+02
	SN-113	255.12		1.93	1.47E+01	4.14E-01	3.99E+00	7.29E+00
		391.69		64.90	4.14E-01		6.85E-02	2.04E-01
	TE123M	159.00		84.10	3.40E-01	3.40E-01	2.71E-02	1.69E-01
	SB-124	602.71		97.87	5.18E-01	5.18E-01	-2.69E-01	2.54E-01
		645.85		7.26	6.71E+00		1.68E+00	3.28E+00
		722.78		11.10	4.86E+00		-1.11E+00	2.38E+00
		1691.02		49.00	1.09E+00		-3.01E-01	5.21E-01
	I-125	35.49		6.49	1.47E+01	1.47E+01	-3.53E+01	7.26E+00
	SB-125	176.33		6.89	2.44E+00	5.68E-01	-3.65E-01	1.21E+00
		427.89		29.33	5.68E-01		2.63E-01	2.79E-01
		463.38		10.35	1.48E+00		1.10E+00	7.26E-01
		600.56		17.80	9.61E-01		-1.99E-01	4.71E-01
		635.90		11.32	1.39E+00		-3.06E-01	6.79E-01
	SB-126	414.70		83.30	5.05E+01	4.15E+01	-9.23E+00	2.49E+01
		666.33		99.60	5.36E+01		1.29E+02	2.63E+01
		695.00		99.60	4.15E+01		9.91E+00	2.03E+01
		720.50		53.80	8.70E+01		1.12E+02	4.26E+01
+	SN-126	87.57	*	37.00	9.82E-01	9.82E-01	2.29E+00	4.89E-01
	SB-127	473.00		25.00	3.93E+07	3.07E+07	1.37E+07	1.93E+07
		685.20		35.70	3.07E+07		4.67E+06	1.50E+07
		783.80		14.70	9.85E+07		1.70E+08	4.83E+07
	I-129	29.78		57.00	9.72E-01	9.72E-01	2.85E+00	4.80E-01
		33.60		13.20	3.07E+00		7.85E+00	1.52E+00
		39.58		7.52	2.85E+00		-9.95E-02	1.41E+00
	I-131	284.30		6.05	1.44E+04	1.00E+03	7.25E+02	7.10E+03

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-131	364.48	81.20	1.00E+03	1.00E+03	7.67E+02	4.93E+02
	636.97	7.26	1.15E+04		-6.13E+03	5.64E+03
	722.89	1.80	5.36E+04		-4.29E+02	2.62E+04
TE-132	49.72	13.10	2.14E+09	3.30E+08	1.22E+09	1.06E+09
	228.16	88.00	3.30E+08		-3.49E+07	1.63E+08
BA-133	81.00	33.00	4.13E-01	2.40E-01	7.97E-01	2.05E-01
	302.84	17.80	8.43E-01		-4.13E-01	4.16E-01
	356.01	60.00	2.40E-01		9.45E-02	1.18E-01
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	2.04E+05	2.04E+05	3.94E+05	1.01E+05
CS-134	563.23	8.38	1.72E+00	2.03E-01	-3.39E-01	8.39E-01
	569.32	15.43	9.59E-01		-4.54E-01	4.69E-01
	604.70	97.60	2.03E-01		-3.03E-02	9.95E-02
	795.84	85.40	2.21E-01		1.54E-01	1.08E-01
	801.93	8.73	2.07E+00		1.40E-01	1.01E+00
CS-135	268.24	16.00	1.02E+00	1.02E+00	-4.02E-01	5.03E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	4.38E+02	3.40E+01	4.86E+01	2.17E+02
	163.89	4.61	6.88E+02		1.29E+02	3.41E+02
	176.55	13.56	2.29E+02		-3.42E+01	1.13E+02
	273.65	12.66	2.51E+02		8.34E+01	1.24E+02
	340.57	48.50	6.18E+01		-4.01E+00	3.05E+01
	818.50	99.70	3.40E+01		-6.29E+00	1.66E+01
	1048.07	79.60	4.31E+01		-4.08E+01	2.09E+01
	1235.34	19.70	3.59E+02		1.62E+03	1.77E+02
CS-137	661.65	85.12	1.92E-01	1.92E-01	-9.79E-01	9.38E-02
LA-138	788.74	34.00	6.14E-01	2.99E-01	1.20E+00	3.01E-01
	1435.80	66.00	2.99E-01		-3.55E-02	1.45E-01
CE-139	165.85	80.35	3.27E-01	3.27E-01	5.13E-02	1.62E-01
BA-140	162.64	6.70	5.56E+02	1.24E+02	6.13E+02	2.76E+02
	304.84	4.50	7.50E+02		2.51E+02	3.70E+02
	423.70	3.20	1.13E+03		-6.29E+02	5.54E+02
	437.55	2.00	1.66E+03		1.87E+03	8.15E+02
	537.32	25.00	1.24E+02		-5.10E+00	6.07E+01
LA-140	328.77	20.50	1.68E+02	5.03E+01	3.69E+01	8.31E+01
	487.03	45.50	7.49E+01		1.08E+02	3.68E+01
	815.85	23.50	1.61E+02		-6.85E+01	7.83E+01
	1596.49	95.49	5.03E+01		2.44E+01	2.43E+01
CE-141	145.44	48.40	2.87E+00	2.87E+00	1.98E+00	1.43E+00
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	1.35E+00	1.35E+00	-6.19E-02	6.67E-01
PM-144	476.78	42.00	3.94E-01	1.82E-01	-2.75E-02	1.93E-01
	618.01	98.60	1.82E-01		7.32E-03	8.92E-02
	696.49	99.49	1.86E-01		7.97E-02	9.10E-02
PM-145	36.85	21.70	1.23E+00	6.44E-01	-1.39E-01	6.07E-01
	37.36	39.70	6.44E-01		-1.35E-01	3.18E-01
	42.30	15.10	1.24E+00		-1.27E-01	6.13E-01
	72.40	2.31	6.36E+00		-1.18E+02	3.16E+00
PM-146	453.90	39.94	3.77E-01	3.77E-01	3.31E-01	1.85E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PM-146	735.90		14.01	1.20E+00	3.77E-01	3.55E-01	5.84E-01
		747.13		13.10	1.25E+00		-1.05E-01	6.11E-01
	ND-147	91.11		28.90	2.73E+02	2.73E+02	-3.54E+03	1.36E+02
		531.02		13.10	5.95E+02		9.51E+01	2.91E+02
	PM-149	285.90		3.10	2.26E+14	2.26E+14	1.64E+14	1.12E+14
+	EU-152	121.78	*	20.50	6.26E-01	6.26E-01	3.79E-01	3.10E-01
		244.69		5.40	3.45E+00		-4.01E+01	1.71E+00
		344.27		19.13	7.93E-01		2.51E-02	3.91E-01
		778.89	*	9.20	1.77E+00		9.19E-01	8.66E-01
		964.01	*	10.40	2.28E+00		1.56E+00	1.12E+00
		1085.78		7.22	2.45E+00		7.79E-01	1.19E+00
		1112.02		9.60	1.87E+00		-4.34E-01	9.05E-01
		1407.95	*	14.94	2.51E+00		7.39E+00	1.24E+00
	GD-153	97.43		31.30	4.64E-01	4.64E-01	1.16E-01	2.30E-01
		103.18		22.20	6.29E-01		9.23E-03	3.12E-01
	EU-154	123.07		40.50	2.80E-01	2.80E-01	-5.43E-02	1.39E-01
		723.30		19.70	8.74E-01		-7.00E-03	4.27E-01
		873.19		11.50	1.62E+00		4.67E-02	7.89E-01
		996.32		10.30	1.73E+00		1.55E-01	8.41E-01
		1004.76		17.90	1.15E+00		2.14E-01	5.61E-01
		1274.45		35.50	4.92E-01		-2.08E-02	2.38E-01
	EU-155	86.50		30.90	5.16E-01	5.16E-01	3.16E+00	2.56E-01
		105.30		20.70	5.29E-01		-1.32E-01	2.62E-01
	EU-156	811.77		10.40	1.55E+02	1.55E+02	5.78E+00	7.56E+01
		1153.47		7.20	3.38E+02		9.74E+02	1.65E+02
		1230.71		8.90	1.85E+02		-4.57E+01	8.96E+01
	HO-166M	184.41		72.60	3.33E-01	2.98E-01	4.03E+00	1.65E-01
		280.45		29.60	5.09E-01		-2.01E-01	2.52E-01
		410.94		11.10	1.36E+00		5.85E-02	6.68E-01
		711.69		54.10	2.98E-01		2.76E-01	1.46E-01
	TM-171	66.72		0.14	1.11E+02	1.11E+02	2.22E+01	5.52E+01
	HF-172	67.35		5.31	2.96E+00	1.10E+00	2.14E+00	1.47E+00
		125.81		11.30	1.10E+00		3.76E-01	5.45E-01
	LU-172	181.53		20.60	2.54E+04	8.32E+03	2.82E+02	1.26E+04
		900.72		29.81	2.10E+04		7.47E+03	1.03E+04
		1093.66		62.50	8.32E+03		-2.12E+03	4.03E+03
	LU-173	100.72		5.24	2.31E+00	9.23E-01	-1.21E+00	1.14E+00
		272.11		21.20	9.23E-01		-2.44E-02	4.57E-01
	HF-175	343.40		84.00	4.84E-01	4.84E-01	9.58E-02	2.39E-01
	LU-176	88.34		13.30	1.10E+00	1.55E-01	1.59E+00	5.48E-01
		201.83		86.00	1.85E-01		1.11E-01	9.18E-02
		306.78		94.00	1.55E-01		-8.49E-02	7.64E-02
	HF-181	133.02		41.70	1.41E+00	8.96E-01	-3.69E-02	6.99E-01
		345.85		17.20	4.54E+00		-3.37E+00	2.24E+00
		482.03		82.80	8.96E-01		2.77E-01	4.40E-01
	TA-182	67.75		41.20	6.30E-01	6.30E-01	4.55E-01	3.13E-01
		1121.30		34.90	3.01E+00		3.64E+01	1.49E+00
		1189.05		16.23	1.90E+00		-9.84E-01	9.20E-01
		1221.41		26.98	1.15E+00		-4.04E-01	5.57E-01
		1231.02		11.44	2.71E+00		-6.69E-01	1.31E+00
	IR-192	308.46		29.68	1.25E+00	7.35E-01	-2.37E-01	6.17E-01
		468.07		48.10	7.35E-01		1.04E-01	3.61E-01
	HG-203	279.19		77.30	8.63E-01	8.63E-01	5.47E-02	4.26E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-204	374.74		94.11	1.60E-01	1.60E-01	-6.09E-02	7.89E-02
		899.15		99.16	2.07E-01		1.10E-01	1.01E-01
		911.74		91.10	2.17E-01		-1.66E-02	1.06E-01
	BI-207	569.67		97.72	1.39E-01	1.39E-01	-6.58E-02	6.79E-02
		1063.62		74.90	2.33E-01		4.96E-02	1.13E-01
	TL-208	583.14		30.22	4.97E-01	2.63E-01	4.07E-01	2.44E-01
		860.37		4.48	3.90E+00		1.41E+00	1.90E+00
		2614.66		35.85	2.63E-01		2.38E-01	1.20E-01
	BI-210M	262.00		45.00	3.35E-01	3.35E-01	-5.85E-01	1.65E-01
		300.00		23.00	6.46E-01		3.83E-01	3.19E-01
+	PB-210	46.50	*	4.25	6.66E+00	6.66E+00	1.87E+01	3.31E+00
	PB-211	404.84		2.90	5.61E+00	5.61E+00	2.19E+00	2.76E+00
		831.96		2.90	6.07E+00		-1.06E-01	2.96E+00
	BI-212	727.17		11.80	1.33E+00	1.33E+00	4.65E-01	6.52E-01
		1620.62		2.75	6.11E+00		-1.71E+00	2.93E+00
+	PB-212	238.63	*	44.60	7.78E-01	7.78E-01	4.17E-01	3.87E-01
		300.09		3.41	4.36E+00		2.59E+00	2.15E+00
+	BI-214	609.31	*	46.30	5.65E-01	5.65E-01	4.22E+01	2.79E-01
		1120.29	*	15.10	2.20E+00		4.68E+01	1.08E+00
		1764.49	*	15.80	1.91E+00		4.82E+01	9.34E-01
		2204.22	*	4.98	4.39E+00		4.51E+01	2.11E+00
+	PB-214	295.21	*	19.19	9.42E-01	6.17E-01	4.57E+01	4.66E-01
		351.92	*	37.19	6.17E-01		4.57E+01	3.05E-01
	RN-219	401.80		6.50	2.48E+00	2.48E+00	1.20E+00	1.22E+00
	RA-223	323.87		3.88	3.80E+00	3.80E+00	1.36E+00	1.87E+00
	RA-224	240.98		3.95	6.68E+00	6.68E+00	8.57E+01	3.32E+00
	RA-225	40.00		31.00	7.39E+01	7.39E+01	-2.58E+00	3.65E+01
+	RA-226	186.21	*	3.28	8.32E+00	8.32E+00	9.43E+01	4.14E+00
+	TH-227	50.10		8.40	1.76E+00	1.76E+00	1.00E+00	8.70E-01
		236.00	*	11.50	2.99E+00		2.60E+00	1.49E+00
		256.20	*	6.30	3.50E+00		1.98E+00	1.74E+00
+	AC-228	338.32	*	11.40	1.39E+00	6.61E-01	8.69E-01	6.84E-01
		911.07	*	27.70	6.61E-01		4.11E-01	3.23E-01
		969.11		16.60	1.10E+00		9.42E-01	5.34E-01
	TH-230	48.44		16.90	9.08E-01	9.08E-01	-5.15E+00	4.49E-01
		62.85		4.60	3.81E+00		2.52E+01	1.89E+00
		67.67		0.37	3.82E+01		2.76E+01	1.90E+01
	PA-231	283.67		1.60	9.46E+00	6.40E+00	4.77E-01	4.68E+00
		302.67		2.30	6.40E+00		-3.14E+00	3.16E+00
+	TH-231	25.64		14.70	1.05E-01	1.05E-01	0.00E+00	0.00E+00
		84.21	*	6.40	5.66E+00		7.97E+00	2.82E+00
	PA-233	311.98		38.60	5.05E+00	5.05E+00	-6.93E-01	2.49E+00
	PA-234	131.20		20.40	5.66E-01	5.66E-01	-2.52E-02	2.80E-01
		733.99		8.80	1.80E+00		2.07E-02	8.77E-01
		946.00		12.00	1.47E+00		1.49E-01	7.17E-01
+	PA-234M	1001.03	*	0.92	3.02E+01	3.02E+01	5.81E+01	1.48E+01
+	TH-234	63.29	*	3.80	6.69E+00	6.69E+00	2.56E+01	3.33E+00
+	U-235	143.76	*	10.50	2.04E+00	2.04E+00	3.14E+00	1.01E+00
		163.35	*	4.70	3.55E+00		1.88E+00	1.76E+00
		205.31	*	4.70	3.49E+00		2.62E+00	1.73E+00
	NP-237	86.50		12.60	1.22E+00	1.22E+00	7.47E+00	6.05E-01
	NP-239	106.10		22.70	3.15E+12	3.15E+12	-7.89E+11	1.56E+12
		228.18		10.70	9.78E+12		-1.04E+12	4.84E+12

Analysis Report for 1707092-12

HTC-A09-S001-0006-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NP-239	277.60	14.10	7.18E+12	3.15E+12	-2.47E+12	3.55E+12
AM-241	59.54	35.90	3.90E-01	3.90E-01	-2.44E-01	1.93E-01
AM-243	74.67	66.00	2.93E-01	2.93E-01	-2.18E+00	1.46E-01
CM-243	209.75	3.29	4.73E+00	1.07E+00	3.64E+00	2.34E+00
	228.14	10.60	1.47E+00		-1.55E-01	7.26E-01
	277.60	14.00	1.07E+00		-3.69E-01	5.31E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: HTC-A09-S001-0006-01

Elapsed Live time: 3600
Elapsed Real Time: 3614

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	450	822	755	759
33:	789	1382	823	789	799	795	793	823
41:	779	804	856	864	876	1031	2215	1014
49:	938	1078	1130	1060	1341	1577	1170	1119
57:	1214	1258	1360	1462	1596	1609	2531	3506
65:	1680	1705	1713	1983	1830	1802	1843	1935
73:	2058	2273	5766	3346	6743	6042	1838	2038
81:	1907	1732	1585	2591	1871	1572	2962	3086
89:	1593	2312	1797	2215	4756	1979	1648	1273
97:	1065	1321	1398	1217	1153	1142	1133	1164
105:	1148	1176	1127	1178	1203	1226	1203	1304
113:	1425	1172	1169	1147	1169	1145	1133	1182
121:	1206	1211	1167	1103	1165	1165	1162	1147
129:	1175	1229	1174	1158	1199	1083	1137	1137
137:	1191	1208	1069	1183	1204	1204	1262	1722
145:	1287	1187	1098	1206	1240	1261	1203	1256
153:	1191	1371	1265	1230	1178	1123	1116	1105
161:	1139	1075	1197	1203	1005	1008	1050	1039
169:	1021	1012	994	990	956	989	1002	938
177:	946	959	964	960	997	981	1003	1007
185:	1569	4541	2735	1002	912	905	875	888
193:	923	936	908	916	907	855	846	894
201:	845	813	853	782	876	906	757	736
209:	727	761	788	724	670	700	675	716
217:	703	712	652	678	669	701	719	639
225:	709	692	642	663	654	679	647	668
233:	643	660	681	986	728	716	813	641
241:	1112	4519	2011	624	564	551	541	540
249:	544	523	537	531	551	575	528	644
257:	591	635	809	601	498	534	509	470
265:	482	482	517	498	706	753	717	641
273:	505	556	596	490	431	473	508	462
281:	487	455	460	505	467	470	457	467
289:	427	441	474	466	452	1170	7578	5298
297:	513	384	407	493	419	388	401	399
305:	422	382	379	379	380	419	356	396
313:	370	423	411	358	367	349	364	331
321:	380	384	345	395	377	338	336	368
329:	377	408	372	381	390	380	360	377
337:	354	429	416	334	356	329	370	356
345:	346	331	338	385	419	571	4312	14189
353:	4150	314	282	319	287	266	260	276
361:	263	283	260	299	311	275	255	271

369:	254	274	265	297	265	280	277	294

Sample Title: HTC-A09-S001-0006-01

Channel								
377:	284	291	299	277	290	241	278	284
385:	280	322	349	301	400	302	275	253
393:	275	272	261	289	294	319	285	293
401:	318	372	304	309	404	311	282	265
409:	230	275	263	296	283	270	275	274
417:	286	276	244	276	288	283	280	277
425:	262	282	302	287	247	232	249	220
433:	225	179	215	227	230	229	214	193
441:	205	201	212	214	247	179	177	167
449:	218	186	201	182	205	225	256	207
457:	187	180	167	182	238	228	175	183
465:	182	183	180	176	190	195	170	189
473:	164	225	178	171	155	194	181	237
481:	226	177	154	163	144	215	264	218
489:	156	161	149	150	153	155	148	171
497:	148	147	146	165	167	160	146	119
505:	146	152	151	163	200	244	271	229
513:	162	154	165	135	146	141	157	152
521:	152	147	124	142	136	148	143	157
529:	147	153	158	130	168	161	129	145
537:	168	131	133	123	132	153	161	172
545:	165	138	144	149	135	141	142	145
553:	135	160	125	128	151	127	133	110
561:	110	132	131	115	133	144	124	129
569:	130	120	144	155	130	141	126	133
577:	119	144	136	210	166	139	169	161
585:	141	97	119	104	137	132	126	130
593:	105	132	116	119	125	137	114	114
601:	111	126	110	124	132	153	304	2270
609:	8622	5456	458	110	100	91	107	104
617:	107	104	85	89	92	95	103	91
625:	99	101	92	87	83	100	91	121
633:	98	87	94	123	92	65	84	90
641:	87	99	87	86	104	95	109	92
649:	113	88	100	106	85	91	91	93
657:	92	90	85	99	115	108	101	139
665:	311	274	91	77	73	86	98	91
673:	90	84	84	93	84	83	77	84
681:	81	101	85	91	86	90	94	92
689:	106	82	69	71	82	82	97	74
697:	95	90	83	86	83	167	165	115
705:	92	72	76	99	85	88	94	96
713:	90	96	78	79	80	94	114	144
721:	111	94	80	83	76	101	91	83
729:	85	76	78	69	86	88	92	89
737:	88	73	101	97	91	140	128	94
745:	83	71	88	85	82	73	83	94
753:	88	81	65	92	83	109	81	80
761:	75	81	83	77	104	165	357	809
769:	557	116	74	88	76	79	73	89
777:	93	88	75	84	61	97	90	110
785:	197	263	136	82	94	64	88	95
793:	81	95	91	76	88	86	83	68

801:	67	81	89	81	147	240	146	80

Sample Title: HTC-A09-S001-0006-01

Channel								
809:	75	89	73	76	81	72	66	78
817:	81	78	64	104	109	84	81	87
825:	78	124	98	91	70	84	90	117
833:	71	74	80	104	82	132	154	107
841:	74	90	80	75	72	90	92	81
849:	59	74	97	74	87	84	87	65
857:	86	66	73	82	88	70	90	74
865:	69	66	81	81	96	74	93	91
873:	83	85	64	99	91	69	84	85
881:	78	88	90	72	82	71	85	60
889:	94	94	80	70	97	80	78	102
897:	90	100	85	100	96	73	90	82
905:	79	87	80	69	101	102	88	81
913:	75	72	87	86	91	64	74	69
921:	66	73	81	85	77	88	61	77
929:	73	69	91	118	277	460	188	91
937:	79	76	67	69	78	71	76	66
945:	59	73	70	70	73	54	72	58
953:	56	73	66	53	69	68	71	69
961:	83	73	86	115	101	63	57	80
969:	86	77	68	63	62	47	82	51
977:	70	81	71	61	53	67	60	60
985:	67	60	60	80	66	70	70	63
993:	57	62	42	60	62	70	79	147
1001:	161	94	75	64	46	65	67	69
1009:	42	56	62	77	55	50	57	65
1017:	45	62	56	65	65	60	55	55
1025:	59	52	54	46	70	50	65	56
1033:	61	54	51	72	52	57	64	57
1041:	61	46	50	52	72	63	44	54
1049:	46	62	88	80	68	59	51	56
1057:	51	52	39	59	64	51	51	49
1065:	47	61	51	58	83	97	47	34
1073:	44	46	47	45	52	61	48	56
1081:	56	55	57	55	66	44	49	48
1089:	50	39	39	44	34	51	52	53
1097:	48	45	52	56	59	42	71	52
1105:	58	50	37	48	58	43	47	50
1113:	56	67	56	68	96	262	934	1691
1121:	874	126	58	46	44	53	45	41
1129:	47	45	41	53	72	73	54	33
1137:	42	46	49	41	46	48	46	50
1145:	44	52	51	62	44	56	45	55
1153:	61	165	212	111	33	54	46	34
1161:	47	41	43	37	43	51	51	46
1169:	55	48	60	46	34	48	46	54
1177:	54	52	51	41	67	56	51	43
1185:	54	40	37	36	35	41	55	50
1193:	50	59	45	43	42	38	43	44
1201:	38	48	42	54	51	49	82	69
1209:	61	42	38	55	61	32	46	38
1217:	48	52	37	51	36	34	41	38
1225:	45	49	41	36	33	43	41	53

1233:	38	47	68	157	411	539	255	50

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Channel								
1241:	40	30	43	45	35	47	37	48
1249:	36	35	43	48	52	58	37	29
1257:	37	50	45	52	36	33	44	50
1265:	37	39	31	38	43	43	30	42
1273:	35	36	45	51	37	43	90	139
1281:	153	70	31	41	39	40	45	42
1289:	36	46	32	40	31	40	41	35
1297:	27	31	46	34	31	36	45	49
1305:	42	32	31	47	44	46	24	43
1313:	35	34	42	47	44	39	40	25
1321:	34	34	33	28	44	31	39	41
1329:	40	39	33	35	28	52	43	40
1337:	42	40	30	33	35	39	30	37
1345:	47	35	29	30	33	39	45	37
1353:	45	34	51	40	36	27	31	26
1361:	28	25	35	27	33	26	36	43
1369:	39	28	29	36	45	63	78	203
1377:	409	328	84	40	23	41	51	82
1385:	104	62	32	30	25	24	34	41
1393:	34	49	28	30	33	51	56	113
1401:	155	103	45	34	49	92	185	204
1409:	93	46	30	39	32	36	36	35
1417:	36	39	30	50	31	36	31	36
1425:	37	42	25	30	33	38	34	36
1433:	36	35	30	33	26	47	30	35
1441:	35	38	24	39	38	41	41	40
1449:	38	32	28	31	45	32	38	34
1457:	49	47	65	72	64	42	45	32
1465:	42	47	36	36	36	42	29	41
1473:	30	38	39	38	29	43	32	36
1481:	33	32	38	37	35	48	44	28
1489:	44	35	38	42	22	38	38	49
1497:	47	32	45	39	37	40	28	47
1505:	38	37	102	164	197	116	54	47
1513:	46	35	39	49	33	26	34	38
1521:	43	47	37	33	40	37	36	41
1529:	39	30	38	31	36	39	45	46
1537:	47	52	58	37	32	54	49	47
1545:	36	35	23	32	26	27	34	31
1553:	32	35	28	21	37	33	20	24
1561:	29	28	21	22	26	27	30	21
1569:	20	26	37	25	23	29	19	34
1577:	31	17	26	32	26	68	81	39
1585:	28	25	30	26	28	26	37	27
1593:	37	38	34	15	26	37	42	37
1601:	21	21	17	26	31	21	25	23
1609:	18	19	24	23	18	35	20	24
1617:	20	24	22	14	21	24	15	17
1625:	22	25	20	17	18	17	24	19
1633:	26	16	21	26	18	17	24	18
1641:	16	15	23	14	15	17	22	12
1649:	22	13	14	14	12	18	20	14
1657:	19	22	38	72	98	60	19	11

1665:	11	12	19	15	13	16	15	15

Sample Title: HTC-A09-S001-0006-01

Channel								
1673:	14	14	15	16	10	12	14	16
1681:	16	21	30	29	21	17	12	17
1689:	17	18	11	31	29	21	23	12
1697:	12	9	6	16	11	12	18	14
1705:	18	14	6	16	9	11	12	7
1713:	5	16	9	7	12	8	8	15
1721:	11	14	9	15	19	30	64	138
1729:	231	149	47	7	12	11	12	6
1737:	13	10	12	8	15	12	8	6
1745:	9	18	8	7	7	11	11	9
1753:	8	17	17	15	16	20	30	47
1761:	126	307	711	977	616	115	24	10
1769:	8	6	10	13	11	7	10	12
1777:	7	12	4	8	7	9	13	11
1785:	8	16	12	8	12	5	7	10
1793:	7	7	6	8	6	10	6	8
1801:	5	10	11	9	10	11	10	8
1809:	8	12	6	10	6	8	7	9
1817:	9	0	10	6	12	7	8	10
1825:	9	11	14	8	10	11	12	7
1833:	13	7	13	14	17	28	23	13
1841:	10	17	20	21	61	128	128	84
1849:	22	8	10	10	12	12	6	6
1857:	8	10	9	5	8	13	16	8
1865:	10	7	9	9	12	10	20	22
1873:	22	15	11	16	9	6	14	12
1881:	11	8	10	9	9	10	9	11
1889:	14	17	8	7	13	12	8	17
1897:	15	6	10	8	8	8	9	4
1905:	7	14	9	9	7	10	9	8
1913:	13	6	7	8	11	9	8	12
1921:	8	12	10	7	9	7	7	11
1929:	10	6	8	9	17	9	16	22
1937:	13	7	9	9	14	14	12	11
1945:	11	8	4	7	6	11	12	11
1953:	12	13	12	9	12	8	4	4
1961:	9	4	10	16	8	4	5	13
1969:	6	8	15	4	6	8	13	8
1977:	5	6	5	3	8	9	8	6
1985:	8	11	7	5	7	6	6	10
1993:	5	6	7	1	4	7	9	3
2001:	4	6	10	8	6	4	5	9
2009:	4	10	6	5	9	9	10	9
2017:	10	7	3	5	3	7	2	7
2025:	6	9	5	3	5	4	9	3
2033:	7	5	4	5	5	8	1	5
2041:	4	8	5	4	6	9	5	5
2049:	7	8	7	13	7	4	2	4
2057:	8	5	4	5	2	5	13	5
2065:	4	7	6	5	4	9	6	8
2073:	7	1	2	4	6	7	6	0
2081:	8	8	4	4	4	3	8	7
2089:	7	4	5	8	4	4	2	4

2097:	1	3	3	5	3	5	2	7

Sample Title: HTC-A09-S001-0006-01

Channel								
2105:	3	2	5	11	6	7	3	3
2113:	4	12	11	27	51	70	25	11
2121:	3	1	4	4	1	5	4	6
2129:	2	1	1	2	1	1	4	2
2137:	2	2	2	3	2	7	3	2
2145:	1	3	10	1	1	2	4	4
2153:	2	3	1	1	4	2	2	4
2161:	5	4	4	2	5	6	2	0
2169:	3	1	0	3	2	6	2	3
2177:	4	4	5	1	1	5	0	4
2185:	4	2	1	5	0	7	13	6
2193:	7	2	5	5	5	8	13	29
2201:	72	156	236	202	64	22	2	1
2209:	2	6	1	3	2	4	0	1
2217:	3	1	3	2	2	1	3	2
2225:	3	1	1	1	0	1	1	2
2233:	1	2	1	2	2	1	1	3
2241:	5	2	1	1	2	2	2	1
2249:	2	1	3	3	0	2	2	3
2257:	1	3	2	2	0	1	1	2
2265:	4	1	3	1	3	0	2	1
2273:	3	3	1	2	2	2	4	0
2281:	5	2	1	3	4	1	2	1
2289:	2	4	8	20	20	4	3	2
2297:	0	0	0	1	1	0	2	2
2305:	2	1	4	2	3	4	1	3
2313:	0	2	1	0	1	3	2	1
2321:	1	2	1	2	0	1	3	0
2329:	1	0	3	4	1	3	2	3
2337:	2	1	1	2	2	2	0	1
2345:	3	1	1	2	1	1	0	2
2353:	2	1	3	0	1	0	1	3
2361:	1	1	1	0	2	0	0	0
2369:	1	0	1	0	0	0	0	0
2377:	1	2	0	0	1	0	3	0
2385:	0	1	0	1	1	0	1	0
2393:	0	1	0	2	2	0	1	0
2401:	1	3	2	1	2	0	2	3
2409:	3	1	0	0	1	3	0	0
2417:	0	0	0	0	2	1	0	0
2425:	1	1	1	0	0	0	0	1
2433:	0	2	1	0	0	1	2	3
2441:	0	3	4	19	34	54	61	48
2449:	12	0	0	0	1	1	0	0
2457:	0	1	1	1	1	0	0	2
2465:	0	0	1	3	2	1	0	1
2473:	0	0	1	0	0	0	1	0
2481:	2	1	0	0	1	0	0	0
2489:	0	0	0	0	0	1	1	0
2497:	1	1	1	0	0	1	0	2
2505:	0	1	0	1	2	0	0	1
2513:	1	0	2	0	1	0	0	0
2521:	0	0	1	0	0	0	0	1

2529:	0	0	0	0	0	1	0	0

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Channel								
2537:	1	2	0	0	2	0	1	0
2545:	0	1	0	0	1	0	0	0
2553:	1	1	0	1	0	0	0	0
2561:	0	0	0	0	0	2	0	0
2569:	0	0	0	1	2	0	0	1
2577:	0	0	0	0	0	0	2	0
2585:	0	0	0	1	1	0	0	1
2593:	0	1	0	0	1	0	1	0
2601:	0	0	0	0	0	1	2	1
2609:	1	0	4	2	11	9	5	1
2617:	0	0	0	0	1	0	1	1
2625:	0	2	1	0	0	1	0	0
2633:	0	0	1	0	0	1	0	0
2641:	0	0	0	0	0	0	1	0
2649:	0	0	0	0	1	2	0	0
2657:	0	0	0	0	0	0	1	1
2665:	0	0	0	0	0	0	0	0
2673:	1	1	0	1	0	0	0	1
2681:	0	1	1	0	0	0	1	0
2689:	0	0	1	0	3	4	1	0
2697:	1	0	0	1	0	0	0	1
2705:	0	0	0	0	0	1	0	0
2713:	2	0	0	1	0	0	0	1
2721:	0	0	0	0	0	0	1	1
2729:	0	0	1	0	0	0	0	0
2737:	0	1	0	2	0	0	0	0
2745:	0	0	0	0	0	0	1	1
2753:	0	1	0	0	0	0	0	0
2761:	2	0	1	0	1	0	0	1
2769:	2	0	0	0	0	0	1	0
2777:	0	0	0	1	0	0	0	0
2785:	2	0	0	2	0	0	0	1
2793:	1	0	1	0	0	0	0	0
2801:	0	0	1	0	0	0	0	0
2809:	0	0	1	0	0	1	0	0
2817:	2	0	0	0	0	0	0	0
2825:	1	0	0	1	0	0	0	0
2833:	2	0	0	0	1	0	1	0
2841:	0	1	0	0	0	1	0	0
2849:	1	0	0	0	0	0	0	0
2857:	0	0	0	0	0	0	1	2
2865:	0	0	0	0	0	1	0	0
2873:	0	1	0	2	0	0	1	0
2881:	0	1	0	1	0	0	0	0
2889:	0	0	1	0	0	0	0	0
2897:	0	1	0	1	1	0	0	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	0	0	1	1	2
2921:	0	0	1	0	0	1	2	0
2929:	1	0	1	0	0	1	0	0
2937:	0	0	2	0	0	0	1	1
2945:	0	0	0	0	0	1	1	0
2953:	0	0	0	0	0	0	0	0

2961:	0	0	0	0	0	0	0	0

Sample Title: HTC-A09-S001-0006-01

Channel								
2969:	0	0	1	0	0	0	0	1
2977:	1	0	0	0	0	0	0	0
2985:	0	0	0	1	1	0	0	0
2993:	0	0	1	0	1	1	0	0
3001:	0	0	1	0	0	0	0	0
3009:	0	0	0	1	0	0	0	0
3017:	0	0	1	0	0	0	1	1
3025:	0	0	0	0	0	1	1	0
3033:	0	0	0	0	0	0	0	0
3041:	0	0	0	0	0	1	0	0
3049:	0	0	0	0	0	1	1	0
3057:	0	0	0	0	0	0	0	0
3065:	0	1	1	0	0	0	0	0
3073:	0	1	0	1	0	0	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	0	0	1	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	0	2	0	0	0	0
3113:	0	0	0	0	0	0	0	0
3121:	0	0	0	1	0	0	0	0
3129:	0	1	0	0	0	0	0	0
3137:	0	0	0	0	0	1	0	0
3145:	0	0	1	0	0	1	1	1
3153:	0	0	0	0	0	0	0	1
3161:	2	0	0	0	0	0	0	0
3169:	1	0	0	0	0	1	0	0
3177:	0	0	0	0	1	1	0	1
3185:	1	0	0	0	0	0	0	0
3193:	0	1	0	0	1	1	0	0
3201:	0	0	0	0	0	1	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	1	0	0
3225:	0	0	0	0	0	0	1	1
3233:	1	1	1	0	0	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	1	1	0	0	0	0	0	1
3265:	0	0	0	0	0	0	0	0
3273:	1	0	0	0	1	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	1	0	1	2	0	0	1
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	1
3313:	0	0	0	1	0	0	0	0
3321:	1	0	0	0	1	0	0	1
3329:	0	0	0	1	0	1	0	0
3337:	0	0	0	0	0	0	2	0
3345:	0	0	0	1	0	0	1	0
3353:	0	0	0	0	0	1	0	0
3361:	1	2	1	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	0	1	0	0	1
3385:	1	0	1	0	0	0	0	1

3393:	0	0	0	0	0	0	0	0

Sample Title: HTC-A09-S001-0006-01

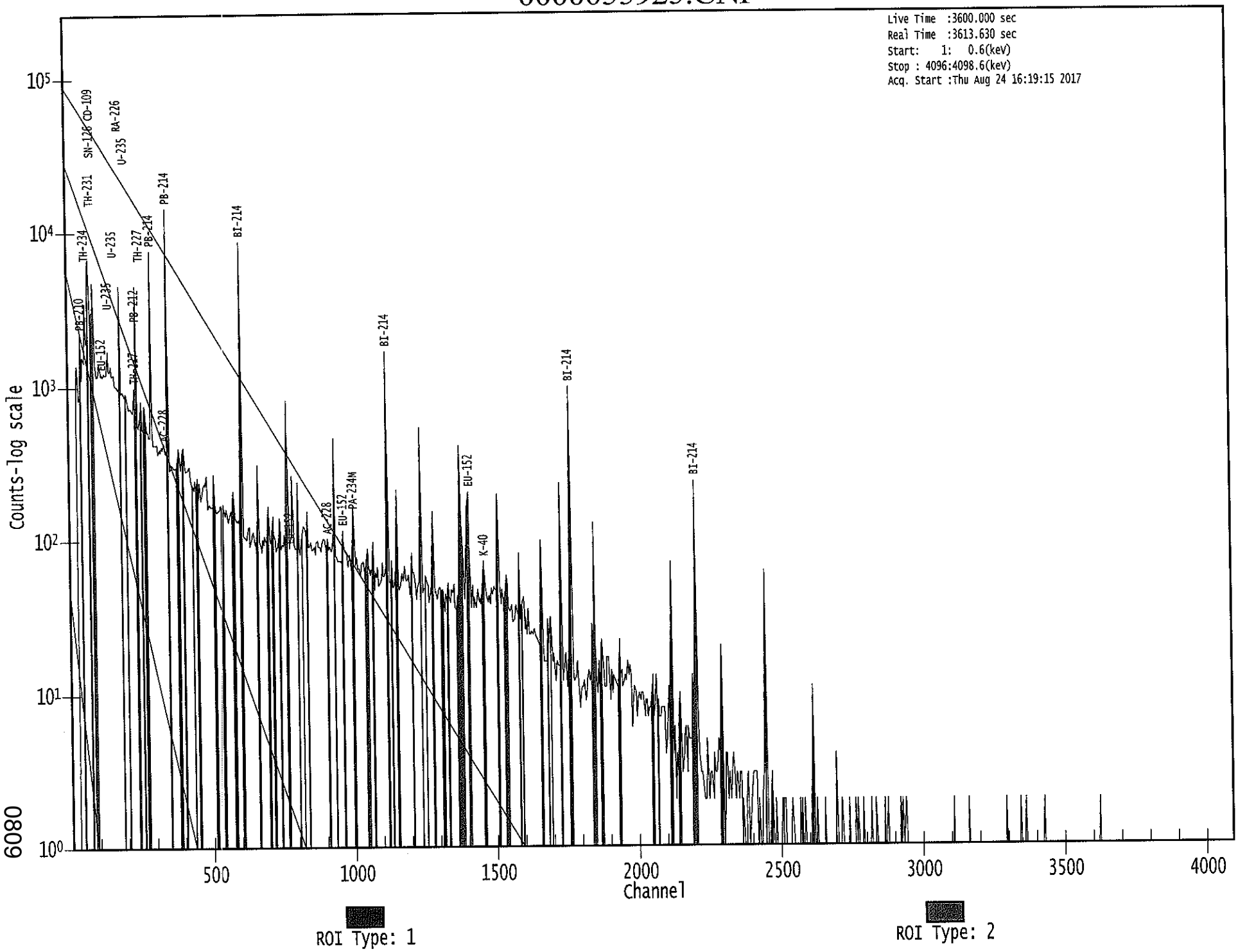
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	1	0	0	0	1	0
3425:	0	0	2	1	0	1	0	0
3433:	0	0	0	0	1	0	0	0
3441:	0	1	0	1	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	1	0	1
3465:	0	0	1	0	0	0	0	0
3473:	0	0	0	0	1	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	1	0	0	0	0	1	0
3497:	0	0	0	0	0	0	0	0
3505:	0	1	0	0	0	0	0	0
3513:	0	1	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	1
3529:	0	0	0	0	0	0	0	0
3537:	1	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	1	0	0	1	1	1	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	1	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	1	0	0	1	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	1	0	0	2	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	1	0	0	0	0
3649:	0	0	1	0	1	0	1	1
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	1	0	0	0	0	0	0
3681:	0	0	0	0	0	0	1	0
3689:	0	0	0	0	0	1	0	0
3697:	0	1	0	0	0	0	0	0
3705:	0	0	0	0	1	0	0	0
3713:	0	0	0	0	1	0	0	1
3721:	1	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	1
3745:	0	0	1	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	1	0	1	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	1	0	0
3801:	0	1	0	0	1	1	0	0
3809:	0	0	1	0	0	0	1	0
3817:	0	1	0	0	0	0	1	0

3825:	0	0	0	0	0	0	0	1

Sample Title: HTC-A09-S001-0006-01

Channel								
3833:	0	1	0	0	0	0	0	0
3841:	0	0	0	0	1	1	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	1	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	1
3889:	0	0	0	0	1	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	1	0
3921:	0	0	0	0	0	0	0	1
3929:	1	0	0	1	0	0	1	0
3937:	0	0	0	0	0	0	0	1
3945:	0	0	0	0	0	0	0	0
3953:	1	0	0	0	0	0	0	0
3961:	0	0	1	0	0	1	0	0
3969:	0	0	0	0	0	0	0	1
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	1	0	0
3993:	0	0	0	1	0	0	0	0
4001:	0	0	0	0	0	0	0	1
4009:	0	0	0	0	1	0	1	0
4017:	0	0	0	0	0	0	0	0
4025:	1	0	1	0	0	0	0	1
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	1	0	1	1
4065:	0	0	1	0	1	0	0	0
4073:	0	0	0	1	0	0	0	1
4081:	0	0	1	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000055925.CNF



6080

Apex-Gamma

Analysis Report for 1707092-15
HTC-A09-S001-0006-02

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-15
Sample Description	: HTC-A09-S001-0006-02
Sample Type	: SOIL
Sample Size	: 8.038E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 7:42:32AM
Acquisition Started	: 8/24/2017 4:19:21PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3628.7 seconds
Dead Time	: 0.79 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 9 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55926

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 5:20:30PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	16.53	16.85	0.0000	0.00
2	34.94	35.25	0.0000	0.00
3	46.67	46.99	0.0000	0.00
4	53.33	53.64	0.0000	0.00
5	63.34	63.65	0.0000	0.00
6	76.50	76.80	0.0000	0.00
7	84.20	84.50	0.0000	0.00
8	87.70	88.00	0.0000	0.00
9	92.80	93.10	0.0000	0.00
10	111.99	112.28	0.0000	0.00
11	144.01	144.29	0.0000	0.00
12	154.57	154.85	0.0000	0.00
13	186.25	186.52	0.0000	0.00
14	236.79	237.04	0.0000	0.00
15	242.23	242.47	0.0000	0.00
16	257.83	258.07	0.0000	0.00
17	270.19	270.42	0.0000	0.00
18	275.32	275.55	0.0000	0.00
19	295.46	295.69	0.0000	0.00
20	352.17	352.38	0.0000	0.00
21	388.32	388.52	0.0000	0.00
22	454.91	455.08	0.0000	0.00
23	461.80	461.98	0.0000	0.00
24	486.93	487.09	0.0000	0.00
25	495.92	496.08	0.0000	0.00
26	510.54	510.70	0.0000	0.00
27	551.39	551.53	0.0000	0.00
28	609.56	609.68	0.0000	0.00
29	624.29	624.41	0.0000	0.00
30	665.85	665.95	0.0000	0.00
31	703.42	703.51	0.0000	0.00
32	719.97	720.05	0.0000	0.00
33	743.62	743.70	0.0000	0.00
34	768.21	768.28	0.0000	0.00
35	785.90	785.96	0.0000	0.00
36	806.42	806.48	0.0000	0.00
37	839.22	839.27	0.0000	0.00
38	903.55	903.58	0.0000	0.00
39	934.26	934.27	0.0000	0.00
40	964.15	964.15	0.0000	0.00
41	982.80	982.79	0.0000	0.00
42	1001.26	1001.25	0.0000	0.00

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1069.49	1069.46	0.0000	0.00
44	1120.52	1120.47	0.0000	0.00
45	1155.18	1155.11	0.0000	0.00
46	1207.68	1207.60	0.0000	0.00
47	1238.19	1238.10	0.0000	0.00
48	1256.83	1256.73	0.0000	0.00
49	1280.91	1280.80	0.0000	0.00
50	1373.21	1373.07	0.0000	0.00
51	1377.91	1377.77	0.0000	0.00
52	1385.21	1385.07	0.0000	0.00
53	1401.70	1401.55	0.0000	0.00
54	1408.16	1408.01	0.0000	0.00
55	1509.03	1508.85	0.0000	0.00
56	1583.29	1583.08	0.0000	0.00
57	1597.03	1596.81	0.0000	0.00
58	1660.75	1660.52	0.0000	0.00
59	1684.94	1684.70	0.0000	0.00
60	1693.21	1692.97	0.0000	0.00
61	1729.77	1729.52	0.0000	0.00
62	1738.26	1738.00	0.0000	0.00
63	1747.89	1747.63	0.0000	0.00
64	1764.69	1764.43	0.0000	0.00
65	1803.30	1803.02	0.0000	0.00
66	1838.48	1838.18	0.0000	0.00
67	1847.48	1847.19	0.0000	0.00
68	1872.25	1871.95	0.0000	0.00
69	2024.26	2023.90	0.0000	0.00
70	2087.53	2087.16	0.0000	0.00
71	2118.81	2118.43	0.0000	0.00
72	2204.36	2203.94	0.0000	0.00
73	2241.90	2241.47	0.0000	0.00
74	2271.31	2270.88	0.0000	0.00
75	2293.45	2293.00	0.0000	0.00
76	2447.96	2447.46	0.0000	0.00
77	2614.31	2613.76	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 5:20:30PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	16.53	15 -	19	16.85	2.79E+02	216.49	1.01E+04	1.89
	2	34.94	33 -	38	35.25	3.69E+02	225.66	9.91E+03	4.38
	3	46.67	45 -	49	46.99	1.60E+03	232.01	1.06E+04	1.60
	4	53.33	51 -	57	53.64	6.86E+02	314.74	1.76E+04	1.93
	5	63.34	61 -	66	63.65	3.11E+03	343.01	2.11E+04	2.06
	6	76.50	71 -	82	76.80	1.71E+04	668.66	4.73E+04	3.82
M	7	84.20	83 -	97	84.50	1.27E+03	202.44	1.12E+04	1.81
m	8	87.70	83 -	97	88.00	4.36E+03	427.22	2.75E+04	2.71
m	9	92.80	83 -	97	93.10	6.37E+03	428.50	2.39E+04	2.72
	10	111.99	110 -	115	112.28	3.71E+02	282.90	1.57E+04	1.43
	11	144.01	142 -	147	144.29	7.55E+02	277.95	1.49E+04	2.08
	12	154.57	153 -	157	154.85	2.71E+02	241.04	1.26E+04	2.65
	13	186.25	182 -	191	186.52	5.88E+03	404.79	2.00E+04	2.26
M	14	236.79	233 -	247	237.04	6.36E+02	251.52	1.04E+04	2.73
m	15	242.23	233 -	247	242.47	5.48E+03	243.52	7.32E+03	2.13
	16	257.83	254 -	262	258.07	7.17E+02	251.81	9.30E+03	4.33
	17	270.19	267 -	274	270.42	3.88E+02	231.38	8.70E+03	2.45
	18	275.32	274 -	279	275.55	1.92E+02	174.42	5.89E+03	1.59
	19	295.46	291 -	300	295.69	1.12E+04	330.16	9.15E+03	2.14
	20	352.17	346 -	357	352.38	1.85E+04	366.91	7.58E+03	2.19
	21	388.32	384 -	393	388.52	4.54E+02	196.21	5.25E+03	3.31
	22	454.91	452 -	458	455.08	1.72E+02	121.97	2.57E+03	1.73
	23	461.80	459 -	465	461.98	1.50E+02	118.89	2.46E+03	4.07
	24	486.93	484 -	490	487.09	2.37E+02	114.00	2.18E+03	2.37
	25	495.92	492 -	500	496.08	1.99E+02	131.66	2.54E+03	3.98
	26	510.54	505 -	516	510.70	3.97E+02	165.75	3.24E+03	3.32
	27	551.39	549 -	554	551.53	7.30E+01	88.22	1.49E+03	2.26
	28	609.56	604 -	614	609.68	1.28E+04	263.05	2.42E+03	2.26
	29	624.29	621 -	628	624.41	1.02E+02	88.07	1.22E+03	4.51
	30	665.85	662 -	670	665.95	3.80E+02	105.52	1.46E+03	2.37
	31	703.42	700 -	707	703.51	1.18E+02	91.70	1.33E+03	2.90
	32	719.97	717 -	723	720.05	1.30E+02	80.13	1.08E+03	3.20
	33	743.62	738 -	749	743.70	2.80E+02	119.98	1.65E+03	4.20
	34	768.21	762 -	773	768.28	1.28E+03	142.97	1.91E+03	2.39
	35	785.90	781 -	790	785.96	2.61E+02	109.45	1.57E+03	2.20
	36	806.42	803 -	811	806.48	2.44E+02	99.20	1.36E+03	2.24
	37	839.22	835 -	843	839.27	1.39E+02	97.62	1.38E+03	3.03
	38	903.55	900 -	907	903.58	8.75E+01	86.07	1.18E+03	0.91
	39	934.26	930 -	940	934.27	5.20E+02	122.75	1.73E+03	2.35
	40	964.15	962 -	968	964.15	6.57E+01	71.88	9.03E+02	1.74

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	982.80	980 -	985	982.79	5.58E+01	59.41	6.58E+02	1.69
	42	1001.26	997 -	1006	1001.25	2.51E+02	93.27	1.10E+03	2.46
	43	1069.49	1064 -	1074	1069.46	1.13E+02	90.34	1.03E+03	5.10
	44	1120.52	1115 -	1126	1120.47	2.66E+03	140.29	1.13E+03	2.48
	45	1155.18	1150 -	1159	1155.11	2.82E+02	85.25	8.70E+02	2.74
	46	1207.68	1205 -	1210	1207.60	5.01E+01	49.84	4.58E+02	1.95
	47	1238.19	1231 -	1242	1238.10	1.00E+03	104.13	8.47E+02	2.36
	48	1256.83	1247 -	1268	1256.73	1.63E+02	140.12	1.44E+03	15.78
	49	1280.91	1276 -	1285	1280.80	2.88E+02	77.82	7.02E+02	2.91
M	50	1373.21	1370 -	1389	1373.07	7.23E+01	44.11	3.34E+02	3.38
m	51	1377.91	1370 -	1389	1377.77	6.38E+02	70.81	4.08E+02	2.28
m	52	1385.21	1370 -	1389	1385.07	1.63E+02	69.47	6.18E+02	3.38
	53	1401.70	1397 -	1405	1401.55	2.05E+02	72.20	6.77E+02	2.24
	54	1408.16	1405 -	1412	1408.01	3.54E+02	69.20	5.66E+02	2.87
	55	1509.03	1504 -	1513	1508.85	2.82E+02	77.43	6.95E+02	2.63
	56	1583.29	1579 -	1588	1583.08	1.08E+02	58.14	4.25E+02	3.16
	57	1597.03	1591 -	1604	1596.81	1.07E+02	76.83	6.07E+02	6.56
	58	1660.75	1655 -	1666	1660.52	1.51E+02	58.65	3.56E+02	2.06
	59	1684.94	1680 -	1688	1684.70	3.49E+01	40.76	2.34E+02	2.14
	60	1693.21	1689 -	1697	1692.97	6.60E+01	38.35	1.78E+02	2.56
M	61	1729.77	1725 -	1743	1729.52	4.49E+02	51.54	1.64E+02	2.72
m	62	1738.26	1725 -	1743	1738.00	2.83E+01	28.31	8.69E+01	2.44
	63	1747.89	1745 -	1750	1747.63	1.72E+01	20.27	6.75E+01	1.14
	64	1764.69	1758 -	1770	1764.43	2.03E+03	103.30	2.98E+02	2.59
	65	1803.30	1797 -	1809	1803.02	3.82E+01	37.68	1.48E+02	2.51
M	66	1838.48	1832 -	1858	1838.18	4.32E+01	39.37	2.04E+02	3.29
m	67	1847.48	1832 -	1858	1847.19	2.63E+02	44.00	1.49E+02	2.62
	68	1872.25	1869 -	1876	1871.95	2.08E+01	26.76	1.08E+02	1.25
	69	2024.26	2015 -	2032	2023.90	4.89E+01	39.57	1.18E+02	14.52
	70	2087.53	2083 -	2091	2087.16	3.10E+01	15.52	1.80E+01	5.00
	71	2118.81	2114 -	2124	2118.43	1.47E+02	32.79	6.18E+01	2.61
	72	2204.36	2198 -	2210	2203.94	5.14E+02	50.52	5.79E+01	3.10
	73	2241.90	2236 -	2247	2241.47	1.99E+01	11.31	6.22E+00	1.28
	74	2271.31	2268 -	2273	2270.88	7.00E+00	9.38	1.20E+01	1.32
	75	2293.45	2288 -	2296	2293.00	3.50E+01	16.03	1.80E+01	2.29
	76	2447.96	2443 -	2453	2447.46	1.70E+02	26.08	0.00E+00	3.02
	77	2614.31	2609 -	2617	2613.76	2.90E+01	10.77	0.00E+00	3.94

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 5:20:30PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	16.53	15 -	19	2.79E+02	216.49	1.01E+04	1.76E+02
	2	34.94	33 -	38	3.69E+02	225.66	9.91E+03	1.83E+02
	3	46.67	45 -	49	1.60E+03	232.01	1.06E+04	1.79E+02
	4	53.33	51 -	57	6.86E+02	314.74	1.76E+04	2.55E+02
	5	63.34	61 -	66	3.11E+03	343.01	2.11E+04	2.67E+02
	6	76.50	71 -	82	1.71E+04	668.66	4.73E+04	5.06E+02
M	7	84.20	83 -	97	1.27E+03	202.44	1.12E+04	1.74E+02
m	8	87.70	83 -	97	4.36E+03	427.22	2.75E+04	2.73E+02
m	9	92.80	83 -	97	6.37E+03	428.50	2.39E+04	2.54E+02
	10	111.99	110 -	115	3.71E+02	282.90	1.57E+04	2.30E+02
	11	144.01	142 -	147	7.55E+02	277.95	1.49E+04	2.24E+02
	12	154.57	153 -	157	2.71E+02	241.04	1.26E+04	1.96E+02
	13	186.25	182 -	191	5.88E+03	404.79	2.00E+04	3.08E+02
M	14	236.79	233 -	247	6.36E+02	251.52	1.04E+04	1.68E+02
m	15	242.23	233 -	247	5.48E+03	243.52	7.32E+03	1.41E+02
	16	257.83	254 -	262	7.17E+02	251.81	9.30E+03	2.02E+02
	17	270.19	267 -	274	3.88E+02	231.38	8.70E+03	1.87E+02
	18	275.32	274 -	279	1.92E+02	174.42	5.89E+03	1.42E+02
	19	295.46	291 -	300	1.12E+04	330.16	9.15E+03	2.08E+02
	20	352.17	346 -	357	1.85E+04	366.91	7.58E+03	2.02E+02
	21	388.32	384 -	393	4.54E+02	196.21	5.25E+03	1.57E+02
	22	454.91	452 -	458	1.72E+02	121.97	2.57E+03	9.79E+01
	23	461.80	459 -	465	1.50E+02	118.89	2.46E+03	9.56E+01
	24	486.93	484 -	490	2.37E+02	114.00	2.18E+03	9.02E+01
	25	495.92	492 -	500	1.99E+02	131.66	2.54E+03	1.06E+02
	26	510.54	505 -	516	3.97E+02	165.75	3.24E+03	1.32E+02
	27	551.39	549 -	554	7.30E+01	88.22	1.49E+03	7.11E+01
	28	609.56	604 -	614	1.28E+04	263.05	2.42E+03	1.11E+02
	29	624.29	621 -	628	1.02E+02	88.07	1.22E+03	7.05E+01
	30	665.85	662 -	670	3.80E+02	105.52	1.46E+03	8.06E+01
	31	703.42	700 -	707	1.18E+02	91.70	1.33E+03	7.32E+01
	32	719.97	717 -	723	1.30E+02	80.13	1.08E+03	6.31E+01
	33	743.62	738 -	749	2.80E+02	119.98	1.65E+03	9.47E+01
	34	768.21	762 -	773	1.28E+03	142.97	1.91E+03	1.02E+02
	35	785.90	781 -	790	2.61E+02	109.45	1.57E+03	8.60E+01
	36	806.42	803 -	811	2.44E+02	99.20	1.36E+03	7.74E+01
	37	839.22	835 -	843	1.39E+02	97.62	1.38E+03	7.79E+01
	38	903.55	900 -	907	8.75E+01	86.07	1.18E+03	6.91E+01
	39	934.26	930 -	940	5.20E+02	122.75	1.73E+03	9.37E+01
	40	964.15	962 -	968	6.57E+01	71.88	9.03E+02	5.76E+01
	41	982.80	980 -	985	5.58E+01	59.41	6.58E+02	4.73E+01

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	42	1001.26	997 -	1006	2.51E+02	93.27	1.10E+03	3.01E+01
	43	1069.49	1064 -	1074	1.13E+02	90.34	1.03E+03	7.22E+01
	44	1120.52	1115 -	1126	2.66E+03	140.29	1.13E+03	7.81E+01
	45	1155.18	1150 -	1159	2.82E+02	85.25	8.70E+02	6.44E+01
	46	1207.68	1205 -	1210	5.01E+01	49.84	4.58E+02	3.93E+01
	47	1238.19	1231 -	1242	1.00E+03	104.13	8.47E+02	6.80E+01
	48	1256.83	1247 -	1268	1.63E+02	140.12	1.44E+03	1.13E+02
	49	1280.91	1276 -	1285	2.88E+02	77.82	7.02E+02	5.76E+01
M	50	1373.21	1370 -	1389	7.23E+01	44.11	3.34E+02	3.00E+01
m	51	1377.91	1370 -	1389	6.38E+02	70.81	4.08E+02	3.32E+01
m	52	1385.21	1370 -	1389	1.63E+02	69.47	6.18E+02	4.09E+01
	53	1401.70	1397 -	1405	2.05E+02	72.20	6.77E+02	5.45E+01
	54	1408.16	1405 -	1412	3.54E+02	69.20	5.66E+02	4.77E+01
	55	1509.03	1504 -	1513	2.82E+02	77.43	6.95E+02	5.73E+01
	56	1583.29	1579 -	1588	1.08E+02	58.14	4.25E+02	4.46E+01
	57	1597.03	1591 -	1604	1.07E+02	76.83	6.07E+02	6.08E+01
	58	1660.75	1655 -	1666	1.51E+02	58.65	3.56E+02	4.38E+01
	59	1684.94	1680 -	1688	3.49E+01	40.76	2.34E+02	3.21E+01
	60	1693.21	1689 -	1697	6.60E+01	38.35	1.78E+02	2.86E+01
M	61	1729.77	1725 -	1743	4.49E+02	51.54	1.64E+02	2.10E+01
m	62	1738.26	1725 -	1743	2.83E+01	28.31	8.69E+01	1.53E+01
	63	1747.89	1745 -	1750	1.72E+01	20.27	6.75E+01	1.52E+01
	64	1764.69	1758 -	1770	2.03E+03	103.30	2.98E+02	4.14E+01
	65	1803.30	1797 -	1809	3.82E+01	37.68	1.48E+02	2.93E+01
M	66	1838.48	1832 -	1858	4.32E+01	39.37	2.04E+02	2.35E+01
m	67	1847.48	1832 -	1858	2.63E+02	44.00	1.49E+02	2.01E+01
	68	1872.25	1869 -	1876	2.08E+01	26.76	1.08E+02	2.07E+01
	69	2024.26	2015 -	2032	4.89E+01	39.57	1.18E+02	3.04E+01
	70	2087.53	2083 -	2091	3.10E+01	15.52	1.80E+01	8.89E+00
	71	2118.81	2114 -	2124	1.47E+02	32.79	6.18E+01	1.81E+01
	72	2204.36	2198 -	2210	5.14E+02	50.52	5.79E+01	1.83E+01
	73	2241.90	2236 -	2247	1.99E+01	11.31	6.22E+00	5.72E+00
	74	2271.31	2268 -	2273	7.00E+00	9.38	1.20E+01	6.37E+00
	75	2293.45	2288 -	2296	3.50E+01	16.03	1.80E+01	8.89E+00
	76	2447.96	2443 -	2453	1.70E+02	26.08	0.00E+00	0.00E+00
	77	2614.31	2609 -	2617	2.90E+01	10.77	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 5:20:30PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	16.53	15 -	19	16.85	2.79E+02	216.49	1.01E+04	NB-93M
	2	34.94	33 -	38	35.25	3.69E+02	225.66	9.91E+03	I-125
	3	46.67	45 -	49	46.99	1.60E+03	232.01	1.06E+04	PB-210
	4	53.33	51 -	57	53.64	6.86E+02	314.74	1.76E+04	.....
	5	63.34	61 -	66	63.65	3.11E+03	343.01	2.11E+04	TH-234
									TH-230
	6	76.50	71 -	82	76.80	1.71E+04	668.66	4.73E+04	.....
M	7	84.20	83 -	97	84.50	1.27E+03	202.44	1.12E+04	TH-231
m	8	87.70	83 -	97	88.00	4.36E+03	427.22	2.75E+04	SN-126
									CD-109
									LU-176
m	9	92.80	83 -	97	93.10	6.37E+03	428.50	2.39E+04	GA-67
	10	111.99	110 -	115	112.28	3.71E+02	282.90	1.57E+04	.....
	11	144.01	142 -	147	144.29	7.55E+02	277.95	1.49E+04	U-235
	12	154.57	153 -	157	154.85	2.71E+02	241.04	1.26E+04	.....
	13	186.25	182 -	191	186.52	5.88E+03	404.79	2.00E+04	RA-226
M	14	236.79	233 -	247	237.04	6.36E+02	251.52	1.04E+04	TH-227
m	15	242.23	233 -	247	242.47	5.48E+03	243.52	7.32E+03	.....
	16	257.83	254 -	262	258.07	7.17E+02	251.81	9.30E+03	.....
	17	270.19	267 -	274	270.42	3.88E+02	231.38	8.70E+03	.....
	18	275.32	274 -	279	275.55	1.92E+02	174.42	5.89E+03	.....
	19	295.46	291 -	300	295.69	1.12E+04	330.16	9.15E+03	PB-214
	20	352.17	346 -	357	352.38	1.85E+04	366.91	7.58E+03	PB-214
	21	388.32	384 -	393	388.52	4.54E+02	196.21	5.25E+03	.....
	22	454.91	452 -	458	455.08	1.72E+02	121.97	2.57E+03	.....
	23	461.80	459 -	465	461.98	1.50E+02	118.89	2.46E+03	.....
	24	486.93	484 -	490	487.09	2.37E+02	114.00	2.18E+03	LA-140
	25	495.92	492 -	500	496.08	1.99E+02	131.66	2.54E+03	.....
	26	510.54	505 -	516	510.70	3.97E+02	165.75	3.24E+03	.....
	27	551.39	549 -	554	551.53	7.30E+01	88.22	1.49E+03	.....
	28	609.56	604 -	614	609.68	1.28E+04	263.05	2.42E+03	BI-214
	29	624.29	621 -	628	624.41	1.02E+02	88.07	1.22E+03	.....
	30	665.85	662 -	670	665.95	3.80E+02	105.52	1.46E+03	SB-126
	31	703.42	700 -	707	703.51	1.18E+02	91.70	1.33E+03	NB-94
	32	719.97	717 -	723	720.05	1.30E+02	80.13	1.08E+03	SB-126
	33	743.62	738 -	749	743.70	2.80E+02	119.98	1.65E+03	.....
	34	768.21	762 -	773	768.28	1.28E+03	142.97	1.91E+03	.....
	35	785.90	781 -	790	785.96	2.61E+02	109.45	1.57E+03	.....
	36	806.42	803 -	811	806.48	2.44E+02	99.20	1.36E+03	.....
	37	839.22	835 -	843	839.27	1.39E+02	97.62	1.38E+03	.....
	38	903.55	900 -	907	903.58	8.75E+01	86.07	1.18E+03	.....

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	39	934.26	930 -	940	934.27	5.20E+02	122.75	1.73E+03	.....
	40	964.15	962 -	968	964.15	6.57E+01	71.88	9.03E+02	EU-152
	41	982.80	980 -	985	982.79	5.58E+01	59.41	6.58E+02	V-48
	42	1001.26	997 -	1006	1001.25	2.51E+02	93.27	1.10E+03	PA-234M
	43	1069.49	1064 -	1074	1069.46	1.13E+02	90.34	1.03E+03	.....
	44	1120.52	1115 -	1126	1120.47	2.66E+03	140.29	1.13E+03	SC-46 BI-214 TA-182
	45	1155.18	1150 -	1159	1155.11	2.82E+02	85.25	8.70E+02	.....
	46	1207.68	1205 -	1210	1207.60	5.01E+01	49.84	4.58E+02	.....
	47	1238.19	1231 -	1242	1238.10	1.00E+03	104.13	8.47E+02	CO-56
	48	1256.83	1247 -	1268	1256.73	1.63E+02	140.12	1.44E+03	.....
	49	1280.91	1276 -	1285	1280.80	2.88E+02	77.82	7.02E+02	.....
M	50	1373.21	1370 -	1389	1373.07	7.23E+01	44.11	3.34E+02	.....
m	51	1377.91	1370 -	1389	1377.77	6.38E+02	70.81	4.08E+02	.....
m	52	1385.21	1370 -	1389	1385.07	1.63E+02	69.47	6.18E+02	AG-110M
	53	1401.70	1397 -	1405	1401.55	2.05E+02	72.20	6.77E+02	.....
	54	1408.16	1405 -	1412	1408.01	3.54E+02	69.20	5.66E+02	EU-152
	55	1509.03	1504 -	1513	1508.85	2.82E+02	77.43	6.95E+02	.....
	56	1583.29	1579 -	1588	1583.08	1.08E+02	58.14	4.25E+02	.....
	57	1597.03	1591 -	1604	1596.81	1.07E+02	76.83	6.07E+02	LA-140
	58	1660.75	1655 -	1666	1660.52	1.51E+02	58.65	3.56E+02	.....
	59	1684.94	1680 -	1688	1684.70	3.49E+01	40.76	2.34E+02	.....
	60	1693.21	1689 -	1697	1692.97	6.60E+01	38.35	1.78E+02	.....
M	61	1729.77	1725 -	1743	1729.52	4.49E+02	51.54	1.64E+02	.....
m	62	1738.26	1725 -	1743	1738.00	2.83E+01	28.31	8.69E+01	.....
	63	1747.89	1745 -	1750	1747.63	1.72E+01	20.27	6.75E+01	.....
	64	1764.69	1758 -	1770	1764.43	2.03E+03	103.30	2.98E+02	BI-214
	65	1803.30	1797 -	1809	1803.02	3.82E+01	37.68	1.48E+02	.....
M	66	1838.48	1832 -	1858	1838.18	4.32E+01	39.37	2.04E+02	.....
m	67	1847.48	1832 -	1858	1847.19	2.63E+02	44.00	1.49E+02	.....
	68	1872.25	1869 -	1876	1871.95	2.08E+01	26.76	1.08E+02	.....
	69	2024.26	2015 -	2032	2023.90	4.89E+01	39.57	1.18E+02	.....
	70	2087.53	2083 -	2091	2087.16	3.10E+01	15.52	1.80E+01	.....
	71	2118.81	2114 -	2124	2118.43	1.47E+02	32.79	6.18E+01	.....
	72	2204.36	2198 -	2210	2203.94	5.14E+02	50.52	5.79E+01	BI-214
	73	2241.90	2236 -	2247	2241.47	1.99E+01	11.31	6.22E+00	.....
	74	2271.31	2268 -	2273	2270.88	7.00E+00	9.38	1.20E+01	.....
	75	2293.45	2288 -	2296	2293.00	3.50E+01	16.03	1.80E+01	.....
	76	2447.96	2443 -	2453	2447.46	1.70E+02	26.08	0.00E+00	.....
	77	2614.31	2609 -	2617	2613.76	2.90E+01	10.77	0.00E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 5:20:30PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	16.53	2.79E+02	216.49	1.96E-04	1.73E-03
	2	34.94	3.69E+02	225.66	9.20E-03	1.73E-03
	3	46.67	1.60E+03	232.01	1.73E-02	1.73E-03
	4	53.33	6.86E+02	314.74	2.09E-02	1.73E-03
	5	63.34	3.11E+03	343.01	2.44E-02	1.80E-03
	6	76.50	1.71E+04	668.66	2.67E-02	2.04E-03
M	7	84.20	1.27E+03	202.44	2.71E-02	2.19E-03
m	8	87.70	4.36E+03	427.22	2.72E-02	2.25E-03
m	9	92.80	6.37E+03	428.50	2.71E-02	2.24E-03
	10	111.99	3.71E+02	282.90	2.60E-02	2.16E-03
	11	144.01	7.55E+02	277.95	2.32E-02	1.87E-03
	12	154.57	2.71E+02	241.04	2.22E-02	1.76E-03
	13	186.25	5.88E+03	404.79	1.96E-02	1.55E-03
M	14	236.79	6.36E+02	251.52	1.62E-02	1.35E-03
m	15	242.23	5.48E+03	243.52	1.59E-02	1.33E-03
	16	257.83	7.17E+02	251.81	1.51E-02	1.26E-03
	17	270.19	3.88E+02	231.38	1.45E-02	1.21E-03
	18	275.32	1.92E+02	174.42	1.43E-02	1.19E-03
	19	295.46	1.12E+04	330.16	1.35E-02	1.15E-03
	20	352.17	1.85E+04	366.91	1.15E-02	1.03E-03
	21	388.32	4.54E+02	196.21	1.06E-02	9.59E-04
	22	454.91	1.72E+02	121.97	9.17E-03	8.69E-04
	23	461.80	1.50E+02	118.89	9.04E-03	8.60E-04
	24	486.93	2.37E+02	114.00	8.62E-03	8.26E-04
	25	495.92	1.99E+02	131.66	8.48E-03	8.14E-04
	26	510.54	3.97E+02	165.75	8.26E-03	7.95E-04
	27	551.39	7.30E+01	88.22	7.71E-03	7.41E-04
	28	609.56	1.28E+04	263.05	7.04E-03	6.64E-04
	29	624.29	1.02E+02	88.07	6.89E-03	6.44E-04
	30	665.85	3.80E+02	105.52	6.50E-03	5.91E-04
	31	703.42	1.18E+02	91.70	6.19E-03	5.58E-04
	32	719.97	1.30E+02	80.13	6.06E-03	5.43E-04
	33	743.62	2.80E+02	119.98	5.89E-03	5.22E-04
	34	768.21	1.28E+03	142.97	5.72E-03	5.01E-04
	35	785.90	2.61E+02	109.45	5.61E-03	4.85E-04
	36	806.42	2.44E+02	99.20	5.48E-03	4.67E-04
	37	839.22	1.39E+02	97.62	5.29E-03	4.38E-04
	38	903.55	8.75E+01	86.07	4.96E-03	3.85E-04
	39	934.26	5.20E+02	122.75	4.81E-03	3.80E-04
	40	964.15	6.57E+01	71.88	4.68E-03	3.75E-04
	41	982.80	5.58E+01	59.41	4.61E-03	3.72E-04
	42	1001.26	2.51E+02	93.27	4.53E-03	3.69E-04
	43	1069.49	1.13E+02	90.34	4.28E-03	3.58E-04
	44	1120.52	2.66E+03	140.29	4.12E-03	3.50E-04
	45	1155.18	2.82E+02	85.25	4.01E-03	3.44E-04

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	46	1207.68	5.01E+01	49.84	3.86E-03	3.31E-04
	47	1238.19	1.00E+03	104.13	3.79E-03	3.22E-04
	48	1256.83	1.63E+02	140.12	3.74E-03	3.17E-04
	49	1280.91	2.88E+02	77.82	3.68E-03	3.10E-04
M	50	1373.21	7.23E+01	44.11	3.48E-03	2.89E-04
m	51	1377.91	6.38E+02	70.81	3.47E-03	2.88E-04
m	52	1385.21	1.63E+02	69.47	3.45E-03	2.87E-04
	53	1401.70	2.05E+02	72.20	3.42E-03	2.85E-04
	54	1408.16	3.54E+02	69.20	3.41E-03	2.83E-04
	55	1509.03	2.82E+02	77.43	3.23E-03	2.67E-04
	56	1583.29	1.08E+02	58.14	3.11E-03	2.55E-04
	57	1597.03	1.07E+02	76.83	3.09E-03	2.53E-04
	58	1660.75	1.51E+02	58.65	3.00E-03	2.43E-04
	59	1684.94	3.49E+01	40.76	2.96E-03	2.39E-04
	60	1693.21	6.60E+01	38.35	2.95E-03	2.38E-04
M	61	1729.77	4.49E+02	51.54	2.91E-03	2.32E-04
m	62	1738.26	2.83E+01	28.31	2.90E-03	2.31E-04
	63	1747.89	1.72E+01	20.27	2.89E-03	2.29E-04
	64	1764.69	2.03E+03	103.30	2.87E-03	2.26E-04
	65	1803.30	3.82E+01	37.68	2.82E-03	2.20E-04
M	66	1838.48	4.32E+01	39.37	2.78E-03	2.15E-04
m	67	1847.48	2.63E+02	44.00	2.77E-03	2.15E-04
	68	1872.25	2.08E+01	26.76	2.75E-03	2.15E-04
	69	2024.26	4.89E+01	39.57	2.60E-03	2.15E-04
	70	2087.53	3.10E+01	15.52	2.55E-03	2.15E-04
	71	2118.81	1.47E+02	32.79	2.53E-03	2.15E-04
	72	2204.36	5.14E+02	50.52	2.46E-03	2.15E-04
	73	2241.90	1.99E+01	11.31	2.44E-03	2.15E-04
	74	2271.31	7.00E+00	9.38	2.42E-03	2.15E-04
	75	2293.45	3.50E+01	16.03	2.41E-03	2.15E-04
	76	2447.96	1.70E+02	26.08	2.32E-03	2.15E-04
	77	2614.31	2.90E+01	10.77	2.24E-03	2.15E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 5:20:30PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	16.53	2.79E+02	216.49			2.79E+02	2.16E+02
	2	34.94	3.69E+02	225.66			3.69E+02	2.26E+02
	3	46.67	1.60E+03	232.01	4.47E+01	1.09E+01	1.55E+03	2.32E+02
	4	53.33	6.86E+02	314.74			6.86E+02	3.15E+02
	5	63.34	3.11E+03	343.01	4.12E+01	5.67E+00	3.07E+03	3.43E+02
	6	76.50	1.71E+04	668.66			1.71E+04	6.69E+02
M	7	84.20	1.27E+03	202.44	5.71E+00	6.69E+00	1.26E+03	2.03E+02
m	8	87.70	4.36E+03	427.22			4.36E+03	4.27E+02
m	9	92.80	6.37E+03	428.50	7.98E+01	7.31E+00	6.29E+03	4.29E+02
	10	111.99	3.71E+02	282.90			3.71E+02	2.83E+02
	11	144.01	7.55E+02	277.95			7.55E+02	2.78E+02
	12	154.57	2.71E+02	241.04			2.71E+02	2.41E+02
	13	186.25	5.88E+03	404.79	3.06E+01	5.82E+00	5.85E+03	4.05E+02
M	14	236.79	6.36E+02	251.52			6.36E+02	2.52E+02
m	15	242.23	5.48E+03	243.52			5.48E+03	2.44E+02
	16	257.83	7.17E+02	251.81			7.17E+02	2.52E+02
	17	270.19	3.88E+02	231.38			3.88E+02	2.31E+02
	18	275.32	1.92E+02	174.42			1.92E+02	1.74E+02
	19	295.46	1.12E+04	330.16			1.12E+04	3.30E+02
	20	352.17	1.85E+04	366.91	6.53E+00	4.43E+00	1.85E+04	3.67E+02
	21	388.32	4.54E+02	196.21			4.54E+02	1.96E+02
	22	454.91	1.72E+02	121.97			1.72E+02	1.22E+02
	23	461.80	1.50E+02	118.89			1.50E+02	1.19E+02
	24	486.93	2.37E+02	114.00			2.37E+02	1.14E+02
	25	495.92	1.99E+02	131.66			1.99E+02	1.32E+02
	26	510.54	3.97E+02	165.75	5.21E+01	4.74E+00	3.44E+02	1.66E+02
	27	551.39	7.30E+01	88.22			7.30E+01	8.82E+01
	28	609.56	1.28E+04	263.05	3.25E+00	2.97E+00	1.28E+04	2.63E+02
	29	624.29	1.02E+02	88.07			1.02E+02	8.81E+01
	30	665.85	3.80E+02	105.52			3.80E+02	1.06E+02
	31	703.42	1.18E+02	91.70			1.18E+02	9.17E+01
	32	719.97	1.30E+02	80.13			1.30E+02	8.01E+01
	33	743.62	2.80E+02	119.98			2.80E+02	1.20E+02
	34	768.21	1.28E+03	142.97			1.28E+03	1.43E+02
	35	785.90	2.61E+02	109.45			2.61E+02	1.09E+02
	36	806.42	2.44E+02	99.20			2.44E+02	9.92E+01
	37	839.22	1.39E+02	97.62			1.39E+02	9.76E+01
	38	903.55	8.75E+01	86.07			8.75E+01	8.61E+01
	39	934.26	5.20E+02	122.75			5.20E+02	1.23E+02
	40	964.15	6.57E+01	71.88			6.57E+01	7.19E+01
	41	982.80	5.58E+01	59.41			5.58E+01	5.94E+01
	42	1001.26	2.51E+02	93.27			2.51E+02	9.33E+01
	43	1069.49	1.13E+02	90.34			1.13E+02	9.03E+01
	44	1120.52	2.66E+03	140.29			2.66E+03	1.40E+02
	45	1155.18	2.82E+02	85.25			2.82E+02	8.53E+01
	46	1207.68	5.01E+01	49.84			5.01E+01	4.98E+01
	47	1238.19	1.00E+03	104.13			1.00E+03	1.04E+02
	48	1256.83	1.63E+02	140.12			1.63E+02	1.40E+02
	49	1280.91	2.88E+02	77.82			2.88E+02	7.78E+01
M	50	1373.21	7.23E+01	44.11			7.23E+01	4.41E+01
m	51	1377.91	6.38E+02	70.81			6.38E+02	7.08E+01
m	52	1385.21	1.63E+02	69.47			1.63E+02	6.95E+01
	53	1401.70	2.05E+02	72.20			2.05E+02	7.22E+01
	54	1408.16	3.54E+02	69.20			3.54E+02	6.92E+01

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	55	1509.03	2.82E+02	77.43			2.82E+02	7.74E+01
	56	1583.29	1.08E+02	58.14			1.08E+02	5.81E+01
	57	1597.03	1.07E+02	76.83			1.07E+02	7.68E+01
	58	1660.75	1.51E+02	58.65			1.51E+02	5.87E+01
	59	1684.94	3.49E+01	40.76			3.49E+01	4.08E+01
	60	1693.21	6.60E+01	38.35			6.60E+01	3.83E+01
M	61	1729.77	4.49E+02	51.54			4.49E+02	5.15E+01
m	62	1738.26	2.83E+01	28.31			2.83E+01	2.83E+01
	63	1747.89	1.72E+01	20.27			1.72E+01	2.03E+01
	64	1764.69	2.03E+03	103.30			2.03E+03	1.03E+02
	65	1803.30	3.82E+01	37.68			3.82E+01	3.77E+01
M	66	1838.48	4.32E+01	39.37			4.32E+01	3.94E+01
m	67	1847.48	2.63E+02	44.00			2.63E+02	4.40E+01
	68	1872.25	2.08E+01	26.76			2.08E+01	2.68E+01
	69	2024.26	4.89E+01	39.57			4.89E+01	3.96E+01
	70	2087.53	3.10E+01	15.52			3.10E+01	1.55E+01
	71	2118.81	1.47E+02	32.79			1.47E+02	3.28E+01
	72	2204.36	5.14E+02	50.52			5.14E+02	5.05E+01
	73	2241.90	1.99E+01	11.31			1.99E+01	1.13E+01
	74	2271.31	7.00E+00	9.38			7.00E+00	9.38E+00
	75	2293.45	3.50E+01	16.03			3.50E+01	1.60E+01
	76	2447.96	1.70E+02	26.08			1.70E+02	2.61E+01
	77	2614.31	2.90E+01	10.77	1.86E+00	1.12E+00	2.71E+01	1.08E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 5:20:30PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	16.53	2.79E+02	216.49			2.79E+02	2.16E+02
2	34.94	3.69E+02	225.66			3.69E+02	2.26E+02
3	46.67	1.60E+03	232.01	4.47E+01	1.09E+01	1.55E+03	2.32E+02
4	53.33	6.86E+02	314.74			6.86E+02	3.15E+02
5	63.34	3.11E+03	343.01	4.12E+01	5.67E+00	3.07E+03	3.43E+02

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	6	76.50	1.71E+04	668.66			1.71E+04	6.69E+02
M	7	84.20	1.27E+03	202.44	5.71E+00	6.69E+00	1.26E+03	2.03E+02
m	8	87.70	4.36E+03	427.22			4.36E+03	4.27E+02
m	9	92.80	6.37E+03	428.50	7.98E+01	7.31E+00	6.29E+03	4.29E+02
	10	111.99	3.71E+02	282.90			3.71E+02	2.83E+02
	11	144.01	7.55E+02	277.95			7.55E+02	2.78E+02
	12	154.57	2.71E+02	241.04			2.71E+02	2.41E+02
	13	186.25	5.88E+03	404.79	3.06E+01	5.82E+00	5.85E+03	4.05E+02
M	14	236.79	6.36E+02	251.52			6.36E+02	2.52E+02
m	15	242.23	5.48E+03	243.52			5.48E+03	2.44E+02
	16	257.83	7.17E+02	251.81			7.17E+02	2.52E+02
	17	270.19	3.88E+02	231.38			3.88E+02	2.31E+02
	18	275.32	1.92E+02	174.42			1.92E+02	1.74E+02
	19	295.46	1.12E+04	330.16			1.12E+04	3.30E+02
	20	352.17	1.85E+04	366.91	6.53E+00	4.43E+00	1.85E+04	3.67E+02
	21	388.32	4.54E+02	196.21			4.54E+02	1.96E+02
	22	454.91	1.72E+02	121.97			1.72E+02	1.22E+02
	23	461.80	1.50E+02	118.89			1.50E+02	1.19E+02
	24	486.93	2.37E+02	114.00			2.37E+02	1.14E+02
	25	495.92	1.99E+02	131.66			1.99E+02	1.32E+02
	26	510.54	3.97E+02	165.75	5.21E+01	4.74E+00	3.44E+02	1.66E+02
	27	551.39	7.30E+01	88.22			7.30E+01	8.82E+01
	28	609.56	1.28E+04	263.05	3.25E+00	2.97E+00	1.28E+04	2.63E+02
	29	624.29	1.02E+02	88.07			1.02E+02	8.81E+01
	30	665.85	3.80E+02	105.52			3.80E+02	1.06E+02
	31	703.42	1.18E+02	91.70			1.18E+02	9.17E+01
	32	719.97	1.30E+02	80.13			1.30E+02	8.01E+01
	33	743.62	2.80E+02	119.98			2.80E+02	1.20E+02
	34	768.21	1.28E+03	142.97			1.28E+03	1.43E+02
	35	785.90	2.61E+02	109.45			2.61E+02	1.09E+02
	36	806.42	2.44E+02	99.20			2.44E+02	9.92E+01
	37	839.22	1.39E+02	97.62			1.39E+02	9.76E+01
	38	903.55	8.75E+01	86.07			8.75E+01	8.61E+01
	39	934.26	5.20E+02	122.75			5.20E+02	1.23E+02
	40	964.15	6.57E+01	71.88			6.57E+01	7.19E+01
	41	982.80	5.58E+01	59.41			5.58E+01	5.94E+01
	42	1001.26	2.51E+02	93.27			2.51E+02	9.33E+01
	43	1069.49	1.13E+02	90.34			1.13E+02	9.03E+01
	44	1120.52	2.66E+03	140.29			2.66E+03	1.40E+02
	45	1155.18	2.82E+02	85.25			2.82E+02	8.53E+01
	46	1207.68	5.01E+01	49.84			5.01E+01	4.98E+01
	47	1238.19	1.00E+03	104.13			1.00E+03	1.04E+02
	48	1256.83	1.63E+02	140.12			1.63E+02	1.40E+02
	49	1280.91	2.88E+02	77.82			2.88E+02	7.78E+01
M	50	1373.21	7.23E+01	44.11			7.23E+01	4.41E+01
m	51	1377.91	6.38E+02	70.81			6.38E+02	7.08E+01
m	52	1385.21	1.63E+02	69.47			1.63E+02	6.95E+01
	53	1401.70	2.05E+02	72.20			2.05E+02	7.22E+01
	54	1408.16	3.54E+02	69.20			3.54E+02	6.92E+01
	55	1509.03	2.82E+02	77.43			2.82E+02	7.74E+01
	56	1583.29	1.08E+02	58.14			1.08E+02	5.81E+01
	57	1597.03	1.07E+02	76.83			1.07E+02	7.68E+01
	58	1660.75	1.51E+02	58.65			1.51E+02	5.87E+01
	59	1684.94	3.49E+01	40.76			3.49E+01	4.08E+01

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	60	1693.21	6.60E+01	38.35			6.60E+01	3.83E+01
M	61	1729.77	4.49E+02	51.54			4.49E+02	5.15E+01
m	62	1738.26	2.83E+01	28.31			2.83E+01	2.83E+01
	63	1747.89	1.72E+01	20.27			1.72E+01	2.03E+01
	64	1764.69	2.03E+03	103.30			2.03E+03	1.03E+02
	65	1803.30	3.82E+01	37.68			3.82E+01	3.77E+01
M	66	1838.48	4.32E+01	39.37			4.32E+01	3.94E+01
m	67	1847.48	2.63E+02	44.00			2.63E+02	4.40E+01
	68	1872.25	2.08E+01	26.76			2.08E+01	2.68E+01
	69	2024.26	4.89E+01	39.57			4.89E+01	3.96E+01
	70	2087.53	3.10E+01	15.52			3.10E+01	1.55E+01
	71	2118.81	1.47E+02	32.79			1.47E+02	3.28E+01
	72	2204.36	5.14E+02	50.52			5.14E+02	5.05E+01
	73	2241.90	1.99E+01	11.31			1.99E+01	1.13E+01
	74	2271.31	7.00E+00	9.38			7.00E+00	9.38E+00
	75	2293.45	3.50E+01	16.03			3.50E+01	1.60E+01
	76	2447.96	1.70E+02	26.08			1.70E+02	2.61E+01
	77	2614.31	2.90E+01	10.77	1.86E+00	1.12E+00	2.71E+01	1.08E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
NB-93M	1.000	16.57	*	9.43	1.43E+02	1.26E+03
CD-109	0.982	88.03	*	3.72	4.69E+01	6.62E+00
I-125	0.939	35.49	*	6.49	1.84E+01	1.17E+01
SN-126	0.997	87.57	*	37.00	4.06E+00	5.21E-01
LA-140	0.370	328.77		20.50		
		487.03	*	45.50	1.30E+02	6.38E+01
		815.85		23.50		
		1596.49	*	95.49	7.79E+01	5.65E+01
PB-210	0.995	46.50	*	4.25	1.98E+01	3.56E+00
BI-214	0.991	609.31	*	46.30	3.66E+01	3.53E+00
		1120.29	*	15.10	4.00E+01	4.00E+00
		1764.49	*	15.80	4.19E+01	3.94E+00
		2204.22	*	4.98	3.91E+01	5.14E+00

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.990	295.21	*	19.19	4.06E+01	3.66E+00
		351.92	*	37.19	4.04E+01	3.70E+00
RA-226	1.000	186.21	*	3.28	8.51E+01	1.56E+02
TH-231	0.309	25.64		14.70		
		84.21	*	6.40	6.78E+00	1.22E+00
PA-234M	0.992	1001.03	*	0.92	5.62E+01	2.14E+01
TH-234	1.000	63.29	*	3.80	3.09E+01	4.13E+00

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 5:20:30PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	4	53.33	1.90509E-01	22.95		
	6	76.50	4.75602E+00	1.95		
m	9	92.80	1.74758E+00	3.41	Sum	
	10	111.99	1.03045E-01	38.13		
	11	144.01	2.09675E-01	18.41	Tol.	U-235
	12	154.57	7.53583E-02	44.42		
M	14	236.79	1.76603E-01	19.78	Tol.	TH-227
m	15	242.23	1.52291E+00	2.22		
	16	257.83	1.99093E-01	17.57		
	17	270.19	1.07900E-01	29.78	Sum	
	18	275.32	5.32981E-02	45.45		
	21	388.32	1.26042E-01	21.62		
	22	454.91	4.78172E-02	35.43		
	23	461.80	4.16828E-02	39.62		
	25	495.92	5.51979E-02	33.13		
	26	510.54	9.56937E-02	24.07		
	27	551.39	2.02778E-02	60.42		
	29	624.29	2.83845E-02	43.09		
	30	665.85	1.05546E-01	13.89	Tol.	SB-126
	31	703.42	3.27771E-02	38.85	Sum	
	32	719.97	3.61215E-02	30.81	Tol.	SB-126
	33	743.62	7.78348E-02	21.41	D-Esc	

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	34	768.21	3.56100E-01	5.58		
	35	785.90	7.24293E-02	20.99		
	36	806.42	6.77586E-02	20.33		
	37	839.22	3.85865E-02	35.14	Sum	
	38	903.55	2.43146E-02	49.16		
	39	934.26	1.44433E-01	11.80		
	40	964.15	1.82603E-02	54.68	Tol.	EU-152
	41	982.80	1.55072E-02	53.21	Tol.	V-48
	43	1069.49	3.13778E-02	39.99		
	45	1155.18	7.83899E-02	15.10	Sum	
	46	1207.68	1.39098E-02	49.76	Sum	
	47	1238.19	2.77878E-01	5.20	Tol.	CO-56
	48	1256.83	4.52629E-02	43.00		
	49	1280.91	7.99996E-02	13.51		
M	50	1373.21	2.00962E-02	30.49		
m	51	1377.91	1.77291E-01	5.55		
m	52	1385.21	4.52585E-02	21.32	Tol.	AG-110M
	53	1401.70	5.70241E-02	17.59		
	54	1408.16	9.83782E-02	9.77	Tol.	EU-152
	55	1509.03	7.84235E-02	13.71		
	56	1583.29	2.98715E-02	27.03		
	58	1660.75	4.19090E-02	19.44	Sum	
	59	1684.94	9.69664E-03	58.38	Sum	
	60	1693.21	1.83423E-02	29.04	S-Esc	
M	61	1729.77	1.24754E-01	5.74	Sum	
m	62	1738.26	7.85252E-03	50.07		
	63	1747.89	4.78758E-03	58.81		
	65	1803.30	1.06039E-02	49.35		
M	66	1838.48	1.20029E-02	45.56		
m	67	1847.48	7.30822E-02	8.36		
	68	1872.25	5.76667E-03	64.45		
	69	2024.26	1.35700E-02	40.50		
	70	2087.53	8.61111E-03	25.04		
	71	2118.81	4.08677E-02	11.14		
	73	2241.90	5.52536E-03	28.44	Sum	
	74	2271.31	1.94444E-03	67.01		
	75	2293.45	9.72222E-03	22.90		
	76	2447.96	4.72222E-02	7.67		
	77	2614.31	7.53943E-03	19.95	Tol.	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
NB-93M	1.00	16.57	*	9.43	1.43E+02	1.26E+03
CD-109	0.98	88.03	*	3.72	4.69E+01	6.62E+00
I-125	0.93	35.49	*	6.49	1.84E+01	1.17E+01
SN-126	0.99	87.57	*	37.00	4.06E+00	5.21E-01
LA-140	0.37	328.77		20.50		
		487.03	*	45.50	1.30E+02	6.38E+01
		815.85		23.50		
		1596.49	*	95.49	7.79E+01	5.65E+01
PB-210	0.99	46.50	*	4.25	1.98E+01	3.56E+00
BI-214	0.99	609.31	*	46.30	3.66E+01	3.53E+00
		1120.29	*	15.10	4.00E+01	4.00E+00
		1764.49	*	15.80	4.19E+01	3.94E+00
		2204.22	*	4.98	3.91E+01	5.14E+00
PB-214	0.99	295.21	*	19.19	4.06E+01	3.66E+00
		351.92	*	37.19	4.04E+01	3.70E+00
RA-226	1.00	186.21	*	3.28	8.51E+01	1.56E+02
TH-231	0.30	25.64		14.70		
		84.21	*	6.40	6.78E+00	1.22E+00
PA-234M	0.99	1001.03	*	0.92	5.62E+01	2.14E+01
TH-234	1.00	63.29	*	3.80	3.09E+01	4.13E+00

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	NB-93M	1.000	1.43E+02	1.26E+03	
?	CD-109	0.982	4.69E+01	6.62E+00	
	I-125	0.939	1.84E+01	1.17E+01	
?	SN-126	0.997	4.06E+00	5.21E-01	
	LA-140	0.370	1.01E+02	4.23E+01	
	PB-210	0.995	1.98E+01	3.56E+00	
	BI-214	0.991	3.93E+01	2.02E+00	
	PB-214	0.990	4.05E+01	2.60E+00	
	RA-226	1.000	8.51E+01	1.56E+02	
	TH-231	0.309	6.78E+00	1.22E+00	
	PA-234M	0.992	5.62E+01	2.14E+01	
	TH-234	1.000	3.09E+01	4.13E+00	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 5:20:30PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	4	53.33	1.90509E-01	22.95		
	6	76.50	4.75602E+00	1.95		
m	9	92.80	1.74758E+00	3.41	Sum	
	10	111.99	1.03045E-01	38.13		
	11	144.01	2.09675E-01	18.41	Tol.	U-235
	12	154.57	7.53583E-02	44.42		
M	14	236.79	1.76603E-01	19.78	Tol.	TH-227
m	15	242.23	1.52291E+00	2.22		
	16	257.83	1.99093E-01	17.57		
	17	270.19	1.07900E-01	29.78	Sum	
	18	275.32	5.32981E-02	45.45		
	21	388.32	1.26042E-01	21.62		
	22	454.91	4.78172E-02	35.43		
	23	461.80	4.16828E-02	39.62		
	25	495.92	5.51979E-02	33.13		
	26	510.54	9.56937E-02	24.07		
	27	551.39	2.02778E-02	60.42		
	29	624.29	2.83845E-02	43.09		
	30	665.85	1.05546E-01	13.89	Tol.	SB-126
	31	703.42	3.27771E-02	38.85	Sum	
	32	719.97	3.61215E-02	30.81	Tol.	SB-126
	33	743.62	7.78348E-02	21.41	D-Esc	
	34	768.21	3.56100E-01	5.58		
	35	785.90	7.24293E-02	20.99		
	36	806.42	6.77586E-02	20.33		
	37	839.22	3.85865E-02	35.14	Sum	
	38	903.55	2.43146E-02	49.16		
	39	934.26	1.44433E-01	11.80		
	40	964.15	1.82603E-02	54.68	Tol.	EU-152
	41	982.80	1.55072E-02	53.21	Tol.	V-48
	43	1069.49	3.13778E-02	39.99		
	45	1155.18	7.83899E-02	15.10	Sum	
	46	1207.68	1.39098E-02	49.76	Sum	
	47	1238.19	2.77878E-01	5.20	Tol.	CO-56
	48	1256.83	4.52629E-02	43.00		

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	49	1280.91	7.99996E-02	13.51		
M	50	1373.21	2.00962E-02	30.49		
m	51	1377.91	1.77291E-01	5.55		
m	52	1385.21	4.52585E-02	21.32	Tol.	AG-110M
	53	1401.70	5.70241E-02	17.59		
	54	1408.16	9.83782E-02	9.77	Tol.	EU-152
	55	1509.03	7.84235E-02	13.71		
	56	1583.29	2.98715E-02	27.03		
	58	1660.75	4.19090E-02	19.44	Sum	
	59	1684.94	9.69664E-03	58.38	Sum	
	60	1693.21	1.83423E-02	29.04	S-Esc	
M	61	1729.77	1.24754E-01	5.74	Sum	
m	62	1738.26	7.85252E-03	50.07		
	63	1747.89	4.78758E-03	58.81		
	65	1803.30	1.06039E-02	49.35		
M	66	1838.48	1.20029E-02	45.56		
m	67	1847.48	7.30822E-02	8.36		
	68	1872.25	5.76667E-03	64.45		
	69	2024.26	1.35700E-02	40.50		
	70	2087.53	8.61111E-03	25.04		
	71	2118.81	4.08677E-02	11.14		
	73	2241.90	5.52536E-03	28.44	Sum	
	74	2271.31	1.94444E-03	67.01		
	75	2293.45	9.72222E-03	22.90		
	76	2447.96	4.72222E-02	7.67		
	77	2614.31	7.53943E-03	19.95	Tol.	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	1.28E+00	6.48E+00	6.48E+00

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		NA-22	1274.54		99.94	1.31E-01	2.14E-01	2.14E-01
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	2.97E-02	1.44E-01	1.44E-01
+		K-40	1460.81		10.67	1.03E+00	2.45E+00	2.45E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	1.10E-01	1.80E-01	1.80E-01
			78.34		96.00	2.31E+00		2.41E-01
+		SC-46	889.25		99.98	-2.83E-03	4.82E-01	4.82E-01
			1120.51		99.99	1.38E+01		1.34E+00
+		V-48	983.52		99.98	5.80E-01	1.60E+01	1.60E+01
			1312.10		97.50	-4.54E+00		1.62E+01
+		CR-51	320.08		9.83	-9.23E+00	2.24E+01	2.24E+01
+		MN-54	834.83		99.97	3.08E-02	2.59E-01	2.59E-01
+		CO-56	846.75		99.96	9.44E-03	4.76E-01	4.76E-01
			1037.75		14.03	2.93E-01		3.29E+00
			1238.25		67.00	8.46E+00		1.48E+00
			1771.40		15.51	3.61E-02		2.88E+00
			2598.48		16.90	1.09E-01		5.53E-01
+		CO-57	122.06		85.51	-4.27E-02	2.07E-01	2.07E-01
			136.48		10.60	1.11E-01		1.78E+00
+		CO-58	810.76		99.40	-8.33E-02	5.13E-01	5.13E-01
+		FE-59	1099.22		56.50	1.00E-01	1.80E+00	1.80E+00
			1291.56		43.20	-3.18E-01		2.14E+00
+		CO-60	1173.22		100.00	6.95E-02	1.99E-01	2.14E-01
			1332.49		100.00	1.45E-02		1.99E-01
+		ZN-65	1115.52		50.75	5.47E-02	5.58E-01	5.58E-01
+		GA-67	93.31		35.70	8.94E+09	9.54E+08	9.54E+08
			208.95		2.24	5.08E+09		1.51E+10
			300.22		16.00	7.94E+08		2.66E+09
+		SE-75	121.11		16.70	-2.45E-01	4.40E-01	1.46E+00
			136.00		59.20	-6.19E-02		4.40E-01
			264.65		59.80	7.32E-02		5.31E-01
			279.53		25.20	3.05E-01		1.29E+00
			400.65		11.40	2.31E-01		3.08E+00
+		RB-82	776.52		13.00	2.41E+00	2.19E+01	2.19E+01
+		RB-83	520.41		46.00	-3.97E-01	8.28E-01	8.28E-01
			529.64		30.30	-9.25E-01		1.31E+00
			552.65		16.40	2.06E-01		2.44E+00
+		KR-85	513.99		0.43	1.65E+01	4.36E+01	4.36E+01
+		SR-85	513.99		99.27	2.07E-01	5.48E-01	5.48E-01
+		Y-88	898.02		93.40	2.56E-02	3.74E-01	4.40E-01
			1836.01		99.38	2.49E-01		3.74E-01
+		MO-93	263.06		56.72	4.37E-02	1.77E-01	3.24E-01
			684.67		99.68	1.06E-02		1.77E-01
			1477.11		99.08	6.46E-02		2.69E-01
+		NB-93M	16.57	*	9.43	1.43E+02	1.81E+02	1.81E+02

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-94	702.63		100.00	1.03E-01	1.88E-01	1.88E-01
		871.10		100.00	-3.61E-02		2.05E-01
+	NB-95	765.79		99.81	1.02E+01	2.27E+00	2.27E+00
+	NB-95M	235.69		25.00	-4.47E+08	1.81E+08	1.81E+08
+	ZR-95	724.18		43.70	-1.78E-01	9.53E-01	1.25E+00
		756.72		55.30	-1.07E-01		9.53E-01
+	MO-99	181.06		6.20	9.44E+09	1.43E+11	2.47E+11
		739.58		12.80	-4.23E+10		1.43E+11
		778.00		4.50	7.71E+10		3.99E+11
+	RU-103	497.08		89.00	8.23E-01	1.17E+00	1.17E+00
+	RU-106	621.84		9.80	1.33E-01	2.01E+00	2.01E+00
+	AG-108M	433.93		89.90	-1.36E-01	2.01E-01	2.01E-01
		614.37		90.40	8.42E-02		3.74E-01
		722.95		90.50	-4.19E-02		2.06E-01
+	CD-109	88.03	*	3.72	4.69E+01	1.15E+01	1.15E+01
+	AG-110M	657.75		93.14	-1.04E-02	2.44E-01	2.44E-01
		677.61		10.53	4.69E-01		2.16E+00
		706.67		16.46	-1.90E-01		1.48E+00
		763.93		21.98	-1.13E+01		1.30E+00
		884.67		71.63	-2.88E-02		3.78E-01
		1384.27		23.94	-7.57E-01		1.37E+00
+	CD-113M	263.70		0.02	1.08E+02	7.82E+02	7.82E+02
+	SN-113	255.12		1.93	-1.87E+00	5.39E-01	1.73E+01
		391.69		64.90	-1.09E-01		5.39E-01
+	TE123M	159.00		84.10	3.06E-02	3.33E-01	3.33E-01
+	SB-124	602.71		97.87	1.02E-01	5.94E-01	5.94E-01
		645.85		7.26	2.48E+00		7.21E+00
		722.78		11.10	-1.08E+00		5.34E+00
		1691.02		49.00	1.25E+00		1.32E+00
+	I-125	35.49	*	6.49	1.84E+01	1.83E+01	1.83E+01
+	SB-125	176.33		6.89	1.26E-01	7.06E-01	2.41E+00
		427.89		29.33	2.72E-02		7.06E-01
		463.38		10.35	1.30E-01		1.87E+00
		600.56		17.80	2.34E-01		1.09E+00
		635.90		11.32	7.87E-01		1.61E+00
+	SB-126	414.70		83.30	2.50E+01	4.88E+01	6.42E+01
		666.33		99.60	1.46E+02		5.72E+01
		695.00		99.60	2.57E+01		4.88E+01
		720.50		53.80	9.80E+01		9.68E+01
+	SN-126	87.57	*	37.00	4.06E+00	9.97E-01	9.97E-01
+	SB-127	473.00		25.00	2.74E+07	3.43E+07	5.11E+07
		685.20		35.70	2.06E+06		3.43E+07
		783.80		14.70	1.89E+08		1.07E+08
+	I-129	29.78		57.00	5.86E-02	9.21E-01	9.21E-01
		33.60		13.20	-1.98E+00		2.66E+00
		39.58		7.52	-3.23E-01		3.10E+00
+	I-131	284.30		6.05	3.57E+03	1.20E+03	1.73E+04
		364.48		81.20	-2.73E+02		1.20E+03

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-131	636.97		7.26	-6.67E+02	1.20E+03	1.32E+04
		722.89		1.80	-1.20E+04		5.94E+04
+	TE-132	49.72		13.10	-1.62E+10	3.88E+08	2.56E+09
		228.16		88.00	5.25E+07		3.88E+08
+	BA-133	81.00		33.00	-7.73E+00	5.33E-01	5.33E-01
		302.84		17.80	5.93E-01		1.04E+00
		356.01		60.00	5.10E-02		6.58E-01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-3.82E+06	2.64E+05	2.64E+05
+	CS-134	563.23		8.38	2.83E-01	2.40E-01	2.29E+00
		569.32		15.43	-3.33E-01		1.27E+00
		604.70		97.60	4.55E-02		3.09E-01
		795.84		85.40	-2.55E-04		2.40E-01
		801.93		8.73	4.19E-01		2.42E+00
+	CS-135	268.24		16.00	2.68E-01	1.20E+00	1.20E+00
+	@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41		28.60	1.00E+26		1.00E+26
	@	1678.03		9.54	1.00E+26		1.00E+26
+	CS-136	153.22		7.46	-1.34E+02	3.99E+01	4.21E+02
		163.89		4.61	2.94E+02		6.72E+02
		176.55		13.56	1.18E+01		2.26E+02
		273.65		12.66	1.73E+02		3.04E+02
		340.57		48.50	6.61E+01		7.72E+01
		818.50		99.70	2.31E+01		3.99E+01
		1048.07		79.60	-7.72E+00		4.93E+01
		1235.34		19.70	4.54E+02		3.43E+02
+	CS-137	661.65		85.12	7.50E-03	2.24E-01	2.24E-01
+	LA-138	788.74		34.00	2.46E-02	3.19E-01	6.47E-01
		1435.80		66.00	-8.18E-02		3.19E-01
+	CE-139	165.85		80.35	1.86E-01	3.21E-01	3.21E-01
+	BA-140	162.64		6.70	4.59E+02	1.70E+02	5.42E+02
		304.84		4.50	-3.06E+02		9.11E+02
		423.70		3.20	3.80E+02		1.43E+03
		437.55		2.00	-8.99E+02		2.07E+03
		537.32		25.00	9.92E+01		1.70E+02
+	LA-140	328.77		20.50	-1.88E+01	9.09E+01	2.07E+02
		487.03	*	45.50	1.30E+02		1.01E+02
		815.85		23.50	-3.13E+01		1.92E+02
		1596.49	*	95.49	7.79E+01		9.09E+01
+	CE-141	145.44		48.40	3.51E+00	2.78E+00	2.78E+00
+	@ CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26		42.00	1.00E+26		1.00E+26
	@	664.55		5.20	1.00E+26		1.00E+26
+	CE-144	133.54		10.80	8.70E-03	1.71E+00	1.71E+00
+	PM-144	476.78		42.00	-3.12E-01	2.02E-01	5.22E-01
		618.01		98.60	8.56E-02		2.02E-01
		696.49		99.49	4.73E-02		2.12E-01
+	PM-145	36.85		21.70	-1.17E+00	6.77E-01	1.27E+00
		37.36		39.70	-6.12E-02		6.77E-01

Analysis Report for 1707092-15

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-145	42.30	15.10	-6.70E-01	6.77E-01	1.41E+00
		72.40	2.31	-7.89E+01		8.57E+00
+	PM-146	453.90	39.94	3.62E-01	4.74E-01	4.74E-01
		735.90	14.01	1.60E-01		1.31E+00
		747.13	13.10	-7.20E-01		1.47E+00
+	ND-147	91.11	28.90	-3.22E+02	3.63E+02	3.63E+02
		531.02	13.10	-3.26E+01		7.81E+02
+	PM-149	285.90	3.10	-9.54E+12	2.71E+14	2.71E+14
+	EU-152	121.78	20.50	-1.39E-01	6.76E-01	6.76E-01
		244.69	5.40	4.58E+01		4.88E+00
		344.27	19.13	2.01E-02		9.95E-01
		778.89	9.20	7.88E-01		2.06E+00
		964.01	10.40	-2.82E-01		2.07E+00
		1085.78	7.22	-5.76E-01		2.67E+00
		1112.02	9.60	1.30E-01		2.12E+00
		1407.95	14.94	5.36E+00		2.17E+00
+	GD-153	97.43	31.30	4.81E-01	5.76E-01	5.76E-01
		103.18	22.20	-1.25E+00		7.69E-01
+	EU-154	123.07	40.50	1.12E-01	3.49E-01	3.49E-01
		723.30	19.70	-1.96E-01		9.68E-01
		873.19	11.50	3.50E-02		1.81E+00
		996.32	10.30	1.21E-01		2.05E+00
		1004.76	17.90	-1.05E-01		1.25E+00
		1274.45	35.50	3.49E-01		5.72E-01
+	EU-155	86.50	30.90	2.18E+00	6.10E-01	6.10E-01
		105.30	20.70	-1.73E-01		6.58E-01
+	EU-156	811.77	10.40	-2.16E+01	1.77E+02	1.77E+02
		1153.47	7.20	6.20E+02		3.58E+02
		1230.71	8.90	0.00E+00		2.04E+02
+	HO-166M	184.41	72.60	2.82E+00	3.09E-01	3.09E-01
		280.45	29.60	2.68E-01		6.15E-01
		410.94	11.10	-8.69E-01		1.75E+00
		711.69	54.10	2.07E-01		3.37E-01
+	TM-171	66.72	0.14	5.13E+01	1.37E+02	1.37E+02
+	HF-172	67.35	5.31	2.16E+00	1.37E+00	3.55E+00
		125.81	11.30	-3.33E-01		1.37E+00
+	LU-172	181.53	20.60	-2.11E+03	1.06E+04	2.50E+04
		900.72	29.81	7.66E+02		2.39E+04
		1093.66	62.50	-2.13E+03		1.06E+04
+	LU-173	100.72	5.24	3.77E-01	1.09E+00	2.86E+00
		272.11	21.20	2.46E+00		1.09E+00
+	HF-175	343.40	84.00	1.22E-02	6.02E-01	6.02E-01
+	LU-176	88.34	13.30	-4.14E+00	1.84E-01	1.37E+00
		201.83	86.00	-4.21E-02		1.84E-01
		306.78	94.00	-9.70E-02		1.87E-01
+	HF-181	133.02	41.70	-6.50E-03	1.16E+00	1.78E+00
		345.85	17.20	5.92E-01		5.69E+00
		482.03	82.80	4.60E-01		1.16E+00
+	TA-182	67.75	41.20	4.61E-01	7.56E-01	7.56E-01

Analysis Report for 1707092-15

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TA-182	1121.30		34.90	3.14E+01	7.56E-01	3.07E+00
		1189.05		16.23	-9.09E-01		2.21E+00
		1221.41		26.98	3.63E-01		1.31E+00
		1231.02		11.44	0.00E+00		2.99E+00
+	IR-192	308.46		29.68	-5.55E-02	9.43E-01	1.51E+00
		468.07		48.10	1.28E-01		9.43E-01
+	HG-203	279.19		77.30	-5.35E-02	1.05E+00	1.05E+00
+	TL-204	374.74		94.11	2.41E-04	1.95E-01	1.95E-01
		899.15		99.16	2.31E-02		2.29E-01
		911.74		91.10	2.19E-01		2.61E-01
+	BI-207	569.67		97.72	1.72E-02	1.86E-01	1.86E-01
		1063.62		74.90	1.79E-02		2.70E-01
+	TL-208	583.14		30.22	5.24E-01	3.23E-01	6.31E-01
		860.37		4.48	3.21E-01		4.53E+00
		2614.66		35.85	3.38E-01		3.23E-01
+	BI-210M	262.00		45.00	-4.80E-03	4.09E-01	4.09E-01
		300.00		23.00	2.99E-01		1.00E+00
+	PB-210	46.50	*	4.25	1.98E+01	4.63E+00	4.63E+00
+	PB-211	404.84		2.90	5.77E+00	6.78E+00	6.93E+00
		831.96		2.90	-1.73E+00		6.78E+00
+	BI-212	727.17		11.80	1.04E-01	1.56E+00	1.56E+00
		1620.62		2.75	1.34E+00		7.80E+00
+	PB-212	238.63		44.60	-9.57E-01	5.38E-01	5.38E-01
		300.09		3.41	2.02E+00		6.75E+00
+	BI-214	609.31	*	46.30	3.66E+01	6.43E-01	6.43E-01
		1120.29	*	15.10	4.00E+01		2.39E+00
		1764.49	*	15.80	4.19E+01		1.77E+00
		2204.22	*	4.98	3.91E+01		3.00E+00
+	PB-214	295.21	*	19.19	4.06E+01	8.87E-01	1.52E+00
		351.92	*	37.19	4.04E+01		8.87E-01
+	RN-219	401.80		6.50	6.79E-01	3.05E+00	3.05E+00
+	RA-223	323.87		3.88	-1.37E-02	4.66E+00	4.66E+00
+	RA-224	240.98		3.95	7.34E+01	6.90E+00	6.90E+00
+	RA-225	40.00		31.00	-8.43E+00	8.08E+01	8.08E+01
+	RA-226	186.21	*	3.28	8.51E+01	9.01E+00	9.01E+00
+	TH-227	50.10		8.40	-1.33E+01	1.68E+00	2.10E+00
		236.00		11.50	-4.15E+00		1.68E+00
		256.20		6.30	2.57E+00		2.97E+00
+	AC-228	338.32		11.40	-5.55E-01	8.09E-01	1.63E+00
		911.07		27.70	2.94E-01		8.09E-01
		969.11		16.60	-6.75E-02		1.26E+00
+	TH-230	48.44		16.90	1.00E+00	1.16E+00	1.16E+00
		62.85		4.60	2.85E+01		4.26E+00
		67.67		0.37	2.80E+01		4.59E+01
+	PA-231	283.67		1.60	5.93E+00	7.91E+00	1.14E+01
		302.67		2.30	4.51E+00		7.91E+00
+	TH-231	25.64		14.70	-3.41E-01	5.55E+00	6.75E+00
		84.21	*	6.40	6.78E+00		5.55E+00

Analysis Report for 1707092-15

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PA-233	311.98		38.60	-3.50E-01	6.02E+00	6.02E+00
+	PA-234	131.20		20.40	1.79E-01	7.03E-01	7.03E-01
		733.99		8.80	5.31E-01		2.06E+00
		946.00		12.00	-3.81E-01		1.66E+00
+	PA-234M	1001.03	*	0.92	5.62E+01	3.29E+01	3.29E+01
+	TH-234	63.29	*	3.80	3.09E+01	5.40E+00	5.40E+00
+	U-235	143.76		10.50	2.57E+00	1.50E+00	1.50E+00
		163.35		4.70	1.45E+00		3.33E+00
		205.31		4.70	2.28E+00		3.97E+00
+	NP-237	86.50		12.60	5.15E+00	1.44E+00	1.44E+00
+	NP-239	106.10		22.70	-1.03E+12	3.92E+12	3.92E+12
		228.18		10.70	1.56E+12		1.15E+13
		277.60		14.10	-6.23E+11		8.91E+12
+	AM-241	59.54		35.90	-2.18E-01	4.72E-01	4.72E-01
+	AM-243	74.67		66.00	1.78E+00	3.59E-01	3.59E-01
+	CM-243	209.75		3.29	-3.15E+00	1.33E+00	5.55E+00
		228.14		10.60	2.33E-01		1.73E+00
		277.60		14.00	-9.32E-02		1.33E+00

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59	10.42	6.48E+00	6.48E+00	1.28E+00	3.19E+00
	NA-22	1274.54	99.94	2.14E-01	2.14E-01	1.31E-01	1.03E-01
@	NA-24	1368.53	99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09	99.86	1.00E+26		1.00E+26	1.00E+20

Analysis Report for 1707092-15

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	AL-26	1808.65		99.76	1.44E-01	1.44E-01	2.97E-02	6.75E-02
	K-40	1460.81		10.67	2.45E+00	2.45E+00	1.03E+00	1.19E+00
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	1.80E-01	1.80E-01	1.10E-01	8.95E-02
		78.34		96.00	2.41E-01		2.31E+00	1.20E-01
	SC-46	889.25		99.98	4.82E-01	4.82E-01	-2.83E-03	2.35E-01
		1120.51		99.99	1.34E+00		1.38E+01	6.61E-01
	V-48	983.52		99.98	1.60E+01	1.60E+01	5.80E-01	7.81E+00
		1312.10		97.50	1.62E+01		-4.54E+00	7.84E+00
	CR-51	320.08		9.83	2.24E+01	2.24E+01	-9.23E+00	1.11E+01
	MN-54	834.83		99.97	2.59E-01	2.59E-01	3.08E-02	1.26E-01
	CO-56	846.75		99.96	4.76E-01	4.76E-01	9.44E-03	2.32E-01
		1037.75		14.03	3.29E+00		2.93E-01	1.60E+00
		1238.25		67.00	1.48E+00		8.46E+00	7.30E-01
		1771.40		15.51	2.88E+00		3.61E-02	1.37E+00
		2598.48		16.90	5.53E-01		1.09E-01	1.96E-01
	CO-57	122.06		85.51	2.07E-01	2.07E-01	-4.27E-02	1.03E-01
		136.48		10.60	1.78E+00		1.11E-01	8.83E-01
	CO-58	810.76		99.40	5.13E-01	5.13E-01	-8.33E-02	2.50E-01
	FE-59	1099.22		56.50	1.80E+00	1.80E+00	1.00E-01	8.73E-01
		1291.56		43.20	2.14E+00		-3.18E-01	1.03E+00
	CO-60	1173.22		100.00	2.14E-01	1.99E-01	6.95E-02	1.03E-01
		1332.49		100.00	1.99E-01		1.45E-02	9.57E-02
	ZN-65	1115.52		50.75	5.58E-01	5.58E-01	5.47E-02	2.71E-01
	GA-67	93.31		35.70	9.54E+08	9.54E+08	8.94E+09	4.74E+08
		208.95		2.24	1.51E+10		5.08E+09	7.49E+09
		300.22		16.00	2.66E+09		7.94E+08	1.32E+09
	SE-75	121.11		16.70	1.46E+00	4.40E-01	-2.45E-01	7.25E-01
		136.00		59.20	4.40E-01		-6.19E-02	2.18E-01
		264.65		59.80	5.31E-01		7.32E-02	2.63E-01
		279.53		25.20	1.29E+00		3.05E-01	6.37E-01
		400.65		11.40	3.08E+00		2.31E-01	1.52E+00
	RB-82	776.52		13.00	2.19E+01	2.19E+01	2.41E+00	1.07E+01
	RB-83	520.41		46.00	8.28E-01	8.28E-01	-3.97E-01	4.06E-01
		529.64		30.30	1.31E+00		-9.25E-01	6.45E-01
		552.65		16.40	2.44E+00		2.06E-01	1.20E+00
	KR-85	513.99		0.43	4.36E+01	4.36E+01	1.65E+01	2.15E+01
	SR-85	513.99		99.27	5.48E-01	5.48E-01	2.07E-01	2.70E-01
	Y-88	898.02		93.40	4.40E-01	3.74E-01	2.56E-02	2.15E-01
		1836.01		99.38	3.74E-01		2.49E-01	1.78E-01
	MO-93	263.06		56.72	3.24E-01	1.77E-01	4.37E-02	1.61E-01
		684.67		99.68	1.77E-01		1.06E-02	8.65E-02
		1477.11		99.08	2.69E-01		6.46E-02	1.31E-01
+	NB-93M	16.57	*	9.43	1.81E+02	1.81E+02	1.43E+02	9.00E+01
	NB-94	702.63		100.00	1.88E-01	1.88E-01	1.03E-01	9.17E-02
		871.10		100.00	2.05E-01		-3.61E-02	9.98E-02
	NB-95	765.79		99.81	2.27E+00	2.27E+00	1.02E+01	1.12E+00
	NB-95M	235.69		25.00	1.81E+08	1.81E+08	-4.47E+08	8.97E+07
	ZR-95	724.18		43.70	1.25E+00	9.53E-01	-1.78E-01	6.09E-01
		756.72		55.30	9.53E-01		-1.07E-01	4.65E-01
	MO-99	181.06		6.20	2.47E+11	1.43E+11	9.44E+09	1.22E+11
		739.58		12.80	1.43E+11		-4.23E+10	6.98E+10
		778.00		4.50	3.99E+11		7.71E+10	1.94E+11

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	RU-103	497.08		89.00	1.17E+00	1.17E+00	8.23E-01	5.76E-01
	RU-106	621.84		9.80	2.01E+00	2.01E+00	1.33E-01	9.84E-01
	AG-108M	433.93		89.90	2.01E-01	2.01E-01	-1.36E-01	9.92E-02
		614.37		90.40	3.74E-01		8.42E-02	1.85E-01
		722.95		90.50	2.06E-01		-4.19E-02	1.01E-01
+	CD-109	88.03	*	3.72	1.15E+01	1.15E+01	4.69E+01	5.75E+00
	AG-110M	657.75		93.14	2.44E-01	2.44E-01	-1.04E-02	1.19E-01
		677.61		10.53	2.16E+00		4.69E-01	1.06E+00
		706.67		16.46	1.48E+00		-1.90E-01	7.22E-01
		763.93		21.98	1.30E+00		-1.13E+01	6.38E-01
		884.67		71.63	3.78E-01		-2.88E-02	1.84E-01
		1384.27		23.94	1.37E+00		-7.57E-01	6.63E-01
	CD-113M	263.70		0.02	7.82E+02	7.82E+02	1.08E+02	3.87E+02
	SN-113	255.12		1.93	1.73E+01	5.39E-01	-1.87E+00	8.58E+00
		391.69		64.90	5.39E-01		-1.09E-01	2.66E-01
	TE123M	159.00		84.10	3.33E-01	3.33E-01	3.06E-02	1.65E-01
	SB-124	602.71		97.87	5.94E-01	5.94E-01	1.02E-01	2.91E-01
		645.85		7.26	7.21E+00		2.48E+00	3.52E+00
		722.78		11.10	5.34E+00		-1.08E+00	2.61E+00
		1691.02		49.00	1.32E+00		1.25E+00	6.32E-01
+	I-125	35.49	*	6.49	1.83E+01	1.83E+01	1.84E+01	9.10E+00
	SB-125	176.33		6.89	2.41E+00	7.06E-01	1.26E-01	1.19E+00
		427.89		29.33	7.06E-01		2.72E-02	3.48E-01
		463.38		10.35	1.87E+00		1.30E-01	9.23E-01
		600.56		17.80	1.09E+00		2.34E-01	5.36E-01
		635.90		11.32	1.61E+00		7.87E-01	7.87E-01
	SB-126	414.70		83.30	6.42E+01	4.88E+01	2.50E+01	3.17E+01
		666.33		99.60	5.72E+01		1.46E+02	2.80E+01
		695.00		99.60	4.88E+01		2.57E+01	2.38E+01
		720.50		53.80	9.68E+01		9.80E+01	4.73E+01
+	SN-126	87.57	*	37.00	9.97E-01	9.97E-01	4.06E+00	4.97E-01
	SB-127	473.00		25.00	5.11E+07	3.43E+07	2.74E+07	2.52E+07
		685.20		35.70	3.43E+07		2.06E+06	1.68E+07
		783.80		14.70	1.07E+08		1.89E+08	5.26E+07
	I-129	29.78		57.00	9.21E-01	9.21E-01	5.86E-02	4.56E-01
		33.60		13.20	2.66E+00		-1.98E+00	1.32E+00
		39.58		7.52	3.10E+00		-3.23E-01	1.53E+00
	I-131	284.30		6.05	1.73E+04	1.20E+03	3.57E+03	8.58E+03
		364.48		81.20	1.20E+03		-2.73E+02	5.92E+02
		636.97		7.26	1.32E+04		-6.67E+02	6.46E+03
		722.89		1.80	5.94E+04		-1.20E+04	2.90E+04
	TE-132	49.72		13.10	2.56E+09	3.88E+08	-1.62E+10	1.27E+09
		228.16		88.00	3.88E+08		5.25E+07	1.93E+08
	BA-133	81.00		33.00	5.33E-01	5.33E-01	-7.73E+00	2.65E-01
		302.84		17.80	1.04E+00		5.93E-01	5.15E-01
		356.01		60.00	6.58E-01		5.10E-02	3.27E-01
	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	2.64E+05	2.64E+05	-3.82E+06	1.31E+05
	CS-134	563.23		8.38	2.29E+00	2.40E-01	2.83E-01	1.12E+00
		569.32		15.43	1.27E+00		-3.33E-01	6.22E-01
		604.70		97.60	3.09E-01		4.55E-02	1.52E-01
		795.84		85.40	2.40E-01		-2.55E-04	1.17E-01
		801.93		8.73	2.42E+00		4.19E-01	1.18E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	CS-135	268.24		16.00	1.20E+00	1.20E+00	2.68E-01	5.97E-01
@	I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1260.41		28.60	1.00E+26		1.00E+26	1.00E+20
@		1678.03		9.54	1.00E+26		1.00E+26	1.00E+20
	CS-136	153.22		7.46	4.21E+02	3.99E+01	-1.34E+02	2.09E+02
		163.89		4.61	6.72E+02		2.94E+02	3.34E+02
		176.55		13.56	2.26E+02		1.18E+01	1.12E+02
		273.65		12.66	3.04E+02		1.73E+02	1.50E+02
		340.57		48.50	7.72E+01		6.61E+01	3.82E+01
		818.50		99.70	3.99E+01		2.31E+01	1.95E+01
		1048.07		79.60	4.93E+01		-7.72E+00	2.40E+01
		1235.34		19.70	3.43E+02		4.54E+02	1.68E+02
	CS-137	661.65		85.12	2.24E-01	2.24E-01	7.50E-03	1.10E-01
	LA-138	788.74		34.00	6.47E-01	3.19E-01	2.46E-02	3.17E-01
		1435.80		66.00	3.19E-01		-8.18E-02	1.54E-01
	CE-139	165.85		80.35	3.21E-01	3.21E-01	1.86E-01	1.59E-01
	BA-140	162.64		6.70	5.42E+02	1.70E+02	4.59E+02	2.69E+02
		304.84		4.50	9.11E+02		-3.06E+02	4.51E+02
		423.70		3.20	1.43E+03		3.80E+02	7.05E+02
		437.55		2.00	2.07E+03		-8.99E+02	1.02E+03
		537.32		25.00	1.70E+02		9.92E+01	8.34E+01
+	LA-140	328.77		20.50	2.07E+02	9.09E+01	-1.88E+01	1.02E+02
		487.03	*	45.50	1.01E+02		1.30E+02	4.95E+01
		815.85		23.50	1.92E+02		-3.13E+01	9.35E+01
		1596.49	*	95.49	9.09E+01		7.79E+01	4.44E+01
	CE-141	145.44		48.40	2.78E+00	2.78E+00	3.51E+00	1.38E+00
@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		293.26		42.00	1.00E+26		1.00E+26	1.00E+20
@		664.55		5.20	1.00E+26		1.00E+26	1.00E+20
	CE-144	133.54		10.80	1.71E+00	1.71E+00	8.70E-03	8.49E-01
	PM-144	476.78		42.00	5.22E-01	2.02E-01	-3.12E-01	2.57E-01
		618.01		98.60	2.02E-01		8.56E-02	9.90E-02
		696.49		99.49	2.12E-01		4.73E-02	1.04E-01
	PM-145	36.85		21.70	1.27E+00	6.77E-01	-1.17E+00	6.31E-01
		37.36		39.70	6.77E-01		-6.12E-02	3.35E-01
		42.30		15.10	1.41E+00		-6.70E-01	6.97E-01
		72.40		2.31	8.57E+00		-7.89E+01	4.26E+00
	PM-146	453.90		39.94	4.74E-01	4.74E-01	3.62E-01	2.34E-01
		735.90		14.01	1.31E+00		1.60E-01	6.40E-01
		747.13		13.10	1.47E+00		-7.20E-01	7.18E-01
	ND-147	91.11		28.90	3.63E+02	3.63E+02	-3.22E+02	1.80E+02
		531.02		13.10	7.81E+02		-3.26E+01	3.84E+02
	PM-149	285.90		3.10	2.71E+14	2.71E+14	-9.54E+12	1.34E+14
	EU-152	121.78		20.50	6.76E-01	6.76E-01	-1.39E-01	3.36E-01
		244.69		5.40	4.88E+00		4.58E+01	2.43E+00
		344.27		19.13	9.95E-01		2.01E-02	4.92E-01
		778.89		9.20	2.06E+00		7.88E-01	1.01E+00
		964.01		10.40	2.07E+00		-2.82E-01	1.01E+00
		1085.78		7.22	2.67E+00		-5.76E-01	1.29E+00
		1112.02		9.60	2.12E+00		1.30E-01	1.03E+00
		1407.95		14.94	2.17E+00		5.36E+00	1.06E+00
	GD-153	97.43		31.30	5.76E-01	5.76E-01	4.81E-01	2.86E-01
		103.18		22.20	7.69E-01		-1.25E+00	3.82E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-154	123.07	40.50	3.49E-01	3.49E-01	1.12E-01	1.73E-01
	723.30	19.70	9.68E-01		-1.96E-01	4.73E-01
	873.19	11.50	1.81E+00		3.50E-02	8.82E-01
	996.32	10.30	2.05E+00		1.21E-01	9.99E-01
	1004.76	17.90	1.25E+00		-1.05E-01	6.09E-01
	1274.45	35.50	5.72E-01		3.49E-01	2.76E-01
EU-155	86.50	30.90	6.10E-01	6.10E-01	2.18E+00	3.03E-01
	105.30	20.70	6.58E-01		-1.73E-01	3.26E-01
EU-156	811.77	10.40	1.77E+02	1.77E+02	-2.16E+01	8.65E+01
	1153.47	7.20	3.58E+02		6.20E+02	1.75E+02
	1230.71	8.90	2.04E+02		0.00E+00	9.84E+01
HO-166M	184.41	72.60	3.09E-01	3.09E-01	2.82E+00	1.54E-01
	280.45	29.60	6.15E-01		2.68E-01	3.05E-01
	410.94	11.10	1.75E+00		-8.69E-01	8.63E-01
	711.69	54.10	3.37E-01		2.07E-01	1.65E-01
TM-171	66.72	0.14	1.37E+02	1.37E+02	5.13E+01	6.79E+01
HF-172	67.35	5.31	3.55E+00	1.37E+00	2.16E+00	1.76E+00
	125.81	11.30	1.37E+00		-3.33E-01	6.78E-01
LU-172	181.53	20.60	2.50E+04	1.06E+04	-2.11E+03	1.24E+04
	900.72	29.81	2.39E+04		7.66E+02	1.17E+04
	1093.66	62.50	1.06E+04		-2.13E+03	5.14E+03
LU-173	100.72	5.24	2.86E+00	1.09E+00	3.77E-01	1.42E+00
	272.11	21.20	1.09E+00		2.46E+00	5.38E-01
HF-175	343.40	84.00	6.02E-01	6.02E-01	1.22E-02	2.98E-01
LU-176	88.34	13.30	1.37E+00	1.84E-01	-4.14E+00	6.81E-01
	201.83	86.00	1.84E-01		-4.21E-02	9.13E-02
	306.78	94.00	1.87E-01		-9.70E-02	9.24E-02
HF-181	133.02	41.70	1.78E+00	1.16E+00	-6.50E-03	8.85E-01
	345.85	17.20	5.69E+00		5.92E-01	2.81E+00
	482.03	82.80	1.16E+00		4.60E-01	5.70E-01
TA-182	67.75	41.20	7.56E-01	7.56E-01	4.61E-01	3.76E-01
	1121.30	34.90	3.07E+00		3.14E+01	1.52E+00
	1189.05	16.23	2.21E+00		-9.09E-01	1.07E+00
	1221.41	26.98	1.31E+00		3.63E-01	6.33E-01
	1231.02	11.44	2.99E+00		0.00E+00	1.44E+00
IR-192	308.46	29.68	1.51E+00	9.43E-01	-5.55E-02	7.48E-01
	468.07	48.10	9.43E-01		1.28E-01	4.64E-01
HG-203	279.19	77.30	1.05E+00	1.05E+00	-5.35E-02	5.21E-01
TL-204	374.74	94.11	1.95E-01	1.95E-01	2.41E-04	9.63E-02
	899.15	99.16	2.29E-01		2.31E-02	1.12E-01
	911.74	91.10	2.61E-01		2.19E-01	1.28E-01
BI-207	569.67	97.72	1.86E-01	1.86E-01	1.72E-02	9.11E-02
	1063.62	74.90	2.70E-01		1.79E-02	1.31E-01
TL-208	583.14	30.22	6.31E-01	3.23E-01	5.24E-01	3.10E-01
	860.37	4.48	4.53E+00		3.21E-01	2.21E+00
	2614.66	35.85	3.23E-01		3.38E-01	1.46E-01
BI-210M	262.00	45.00	4.09E-01	4.09E-01	-4.80E-03	2.03E-01
	300.00	23.00	1.00E+00		2.99E-01	4.96E-01
+ PB-210	46.50 *	4.25	4.63E+00	4.63E+00	1.98E+01	2.30E+00
PB-211	404.84	2.90	6.93E+00	6.78E+00	5.77E+00	3.42E+00
	831.96	2.90	6.78E+00		-1.73E+00	3.31E+00
BI-212	727.17	11.80	1.56E+00	1.56E+00	1.04E-01	7.62E-01
	1620.62	2.75	7.80E+00		1.34E+00	3.75E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PB-212	238.63		44.60	5.38E-01	5.38E-01	-9.57E-01	2.67E-01
		300.09		3.41	6.75E+00		2.02E+00	3.35E+00
+	BI-214	609.31	*	46.30	6.43E-01	6.43E-01	3.66E+01	3.18E-01
		1120.29	*	15.10	2.39E+00		4.00E+01	1.17E+00
		1764.49	*	15.80	1.77E+00		4.19E+01	8.55E-01
		2204.22	*	4.98	3.00E+00		3.91E+01	1.39E+00
+	PB-214	295.21	*	19.19	1.52E+00	8.87E-01	4.06E+01	7.53E-01
		351.92	*	37.19	8.87E-01		4.04E+01	4.41E-01
	RN-219	401.80		6.50	3.05E+00	3.05E+00	6.79E-01	1.51E+00
	RA-223	323.87		3.88	4.66E+00	4.66E+00	-1.37E-02	2.30E+00
	RA-224	240.98		3.95	6.90E+00	6.90E+00	7.34E+01	3.43E+00
	RA-225	40.00		31.00	8.08E+01	8.08E+01	-8.43E+00	4.00E+01
+	RA-226	186.21	*	3.28	9.01E+00	9.01E+00	8.51E+01	4.48E+00
	TH-227	50.10		8.40	2.10E+00	1.68E+00	-1.33E+01	1.04E+00
		236.00		11.50	1.68E+00		-4.15E+00	8.31E-01
		256.20		6.30	2.97E+00		2.57E+00	1.47E+00
	AC-228	338.32		11.40	1.63E+00	8.09E-01	-5.55E-01	8.06E-01
		911.07		27.70	8.09E-01		2.94E-01	3.95E-01
		969.11		16.60	1.26E+00		-6.75E-02	6.14E-01
	TH-230	48.44		16.90	1.16E+00	1.16E+00	1.00E+00	5.77E-01
		62.85		4.60	4.26E+00		2.85E+01	2.12E+00
		67.67		0.37	4.59E+01		2.80E+01	2.28E+01
	PA-231	283.67		1.60	1.14E+01	7.91E+00	5.93E+00	5.66E+00
		302.67		2.30	7.91E+00		4.51E+00	3.91E+00
+	TH-231	25.64		14.70	6.75E+00	5.55E+00	-3.41E-01	3.35E+00
		84.21	*	6.40	5.55E+00		6.78E+00	2.77E+00
	PA-233	311.98		38.60	6.02E+00	6.02E+00	-3.50E-01	2.98E+00
	PA-234	131.20		20.40	7.03E-01	7.03E-01	1.79E-01	3.49E-01
		733.99		8.80	2.06E+00		5.31E-01	1.01E+00
		946.00		12.00	1.66E+00		-3.81E-01	8.06E-01
+	PA-234M	1001.03	*	0.92	3.29E+01	3.29E+01	5.62E+01	1.62E+01
+	TH-234	63.29	*	3.80	5.40E+00	5.40E+00	3.09E+01	2.69E+00
	U-235	143.76		10.50	1.50E+00	1.50E+00	2.57E+00	7.44E-01
		163.35		4.70	3.33E+00		1.45E+00	1.65E+00
		205.31		4.70	3.97E+00		2.28E+00	1.97E+00
	NP-237	86.50		12.60	1.44E+00	1.44E+00	5.15E+00	7.16E-01
	NP-239	106.10		22.70	3.92E+12	3.92E+12	-1.03E+12	1.95E+12
		228.18		10.70	1.15E+13		1.56E+12	5.72E+12
		277.60		14.10	8.91E+12		-6.23E+11	4.41E+12
	AM-241	59.54		35.90	4.72E-01	4.72E-01	-2.18E-01	2.34E-01
	AM-243	74.67		66.00	3.59E-01	3.59E-01	1.78E+00	1.79E-01
	CM-243	209.75		3.29	5.55E+00	1.33E+00	-3.15E+00	2.75E+00
		228.14		10.60	1.73E+00		2.33E-01	8.57E-01
		277.60		14.00	1.33E+00		-9.32E-02	6.60E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

Analysis Report for 1707092-15

HTC-A09-S001-0006-02

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: HTC-A09-S001-0006-02

Elapsed Live time: 3600
Elapsed Real Time: 3629

Channel								
1:	0	0	0	0	0	0	0	0
9:	95	1187	1108	1068	1103	1074	1073	1125
17:	1127	989	1017	923	936	911	934	918
25:	921	926	866	890	890	896	887	756
33:	856	918	871	907	922	850	830	943
41:	919	957	965	983	1027	1386	1986	1424
49:	1069	1123	1185	1241	1468	1615	1371	1312
57:	1304	1374	1571	1586	1721	1892	2793	3236
65:	2254	1784	1902	2055	2003	2002	2003	2089
73:	2225	2807	4698	4894	6043	6486	3226	2178
81:	2085	2034	1851	2408	2307	1944	2775	3373
89:	2289	2228	2137	2647	3971	2997	1958	1509
97:	1297	1360	1476	1281	1210	1182	1224	1233
105:	1218	1318	1283	1246	1276	1385	1316	1405
113:	1509	1308	1290	1291	1267	1238	1249	1187
121:	1258	1251	1275	1233	1285	1244	1254	1249
129:	1276	1277	1260	1312	1255	1290	1231	1276
137:	1255	1295	1272	1283	1224	1195	1337	1607
145:	1545	1278	1232	1291	1335	1280	1216	1325
153:	1302	1376	1366	1310	1227	1230	1190	1225
161:	1224	1138	1208	1251	1179	1091	1094	1082
169:	1085	1018	1049	1046	1005	1053	1009	1046
177:	1004	1056	1064	1012	1057	1043	1047	1094
185:	1622	3244	3222	1631	1022	981	964	951
193:	937	993	959	971	952	956	920	886
201:	899	863	908	878	878	875	857	818
209:	786	821	757	725	726	726	809	755
217:	716	724	709	738	757	682	704	690
225:	721	701	710	677	664	654	699	680
233:	666	617	712	827	818	712	779	781
241:	1184	2719	2672	1120	618	569	556	574
249:	581	559	541	533	522	530	553	619
257:	659	619	709	652	521	506	513	485
265:	544	531	501	510	616	743	684	634
273:	546	502	628	568	498	484	457	481
281:	483	500	498	510	443	498	448	464
289:	452	478	447	447	495	1194	4267	5414
297:	2107	552	431	447	460	406	466	398
305:	397	405	394	345	408	363	379	387
313:	369	380	375	405	378	379	367	369
321:	352	369	381	379	383	374	375	386
329:	369	376	416	347	373	388	362	360
337:	323	401	389	358	354	367	386	368
345:	340	356	353	377	379	544	2651	7970
353:	7016	1724	390	302	263	300	272	282
361:	244	249	286	250	263	272	260	282

369:	300	260	284	255	286	260	294	270

Sample Title: HTC-A09-S001-0006-02

Channel								
377:	253	254	275	253	268	271	247	254
385:	272	271	333	374	393	344	274	280
393:	286	260	239	255	280	299	298	259
401:	304	341	335	269	326	318	290	282
409:	289	278	274	284	278	277	266	311
417:	277	264	265	259	292	274	292	282
425:	279	259	262	267	282	250	210	237
433:	236	204	217	201	233	217	216	206
441:	197	215	238	208	202	205	193	200
449:	195	201	185	193	209	195	259	228
457:	184	191	169	208	200	231	198	201
465:	171	173	195	177	173	195	202	171
473:	187	194	177	193	171	180	181	199
481:	230	200	162	171	197	185	222	224
489:	171	156	139	152	155	172	170	171
497:	191	158	155	144	131	163	157	135
505:	126	151	149	155	169	212	229	209
513:	166	159	154	138	140	148	141	149
521:	126	134	121	152	160	152	136	149
529:	158	142	165	135	142	174	159	161
537:	172	128	131	154	141	145	168	134
545:	162	135	123	138	129	143	155	164
553:	132	93	142	134	137	139	114	112
561:	147	120	133	123	138	118	123	124
569:	146	122	124	152	138	140	126	145
577:	122	137	130	165	179	138	133	127
585:	138	115	118	119	134	137	125	95
593:	126	119	127	116	120	116	123	108
601:	124	133	132	119	116	129	187	1143
609:	4396	5330	2036	325	114	84	104	118
617:	107	82	91	91	72	97	93	95
625:	106	97	78	73	71	93	83	97
633:	112	94	92	100	88	86	100	89
641:	82	89	87	85	83	91	102	85
649:	80	82	76	89	88	95	80	83
657:	96	97	87	108	94	96	92	103
665:	201	226	147	90	74	79	62	94
673:	75	79	69	99	93	84	97	91
681:	83	95	85	102	77	82	85	86
689:	90	82	86	85	96	91	83	79
697:	88	103	74	81	71	111	120	118
705:	94	89	98	77	93	83	88	87
713:	98	103	80	67	81	76	119	113
721:	110	98	71	87	75	88	92	98
729:	88	91	96	83	96	81	81	85
737:	70	78	70	96	83	123	116	111
745:	105	88	85	84	67	62	85	73
753:	90	86	70	65	79	87	76	73
761:	73	79	91	95	107	126	217	474
769:	535	254	87	87	87	80	72	99
777:	87	76	80	75	68	80	86	87
785:	121	193	167	99	70	74	95	69
793:	79	84	74	67	76	75	87	78

801:	70	79	72	73	109	173	178	98

Sample Title: HTC-A09-S001-0006-02

Channel								
809:	75	70	78	74	80	72	86	84
817:	88	69	88	86	93	91	70	77
825:	85	82	94	76	65	79	75	79
833:	100	80	77	91	76	109	114	103
841:	90	92	76	74	64	74	77	83
849:	85	81	62	79	84	76	72	71
857:	82	77	73	76	84	81	83	92
865:	75	92	99	79	72	94	70	72
873:	88	78	67	76	77	81	57	70
881:	89	68	89	75	75	89	79	65
889:	81	74	93	83	86	84	81	87
897:	82	91	74	72	87	92	63	124
905:	74	86	78	70	74	97	86	108
913:	97	83	81	82	70	94	70	57
921:	56	70	90	65	62	76	75	61
929:	84	75	75	86	185	299	248	104
937:	83	86	69	75	81	74	66	63
945:	65	74	58	72	52	56	65	60
953:	65	50	64	55	82	62	64	86
961:	53	56	69	101	86	67	67	71
969:	73	75	66	59	83	57	71	67
977:	55	59	58	57	58	72	87	62
985:	49	57	65	59	62	77	57	60
993:	70	63	59	62	50	78	63	93
1001:	139	117	82	58	59	61	47	69
1009:	67	60	50	76	59	51	59	67
1017:	53	52	62	66	62	65	58	56
1025:	58	67	62	47	54	51	46	55
1033:	51	51	67	39	35	49	57	54
1041:	50	64	31	51	49	57	47	52
1049:	55	53	61	83	51	47	64	41
1057:	60	50	62	44	57	56	47	49
1065:	52	47	67	56	62	71	76	59
1073:	41	46	45	47	49	33	55	48
1081:	66	42	46	35	48	43	50	41
1089:	58	48	40	45	69	56	44	59
1097:	55	58	56	46	64	61	60	62
1105:	57	42	48	60	55	48	48	60
1113:	42	46	46	45	46	102	430	999
1121:	941	372	88	51	48	60	36	56
1129:	44	51	53	60	58	66	51	40
1137:	33	48	45	53	46	60	46	50
1145:	42	40	45	45	56	45	60	50
1153:	50	108	140	115	63	49	37	38
1161:	49	57	48	41	38	56	44	51
1169:	40	54	38	47	48	46	49	49
1177:	44	39	41	46	50	60	48	53
1185:	46	33	39	41	41	47	40	49
1193:	49	38	54	41	44	38	43	42
1201:	47	46	37	40	34	43	56	66
1209:	45	35	43	42	45	42	41	44
1217:	32	32	38	47	37	36	44	34
1225:	37	29	51	34	31	34	30	29

1233:	47	42	45	72	200	419	331	132

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Channel								
1241:	43	34	45	36	46	32	44	31
1249:	43	32	52	53	58	44	51	40
1257:	46	39	30	32	32	33	40	39
1265:	36	42	40	28	29	34	33	48
1273:	41	39	43	23	39	51	55	102
1281:	129	114	49	44	33	41	38	35
1289:	40	28	42	38	35	31	34	37
1297:	40	28	38	29	43	37	31	36
1305:	35	42	33	37	31	37	44	48
1313:	34	34	37	54	37	40	48	30
1321:	43	28	26	30	30	41	38	33
1329:	37	35	32	31	35	31	28	29
1337:	30	34	34	30	33	21	25	31
1345:	31	30	30	29	40	28	36	34
1353:	37	23	28	33	35	34	28	39
1361:	36	38	34	24	35	33	32	39
1369:	30	25	35	45	30	36	50	110
1377:	215	301	134	46	37	27	33	67
1385:	78	71	52	31	27	36	39	29
1393:	30	39	36	37	34	36	42	54
1401:	116	127	69	40	26	53	132	163
1409:	133	58	36	36	38	26	35	35
1417:	36	30	31	24	46	30	33	33
1425:	38	32	33	33	34	24	38	42
1433:	46	26	38	39	36	34	27	36
1441:	37	29	34	36	28	31	24	40
1449:	24	31	34	32	26	43	35	40
1457:	40	34	48	55	51	46	31	36
1465:	33	35	39	34	30	33	40	31
1473:	31	42	49	42	41	38	54	38
1481:	34	40	42	26	33	38	34	32
1489:	40	34	38	38	31	26	45	31
1497:	38	46	37	39	39	53	34	35
1505:	40	45	52	91	133	125	42	33
1513:	34	36	32	36	39	30	36	32
1521:	44	36	21	31	41	36	31	45
1529:	26	31	40	41	40	32	21	42
1537:	54	50	44	48	42	39	41	34
1545:	55	40	33	26	28	27	31	20
1553:	24	36	21	31	23	23	19	27
1561:	26	26	29	21	32	22	20	39
1569:	22	24	34	19	34	33	26	30
1577:	23	20	18	29	32	45	52	45
1585:	27	16	36	20	26	26	19	27
1593:	31	41	41	23	26	43	38	31
1601:	30	24	20	16	26	18	26	26
1609:	22	23	19	23	25	24	20	24
1617:	28	26	24	23	22	19	24	20
1625:	16	28	21	23	8	14	26	23
1633:	16	15	19	14	15	22	15	13
1641:	8	12	15	14	16	14	11	16
1649:	13	13	19	9	11	14	12	18
1657:	25	21	15	48	74	43	17	21

1665:	18	17	16	14	13	21	16	9

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Channel								
1673:	13	11	15	10	7	18	18	6
1681:	12	15	19	27	22	15	18	18
1689:	10	20	20	17	29	27	17	9
1697:	6	8	12	10	5	11	6	11
1705:	13	10	11	8	18	19	12	8
1713:	14	15	8	10	10	10	7	10
1721:	15	14	8	20	6	15	18	77
1729:	153	151	73	23	9	13	14	15
1737:	5	17	13	10	13	8	3	8
1745:	5	8	9	19	5	5	5	11
1753:	12	13	12	8	18	8	20	11
1761:	20	75	318	697	671	264	68	14
1769:	8	8	12	3	5	10	6	6
1777:	7	9	6	4	9	7	8	10
1785:	13	10	8	9	8	13	7	12
1793:	6	10	9	10	3	11	6	9
1801:	8	15	13	10	10	9	8	7
1809:	3	7	6	16	7	9	5	11
1817:	10	6	9	7	14	11	5	7
1825:	9	9	8	7	4	14	10	11
1833:	8	10	9	15	20	30	27	10
1841:	13	8	9	8	27	56	112	70
1849:	39	11	7	8	9	7	7	9
1857:	9	5	12	10	8	9	13	8
1865:	10	11	13	4	3	9	11	10
1873:	20	9	5	8	11	10	0	9
1881:	13	7	9	8	9	10	6	5
1889:	14	12	6	16	11	13	16	15
1897:	10	16	9	7	4	10	8	12
1905:	6	5	10	11	14	13	8	9
1913:	16	5	5	7	6	6	6	8
1921:	13	10	9	7	6	5	8	11
1929:	8	6	10	9	14	9	12	13
1937:	16	13	8	9	9	11	10	8
1945:	5	8	7	6	12	7	5	8
1953:	16	8	12	5	12	12	7	7
1961:	6	6	7	13	12	9	7	10
1969:	5	6	6	6	7	6	7	11
1977:	9	5	11	10	7	4	7	10
1985:	8	7	7	5	6	5	4	10
1993:	2	7	9	3	8	4	4	4
2001:	9	5	10	4	7	5	8	6
2009:	5	5	11	8	3	8	3	3
2017:	10	12	8	7	5	2	8	4
2025:	10	3	7	8	4	5	7	2
2033:	1	5	6	5	3	8	9	1
2041:	5	6	4	7	6	3	6	5
2049:	10	13	6	6	8	11	4	5
2057:	7	5	10	3	6	4	3	8
2065:	8	6	5	3	6	3	3	8
2073:	3	2	5	4	6	8	2	3
2081:	4	1	1	1	8	8	6	3
2089:	10	3	0	2	4	4	4	3

2097:	4	0	4	3	6	2	3	1

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Channel								
2105:	2	5	2	1	7	4	5	6
2113:	5	3	2	12	27	54	43	22
2121:	7	3	3	2	2	3	2	6
2129:	0	4	2	6	3	0	3	5
2137:	2	2	2	2	1	6	2	2
2145:	6	6	6	4	3	4	2	7
2153:	3	2	3	2	1	3	7	3
2161:	3	6	4	2	0	2	3	4
2169:	0	3	3	3	4	7	5	3
2177:	2	7	2	5	2	0	3	2
2185:	1	2	6	3	2	6	2	7
2193:	3	5	3	2	4	1	3	2
2201:	12	54	145	155	102	46	11	5
2209:	6	1	3	1	3	3	1	3
2217:	2	3	1	1	3	1	1	1
2225:	3	2	0	1	0	1	2	1
2233:	2	3	0	0	2	2	2	1
2241:	3	2	6	1	1	2	1	0
2249:	1	0	1	6	1	1	1	0
2257:	2	2	0	2	4	2	2	5
2265:	0	3	0	2	1	1	6	3
2273:	0	2	0	0	0	2	1	4
2281:	1	2	2	3	3	1	2	0
2289:	1	2	2	10	16	9	4	0
2297:	2	0	1	2	0	1	2	1
2305:	1	3	1	0	1	0	1	2
2313:	1	1	0	1	1	4	1	1
2321:	1	1	0	0	2	0	2	1
2329:	1	1	1	2	1	0	1	4
2337:	1	0	1	1	1	1	0	2
2345:	0	1	0	0	3	1	1	1
2353:	0	0	0	0	0	0	0	2
2361:	1	1	2	0	0	1	1	0
2369:	0	0	3	0	1	1	0	0
2377:	1	3	0	2	1	1	1	1
2385:	1	0	1	3	0	0	0	0
2393:	2	0	0	4	0	1	2	0
2401:	0	0	0	0	2	1	0	1
2409:	2	3	1	1	0	1	1	1
2417:	0	2	0	1	0	1	1	1
2425:	1	2	1	1	1	0	0	1
2433:	0	0	4	0	0	2	0	2
2441:	2	0	0	4	9	29	48	46
2449:	20	8	3	3	0	0	0	0
2457:	0	0	0	0	2	0	0	0
2465:	1	0	0	1	1	1	0	0
2473:	0	0	1	0	1	0	0	1
2481:	0	0	2	1	0	2	0	1
2489:	1	0	1	0	1	0	0	1
2497:	0	1	0	0	1	0	0	0
2505:	0	0	0	0	0	0	0	0
2513:	0	0	0	1	1	0	0	0
2521:	0	1	1	1	1	1	0	0

2529:	0	1	1	0	0	0	1	0

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Channel								
2537:	0	0	0	0	1	1	0	1
2545:	0	2	0	0	0	1	0	1
2553:	0	1	1	0	1	1	0	0
2561:	1	0	3	0	0	0	0	0
2569:	0	0	0	1	0	1	0	0
2577:	0	2	0	1	0	0	0	0
2585:	0	0	1	0	1	0	0	1
2593:	0	1	1	0	0	0	0	0
2601:	0	0	0	0	0	0	0	0
2609:	0	0	2	4	6	7	7	3
2617:	0	0	0	0	0	1	1	0
2625:	0	1	0	0	1	0	0	0
2633:	0	1	0	0	0	0	0	0
2641:	0	0	0	1	0	0	0	1
2649:	0	0	1	0	1	0	1	0
2657:	0	0	1	0	0	1	0	0
2665:	0	0	0	1	1	0	0	1
2673:	2	0	0	0	0	0	0	0
2681:	0	0	1	0	1	1	1	2
2689:	0	0	0	0	0	0	0	0
2697:	0	0	0	0	0	0	0	0
2705:	0	0	0	0	1	1	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	0	0	0	1	1	0
2729:	0	0	0	0	0	1	1	0
2737:	0	0	1	0	1	1	1	0
2745:	2	0	0	1	1	1	1	1
2753:	0	0	1	0	0	0	1	0
2761:	0	0	0	1	0	0	0	0
2769:	0	1	0	0	1	0	0	1
2777:	1	1	0	1	0	0	1	0
2785:	0	2	0	0	1	0	0	0
2793:	1	0	1	0	0	0	0	0
2801:	0	0	1	0	0	0	0	0
2809:	0	0	1	0	0	0	1	0
2817:	0	0	0	0	0	0	0	1
2825:	0	0	0	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	0	0	0	1	0
2849:	0	0	0	1	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	0	1	0	0	0	0	0	2
2873:	1	1	0	0	0	0	1	1
2881:	0	0	2	0	0	0	0	0
2889:	0	0	1	0	1	0	1	0
2897:	0	0	1	0	0	0	0	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	1	0	0	1	0	0	0
2929:	0	0	0	0	0	0	1	0
2937:	0	0	1	0	0	0	1	0
2945:	0	0	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	1

2961:	1	0	0	0	1	0	0	0

Sample Title: HTC-A09-S001-0006-02

Channel								
2969:	1	0	0	0	1	0	0	2
2977:	0	0	1	1	0	0	1	0
2985:	0	0	0	0	1	0	0	0
2993:	1	0	0	0	0	1	0	2
3001:	0	0	0	0	1	0	0	0
3009:	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	0	0	0
3033:	0	0	0	1	0	0	0	1
3041:	1	0	0	0	0	0	0	0
3049:	0	0	0	0	0	1	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	1	0	0	0	0	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	0	0	0	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	0	0	0	0	1	0
3113:	1	0	0	1	0	0	1	0
3121:	0	0	0	1	0	0	0	0
3129:	0	0	0	1	0	0	0	0
3137:	0	0	0	0	1	1	0	0
3145:	0	0	0	0	1	0	1	0
3153:	1	0	0	0	0	0	0	1
3161:	1	0	1	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	1	0	0	0	0
3185:	0	0	0	1	0	0	0	1
3193:	0	1	0	0	0	0	0	0
3201:	0	0	0	0	0	0	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	1	0	0	1	0	0	0
3225:	0	0	1	0	0	0	0	0
3233:	0	0	0	0	0	0	0	1
3241:	0	0	0	1	1	0	0	1
3249:	1	0	0	0	1	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	1	0	0	0	0	0	0	1
3281:	0	0	0	1	0	0	0	1
3289:	0	0	0	0	0	0	0	0
3297:	0	1	0	0	0	0	0	0
3305:	0	0	1	0	0	0	1	0
3313:	0	1	0	0	0	0	0	0
3321:	0	1	1	0	0	0	0	0
3329:	0	0	0	0	0	0	0	1
3337:	0	0	0	0	0	0	0	1
3345:	0	0	0	1	1	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	1
3369:	0	0	0	1	0	0	0	0
3377:	0	0	0	0	0	0	1	1
3385:	0	0	0	0	0	0	0	0

3393:	1	0	0	0	0	0	1	0

Sample Title: HTC-A09-S001-0006-02

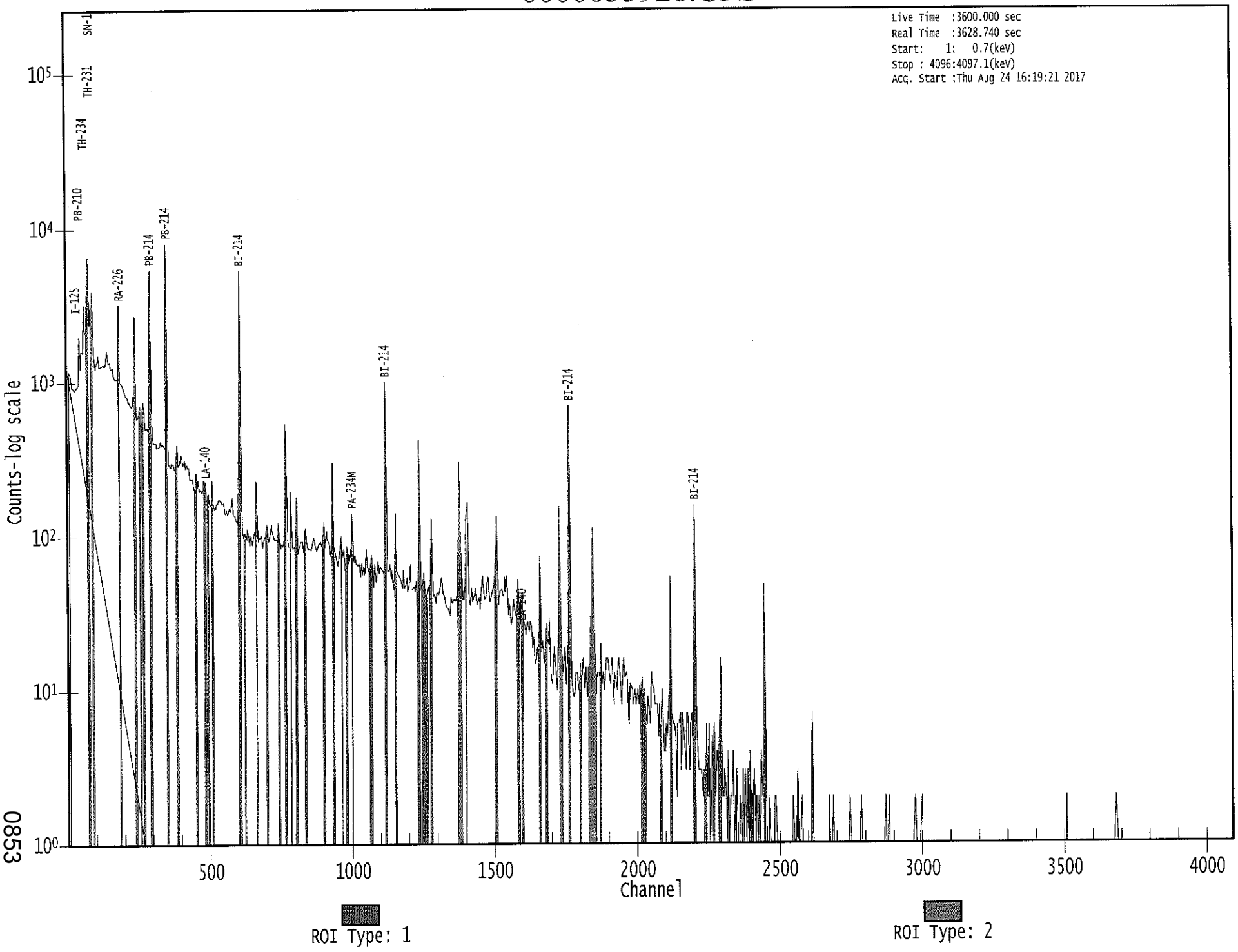
Channel								
3401:	0	1	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	1	0	0	0	0	0	0	0
3425:	0	0	0	0	1	0	0	0
3433:	0	0	0	1	0	1	0	0
3441:	0	0	0	0	0	1	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	1
3465:	1	1	0	0	0	0	0	1
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	1	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	2	0	0	0	0
3513:	0	0	0	0	1	0	0	0
3521:	1	0	0	1	0	0	1	0
3529:	0	0	0	1	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	1	0	0
3561:	0	0	0	0	1	0	0	0
3569:	1	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	1	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	1	1	0	0	0	0	0	0
3609:	1	0	0	0	1	0	0	0
3617:	1	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	1	0	1
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	1	1
3665:	0	0	0	0	1	0	0	0
3673:	0	0	0	1	1	0	0	0
3681:	2	0	0	0	0	0	0	1
3689:	0	0	1	0	0	0	0	0
3697:	0	0	1	0	0	0	0	0
3705:	0	1	0	0	0	0	0	0
3713:	0	0	0	0	1	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	1	0	0	0	0	0
3745:	0	0	0	1	1	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	1	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	1	0
3785:	0	0	0	0	1	1	0	0
3793:	0	0	0	1	0	0	0	0
3801:	1	0	0	0	0	0	0	0
3809:	0	0	1	0	1	0	0	0
3817:	0	0	0	0	1	0	0	1

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A09-S001-0006-02

Channel								
3833:	0	0	0	0	0	0	1	0
3841:	0	1	0	0	0	0	0	0
3849:	0	0	0	1	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	1	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	1	0
3905:	0	1	0	0	1	1	0	0
3913:	0	0	0	0	0	0	1	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	1	0	1	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	1	0	0	0	0	0
3985:	0	0	0	0	1	1	0	0
3993:	0	0	0	0	0	0	0	1
4001:	0	0	0	0	0	1	1	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	1	0	1	0
4041:	0	0	1	0	0	0	1	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	1	0	0	0	0	0	0	0
4073:	0	0	0	0	0	1	0	0
4081:	0	0	0	0	1	0	0	1
4089:	0	0	0	0	0	0	0	0

0000055926.CNF



0853

Apex-Gamma

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-16
Sample Description	: HTC-A09-S001-0612-01
Sample Type	: SOIL
Sample Size	: 6.910E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 7:42:59AM
Acquisition Started	: 8/24/2017 5:07:41PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3602.9 seconds
Dead Time	: 0.08 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 15 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55927

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 6:07:45PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.21	45.26	0.0000	0.00
2	64.08	63.13	0.0000	0.00
3	76.32	75.38	0.0000	0.00
4	87.32	86.39	0.0000	0.00
5	91.79	90.86	0.0000	0.00
6	129.88	128.95	0.0000	0.00
7	144.40	143.47	0.0000	0.00
8	152.98	152.06	0.0000	0.00
9	186.00	185.09	0.0000	0.00
10	197.41	196.50	0.0000	0.00
11	238.65	237.76	0.0000	0.00
12	242.00	241.11	0.0000	0.00
13	270.52	269.64	0.0000	0.00
14	295.28	294.41	0.0000	0.00
15	337.86	337.01	0.0000	0.00
16	352.00	351.15	0.0000	0.00
17	402.27	401.43	0.0000	0.00
18	410.98	410.15	0.0000	0.00
19	462.92	462.11	0.0000	0.00
20	478.10	477.29	0.0000	0.00
21	511.02	510.22	0.0000	0.00
22	526.09	525.29	0.0000	0.00
23	583.14	582.37	0.0000	0.00
24	609.23	608.47	0.0000	0.00
25	665.14	664.40	0.0000	0.00
26	715.71	714.99	0.0000	0.00
27	726.89	726.17	0.0000	0.00
28	742.77	742.06	0.0000	0.00
29	768.31	767.61	0.0000	0.00
30	785.82	785.13	0.0000	0.00
31	795.00	794.31	0.0000	0.00
32	911.32	910.69	0.0000	0.00
33	933.20	932.58	0.0000	0.00
34	967.74	967.13	0.0000	0.00
35	1120.37	1119.83	0.0000	0.00
36	1238.59	1238.10	0.0000	0.00
37	1379.20	1378.79	0.0000	0.00
38	1407.18	1406.78	0.0000	0.00
39	1460.71	1460.33	0.0000	0.00
40	1621.89	1621.60	0.0000	0.00
41	1729.50	1729.26	0.0000	0.00
42	1735.50	1735.27	0.0000	0.00

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1764.31	1764.10	0.0000	0.00
44	1838.14	1837.97	0.0000	0.00
45	1847.47	1847.30	0.0000	0.00
46	1867.87	1867.72	0.0000	0.00
47	1937.84	1937.73	0.0000	0.00
48	2118.95	2118.94	0.0000	0.00
49	2131.28	2131.29	0.0000	0.00
50	2202.82	2202.87	0.0000	0.00
51	2305.69	2305.80	0.0000	0.00
52	2352.81	2352.95	0.0000	0.00
53	2367.44	2367.59	0.0000	0.00
54	2447.73	2447.93	0.0000	0.00
55	2614.18	2614.50	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 6:07:45PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	46.21	41 -	49	45.26	2.48E+02	132.84	2.58E+03	2.21
M	2	64.08	55 -	80	63.13	5.87E+02	188.62	3.97E+03	3.81
m	3	76.32	55 -	80	75.38	2.03E+03	192.12	4.31E+03	3.84
M	4	87.32	81 -	96	86.39	7.10E+02	189.51	4.45E+03	5.15
m	5	91.79	81 -	96	90.86	6.14E+02	160.14	3.19E+03	2.88
	6	129.88	127 -	132	128.95	7.46E+01	91.83	1.62E+03	2.53
	7	144.40	138 -	148	143.47	2.29E+02	148.88	2.82E+03	5.06
	8	152.98	148 -	155	152.06	1.01E+02	113.08	2.06E+03	4.74
	9	186.00	180 -	188	185.09	4.67E+02	121.50	1.98E+03	2.52
	10	197.41	192 -	200	196.50	1.81E+02	103.08	1.51E+03	4.46
M	11	238.65	233 -	247	237.76	8.02E+02	103.07	1.07E+03	2.56
m	12	242.00	233 -	247	241.11	4.10E+02	103.69	9.45E+02	2.56
	13	270.52	266 -	273	269.64	9.52E+01	79.02	9.80E+02	2.27
	14	295.28	290 -	298	294.41	7.39E+02	94.50	9.21E+02	2.37
	15	337.86	332 -	342	337.01	1.59E+02	84.54	8.65E+02	2.16
	16	352.00	345 -	357	351.15	1.36E+03	114.51	9.01E+02	2.26
	17	402.27	398 -	406	401.43	5.95E+01	61.24	5.31E+02	1.30
	18	410.98	406 -	416	410.15	9.11E+01	64.55	5.10E+02	6.52
	19	462.92	459 -	465	462.11	5.51E+01	41.90	2.78E+02	3.48
	20	478.10	473 -	481	477.29	4.80E+01	51.35	3.72E+02	3.24
	21	511.02	506 -	515	510.22	1.14E+02	57.25	3.98E+02	2.91
	22	526.09	521 -	529	525.29	5.89E+01	44.98	2.76E+02	2.92
	23	583.14	578 -	587	582.37	1.97E+02	55.66	3.30E+02	1.98
	24	609.23	602 -	614	608.47	9.23E+02	82.38	3.64E+02	2.43
	25	665.14	659 -	670	664.40	5.83E+01	49.88	2.81E+02	5.99
	26	715.71	713 -	717	714.99	2.10E+01	22.89	9.81E+01	2.26
	27	726.89	722 -	729	726.17	3.88E+01	37.42	2.06E+02	1.84
	28	742.77	738 -	747	742.06	3.88E+01	37.13	1.74E+02	1.25
	29	768.31	763 -	772	767.61	6.86E+01	46.54	2.71E+02	1.43
	30	785.82	780 -	790	785.13	6.30E+01	41.48	1.90E+02	3.79
	31	795.00	791 -	799	794.31	4.46E+01	33.94	1.53E+02	2.41
	32	911.32	906 -	914	910.69	9.67E+01	41.12	1.97E+02	2.32
	33	933.20	927 -	936	932.58	4.67E+01	37.56	1.75E+02	2.10
	34	967.74	960 -	973	967.13	1.02E+02	50.50	2.38E+02	2.88
	35	1120.37	1114 -	1125	1119.83	1.40E+02	47.83	2.16E+02	2.21
	36	1238.59	1233 -	1245	1238.10	7.23E+01	43.51	1.89E+02	3.07
	37	1379.20	1374 -	1387	1378.79	3.63E+01	33.65	1.01E+02	3.22
	38	1407.18	1397 -	1417	1406.78	6.46E+01	42.70	1.21E+02	5.93
	39	1460.71	1453 -	1468	1460.33	4.94E+02	57.06	1.28E+02	3.17
	40	1621.89	1619 -	1624	1621.60	9.00E+00	11.22	1.80E+01	2.10

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	41	1729.50	1724 -	1738	1729.26	1.70E+01	16.55	3.44E+01	2.95
m	42	1735.50	1724 -	1738	1735.27	1.37E+01	12.24	1.67E+01	2.95
	43	1764.31	1759 -	1769	1764.10	1.18E+02	26.86	3.37E+01	2.17
	44	1838.14	1833 -	1842	1837.97	8.75E+00	11.79	1.45E+01	2.14
	45	1847.47	1843 -	1851	1847.30	2.39E+01	11.15	4.12E+00	4.57
	46	1867.87	1863 -	1871	1867.72	1.38E+01	9.18	4.44E+00	6.54
	47	1937.84	1934 -	1941	1937.73	9.38E+00	9.17	7.23E+00	1.36
	48	2118.95	2114 -	2125	2118.94	1.46E+01	10.39	6.72E+00	4.72
	49	2131.28	2126 -	2134	2131.29	8.50E+00	9.62	9.00E+00	2.03
	50	2202.82	2197 -	2207	2202.87	5.40E+01	14.70	0.00E+00	3.06
	51	2305.69	2301 -	2309	2305.80	1.35E+01	10.61	9.00E+00	4.82
	52	2352.81	2348 -	2356	2352.95	7.67E+00	9.41	8.67E+00	2.38
	53	2367.44	2365 -	2370	2367.59	4.75E+00	7.07	6.50E+00	2.54
	54	2447.73	2443 -	2452	2447.93	1.20E+01	13.71	2.00E+01	1.40
	55	2614.18	2610 -	2619	2614.50	5.60E+01	14.97	0.00E+00	4.04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 6:07:45PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.21	41 -	49	2.48E+02	132.84	2.58E+03	1.06E+02
M	2	64.08	55 -	80	5.87E+02	188.62	3.97E+03	1.04E+02
m	3	76.32	55 -	80	2.03E+03	192.12	4.31E+03	1.08E+02
M	4	87.32	81 -	96	7.10E+02	189.51	4.45E+03	1.10E+02
m	5	91.79	81 -	96	6.14E+02	160.14	3.19E+03	9.29E+01
	6	129.88	127 -	132	7.46E+01	91.83	1.62E+03	7.41E+01
	7	144.40	138 -	148	2.29E+02	148.88	2.82E+03	1.20E+02
	8	152.98	148 -	155	1.01E+02	113.08	2.06E+03	9.15E+01
	9	186.00	180 -	188	4.67E+02	121.50	1.98E+03	9.33E+01
	10	197.41	192 -	200	1.81E+02	103.08	1.51E+03	8.18E+01
M	11	238.65	233 -	247	8.02E+02	103.07	1.07E+03	5.39E+01
m	12	242.00	233 -	247	4.10E+02	103.69	9.45E+02	5.05E+01
	13	270.52	266 -	273	9.52E+01	79.02	9.80E+02	6.29E+01

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	14	295.28	290 -	298	7.39E+02	94.50	9.21E+02	6.35E+01
	15	337.86	332 -	342	1.59E+02	84.54	8.65E+02	6.63E+01
	16	352.00	345 -	357	1.36E+03	114.51	9.01E+02	7.20E+01
	17	402.27	398 -	406	5.95E+01	61.24	5.31E+02	2.90E+01
	18	410.98	406 -	416	9.11E+01	64.55	5.10E+02	5.07E+01
	19	462.92	459 -	465	5.51E+01	41.90	2.78E+02	3.22E+01
	20	478.10	473 -	481	4.80E+01	51.35	3.72E+02	4.06E+01
	21	511.02	506 -	515	1.14E+02	57.25	3.98E+02	4.37E+01
	22	526.09	521 -	529	5.89E+01	44.98	2.76E+02	3.48E+01
	23	583.14	578 -	587	1.97E+02	55.66	3.30E+02	3.95E+01
	24	609.23	602 -	614	9.23E+02	82.38	3.64E+02	4.57E+01
	25	665.14	659 -	670	5.83E+01	49.88	2.81E+02	3.90E+01
	26	715.71	713 -	717	2.10E+01	22.89	9.81E+01	1.72E+01
	27	726.89	722 -	729	3.88E+01	37.42	2.06E+02	2.90E+01
	28	742.77	738 -	747	3.88E+01	37.13	1.74E+02	2.88E+01
	29	768.31	763 -	772	6.86E+01	46.54	2.71E+02	3.58E+01
	30	785.82	780 -	790	6.30E+01	41.48	1.90E+02	3.15E+01
	31	795.00	791 -	799	4.46E+01	33.94	1.53E+02	2.57E+01
	32	911.32	906 -	914	9.67E+01	41.12	1.97E+02	2.97E+01
	33	933.20	927 -	936	4.67E+01	37.56	1.75E+02	2.88E+01
	34	967.74	960 -	973	1.02E+02	50.50	2.38E+02	3.80E+01
	35	1120.37	1114 -	1125	1.40E+02	47.83	2.16E+02	3.42E+01
	36	1238.59	1233 -	1245	7.23E+01	43.51	1.89E+02	3.29E+01
	37	1379.20	1374 -	1387	3.63E+01	33.65	1.01E+02	2.58E+01
	38	1407.18	1397 -	1417	6.46E+01	42.70	1.21E+02	3.25E+01
	39	1460.71	1453 -	1468	4.94E+02	57.06	1.28E+02	2.94E+01
	40	1621.89	1619 -	1624	9.00E+00	11.22	1.80E+01	7.80E+00
M	41	1729.50	1724 -	1738	1.70E+01	16.55	3.44E+01	9.64E+00
m	42	1735.50	1724 -	1738	1.37E+01	12.24	1.67E+01	6.71E+00
	43	1764.31	1759 -	1769	1.18E+02	26.86	3.37E+01	1.30E+01
	44	1838.14	1833 -	1842	8.75E+00	11.79	1.45E+01	8.38E+00
	45	1847.47	1843 -	1851	2.39E+01	11.15	4.12E+00	4.39E+00
	46	1867.87	1863 -	1871	1.38E+01	9.18	4.44E+00	4.44E+00
	47	1937.84	1934 -	1941	9.38E+00	9.17	7.23E+00	5.60E+00
	48	2118.95	2114 -	2125	1.46E+01	10.39	6.72E+00	5.78E+00
	49	2131.28	2126 -	2134	8.50E+00	9.62	9.00E+00	6.29E+00
	50	2202.82	2197 -	2207	5.40E+01	14.70	0.00E+00	0.00E+00
	51	2305.69	2301 -	2309	1.35E+01	10.61	9.00E+00	6.29E+00
	52	2352.81	2348 -	2356	7.67E+00	9.41	8.67E+00	6.25E+00
	53	2367.44	2365 -	2370	4.75E+00	7.07	6.50E+00	4.58E+00
	54	2447.73	2443 -	2452	1.20E+01	13.71	2.00E+01	9.73E+00
	55	2614.18	2610 -	2619	5.60E+01	14.97	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 6:07:45PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	46.21	41 -	49	45.26	2.48E+02	132.84	2.58E+03	PB-210
M	2	64.08	55 -	80	63.13	5.87E+02	188.62	3.97E+03	TH-234
m	3	76.32	55 -	80	75.38	2.03E+03	192.12	4.31E+03	.....
M	4	87.32	81 -	96	86.39	7.10E+02	189.51	4.45E+03	SN-126 CD-109 NP-237 EU-155
m	5	91.79	81 -	96	90.86	6.14E+02	160.14	3.19E+03	ND-147
	6	129.88	127 -	132	128.95	7.46E+01	91.83	1.62E+03	.....
	7	144.40	138 -	148	143.47	2.29E+02	148.88	2.82E+03	U-235
	8	152.98	148 -	155	152.06	1.01E+02	113.08	2.06E+03	CS-136
	9	186.00	180 -	188	185.09	4.67E+02	121.50	1.98E+03	RA-226
	10	197.41	192 -	200	196.50	1.81E+02	103.08	1.51E+03	.....
M	11	238.65	233 -	247	237.76	8.02E+02	103.07	1.07E+03	PB-212
m	12	242.00	233 -	247	241.11	4.10E+02	103.69	9.45E+02	.....
	13	270.52	266 -	273	269.64	9.52E+01	79.02	9.80E+02	.....
	14	295.28	290 -	298	294.41	7.39E+02	94.50	9.21E+02	PB-214
	15	337.86	332 -	342	337.01	1.59E+02	84.54	8.65E+02	AC-228
	16	352.00	345 -	357	351.15	1.36E+03	114.51	9.01E+02	PB-214
	17	402.27	398 -	406	401.43	5.95E+01	61.24	5.31E+02	RN-219
	18	410.98	406 -	416	410.15	9.11E+01	64.55	5.10E+02	HO-166M
	19	462.92	459 -	465	462.11	5.51E+01	41.90	2.78E+02	SB-125
	20	478.10	473 -	481	477.29	4.80E+01	51.35	3.72E+02	BE-7
	21	511.02	506 -	515	510.22	1.14E+02	57.25	3.98E+02	.....
	22	526.09	521 -	529	525.29	5.89E+01	44.98	2.76E+02	.....
	23	583.14	578 -	587	582.37	1.97E+02	55.66	3.30E+02	TL-208
	24	609.23	602 -	614	608.47	9.23E+02	82.38	3.64E+02	BI-214
	25	665.14	659 -	670	664.40	5.83E+01	49.88	2.81E+02	CE-143
	26	715.71	713 -	717	714.99	2.10E+01	22.89	9.81E+01	.....
	27	726.89	722 -	729	726.17	3.88E+01	37.42	2.06E+02	BI-212
	28	742.77	738 -	747	742.06	3.88E+01	37.13	1.74E+02	.....
	29	768.31	763 -	772	767.61	6.86E+01	46.54	2.71E+02	.....
	30	785.82	780 -	790	785.13	6.30E+01	41.48	1.90E+02	.....
	31	795.00	791 -	799	794.31	4.46E+01	33.94	1.53E+02	CS-134
	32	911.32	906 -	914	910.69	9.67E+01	41.12	1.97E+02	AC-228 TL-204
	33	933.20	927 -	936	932.58	4.67E+01	37.56	1.75E+02	.....
	34	967.74	960 -	973	967.13	1.02E+02	50.50	2.38E+02	.....

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	35	1120.37	1114 -	1125	1119.83	1.40E+02	47.83	2.16E+02	BI-214 SC-46 TA-182
	36	1238.59	1233 -	1245	1238.10	7.23E+01	43.51	1.89E+02	CO-56
	37	1379.20	1374 -	1387	1378.79	3.63E+01	33.65	1.01E+02	.....
	38	1407.18	1397 -	1417	1406.78	6.46E+01	42.70	1.21E+02	EU-152
	39	1460.71	1453 -	1468	1460.33	4.94E+02	57.06	1.28E+02	K-40
	40	1621.89	1619 -	1624	1621.60	9.00E+00	11.22	1.80E+01	.....
M	41	1729.50	1724 -	1738	1729.26	1.70E+01	16.55	3.44E+01	.....
m	42	1735.50	1724 -	1738	1735.27	1.37E+01	12.24	1.67E+01	.....
	43	1764.31	1759 -	1769	1764.10	1.18E+02	26.86	3.37E+01	BI-214
	44	1838.14	1833 -	1842	1837.97	8.75E+00	11.79	1.45E+01	.....
	45	1847.47	1843 -	1851	1847.30	2.39E+01	11.15	4.12E+00	.....
	46	1867.87	1863 -	1871	1867.72	1.38E+01	9.18	4.44E+00	.....
	47	1937.84	1934 -	1941	1937.73	9.38E+00	9.17	7.23E+00	.....
	48	2118.95	2114 -	2125	2118.94	1.46E+01	10.39	6.72E+00	.....
	49	2131.28	2126 -	2134	2131.29	8.50E+00	9.62	9.00E+00	.....
	50	2202.82	2197 -	2207	2202.87	5.40E+01	14.70	0.00E+00	.....
	51	2305.69	2301 -	2309	2305.80	1.35E+01	10.61	9.00E+00	.....
	52	2352.81	2348 -	2356	2352.95	7.67E+00	9.41	8.67E+00	.....
	53	2367.44	2365 -	2370	2367.59	4.75E+00	7.07	6.50E+00	.....
	54	2447.73	2443 -	2452	2447.93	1.20E+01	13.71	2.00E+01	.....
	55	2614.18	2610 -	2619	2614.50	5.60E+01	14.97	0.00E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 6:07:45PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.21	2.48E+02	132.84	1.63E-02	1.56E-03
M	2	64.08	5.87E+02	188.62	2.17E-02	1.66E-03
m	3	76.32	2.03E+03	192.12	2.32E-02	1.92E-03
M	4	87.32	7.10E+02	189.51	2.37E-02	2.15E-03
m	5	91.79	6.14E+02	160.14	2.37E-02	2.11E-03
	6	129.88	7.46E+01	91.83	2.15E-02	1.62E-03
	7	144.40	2.29E+02	148.88	2.03E-02	1.57E-03

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	8	152.98	1.01E+02	113.08	1.95E-02	1.54E-03
	9	186.00	4.67E+02	121.50	1.69E-02	1.40E-03
	10	197.41	1.81E+02	103.08	1.61E-02	1.34E-03
M	11	238.65	8.02E+02	103.07	1.36E-02	1.14E-03
m	12	242.00	4.10E+02	103.69	1.34E-02	1.13E-03
	13	270.52	9.52E+01	79.02	1.20E-02	9.89E-04
	14	295.28	7.39E+02	94.50	1.10E-02	9.13E-04
	15	337.86	1.59E+02	84.54	9.61E-03	8.24E-04
	16	352.00	1.36E+03	114.51	9.21E-03	7.94E-04
	17	402.27	5.95E+01	61.24	8.03E-03	7.06E-04
	18	410.98	9.11E+01	64.55	7.85E-03	7.03E-04
	19	462.92	5.51E+01	41.90	6.95E-03	6.81E-04
	20	478.10	4.80E+01	51.35	6.72E-03	6.75E-04
	21	511.02	1.14E+02	57.25	6.28E-03	6.61E-04
	22	526.09	5.89E+01	44.98	6.10E-03	6.55E-04
	23	583.14	1.97E+02	55.66	5.51E-03	6.31E-04
	24	609.23	9.23E+02	82.38	5.27E-03	6.20E-04
	25	665.14	5.83E+01	49.88	4.84E-03	5.94E-04
	26	715.71	2.10E+01	22.89	4.52E-03	5.31E-04
	27	726.89	3.88E+01	37.42	4.45E-03	5.17E-04
	28	742.77	3.88E+01	37.13	4.36E-03	4.97E-04
	29	768.31	6.86E+01	46.54	4.23E-03	4.65E-04
	30	785.82	6.30E+01	41.48	4.14E-03	4.43E-04
	31	795.00	4.46E+01	33.94	4.10E-03	4.31E-04
	32	911.32	9.67E+01	41.12	3.62E-03	2.99E-04
	33	933.20	4.67E+01	37.56	3.54E-03	2.94E-04
	34	967.74	1.02E+02	50.50	3.43E-03	2.86E-04
	35	1120.37	1.40E+02	47.83	3.01E-03	2.50E-04
	36	1238.59	7.23E+01	43.51	2.76E-03	2.33E-04
	37	1379.20	3.63E+01	33.65	2.51E-03	2.20E-04
	38	1407.18	6.46E+01	42.70	2.47E-03	2.16E-04
	39	1460.71	4.94E+02	57.06	2.38E-03	2.08E-04
	40	1621.89	9.00E+00	11.22	2.17E-03	1.83E-04
M	41	1729.50	1.70E+01	16.55	2.04E-03	1.67E-04
m	42	1735.50	1.37E+01	12.24	2.03E-03	1.66E-04
	43	1764.31	1.18E+02	26.86	2.00E-03	1.62E-04
	44	1838.14	8.75E+00	11.79	1.92E-03	1.51E-04
	45	1847.47	2.39E+01	11.15	1.91E-03	1.51E-04
	46	1867.87	1.38E+01	9.18	1.89E-03	1.51E-04
	47	1937.84	9.38E+00	9.17	1.82E-03	1.51E-04
	48	2118.95	1.46E+01	10.39	1.65E-03	1.51E-04
	49	2131.28	8.50E+00	9.62	1.64E-03	1.51E-04
	50	2202.82	5.40E+01	14.70	1.58E-03	1.51E-04
	51	2305.69	1.35E+01	10.61	1.50E-03	1.51E-04
	52	2352.81	7.67E+00	9.41	1.46E-03	1.51E-04
	53	2367.44	4.75E+00	7.07	1.45E-03	1.51E-04
	54	2447.73	1.20E+01	13.71	1.39E-03	1.51E-04
	55	2614.18	5.60E+01	14.97	1.28E-03	1.51E-04

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 6:07:45PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.21	2.48E+02	132.84	2.81E+01	8.29E+00	2.20E+02	1.33E+02
M	2	64.08	5.87E+02	188.62	5.67E+01	8.57E+00	5.30E+02	1.89E+02
m	3	76.32	2.03E+03	192.12			2.03E+03	1.92E+02
M	4	87.32	7.10E+02	189.51			7.10E+02	1.90E+02
m	5	91.79	6.14E+02	160.14	5.99E+01	8.61E+00	5.54E+02	1.60E+02
	6	129.88	7.46E+01	91.83			7.46E+01	9.18E+01
	7	144.40	2.29E+02	148.88			2.29E+02	1.49E+02
	8	152.98	1.01E+02	113.08			1.01E+02	1.13E+02
	9	186.00	4.67E+02	121.50	2.43E+01	7.50E+00	4.43E+02	1.22E+02
	10	197.41	1.81E+02	103.08	1.62E+01	7.19E+00	1.65E+02	1.03E+02
M	11	238.65	8.02E+02	103.07	1.06E+01	6.01E+00	7.92E+02	1.03E+02
m	12	242.00	4.10E+02	103.69			4.10E+02	1.04E+02
	13	270.52	9.52E+01	79.02			9.52E+01	7.90E+01
	14	295.28	7.39E+02	94.50			7.39E+02	9.45E+01
	15	337.86	1.59E+02	84.54			1.59E+02	8.45E+01
	16	352.00	1.36E+03	114.51			1.36E+03	1.15E+02
	17	402.27	5.95E+01	61.24			5.95E+01	6.12E+01
	18	410.98	9.11E+01	64.55			9.11E+01	6.46E+01
	19	462.92	5.51E+01	41.90			5.51E+01	4.19E+01
	20	478.10	4.80E+01	51.35			4.80E+01	5.14E+01
	21	511.02	1.14E+02	57.25	4.55E+01	4.99E+00	6.85E+01	5.75E+01
	22	526.09	5.89E+01	44.98			5.89E+01	4.50E+01
	23	583.14	1.97E+02	55.66			1.97E+02	5.57E+01
	24	609.23	9.23E+02	82.38			9.23E+02	8.24E+01
	25	665.14	5.83E+01	49.88			5.83E+01	4.99E+01
	26	715.71	2.10E+01	22.89			2.10E+01	2.29E+01
	27	726.89	3.88E+01	37.42			3.88E+01	3.74E+01
	28	742.77	3.88E+01	37.13			3.88E+01	3.71E+01
	29	768.31	6.86E+01	46.54			6.86E+01	4.65E+01
	30	785.82	6.30E+01	41.48			6.30E+01	4.15E+01
	31	795.00	4.46E+01	33.94			4.46E+01	3.39E+01
	32	911.32	9.67E+01	41.12			9.67E+01	4.11E+01
	33	933.20	4.67E+01	37.56			4.67E+01	3.76E+01
	34	967.74	1.02E+02	50.50			1.02E+02	5.05E+01
	35	1120.37	1.40E+02	47.83			1.40E+02	4.78E+01

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	36	1238.59	7.23E+01	43.51			7.23E+01	4.35E+01
	37	1379.20	3.63E+01	33.65			3.63E+01	3.36E+01
	38	1407.18	6.46E+01	42.70			6.46E+01	4.27E+01
	39	1460.71	4.94E+02	57.06			4.94E+02	5.71E+01
	40	1621.89	9.00E+00	11.22			9.00E+00	1.12E+01
M	41	1729.50	1.70E+01	16.55			1.70E+01	1.65E+01
m	42	1735.50	1.37E+01	12.24			1.37E+01	1.22E+01
	43	1764.31	1.18E+02	26.86			1.18E+02	2.69E+01
	44	1838.14	8.75E+00	11.79			8.75E+00	1.18E+01
	45	1847.47	2.39E+01	11.15			2.39E+01	1.11E+01
	46	1867.87	1.38E+01	9.18	1.09E-01	1.05E+00	1.37E+01	9.24E+00
	47	1937.84	9.38E+00	9.17			9.38E+00	9.17E+00
	48	2118.95	1.46E+01	10.39			1.46E+01	1.04E+01
	49	2131.28	8.50E+00	9.62			8.50E+00	9.62E+00
	50	2202.82	5.40E+01	14.70			5.40E+01	1.47E+01
	51	2305.69	1.35E+01	10.61			1.35E+01	1.06E+01
	52	2352.81	7.67E+00	9.41			7.67E+00	9.41E+00
	53	2367.44	4.75E+00	7.07			4.75E+00	7.07E+00
	54	2447.73	1.20E+01	13.71			1.20E+01	1.37E+01
	55	2614.18	5.60E+01	14.97			5.60E+01	1.50E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 6:07:45PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	46.21	2.48E+02	132.84	2.81E+01	8.29E+00	2.20E+02	1.33E+02
M	2	64.08	5.87E+02	188.62	5.67E+01	8.57E+00	5.30E+02	1.89E+02
m	3	76.32	2.03E+03	192.12			2.03E+03	1.92E+02
M	4	87.32	7.10E+02	189.51			7.10E+02	1.90E+02
m	5	91.79	6.14E+02	160.14	5.99E+01	8.61E+00	5.54E+02	1.60E+02
	6	129.88	7.46E+01	91.83			7.46E+01	9.18E+01
	7	144.40	2.29E+02	148.88			2.29E+02	1.49E+02
	8	152.98	1.01E+02	113.08			1.01E+02	1.13E+02

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	9	186.00	4.67E+02	121.50	2.43E+01	7.50E+00	4.43E+02	1.22E+02
	10	197.41	1.81E+02	103.08	1.62E+01	7.19E+00	1.65E+02	1.03E+02
M	11	238.65	8.02E+02	103.07	1.06E+01	6.01E+00	7.92E+02	1.03E+02
m	12	242.00	4.10E+02	103.69			4.10E+02	1.04E+02
	13	270.52	9.52E+01	79.02			9.52E+01	7.90E+01
	14	295.28	7.39E+02	94.50			7.39E+02	9.45E+01
	15	337.86	1.59E+02	84.54			1.59E+02	8.45E+01
	16	352.00	1.36E+03	114.51			1.36E+03	1.15E+02
	17	402.27	5.95E+01	61.24			5.95E+01	6.12E+01
	18	410.98	9.11E+01	64.55			9.11E+01	6.46E+01
	19	462.92	5.51E+01	41.90			5.51E+01	4.19E+01
	20	478.10	4.80E+01	51.35			4.80E+01	5.14E+01
	21	511.02	1.14E+02	57.25	4.55E+01	4.99E+00	6.85E+01	5.75E+01
	22	526.09	5.89E+01	44.98			5.89E+01	4.50E+01
	23	583.14	1.97E+02	55.66			1.97E+02	5.57E+01
	24	609.23	9.23E+02	82.38			9.23E+02	8.24E+01
	25	665.14	5.83E+01	49.88			5.83E+01	4.99E+01
	26	715.71	2.10E+01	22.89			2.10E+01	2.29E+01
	27	726.89	3.88E+01	37.42			3.88E+01	3.74E+01
	28	742.77	3.88E+01	37.13			3.88E+01	3.71E+01
	29	768.31	6.86E+01	46.54			6.86E+01	4.65E+01
	30	785.82	6.30E+01	41.48			6.30E+01	4.15E+01
	31	795.00	4.46E+01	33.94			4.46E+01	3.39E+01
	32	911.32	9.67E+01	41.12			9.67E+01	4.11E+01
	33	933.20	4.67E+01	37.56			4.67E+01	3.76E+01
	34	967.74	1.02E+02	50.50			1.02E+02	5.05E+01
	35	1120.37	1.40E+02	47.83			1.40E+02	4.78E+01
	36	1238.59	7.23E+01	43.51			7.23E+01	4.35E+01
	37	1379.20	3.63E+01	33.65			3.63E+01	3.36E+01
	38	1407.18	6.46E+01	42.70			6.46E+01	4.27E+01
	39	1460.71	4.94E+02	57.06			4.94E+02	5.71E+01
	40	1621.89	9.00E+00	11.22			9.00E+00	1.12E+01
M	41	1729.50	1.70E+01	16.55			1.70E+01	1.65E+01
m	42	1735.50	1.37E+01	12.24			1.37E+01	1.22E+01
	43	1764.31	1.18E+02	26.86			1.18E+02	2.69E+01
	44	1838.14	8.75E+00	11.79			8.75E+00	1.18E+01
	45	1847.47	2.39E+01	11.15			2.39E+01	1.11E+01
	46	1867.87	1.38E+01	9.18	1.09E-01	1.05E+00	1.37E+01	9.24E+00
	47	1937.84	9.38E+00	9.17			9.38E+00	9.17E+00
	48	2118.95	1.46E+01	10.39			1.46E+01	1.04E+01
	49	2131.28	8.50E+00	9.62			8.50E+00	9.62E+00
	50	2202.82	5.40E+01	14.70			5.40E+01	1.47E+01
	51	2305.69	1.35E+01	10.61			1.35E+01	1.06E+01
	52	2352.81	7.67E+00	9.41			7.67E+00	9.41E+00
	53	2367.44	4.75E+00	7.07			4.75E+00	7.07E+00
	54	2447.73	1.20E+01	13.71			1.20E+01	1.37E+01
	55	2614.18	5.60E+01	14.97			5.60E+01	1.50E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BE-7	0.943	477.59	*	10.42	2.74E+00	2.94E+00
K-40	0.998	1460.81	*	10.67	2.11E+01	3.08E+00
CD-109	0.923	88.03	*	3.72	1.02E+01	2.93E+00
SN-126	0.990	87.57	*	37.00	8.81E-01	2.48E-01
ND-147	0.429	91.11	*	28.90	4.99E+02	1.51E+02
		531.02		13.10		
TL-208	0.865	583.14	*	30.22	1.29E+00	3.92E-01
		860.37		4.48		
		2614.66	*	35.85	1.33E+00	3.87E-01
PB-210	0.987	46.50	*	4.25	3.48E+00	2.13E+00
BI-212	0.766	727.17	*	11.80	8.02E-01	7.79E-01
		1620.62		2.75		
PB-212	0.898	238.63	*	44.60	1.42E+00	2.20E-01
		300.09		3.41		
BI-214	0.936	609.31	*	46.30	4.11E+00	6.06E-01
		1120.29	*	15.10	3.34E+00	1.17E+00
		1764.49	*	15.80	4.07E+00	9.81E-01
		2204.22		4.98		
PB-214	0.999	295.21	*	19.19	3.80E+00	5.78E-01
		351.92	*	37.19	4.31E+00	5.19E-01
RN-219	0.965	401.80	*	6.50	1.24E+00	1.28E+00
RA-226	0.993	186.21	*	3.28	8.66E+00	1.60E+01
AC-228	0.574	338.32	*	11.40	1.58E+00	8.49E-01
		911.07	*	27.70	1.05E+00	4.54E-01
		969.11		16.60		
TH-234	0.905	63.29	*	3.80	6.99E+00	2.55E+00
NP-237	0.898	86.50	*	12.60	2.59E+00	7.29E-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 6:07:45PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	3	76.32	5.64758E-01	4.72		
	6	129.88	2.07243E-02	61.54		
	7	144.40	6.34798E-02	32.57	Tol.	U-235
	8	152.98	2.80556E-02	55.98		
	10	197.41	4.57846E-02	31.34		
m	12	242.00	1.14001E-01	12.63		
	13	270.52	2.64449E-02	41.50		
	18	410.98	2.52962E-02	35.44	Tol.	HO-166M
	19	462.92	1.52950E-02	38.05	Tol.	SB-125
	21	511.02	1.90178E-02	41.97		
	22	526.09	1.63734E-02	38.16		
	25	665.14	1.61942E-02	42.78	Tol.	CE-143
	26	715.71	5.81944E-03	54.62		
	28	742.77	1.07815E-02	47.84	D-Esc	
	29	768.31	1.90428E-02	33.94	Sum	
	30	785.82	1.75053E-02	32.91		
	31	795.00	1.23875E-02	38.06	Sum	
	33	933.20	1.29695E-02	40.23		
	34	967.74	2.83333E-02	24.75		
	36	1238.59	2.00915E-02	30.08	Tol.	CO-56
	37	1379.20	1.00862E-02	46.33		
	38	1407.18	1.79444E-02	33.05	Tol.	EU-152
	40	1621.89	2.50000E-03	62.36		
M	41	1729.50	4.72704E-03	48.61	Sum	
m	42	1735.50	3.80419E-03	44.68		
	44	1838.14	2.43056E-03	67.37		
	45	1847.47	6.65064E-03	23.28	Sum	
	46	1867.87	3.79788E-03	33.79		
	47	1937.84	2.60684E-03	48.83	Sum	
	48	2118.95	4.06636E-03	35.50		
	49	2131.28	2.36111E-03	56.57		
	50	2202.82	1.50000E-02	13.61		
	51	2305.69	3.75000E-03	39.28		
	52	2352.81	2.12963E-03	61.35		
	53	2367.44	1.31944E-03	74.43		
	54	2447.73	3.33333E-03	57.13		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BE-7	0.94	477.59	*	10.42	2.74E+00	2.94E+00
K-40	0.99	1460.81	*	10.67	2.11E+01	3.08E+00
CD-109	0.92	88.03	*	3.72	1.02E+01	2.93E+00
SN-126	0.99	87.57	*	37.00	8.81E-01	2.48E-01
ND-147	0.42	91.11	*	28.90	4.99E+02	1.51E+02
		531.02		13.10		
TL-208	0.86	583.14	*	30.22	1.29E+00	3.92E-01
		860.37		4.48		
		2614.66	*	35.85	1.33E+00	3.87E-01
PB-210	0.98	46.50	*	4.25	3.48E+00	2.13E+00
BI-212	0.76	727.17	*	11.80	8.02E-01	7.79E-01
		1620.62		2.75		
PB-212	0.89	238.63	*	44.60	1.42E+00	2.20E-01
		300.09		3.41		
BI-214	0.93	609.31	*	46.30	4.11E+00	6.06E-01
		1120.29	*	15.10	3.34E+00	1.17E+00
		1764.49	*	15.80	4.07E+00	9.81E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	3.80E+00	5.78E-01
		351.92	*	37.19	4.31E+00	5.19E-01
RN-219	0.96	401.80	*	6.50	1.24E+00	1.28E+00
RA-226	0.99	186.21	*	3.28	8.66E+00	1.60E+01
AC-228	0.57	338.32	*	11.40	1.58E+00	8.49E-01
		911.07	*	27.70	1.05E+00	4.54E-01
		969.11		16.60		
TH-234	0.90	63.29	*	3.80	6.99E+00	2.55E+00
NP-237	0.89	86.50	*	12.60	2.59E+00	7.29E-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	BE-7	0.943	2.74E+00	2.94E+00	
	K-40	0.998	2.11E+01	3.08E+00	
?	CD-109	0.923	1.02E+01	2.93E+00	
?	SN-126	0.990	8.81E-01	2.48E-01	
	ND-147	0.429	4.99E+02	1.51E+02	
	TL-208	0.865	1.31E+00	2.76E-01	
	PB-210	0.987	3.48E+00	2.13E+00	
	BI-212	0.766	8.02E-01	7.79E-01	
	PB-212	0.898	1.42E+00	2.20E-01	
	BI-214	0.936	3.97E+00	4.72E-01	
	PB-214	0.999	4.08E+00	3.86E-01	
	RN-219	0.965	1.24E+00	1.28E+00	
	RA-226	0.993	8.66E+00	1.60E+01	
	AC-228	0.574	1.17E+00	4.00E-01	
	TH-234	0.905	6.99E+00	2.55E+00	
?	NP-237	0.898	2.59E+00	7.29E-01	

? = nuclide is part of an undetermined solution

X = nuclide rejected by the interference analysis

@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 6:07:45PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	3	76.32	5.64758E-01	4.72		
	6	129.88	2.07243E-02	61.54		
	7	144.40	6.34798E-02	32.57	Tol.	U-235
	8	152.98	2.80556E-02	55.98		
	10	197.41	4.57846E-02	31.34		
m	12	242.00	1.14001E-01	12.63		
	13	270.52	2.64449E-02	41.50		
	18	410.98	2.52962E-02	35.44	Tol.	HO-166M
	19	462.92	1.52950E-02	38.05	Tol.	SB-125
	21	511.02	1.90178E-02	41.97		
	22	526.09	1.63734E-02	38.16		
	25	665.14	1.61942E-02	42.78	Tol.	CE-143
	26	715.71	5.81944E-03	54.62		
	28	742.77	1.07815E-02	47.84	D-Esc	
	29	768.31	1.90428E-02	33.94	Sum	
	30	785.82	1.75053E-02	32.91		
	31	795.00	1.23875E-02	38.06	Sum	
	33	933.20	1.29695E-02	40.23		
	34	967.74	2.83333E-02	24.75		
	36	1238.59	2.00915E-02	30.08	Tol.	CO-56
	37	1379.20	1.00862E-02	46.33		
	38	1407.18	1.79444E-02	33.05	Tol.	EU-152
	40	1621.89	2.50000E-03	62.36		
M	41	1729.50	4.72704E-03	48.61	Sum	
m	42	1735.50	3.80419E-03	44.68		
	44	1838.14	2.43056E-03	67.37		
	45	1847.47	6.65064E-03	23.28	Sum	
	46	1867.87	3.79788E-03	33.79		
	47	1937.84	2.60684E-03	48.83	Sum	
	48	2118.95	4.06636E-03	35.50		
	49	2131.28	2.36111E-03	56.57		
	50	2202.82	1.50000E-02	13.61		
	51	2305.69	3.75000E-03	39.28		
	52	2352.81	2.12963E-03	61.35		
	53	2367.44	1.31944E-03	74.43		

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
54	2447.73	3.33333E-03	57.13		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	*	10.42	2.74E+00	4.80E+00	4.80E+00
+	NA-22	1274.54		99.94	1.34E-02	1.75E-01	1.75E-01
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	-6.82E-03	9.30E-02	9.30E-02
+	K-40	1460.81	*	10.67	2.11E+01	2.63E+00	2.63E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-1.69E-01	1.05E-01	1.05E-01
		78.34		96.00	6.79E-01		1.31E-01
+	SC-46	889.25		99.98	1.99E-03	3.29E-01	3.29E-01
		1120.51		99.99	1.09E+00		5.94E-01
+	V-48	983.52		99.98	5.11E+00	1.20E+01	1.20E+01
		1312.10		97.50	9.75E-01		1.30E+01
+	CR-51	320.08		9.83	-1.99E-01	1.14E+01	1.14E+01
+	MN-54	834.83		99.97	-5.15E-02	1.66E-01	1.66E-01
+	CO-56	846.75		99.96	4.94E-02	3.03E-01	3.03E-01
		1037.75		14.03	-8.63E-01		2.40E+00
		1238.25		67.00	7.85E-01		8.07E-01
		1771.40		15.51	-1.79E-01		1.71E+00
		2598.48		16.90	-4.02E-02		8.87E-01
+	CO-57	122.06		85.51	-2.88E-02	1.08E-01	1.08E-01
		136.48		10.60	1.00E-01		9.29E-01
+	CO-58	810.76		99.40	1.15E-01	3.90E-01	3.90E-01
+	FE-59	1099.22		56.50	-1.05E-01	1.36E+00	1.36E+00
		1291.56		43.20	1.76E-01		1.79E+00
+	CO-60	1173.22		100.00	-4.91E-02	1.51E-01	1.63E-01
		1332.49		100.00	5.72E-02		1.51E-01
+	ZN-65	1115.52		50.75	-3.00E-02	5.49E-01	5.49E-01

Analysis Report for 1707092-16

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	GA-67	93.31		35.70	1.20E+09	4.96E+08	4.96E+08
		208.95		2.24	2.89E+09		7.31E+09
		300.22		16.00	5.39E+08		1.23E+09
+	SE-75	121.11		16.70	-4.24E-01	2.28E-01	7.61E-01
		136.00		59.20	2.47E-02		2.28E-01
		264.65		59.80	-4.52E-02		2.54E-01
		279.53		25.20	-1.17E-01		6.25E-01
		400.65		11.40	3.50E-01		1.69E+00
+	RB-82	776.52		13.00	-3.90E-01	1.61E+01	1.61E+01
+	RB-83	520.41		46.00	1.26E-01	4.98E-01	4.98E-01
		529.64		30.30	7.62E-02		8.14E-01
		552.65		16.40	4.75E-01		1.50E+00
+	KR-85	513.99		0.43	7.61E+00	2.90E+01	2.90E+01
+	SR-85	513.99		99.27	9.56E-02	3.64E-01	3.64E-01
+	Y-88	898.02		93.40	-2.85E-02	2.27E-01	3.19E-01
		1836.01		99.38	4.08E-02		2.27E-01
+	MO-93	263.06		56.72	7.29E-03	1.27E-01	1.55E-01
		684.67		99.68	7.47E-03		1.30E-01
		1477.11		99.08	-4.90E-02		1.27E-01
+	NB-93M	16.57		9.43	2.32E+01	9.54E+00	9.54E+00
+	NB-94	702.63		100.00	-4.84E-02	1.29E-01	1.29E-01
		871.10		100.00	-2.59E-02		1.41E-01
+	NB-95	765.79		99.81	-3.55E-02	1.24E+00	1.24E+00
+	NB-95M	235.69		25.00	1.64E+08	1.19E+08	1.19E+08
+	ZR-95	724.18		43.70	9.80E-02	7.71E-01	1.00E+00
		756.72		55.30	3.54E-01		7.71E-01
+	MO-99	181.06		6.20	9.04E+09	1.00E+11	1.33E+11
		739.58		12.80	1.19E+09		1.00E+11
		778.00		4.50	-7.20E+09		2.97E+11
+	RU-103	497.08		89.00	8.26E-02	6.68E-01	6.68E-01
+	RU-106	621.84		9.80	3.78E-01	1.32E+00	1.32E+00
+	AG-108M	433.93		89.90	-4.21E-02	1.10E-01	1.10E-01
		614.37		90.40	-4.27E-02		1.17E-01
		722.95		90.50	1.74E-02		1.59E-01
+	CD-109	88.03	*	3.72	1.02E+01	5.74E+00	5.74E+00
+	AG-110M	657.75		93.14	2.32E-02	1.83E-01	1.83E-01
		677.61		10.53	-3.61E-03		1.58E+00
		706.67		16.46	4.14E-01		1.09E+00
		763.93		21.98	-6.61E-02		8.90E-01
		884.67		71.63	-1.11E-01		2.50E-01
		1384.27		23.94	-6.02E-01		7.43E-01
+	CD-113M	263.70		0.02	6.53E+00	3.80E+02	3.80E+02
+	SN-113	255.12		1.93	-1.79E+00	2.89E-01	8.14E+00
		391.69		64.90	-4.26E-02		2.89E-01
+	TE123M	159.00		84.10	-7.07E-02	1.71E-01	1.71E-01
+	SB-124	602.71		97.87	-2.98E-02	3.45E-01	3.45E-01
		645.85		7.26	-3.00E-01		4.76E+00
		722.78		11.10	4.50E-01		4.12E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-124	1691.02		49.00	2.95E-02	3.45E-01	6.59E-01
+	I-125	35.49		6.49	-1.95E+00	6.57E+00	6.57E+00
+	SB-125	176.33		6.89	-3.63E-01	3.89E-01	1.26E+00
		427.89		29.33	1.74E-01		3.89E-01
		463.38		10.35	7.75E-01		1.10E+00
		600.56		17.80	4.91E-02		6.54E-01
		635.90		11.32	-7.26E-01		9.57E-01
+	SB-126	414.70		83.30	-1.44E+01	3.18E+01	3.18E+01
		666.33		99.60	2.58E+00		3.67E+01
		695.00		99.60	-2.24E-02		3.38E+01
		720.50		53.80	7.98E+00		6.56E+01
+	SN-126	87.57	*	37.00	8.81E-01	4.97E-01	4.97E-01
+	SB-127	473.00		25.00	3.52E+06	2.53E+07	2.83E+07
		685.20		35.70	1.46E+06		2.53E+07
		783.80		14.70	2.89E+07		7.35E+07
+	I-129	29.78		57.00	-5.75E-02	3.39E-01	3.39E-01
		33.60		13.20	1.77E-01		1.13E+00
		39.58		7.52	-5.70E-01		1.52E+00
+	I-131	284.30		6.05	1.20E+03	6.33E+02	8.43E+03
		364.48		81.20	-6.95E+00		6.33E+02
		636.97		7.26	-2.11E+03		8.47E+03
		722.89		1.80	5.02E+03		4.60E+04
+	TE-132	49.72		13.10	3.77E+08	1.79E+08	1.51E+09
		228.16		88.00	-6.73E+07		1.79E+08
+	BA-133	81.00		33.00	-1.27E+00	2.56E-01	3.06E-01
		302.84		17.80	1.88E-01		5.32E-01
		356.01		60.00	-2.40E-02		2.56E-01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-6.33E+05	1.52E+05	1.52E+05
+	CS-134	563.23		8.38	2.75E-01	1.67E-01	1.45E+00
		569.32		15.43	1.17E-02		7.35E-01
		604.70		97.60	-1.59E+00		1.67E-01
		795.84		85.40	1.41E-01		1.84E-01
		801.93		8.73	-6.14E-01		1.65E+00
+	CS-135	268.24		16.00	1.97E-02	5.96E-01	5.96E-01
+	@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41		28.60	1.00E+26		1.00E+26
	@	1678.03		9.54	1.00E+26		1.00E+26
+	CS-136	153.22		7.46	1.17E+02	2.60E+01	2.22E+02
		163.89		4.61	3.46E+01		3.48E+02
		176.55		13.56	-1.17E+01		1.20E+02
		273.65		12.66	3.44E+01		1.51E+02
		340.57		48.50	4.58E+01		4.40E+01
		818.50		99.70	-2.50E+00		2.60E+01
		1048.07		79.60	-3.26E+00		3.86E+01
		1235.34		19.70	1.30E+01		2.20E+02
+	CS-137	661.65		85.12	1.05E-02	1.58E-01	1.58E-01
+	LA-138	788.74		34.00	-2.45E-01	2.11E-01	4.22E-01
		1435.80		66.00	-5.44E-02		2.11E-01

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		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		CE-139	165.85		80.35	3.04E-02	1.68E-01	1.68E-01
+		BA-140	162.64		6.70	-6.89E+01	9.44E+01	2.75E+02
			304.84		4.50	-2.62E+02		4.55E+02
			423.70		3.20	-1.02E+02		7.47E+02
			437.55		2.00	3.81E+02		1.13E+03
			537.32		25.00	-1.72E+01		9.44E+01
+		LA-140	328.77		20.50	2.35E+01	3.47E+01	1.08E+02
			487.03		45.50	-3.11E+00		4.63E+01
			815.85		23.50	-4.53E+01		1.24E+02
			1596.49		95.49	1.10E+01		3.47E+01
+		CE-141	145.44		48.40	1.52E+00	1.47E+00	1.47E+00
+	@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26
	@		293.26		42.00	1.00E+26		1.00E+26
	@		664.55		5.20	1.00E+26		1.00E+26
+		CE-144	133.54		10.80	5.88E-02	8.90E-01	8.90E-01
+		PM-144	476.78		42.00	2.20E-01	1.26E-01	3.15E-01
			618.01		98.60	2.48E-03		1.26E-01
			696.49		99.49	-5.98E-02		1.48E-01
+		PM-145	36.85		21.70	-1.61E-01	3.12E-01	5.84E-01
			37.36		39.70	-8.61E-02		3.12E-01
			42.30		15.10	-1.62E-01		7.21E-01
			72.40		2.31	-2.00E+01		4.73E+00
+		PM-146	453.90		39.94	1.25E-01	2.73E-01	2.73E-01
			735.90		14.01	1.49E-01		9.39E-01
			747.13		13.10	-1.52E-01		1.04E+00
+		ND-147	91.11	*	28.90	4.99E+02	3.53E+02	3.53E+02
			531.02		13.10	6.82E+01		4.71E+02
+		PM-149	285.90		3.10	6.71E+12	1.32E+14	1.32E+14
+		EU-152	121.78		20.50	-9.42E-02	3.54E-01	3.54E-01
			244.69		5.40	9.01E-01		2.01E+00
			344.27		19.13	7.87E-02		4.73E-01
			778.89		9.20	3.05E-02		1.55E+00
			964.01		10.40	-1.84E+00		1.67E+00
			1085.78		7.22	3.13E-01		2.28E+00
			1112.02		9.60	-1.67E-01		1.70E+00
			1407.95		14.94	7.35E-01		1.22E+00
+		GD-153	97.43		31.30	8.92E-02	3.33E-01	3.33E-01
			103.18		22.20	-7.94E-02		4.35E-01
+		EU-154	123.07		40.50	-2.72E-02	1.82E-01	1.82E-01
			723.30		19.70	7.48E-02		7.66E-01
			873.19		11.50	-1.93E-01		1.24E+00
			996.32		10.30	-3.87E-01		1.67E+00
			1004.76		17.90	6.40E-01		9.71E-01
			1274.45		35.50	3.59E-02		4.67E-01
+		EU-155	86.50		30.90	1.55E-01	3.28E-01	3.28E-01
			105.30		20.70	1.21E-01		3.64E-01
+		EU-156	811.77		10.40	-2.79E+01	1.30E+02	1.30E+02
			1153.47		7.20	1.39E+02		2.68E+02
			1230.71		8.90	-3.56E+01		1.90E+02

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	HO-166M	184.41		72.60	4.21E-01	1.47E-01	1.47E-01
		280.45		29.60	-4.77E-02		2.94E-01
		410.94		11.10	7.03E-01		9.40E-01
		711.69		54.10	3.57E-02		2.55E-01
+	TM-171	66.72		0.14	-3.53E+01	7.97E+01	7.97E+01
+	HF-172	67.35		5.31	-9.28E-01	7.32E-01	2.10E+00
		125.81		11.30	-8.03E-02		7.32E-01
+	LU-172	181.53		20.60	8.01E+02	8.68E+03	1.42E+04
		900.72		29.81	-2.03E+03		1.75E+04
		1093.66		62.50	8.87E+01		8.68E+03
+	LU-173	100.72		5.24	5.07E-01	5.46E-01	1.60E+00
		272.11		21.20	6.05E-01		5.46E-01
+	HF-175	343.40		84.00	4.77E-02	2.86E-01	2.86E-01
+	LU-176	88.34		13.30	-5.18E-01	9.38E-02	7.35E-01
		201.83		86.00	3.10E-03		9.80E-02
		306.78		94.00	-1.31E-02		9.38E-02
+	HF-181	133.02		41.70	7.46E-02	6.32E-01	9.47E-01
		345.85		17.20	4.48E-01		2.74E+00
		482.03		82.80	3.49E-02		6.32E-01
+	TA-182	67.75		41.20	-7.08E-01	4.40E-01	4.40E-01
		1121.30		34.90	2.65E+00		1.36E+00
		1189.05		16.23	-1.90E-01		1.98E+00
		1221.41		26.98	-1.54E-01		1.27E+00
		1231.02		11.44	3.31E-02		2.85E+00
+	IR-192	308.46		29.68	-2.48E-01	5.18E-01	7.73E-01
		468.07		48.10	-8.42E-03		5.18E-01
+	HG-203	279.19		77.30	7.78E-02	5.14E-01	5.14E-01
+	TL-204	374.74		94.11	3.51E-02	1.10E-01	1.10E-01
		899.15		99.16	-5.16E-02		1.69E-01
		911.74		91.10	2.55E-01		2.30E-01
+	BI-207	569.67		97.72	1.70E-03	1.07E-01	1.07E-01
		1063.62		74.90	-8.94E-02		2.17E-01
+	TL-208	583.14	*	30.22	1.29E+00	6.41E-02	5.34E-01
		860.37		4.48	1.04E+00		3.36E+00
		2614.66	*	35.85	1.33E+00		6.41E-02
+	BI-210M	262.00		45.00	5.91E-03	1.93E-01	1.93E-01
		300.00		23.00	2.01E-01		4.61E-01
+	PB-210	46.50	*	4.25	3.48E+00	3.41E+00	3.41E+00
+	PB-211	404.84		2.90	-3.43E+00	3.46E+00	3.46E+00
		831.96		2.90	2.81E+00		4.83E+00
+	BI-212	727.17	*	11.80	8.02E-01	1.26E+00	1.26E+00
		1620.62		2.75	-4.86E-01		4.65E+00
+	PB-212	238.63	*	44.60	1.42E+00	3.85E-01	3.85E-01
		300.09		3.41	1.36E+00		3.11E+00
+	BI-214	609.31	*	46.30	4.11E+00	4.19E-01	4.19E-01
		1120.29	*	15.10	3.34E+00		1.70E+00
		1764.49	*	15.80	4.07E+00		9.86E-01
		2204.22		4.98	5.42E+00		4.82E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PB-214	295.21	*	19.19	3.80E+00	4.65E-01	6.67E-01
		351.92	*	37.19	4.31E+00		4.65E-01
+	RN-219	401.80	*	6.50	1.24E+00	2.09E+00	2.09E+00
+	RA-223	323.87		3.88	-2.51E-01	2.38E+00	2.38E+00
+	RA-224	240.98		3.95	2.01E+01	3.85E+00	3.85E+00
+	RA-225	40.00		31.00	-1.50E+01	3.99E+01	3.99E+01
+	RA-226	186.21	*	3.28	8.66E+00	3.73E+00	3.73E+00
+	TH-227	50.10		8.40	3.09E-01	1.10E+00	1.23E+00
		236.00		11.50	1.51E+00		1.10E+00
		256.20		6.30	-3.55E-01		1.38E+00
+	AC-228	338.32	*	11.40	1.58E+00	6.73E-01	1.34E+00
		911.07	*	27.70	1.05E+00		6.73E-01
		969.11		16.60	1.26E+00		1.20E+00
+	TH-230	48.44		16.90	2.43E-01	6.32E-01	6.32E-01
		62.85		4.60	2.56E+00		2.29E+00
		67.67		0.37	-4.30E+01		2.67E+01
+	PA-231	283.67		1.60	7.89E-01	4.04E+00	5.53E+00
		302.67		2.30	1.43E+00		4.04E+00
+	TH-231	25.64		14.70	3.48E-01	1.47E+00	1.93E+00
		84.21		6.40	-2.14E-01		1.47E+00
+	PA-233	311.98		38.60	1.76E+00	3.22E+00	3.22E+00
+	PA-234	131.20		20.40	5.77E-02	3.77E-01	3.77E-01
		733.99		8.80	1.60E-01		1.45E+00
		946.00		12.00	-2.58E-01		1.27E+00
+	PA-234M	1001.03		0.92	8.12E+00	1.86E+01	1.86E+01
+	TH-234	63.29	*	3.80	6.99E+00	8.21E+00	8.21E+00
+	U-235	143.76		10.50	9.16E-01	8.02E-01	8.02E-01
		163.35		4.70	-4.27E-01		1.71E+00
		205.31		4.70	-6.80E-01		1.83E+00
+	NP-237	86.50	*	12.60	2.59E+00	1.46E+00	1.46E+00
+	NP-239	106.10		22.70	-4.66E+11	2.16E+12	2.16E+12
		228.18		10.70	-2.00E+12		5.33E+12
		277.60		14.10	-6.16E+11		4.34E+12
+	AM-241	59.54		35.90	3.63E-02	2.82E-01	2.82E-01
+	AM-243	74.67		66.00	1.20E+00	1.99E-01	1.99E-01
+	CM-243	209.75		3.29	9.65E-01	6.43E-01	2.68E+00
		228.14		10.60	-2.97E-01		7.91E-01
		277.60		14.00	-9.13E-02		6.43E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	BE-7	477.59	*	10.42	4.80E+00	4.80E+00	2.74E+00	2.32E+00
	NA-22	1274.54		99.94	1.75E-01	1.75E-01	1.34E-02	8.15E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	9.30E-02	9.30E-02	-6.82E-03	3.90E-02
+	K-40	1460.81	*	10.67	2.63E+00	2.63E+00	2.11E+01	1.26E+00
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	1.05E-01	1.05E-01	-1.69E-01	5.17E-02
		78.34		96.00	1.31E-01		6.79E-01	6.50E-02
	SC-46	889.25		99.98	3.29E-01	3.29E-01	1.99E-03	1.55E-01
		1120.51		99.99	5.94E-01		1.09E+00	2.86E-01
	V-48	983.52		99.98	1.20E+01	1.20E+01	5.11E+00	5.66E+00
		1312.10		97.50	1.30E+01		9.75E-01	6.03E+00
	CR-51	320.08		9.83	1.14E+01	1.14E+01	-1.99E-01	5.53E+00
	MN-54	834.83		99.97	1.66E-01	1.66E-01	-5.15E-02	7.82E-02
	CO-56	846.75		99.96	3.03E-01	3.03E-01	4.94E-02	1.42E-01
		1037.75		14.03	2.40E+00		-8.63E-01	1.12E+00
		1238.25		67.00	8.07E-01		7.85E-01	3.84E-01
		1771.40		15.51	1.71E+00		-1.79E-01	7.41E-01
		2598.48		16.90	8.87E-01		-4.02E-02	2.80E-01
	CO-57	122.06		85.51	1.08E-01	1.08E-01	-2.88E-02	5.31E-02
		136.48		10.60	9.29E-01		1.00E-01	4.56E-01
	CO-58	810.76		99.40	3.90E-01	3.90E-01	1.15E-01	1.85E-01
	FE-59	1099.22		56.50	1.36E+00	1.36E+00	-1.05E-01	6.40E-01
		1291.56		43.20	1.79E+00		1.76E-01	8.37E-01
	CO-60	1173.22		100.00	1.63E-01	1.51E-01	-4.91E-02	7.63E-02
		1332.49		100.00	1.51E-01		5.72E-02	6.94E-02
	ZN-65	1115.52		50.75	5.49E-01	5.49E-01	-3.00E-02	2.62E-01
	GA-67	93.31		35.70	4.96E+08	4.96E+08	1.20E+09	2.45E+08
		208.95		2.24	7.31E+09		2.89E+09	3.58E+09
		300.22		16.00	1.23E+09		5.39E+08	6.01E+08
	SE-75	121.11		16.70	7.61E-01	2.28E-01	-4.24E-01	3.73E-01
		136.00		59.20	2.28E-01		2.47E-02	1.12E-01
		264.65		59.80	2.54E-01		-4.52E-02	1.23E-01
		279.53		25.20	6.25E-01		-1.17E-01	3.04E-01
		400.65		11.40	1.69E+00		3.50E-01	8.16E-01
	RB-82	776.52		13.00	1.61E+01	1.61E+01	-3.90E-01	7.66E+00

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	RB-83	520.41		46.00	4.98E-01	4.98E-01	1.26E-01	2.37E-01
		529.64		30.30	8.14E-01		7.62E-02	3.89E-01
		552.65		16.40	1.50E+00		4.75E-01	7.17E-01
	KR-85	513.99		0.43	2.90E+01	2.90E+01	7.61E+00	1.40E+01
	SR-85	513.99		99.27	3.64E-01	3.64E-01	9.56E-02	1.75E-01
	Y-88	898.02		93.40	3.19E-01	2.27E-01	-2.85E-02	1.51E-01
		1836.01		99.38	2.27E-01		4.08E-02	9.85E-02
	MO-93	263.06		56.72	1.55E-01	1.27E-01	7.29E-03	7.55E-02
		684.67		99.68	1.30E-01		7.47E-03	6.17E-02
		1477.11		99.08	1.27E-01		-4.90E-02	5.71E-02
	NB-93M	16.57		9.43	9.54E+00	9.54E+00	2.32E+01	4.66E+00
	NB-94	702.63		100.00	1.29E-01	1.29E-01	-4.84E-02	6.12E-02
		871.10		100.00	1.41E-01		-2.59E-02	6.67E-02
	NB-95	765.79		99.81	1.24E+00	1.24E+00	-3.55E-02	5.93E-01
	NB-95M	235.69		25.00	1.19E+08	1.19E+08	1.64E+08	5.85E+07
	ZR-95	724.18		43.70	1.00E+00	7.71E-01	9.80E-02	4.80E-01
		756.72		55.30	7.71E-01		3.54E-01	3.67E-01
	MO-99	181.06		6.20	1.33E+11	1.00E+11	9.04E+09	6.51E+10
		739.58		12.80	1.00E+11		1.19E+09	4.75E+10
		778.00		4.50	2.97E+11		-7.20E+09	1.41E+11
	RU-103	497.08		89.00	6.68E-01	6.68E-01	8.26E-02	3.19E-01
	RU-106	621.84		9.80	1.32E+00	1.32E+00	3.78E-01	6.26E-01
	AG-108M	433.93		89.90	1.10E-01	1.10E-01	-4.21E-02	5.26E-02
		614.37		90.40	1.17E-01		-4.27E-02	5.54E-02
		722.95		90.50	1.59E-01		1.74E-02	7.60E-02
+	CD-109	88.03	*	3.72	5.74E+00	5.74E+00	1.02E+01	2.85E+00
	AG-110M	657.75		93.14	1.83E-01	1.83E-01	2.32E-02	8.73E-02
		677.61		10.53	1.58E+00		-3.61E-03	7.51E-01
		706.67		16.46	1.09E+00		4.14E-01	5.21E-01
		763.93		21.98	8.90E-01		-6.61E-02	4.24E-01
		884.67		71.63	2.50E-01		-1.11E-01	1.18E-01
		1384.27		23.94	7.43E-01		-6.02E-01	3.39E-01
	CD-113M	263.70		0.02	3.80E+02	3.80E+02	6.53E+00	1.85E+02
	SN-113	255.12		1.93	8.14E+00	2.89E-01	-1.79E+00	3.96E+00
		391.69		64.90	2.89E-01		-4.26E-02	1.40E-01
	TE123M	159.00		84.10	1.71E-01	1.71E-01	-7.07E-02	8.38E-02
	SB-124	602.71		97.87	3.45E-01	3.45E-01	-2.98E-02	1.64E-01
		645.85		7.26	4.76E+00		-3.00E-01	2.25E+00
		722.78		11.10	4.12E+00		4.50E-01	1.97E+00
		1691.02		49.00	6.59E-01		2.95E-02	2.84E-01
	I-125	35.49		6.49	6.57E+00	6.57E+00	-1.95E+00	3.22E+00
	SB-125	176.33		6.89	1.26E+00	3.89E-01	-3.63E-01	6.18E-01
		427.89		29.33	3.89E-01		1.74E-01	1.88E-01
		463.38		10.35	1.10E+00		7.75E-01	5.29E-01
		600.56		17.80	6.54E-01		4.91E-02	3.10E-01
		635.90		11.32	9.57E-01		-7.26E-01	4.51E-01
	SB-126	414.70		83.30	3.18E+01	3.18E+01	-1.44E+01	1.53E+01
		666.33		99.60	3.67E+01		2.58E+00	1.75E+01
		695.00		99.60	3.38E+01		-2.24E-02	1.60E+01
		720.50		53.80	6.56E+01		7.98E+00	3.11E+01
+	SN-126	87.57	*	37.00	4.97E-01	4.97E-01	8.81E-01	2.47E-01
	SB-127	473.00		25.00	2.83E+07	2.53E+07	3.52E+06	1.35E+07
		685.20		35.70	2.53E+07		1.46E+06	1.20E+07

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-127	783.80	14.70	7.35E+07	2.53E+07	2.89E+07	3.50E+07
I-129	29.78	57.00	3.39E-01	3.39E-01	-5.75E-02	1.66E-01
	33.60	13.20	1.13E+00		1.77E-01	5.54E-01
	39.58	7.52	1.52E+00		-5.70E-01	7.43E-01
I-131	284.30	6.05	8.43E+03	6.33E+02	1.20E+03	4.09E+03
	364.48	81.20	6.33E+02		-6.95E+00	3.05E+02
	636.97	7.26	8.47E+03		-2.11E+03	4.00E+03
	722.89	1.80	4.60E+04		5.02E+03	2.19E+04
TE-132	49.72	13.10	1.51E+09	1.79E+08	3.77E+08	7.41E+08
	228.16	88.00	1.79E+08		-6.73E+07	8.73E+07
BA-133	81.00	33.00	3.06E-01	2.56E-01	-1.27E+00	1.51E-01
	302.84	17.80	5.32E-01		1.88E-01	2.58E-01
	356.01	60.00	2.56E-01		-2.40E-02	1.25E-01
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	1.52E+05	1.52E+05	-6.33E+05	7.51E+04
CS-134	563.23	8.38	1.45E+00	1.67E-01	2.75E-01	6.92E-01
	569.32	15.43	7.35E-01		1.17E-02	3.49E-01
	604.70	97.60	1.67E-01		-1.59E+00	8.04E-02
	795.84	85.40	1.84E-01		1.41E-01	8.73E-02
	801.93	8.73	1.65E+00		-6.14E-01	7.81E-01
CS-135	268.24	16.00	5.96E-01	5.96E-01	1.97E-02	2.90E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	2.22E+02	2.60E+01	1.17E+02	1.09E+02
	163.89	4.61	3.48E+02		3.46E+01	1.71E+02
	176.55	13.56	1.20E+02		-1.17E+01	5.85E+01
	273.65	12.66	1.51E+02		3.44E+01	7.33E+01
	340.57	48.50	4.40E+01		4.58E+01	2.14E+01
	818.50	99.70	2.60E+01		-2.50E+00	1.23E+01
	1048.07	79.60	3.86E+01		-3.26E+00	1.81E+01
	1235.34	19.70	2.20E+02		1.30E+01	1.05E+02
CS-137	661.65	85.12	1.58E-01	1.58E-01	1.05E-02	7.57E-02
LA-138	788.74	34.00	4.22E-01	2.11E-01	-2.45E-01	2.01E-01
	1435.80	66.00	2.11E-01		-5.44E-02	9.62E-02
CE-139	165.85	80.35	1.68E-01	1.68E-01	3.04E-02	8.25E-02
BA-140	162.64	6.70	2.75E+02	9.44E+01	-6.89E+01	1.35E+02
	304.84	4.50	4.55E+02		-2.62E+02	2.20E+02
	423.70	3.20	7.47E+02		-1.02E+02	3.60E+02
	437.55	2.00	1.13E+03		3.81E+02	5.44E+02
	537.32	25.00	9.44E+01		-1.72E+01	4.49E+01
LA-140	328.77	20.50	1.08E+02	3.47E+01	2.35E+01	5.23E+01
	487.03	45.50	4.63E+01		-3.11E+00	2.20E+01
	815.85	23.50	1.24E+02		-4.53E+01	5.86E+01
	1596.49	95.49	3.47E+01		1.10E+01	1.57E+01
CE-141	145.44	48.40	1.47E+00	1.47E+00	1.52E+00	7.21E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	8.90E-01	8.90E-01	5.88E-02	4.37E-01
PM-144	476.78	42.00	3.15E-01	1.26E-01	2.20E-01	1.51E-01
	618.01	98.60	1.26E-01		2.48E-03	5.97E-02
	696.49	99.49	1.48E-01		-5.98E-02	7.03E-02

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PM-145	36.85		21.70	5.84E-01	3.12E-01	-1.61E-01	2.86E-01
		37.36		39.70	3.12E-01		-8.61E-02	1.53E-01
		42.30		15.10	7.21E-01		-1.62E-01	3.54E-01
		72.40		2.31	4.73E+00		-2.00E+01	2.34E+00
	PM-146	453.90		39.94	2.73E-01	2.73E-01	1.25E-01	1.31E-01
		735.90		14.01	9.39E-01		1.49E-01	4.45E-01
		747.13		13.10	1.04E+00		-1.52E-01	4.94E-01
+	ND-147	91.11	*	28.90	3.53E+02	3.53E+02	4.99E+02	1.75E+02
		531.02		13.10	4.71E+02		6.82E+01	2.25E+02
	PM-149	285.90		3.10	1.32E+14	1.32E+14	6.71E+12	6.40E+13
	EU-152	121.78		20.50	3.54E-01	3.54E-01	-9.42E-02	1.74E-01
		244.69		5.40	2.01E+00		9.01E-01	9.86E-01
		344.27		19.13	4.73E-01		7.87E-02	2.28E-01
		778.89		9.20	1.55E+00		3.05E-02	7.37E-01
		964.01		10.40	1.67E+00		-1.84E+00	7.91E-01
		1085.78		7.22	2.28E+00		3.13E-01	1.07E+00
		1112.02		9.60	1.70E+00		-1.67E-01	7.97E-01
		1407.95		14.94	1.22E+00		7.35E-01	5.70E-01
	GD-153	97.43		31.30	3.33E-01	3.33E-01	8.92E-02	1.64E-01
		103.18		22.20	4.35E-01		-7.94E-02	2.13E-01
	EU-154	123.07		40.50	1.82E-01	1.82E-01	-2.72E-02	8.95E-02
		723.30		19.70	7.66E-01		7.48E-02	3.66E-01
		873.19		11.50	1.24E+00		-1.93E-01	5.85E-01
		996.32		10.30	1.67E+00		-3.87E-01	7.90E-01
		1004.76		17.90	9.71E-01		6.40E-01	4.60E-01
		1274.45		35.50	4.67E-01		3.59E-02	2.18E-01
	EU-155	86.50		30.90	3.28E-01	3.28E-01	1.55E-01	1.62E-01
		105.30		20.70	3.64E-01		1.21E-01	1.79E-01
	EU-156	811.77		10.40	1.30E+02	1.30E+02	-2.79E+01	6.17E+01
		1153.47		7.20	2.68E+02		1.39E+02	1.27E+02
		1230.71		8.90	1.90E+02		-3.56E+01	8.94E+01
	HO-166M	184.41		72.60	1.47E-01	1.47E-01	4.21E-01	7.22E-02
		280.45		29.60	2.94E-01		-4.77E-02	1.43E-01
		410.94		11.10	9.40E-01		7.03E-01	4.53E-01
		711.69		54.10	2.55E-01		3.57E-02	1.21E-01
	TM-171	66.72		0.14	7.97E+01	7.97E+01	-3.53E+01	3.93E+01
	HF-172	67.35		5.31	2.10E+00	7.32E-01	-9.28E-01	1.03E+00
		125.81		11.30	7.32E-01		-8.03E-02	3.59E-01
	LU-172	181.53		20.60	1.42E+04	8.68E+03	8.01E+02	6.94E+03
		900.72		29.81	1.75E+04		-2.03E+03	8.32E+03
		1093.66		62.50	8.68E+03		8.87E+01	4.09E+03
	LU-173	100.72		5.24	1.60E+00	5.46E-01	5.07E-01	7.86E-01
		272.11		21.20	5.46E-01		6.05E-01	2.66E-01
	HF-175	343.40		84.00	2.86E-01	2.86E-01	4.77E-02	1.38E-01
	LU-176	88.34		13.30	7.35E-01	9.38E-02	-5.18E-01	3.63E-01
		201.83		86.00	9.80E-02		3.10E-03	4.79E-02
		306.78		94.00	9.38E-02		-1.31E-02	4.54E-02
	HF-181	133.02		41.70	9.47E-01	6.32E-01	7.46E-02	4.65E-01
		345.85		17.20	2.74E+00		4.48E-01	1.32E+00
		482.03		82.80	6.32E-01		3.49E-02	3.02E-01
	TA-182	67.75		41.20	4.40E-01	4.40E-01	-7.08E-01	2.17E-01
		1121.30		34.90	1.36E+00		2.65E+00	6.55E-01
		1189.05		16.23	1.98E+00		-1.90E-01	9.33E-01

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TA-182	1221.41		26.98	1.27E+00	4.40E-01	-1.54E-01	5.97E-01
		1231.02		11.44	2.85E+00		3.31E-02	1.34E+00
	IR-192	308.46		29.68	7.73E-01	5.18E-01	-2.48E-01	3.74E-01
		468.07		48.10	5.18E-01		-8.42E-03	2.48E-01
	HG-203	279.19		77.30	5.14E-01	5.14E-01	7.78E-02	2.50E-01
	TL-204	374.74		94.11	1.10E-01	1.10E-01	3.51E-02	5.32E-02
		899.15		99.16	1.69E-01		-5.16E-02	8.02E-02
		911.74		91.10	2.30E-01		2.55E-01	1.10E-01
	BI-207	569.67		97.72	1.07E-01	1.07E-01	1.70E-03	5.06E-02
		1063.62		74.90	2.17E-01		-8.94E-02	1.02E-01
+	TL-208	583.14	*	30.22	5.34E-01	6.41E-02	1.29E+00	2.58E-01
		860.37		4.48	3.36E+00		1.04E+00	1.59E+00
		2614.66	*	35.85	6.41E-02		1.33E+00	0.00E+00
	BI-210M	262.00		45.00	1.93E-01	1.93E-01	5.91E-03	9.41E-02
		300.00		23.00	4.61E-01		2.01E-01	2.25E-01
+	PB-210	46.50	*	4.25	3.41E+00	3.41E+00	3.48E+00	1.69E+00
	PB-211	404.84		2.90	3.46E+00	3.46E+00	-3.43E+00	1.67E+00
		831.96		2.90	4.83E+00		2.81E+00	2.28E+00
+	BI-212	727.17	*	11.80	1.26E+00	1.26E+00	8.02E-01	6.00E-01
		1620.62		2.75	4.65E+00		-4.86E-01	2.08E+00
+	PB-212	238.63	*	44.60	3.85E-01	3.85E-01	1.42E+00	1.90E-01
		300.09		3.41	3.11E+00		1.36E+00	1.52E+00
+	BI-214	609.31	*	46.30	4.19E-01	4.19E-01	4.11E+00	2.04E-01
		1120.29	*	15.10	1.70E+00		3.34E+00	8.16E-01
		1764.49	*	15.80	9.86E-01		4.07E+00	4.46E-01
		2204.22		4.98	4.82E+00		5.42E+00	2.22E+00
+	PB-214	295.21	*	19.19	6.67E-01	4.65E-01	3.80E+00	3.26E-01
		351.92	*	37.19	4.65E-01		4.31E+00	2.28E-01
+	RN-219	401.80	*	6.50	2.09E+00	2.09E+00	1.24E+00	1.02E+00
	RA-223	323.87		3.88	2.38E+00	2.38E+00	-2.51E-01	1.15E+00
	RA-224	240.98		3.95	3.85E+00	3.85E+00	2.01E+01	1.89E+00
	RA-225	40.00		31.00	3.99E+01	3.99E+01	-1.50E+01	1.96E+01
+	RA-226	186.21	*	3.28	3.73E+00	3.73E+00	8.66E+00	1.84E+00
	TH-227	50.10		8.40	1.23E+00	1.10E+00	3.09E-01	6.06E-01
		236.00		11.50	1.10E+00		1.51E+00	5.39E-01
		256.20		6.30	1.38E+00		-3.55E-01	6.71E-01
+	AC-228	338.32	*	11.40	1.34E+00	6.73E-01	1.58E+00	6.58E-01
		911.07	*	27.70	6.73E-01		1.05E+00	3.22E-01
		969.11		16.60	1.20E+00		1.26E+00	5.74E-01
	TH-230	48.44		16.90	6.32E-01	6.32E-01	2.43E-01	3.11E-01
		62.85		4.60	2.29E+00		2.56E+00	1.13E+00
		67.67		0.37	2.67E+01		-4.30E+01	1.32E+01
	PA-231	283.67		1.60	5.53E+00	4.04E+00	7.89E-01	2.69E+00
		302.67		2.30	4.04E+00		1.43E+00	1.96E+00
	TH-231	25.64		14.70	1.93E+00	1.47E+00	3.48E-01	9.45E-01
		84.21		6.40	1.47E+00		-2.14E-01	7.24E-01
	PA-233	311.98		38.60	3.22E+00	3.22E+00	1.76E+00	1.56E+00
	PA-234	131.20		20.40	3.77E-01	3.77E-01	5.77E-02	1.85E-01
		733.99		8.80	1.45E+00		1.60E-01	6.89E-01
		946.00		12.00	1.27E+00		-2.58E-01	5.99E-01
	PA-234M	1001.03		0.92	1.86E+01	1.86E+01	8.12E+00	8.81E+00
+	TH-234	63.29	*	3.80	8.21E+00	8.21E+00	6.99E+00	4.09E+00
	U-235	143.76		10.50	8.02E-01	8.02E-01	9.16E-01	3.94E-01

Analysis Report for 1707092-16

HTC-A09-S001-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	U-235	163.35		4.70	1.71E+00	8.02E-01	-4.27E-01	8.36E-01
		205.31		4.70	1.83E+00		-6.80E-01	8.95E-01
+	NP-237	86.50	*	12.60	1.46E+00	1.46E+00	2.59E+00	7.24E-01
	NP-239	106.10		22.70	2.16E+12	2.16E+12	-4.66E+11	1.06E+12
		228.18		10.70	5.33E+12		-2.00E+12	2.60E+12
		277.60		14.10	4.34E+12		-6.16E+11	2.11E+12
	AM-241	59.54		35.90	2.82E-01	2.82E-01	3.63E-02	1.39E-01
	AM-243	74.67		66.00	1.99E-01	1.99E-01	1.20E+00	9.84E-02
	CM-243	209.75		3.29	2.68E+00	6.43E-01	9.65E-01	1.31E+00
		228.14		10.60	7.91E-01		-2.97E-01	3.85E-01
		277.60		14.00	6.43E-01		-9.13E-02	3.12E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: HTC-A09-S001-0612-01

Elapsed Live time: 3600
Elapsed Real Time: 3603

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	34	170
17:	151	155	148	139	131	137	130	135
25:	145	129	119	123	124	120	115	128
33:	110	121	128	114	127	95	124	131
41:	115	148	144	171	207	245	182	158
49:	166	156	186	201	177	162	170	176
57:	207	223	225	235	254	358	338	266
65:	264	255	280	255	250	276	267	297
73:	398	597	626	743	602	287	243	218
81:	242	234	255	275	296	357	306	252
89:	291	270	340	388	282	206	153	140
97:	175	159	166	138	170	147	147	162
105:	144	152	149	140	142	164	144	165
113:	152	137	158	127	133	141	140	138
121:	123	145	115	142	152	144	139	164
129:	169	154	133	125	136	155	122	133
137:	139	135	139	141	153	181	164	157
145:	158	153	135	123	119	164	140	156
153:	148	164	119	139	133	142	105	115
161:	128	153	114	128	101	121	112	126
169:	119	114	122	108	114	113	107	107
177:	110	111	120	107	118	123	116	210
185:	293	253	138	100	114	116	92	98
193:	106	94	110	118	121	105	102	81
201:	69	101	108	99	90	99	106	105
209:	118	94	72	76	87	85	92	86
217:	96	86	78	99	75	72	80	74
225:	87	90	58	70	66	73	82	83
233:	73	86	88	133	295	378	224	199
241:	229	186	79	74	75	68	49	51
249:	62	74	64	63	50	70	67	73
257:	57	71	60	75	60	56	56	55
265:	62	56	58	73	104	90	79	69
273:	56	70	65	58	58	49	52	55
281:	64	53	46	56	48	59	53	55
289:	43	50	44	57	154	345	287	153
297:	59	51	60	67	52	51	48	34
305:	57	40	47	40	55	42	47	59
313:	57	56	44	44	49	47	39	48
321:	51	36	37	46	52	44	52	45
329:	53	44	40	42	51	48	53	51
337:	83	96	57	36	42	33	43	38
345:	35	31	39	48	85	302	599	418
353:	104	34	42	43	30	36	27	37
361:	33	31	30	34	21	40	40	33

369:	34	34	33	47	37	37	42	33

Sample Title: HTC-A09-S001-0612-01

Channel								
377:	36	34	35	36	37	26	50	33
385:	33	25	44	37	42	42	39	33
393:	34	34	52	32	35	33	33	60
401:	41	43	30	42	24	19	34	47
409:	37	32	25	30	39	34	27	22
417:	27	28	38	27	29	31	34	39
425:	33	32	29	39	28	34	29	23
433:	30	31	17	28	27	32	31	22
441:	12	31	17	28	19	30	37	18
449:	31	22	32	31	37	30	17	32
457:	25	23	19	26	34	40	29	30
465:	16	22	20	23	23	26	21	25
473:	22	22	25	39	28	33	26	23
481:	16	21	26	18	22	20	13	20
489:	9	16	22	19	18	28	23	24
497:	19	22	19	25	17	29	31	20
505:	22	23	19	33	43	56	55	26
513:	27	16	15	21	26	22	21	15
521:	13	21	23	21	25	23	34	22
529:	15	18	21	26	19	22	16	14
537:	13	24	17	26	15	22	19	22
545:	21	25	16	18	16	19	19	20
553:	21	25	25	19	19	19	17	24
561:	20	18	26	20	17	19	18	11
569:	24	21	15	12	15	17	14	21
577:	19	14	23	25	37	97	64	43
585:	26	16	17	16	12	20	18	19
593:	26	17	25	13	19	22	15	17
601:	15	10	21	20	15	32	113	319
609:	351	152	32	13	14	13	18	12
617:	5	14	24	14	15	15	15	11
625:	21	12	17	14	12	15	18	10
633:	13	10	10	21	12	15	21	18
641:	19	16	12	14	12	18	14	17
649:	14	11	14	15	12	15	12	20
657:	19	13	11	16	24	6	15	21
665:	27	28	15	18	10	8	15	11
673:	15	16	12	17	13	12	12	15
681:	15	15	15	18	16	10	13	10
689:	15	15	14	14	5	16	11	14
697:	16	10	17	9	13	17	13	14
705:	12	19	14	20	14	15	20	9
713:	10	16	21	17	6	14	15	12
721:	14	14	11	15	21	32	22	17
729:	10	14	10	18	15	10	15	8
737:	12	6	16	15	8	23	14	15
745:	10	12	7	10	15	9	14	18
753:	17	12	22	20	12	11	13	10
761:	14	11	15	13	12	25	28	49
769:	19	15	11	17	11	11	11	17
777:	13	14	14	9	16	17	11	23
785:	20	17	15	14	12	4	9	10
793:	14	24	18	16	10	12	8	12

801:	7	13	13	10	15	19	18	13

Sample Title: HTC-A09-S001-0612-01

Channel								
809:	16	11	11	9	11	12	8	14
817:	8	5	11	12	9	16	13	11
825:	10	7	14	16	14	5	14	10
833:	9	13	11	8	9	15	13	6
841:	8	13	9	8	7	12	10	10
849:	6	6	8	10	8	12	9	15
857:	11	15	13	17	16	7	9	13
865:	11	12	12	11	13	10	13	10
873:	6	12	17	7	8	13	10	9
881:	13	12	7	9	9	9	6	14
889:	14	11	11	8	16	10	17	10
897:	10	15	11	11	14	16	16	19
905:	15	15	12	11	18	51	45	26
913:	9	8	7	9	13	13	7	9
921:	12	11	11	14	8	12	7	10
929:	13	14	13	12	24	18	14	9
937:	7	9	13	8	12	7	10	14
945:	11	11	9	8	17	14	13	7
953:	13	13	10	5	7	12	9	8
961:	7	12	18	13	16	16	23	34
969:	31	17	10	7	9	8	9	9
977:	9	11	12	6	10	11	9	9
985:	10	9	18	6	7	8	15	12
993:	14	10	13	11	11	13	8	19
1001:	21	10	9	12	9	9	15	8
1009:	5	10	4	7	10	7	12	9
1017:	9	12	15	10	15	8	16	9
1025:	14	8	11	5	9	9	8	5
1033:	7	7	6	8	3	7	13	9
1041:	9	9	15	11	8	8	6	9
1049:	8	8	12	11	10	12	8	13
1057:	11	9	6	11	13	6	10	13
1065:	12	9	10	15	13	13	14	11
1073:	11	10	7	17	8	7	10	6
1081:	10	7	8	8	17	6	11	11
1089:	10	10	10	11	13	9	9	5
1097:	15	12	7	15	12	7	3	7
1105:	11	13	7	11	9	11	6	9
1113:	11	7	11	10	12	17	60	50
1121:	28	19	10	15	9	9	12	5
1129:	16	12	13	9	15	14	12	8
1137:	9	11	7	12	16	11	7	4
1145:	8	13	8	16	10	19	13	10
1153:	12	8	17	20	10	9	6	10
1161:	12	8	9	6	13	12	11	10
1169:	7	13	4	11	9	4	7	5
1177:	11	8	7	9	11	14	5	10
1185:	5	8	12	7	12	7	6	14
1193:	16	10	11	11	8	12	14	5
1201:	8	3	15	10	10	13	11	11
1209:	16	7	9	9	11	12	15	12
1217:	6	8	12	13	10	9	13	12
1225:	11	7	11	10	7	8	12	9

1233:	5	11	11	15	25	24	18	12

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Channel								
1241:	10	9	9	12	6	9	7	10
1249:	5	7	4	10	7	5	5	13
1257:	10	11	4	9	11	5	9	6
1265:	6	10	4	7	5	8	7	7
1273:	9	5	10	9	6	4	8	11
1281:	5	10	8	9	8	8	11	11
1289:	5	7	4	10	7	4	5	5
1297:	4	8	6	6	4	7	4	8
1305:	6	3	8	5	14	4	8	4
1313:	7	8	7	4	9	5	7	6
1321:	6	3	6	7	6	5	2	5
1329:	6	5	8	4	6	3	3	7
1337:	3	4	3	6	3	8	6	2
1345:	5	6	8	7	3	8	3	6
1353:	5	5	4	7	7	9	3	5
1361:	2	4	6	5	5	4	3	6
1369:	4	6	8	4	7	4	9	8
1377:	11	12	9	6	4	6	4	5
1385:	4	3	2	3	7	4	3	5
1393:	2	4	6	3	5	4	3	7
1401:	7	12	4	4	8	8	17	6
1409:	8	6	8	2	1	5	2	6
1417:	2	2	4	3	3	6	2	4
1425:	4	2	4	4	4	4	5	4
1433:	7	6	1	1	7	2	4	4
1441:	4	9	6	3	10	2	3	3
1449:	4	8	2	3	5	4	6	4
1457:	5	26	111	134	158	70	14	6
1465:	4	6	2	3	5	7	3	6
1473:	1	3	0	4	5	5	5	2
1481:	2	0	2	7	4	2	7	6
1489:	5	7	4	4	3	4	5	4
1497:	4	5	0	5	6	4	2	3
1505:	3	3	5	4	7	3	8	4
1513:	5	4	3	3	5	3	5	1
1521:	1	2	6	4	4	5	3	4
1529:	0	4	4	3	4	2	2	6
1537:	3	4	4	1	3	4	1	3
1545:	1	5	3	1	5	1	3	4
1553:	2	3	3	4	2	0	2	3
1561:	3	2	1	1	4	2	3	7
1569:	2	1	2	1	4	3	2	2
1577:	0	1	0	6	3	3	2	8
1585:	3	1	2	7	5	0	7	7
1593:	4	1	6	3	3	3	2	3
1601:	2	0	3	4	2	3	2	0
1609:	5	4	5	1	4	1	3	2
1617:	2	2	1	2	6	5	3	1
1625:	2	1	3	3	4	5	2	3
1633:	3	0	4	2	2	2	1	1
1641:	0	2	3	0	3	1	3	2
1649:	2	2	0	0	3	1	3	0
1657:	4	3	2	6	5	3	3	4

1665:	1	0	1	1	0	1	1	1

Sample Title: HTC-A09-S001-0612-01

Channel								
1673:	2	2	6	1	1	1	3	2
1681:	3	4	3	1	1	1	2	0
1689:	2	1	1	2	2	1	2	1
1697:	3	1	2	2	0	2	3	2
1705:	2	2	1	1	0	2	2	1
1713:	0	2	2	0	2	0	1	2
1721:	0	1	4	1	1	2	1	4
1729:	8	13	0	2	2	2	6	3
1737:	1	0	2	0	1	2	1	2
1745:	2	0	1	0	1	1	0	1
1753:	2	2	1	2	1	2	0	2
1761:	2	11	20	49	31	16	2	1
1769:	1	3	1	3	1	1	1	1
1777:	0	6	3	1	0	1	0	1
1785:	4	0	0	1	0	2	1	1
1793:	4	0	1	2	1	1	2	0
1801:	1	0	0	0	1	1	2	0
1809:	2	0	1	2	4	0	2	2
1817:	0	1	1	1	1	2	0	3
1825:	1	2	0	1	2	1	2	0
1833:	2	1	0	2	1	3	4	2
1841:	1	0	1	1	2	6	6	3
1849:	4	3	0	0	0	0	1	0
1857:	3	3	0	2	2	0	1	3
1865:	1	0	1	3	2	5	0	0
1873:	1	2	1	0	3	2	3	0
1881:	2	2	2	1	1	2	1	4
1889:	0	1	3	1	0	0	1	4
1897:	0	0	5	2	2	1	1	1
1905:	0	2	1	1	1	0	2	4
1913:	2	0	1	1	3	1	2	0
1921:	1	0	0	3	1	3	1	1
1929:	2	2	0	0	2	0	0	2
1937:	6	2	1	2	0	0	0	3
1945:	0	0	1	2	1	1	0	2
1953:	2	0	1	1	0	0	1	1
1961:	1	1	3	0	3	0	2	2
1969:	0	1	1	0	1	1	1	1
1977:	2	0	0	0	2	0	0	1
1985:	2	2	0	0	2	0	3	0
1993:	1	0	0	0	1	2	2	1
2001:	1	0	1	1	1	1	6	0
2009:	1	0	0	3	2	0	0	0
2017:	3	0	0	0	1	2	0	1
2025:	1	1	1	1	1	0	1	0
2033:	0	0	0	3	1	0	1	1
2041:	0	0	0	0	2	1	0	0
2049:	1	0	2	2	0	2	1	1
2057:	2	0	0	0	2	0	1	3
2065:	1	1	3	0	1	0	0	1
2073:	0	1	0	0	2	1	0	1
2081:	1	1	1	1	1	0	0	0
2089:	0	1	0	1	0	1	0	0

2097:	1	0	0	1	1	1	5	2

Sample Title: HTC-A09-S001-0612-01

Channel								
2105:	3	1	1	1	2	1	0	1
2113:	0	0	0	3	2	4	1	3
2121:	1	1	1	2	0	1	1	0
2129:	0	0	4	5	2	0	1	1
2137:	0	1	1	0	1	0	1	1
2145:	1	1	1	0	1	0	0	1
2153:	0	2	2	1	0	2	1	1
2161:	2	0	1	1	0	0	0	1
2169:	3	0	3	0	3	1	1	3
2177:	0	0	0	2	2	0	0	0
2185:	2	0	0	1	1	0	2	1
2193:	1	2	3	0	0	3	3	4
2201:	1	7	9	15	10	2	0	0
2209:	0	0	1	0	1	1	1	2
2217:	0	1	3	2	0	0	1	1
2225:	0	2	0	0	1	1	1	0
2233:	1	1	2	0	1	4	0	3
2241:	0	1	1	0	3	0	1	3
2249:	1	1	0	0	2	1	0	0
2257:	0	0	0	0	1	1	0	2
2265:	1	2	1	2	2	1	0	1
2273:	3	0	1	2	0	0	0	2
2281:	1	0	0	2	0	0	2	2
2289:	0	1	0	2	2	2	1	0
2297:	1	0	0	1	0	1	0	4
2305:	4	2	3	4	0	1	3	2
2313:	1	2	2	0	3	0	1	1
2321:	0	0	1	1	1	2	1	3
2329:	1	0	0	1	0	2	1	0
2337:	0	1	2	2	2	3	0	2
2345:	1	0	1	1	0	1	0	4
2353:	3	2	1	0	0	1	1	1
2361:	0	1	2	0	0	1	2	3
2369:	2	0	2	1	0	2	1	0
2377:	0	1	0	1	0	0	1	0
2385:	0	0	0	0	1	0	1	0
2393:	0	0	1	3	0	0	1	1
2401:	0	0	0	0	1	2	0	1
2409:	0	1	0	0	0	0	0	1
2417:	0	0	1	0	1	1	2	3
2425:	1	1	2	2	0	0	0	0
2433:	0	0	1	0	1	0	1	0
2441:	0	2	0	1	4	1	1	5
2449:	9	0	1	0	2	2	0	1
2457:	0	0	1	0	0	1	1	0
2465:	2	0	0	0	0	1	0	1
2473:	1	1	0	0	0	0	2	0
2481:	0	0	1	1	0	0	0	0
2489:	0	1	1	0	0	0	0	2
2497:	1	0	0	0	0	0	0	1
2505:	1	2	0	0	1	1	0	0
2513:	0	0	0	0	0	0	0	1
2521:	0	0	0	0	0	0	1	1

2529:	0	1	0	1	1	0	0	0

Sample Title: HTC-A09-S001-0612-01

Channel								
2537:	0	0	0	0	0	1	0	2
2545:	0	0	0	0	0	0	2	0
2553:	1	0	0	0	0	0	0	1
2561:	0	0	0	0	1	0	0	0
2569:	0	1	0	0	0	0	0	1
2577:	0	0	1	0	0	0	0	0
2585:	0	0	1	0	0	0	0	0
2593:	0	0	0	0	0	0	0	0
2601:	0	1	0	0	1	1	0	1
2609:	0	0	2	2	11	14	10	13
2617:	3	1	0	0	0	2	0	0
2625:	0	0	1	0	0	0	0	0
2633:	0	1	1	1	0	0	1	0
2641:	0	0	0	0	0	0	0	1
2649:	0	1	0	0	0	0	0	1
2657:	1	0	0	0	0	0	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	1	0	0	0	0	0	0
2681:	1	0	0	0	1	1	0	0
2689:	0	0	1	0	1	0	0	0
2697:	0	0	0	1	0	1	0	1
2705:	0	0	0	0	0	1	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	0	0	0	0	0	0
2729:	1	1	0	0	0	0	0	1
2737:	0	0	0	0	0	0	1	0
2745:	0	0	0	0	0	0	0	0
2753:	0	0	0	1	0	0	0	0
2761:	0	1	1	0	0	1	0	0
2769:	0	0	0	0	0	0	1	0
2777:	0	0	0	0	1	1	0	0
2785:	0	1	0	0	0	0	0	0
2793:	0	0	0	0	0	0	1	0
2801:	0	0	0	0	1	0	0	1
2809:	1	0	1	0	0	0	0	0
2817:	0	1	0	0	0	0	0	0
2825:	0	0	0	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	1	0	0	0	0	0	0	1
2849:	0	0	0	0	0	0	1	0
2857:	0	0	0	0	1	0	0	0
2865:	0	0	0	1	0	1	0	0
2873:	0	0	0	0	0	0	2	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	0	0	0	0	1
2897:	0	0	0	0	3	0	0	0
2905:	0	1	0	0	1	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	1	0	0	0	0
2929:	0	0	1	0	0	0	0	0
2937:	0	0	0	0	0	1	0	1
2945:	0	0	0	0	0	0	0	0
2953:	0	0	0	0	0	0	1	0

2961:	0	1	0	0	0	0	0	0

Sample Title: HTC-A09-S001-0612-01

Channel								
2969:	0	0	0	1	0	0	1	0
2977:	0	0	0	0	0	0	0	1
2985:	0	0	0	0	1	0	0	1
2993:	0	0	0	0	0	0	0	0
3001:	0	0	1	0	0	0	0	0
3009:	0	0	1	0	0	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	0	0	0
3033:	0	0	0	0	0	1	0	1
3041:	0	0	0	0	0	1	0	0
3049:	0	1	0	0	0	1	0	0
3057:	0	1	0	0	0	0	0	0
3065:	0	0	0	0	0	1	0	0
3073:	0	0	0	0	0	1	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	0	0	0	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	0	0	0	0	1	1
3113:	0	0	0	0	0	0	1	0
3121:	0	1	0	0	0	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	0	1	0
3145:	0	0	0	0	0	0	1	0
3153:	0	0	0	1	0	0	0	0
3161:	0	0	0	1	0	0	0	0
3169:	1	0	0	0	0	0	0	0
3177:	0	0	0	1	0	0	0	0
3185:	0	0	0	0	0	0	1	1
3193:	0	0	0	0	1	0	0	0
3201:	0	0	0	0	1	0	0	0
3209:	0	0	0	1	0	0	0	0
3217:	0	0	0	0	1	0	0	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	1	0	0	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	1	1	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	1	0	1	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	1
3313:	0	0	0	0	0	0	1	1
3321:	0	0	0	0	0	1	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	1
3345:	0	1	1	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	1	0	0	0	0	0	0
3377:	0	0	0	0	1	0	0	0
3385:	0	0	0	0	0	0	1	1

3393:	0	0	0	1	0	0	0	0

Sample Title: HTC-A09-S001-0612-01

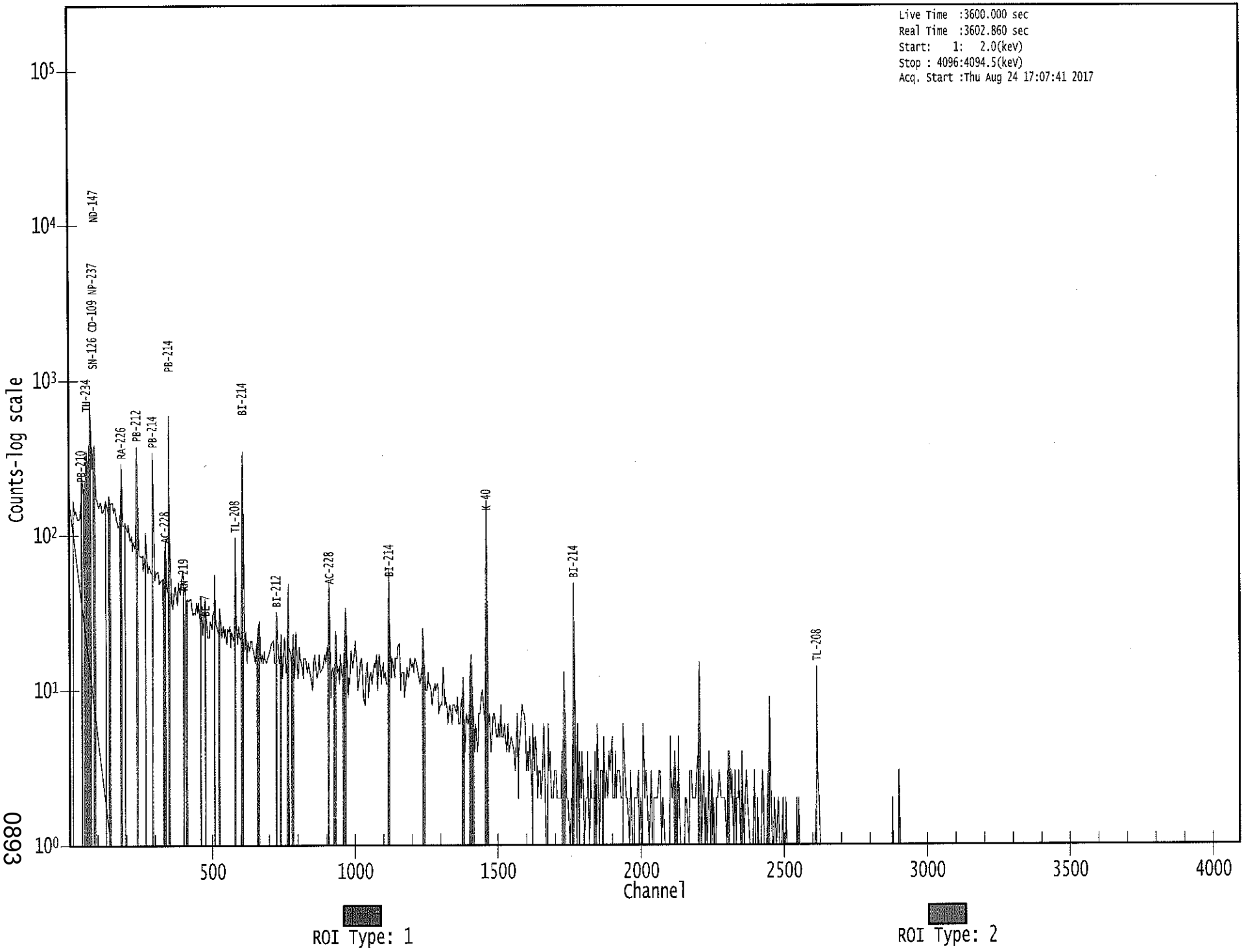
Channel								
3401:	0	0	0	0	1	0	0	1
3409:	1	0	0	1	0	0	0	0
3417:	0	0	0	0	0	1	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	1	0	0	0	1	0
3449:	0	0	0	1	0	0	1	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	1	0	0	0
3473:	0	0	0	0	0	0	0	1
3481:	0	0	0	1	0	0	0	1
3489:	0	0	0	0	1	0	1	0
3497:	0	0	0	0	0	1	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	1	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	1	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	1	0	0	0	0	0	0	0
3561:	0	0	1	0	0	0	0	0
3569:	0	1	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	1	0	0	0	0
3593:	0	0	0	0	1	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	1	0	0	0
3617:	0	0	0	1	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	1	0	0	0	0	0	0	0
3641:	0	0	1	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	1	0
3673:	0	0	1	0	0	0	0	0
3681:	0	1	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	1	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	1	0	0	0
3721:	1	0	0	0	0	0	0	0
3729:	0	1	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	1
3753:	0	0	0	1	0	1	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	1	0	0	0	0	0
3817:	0	0	0	0	1	0	0	1

3825:	0	1	0	0	0	0	0	0

Sample Title: HTC-A09-S001-0612-01

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	1	0	0	0	0	0
3857:	0	0	0	0	0	1	0	0
3865:	0	0	0	0	1	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	1	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	1	0	0
3913:	0	0	0	0	0	0	0	1
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	1
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	1	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	1	0	0	0	0
3969:	0	0	0	1	1	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	1	1	0	0	0
3993:	0	0	0	0	0	1	0	0
4001:	0	0	0	0	0	0	0	0
4009:	1	0	0	0	0	0	0	1
4017:	0	0	0	0	0	1	1	0
4025:	0	0	1	0	0	0	0	0
4033:	0	0	0	0	0	0	0	1
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	1	0	0	0	0	0	0	0
4073:	0	0	0	0	0	1	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000055927.CNF



0893

KB 8/24/17

Apex-Gamma

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-17
Sample Description	: HTC-A09-S001-1218-01
Sample Type	: SOIL
Sample Size	: 6.877E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 7:43:28AM
Acquisition Started	: 8/24/2017 5:19:50PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3602.4 seconds
Dead Time	: 0.07 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 19 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55928

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 6:19:57PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	63.37	63.97	0.0000	0.00
2	74.72	75.31	0.0000	0.00
3	77.22	77.81	0.0000	0.00
4	84.57	85.15	0.0000	0.00
5	89.27	89.85	0.0000	0.00
6	92.56	93.14	0.0000	0.00
7	185.89	186.37	0.0000	0.00
8	238.46	238.88	0.0000	0.00
9	241.74	242.17	0.0000	0.00
10	270.01	270.40	0.0000	0.00
11	295.17	295.54	0.0000	0.00
12	314.00	314.35	0.0000	0.00
13	338.63	338.95	0.0000	0.00
14	351.98	352.29	0.0000	0.00
15	356.33	356.64	0.0000	0.00
16	462.48	462.68	0.0000	0.00
17	511.07	511.22	0.0000	0.00
18	583.44	583.52	0.0000	0.00
19	609.43	609.48	0.0000	0.00
20	615.28	615.33	0.0000	0.00
21	680.05	680.03	0.0000	0.00
22	727.82	727.75	0.0000	0.00
23	742.81	742.72	0.0000	0.00
24	768.47	768.36	0.0000	0.00
25	772.09	771.98	0.0000	0.00
26	785.88	785.76	0.0000	0.00
27	796.21	796.07	0.0000	0.00
28	803.52	803.37	0.0000	0.00
29	806.56	806.41	0.0000	0.00
30	861.08	860.88	0.0000	0.00
31	905.06	904.81	0.0000	0.00
32	912.33	912.08	0.0000	0.00
33	934.53	934.25	0.0000	0.00
34	965.36	965.06	0.0000	0.00
35	969.43	969.12	0.0000	0.00
36	1054.56	1054.16	0.0000	0.00
37	1069.41	1069.00	0.0000	0.00
38	1120.89	1120.43	0.0000	0.00
39	1126.16	1125.69	0.0000	0.00
40	1154.31	1153.82	0.0000	0.00
41	1238.80	1238.22	0.0000	0.00
42	1281.41	1280.79	0.0000	0.00

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1378.53	1377.82	0.0000	0.00
44	1402.20	1401.46	0.0000	0.00
45	1408.71	1407.96	0.0000	0.00
46	1427.15	1426.39	0.0000	0.00
47	1461.45	1460.65	0.0000	0.00
48	1466.52	1465.72	0.0000	0.00
49	1504.85	1504.01	0.0000	0.00
50	1509.55	1508.70	0.0000	0.00
51	1589.90	1588.98	0.0000	0.00
52	1596.24	1595.32	0.0000	0.00
53	1661.73	1660.74	0.0000	0.00
54	1730.14	1729.08	0.0000	0.00
55	1765.37	1764.28	0.0000	0.00
56	1848.47	1847.30	0.0000	0.00
57	2046.15	2044.78	0.0000	0.00
58	2104.22	2102.80	0.0000	0.00
59	2118.49	2117.05	0.0000	0.00
60	2161.25	2159.78	0.0000	0.00
61	2200.51	2199.00	0.0000	0.00
62	2204.28	2202.76	0.0000	0.00
63	2236.76	2235.21	0.0000	0.00
64	2265.00	2263.43	0.0000	0.00
65	2293.70	2292.09	0.0000	0.00
66	2367.67	2365.99	0.0000	0.00
67	2448.62	2446.87	0.0000	0.00
68	2615.49	2613.58	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 6:19:57PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	63.37	61 -	67	63.97	3.37E+02	144.04	3.55E+03	1.19
M	2	74.72	71 -	82	75.31	7.98E+02	133.65	2.71E+03	1.81
m	3	77.22	71 -	82	77.81	1.44E+03	144.11	2.63E+03	1.82
M	4	84.57	83 -	97	85.15	2.00E+02	106.94	2.39E+03	1.66
m	5	89.27	83 -	97	89.85	2.77E+02	111.98	2.18E+03	1.67
m	6	92.56	83 -	97	93.14	6.69E+02	112.67	1.96E+03	1.67
	7	185.89	183 -	190	186.37	5.46E+02	119.65	2.02E+03	2.17
M	8	238.46	234 -	247	238.88	1.12E+03	91.66	8.88E+02	1.82
m	9	241.74	234 -	247	242.17	5.63E+02	98.78	8.58E+02	1.82
	10	270.01	268 -	274	270.40	1.18E+02	76.67	9.94E+02	2.08
	11	295.17	292 -	299	295.54	1.06E+03	103.67	1.10E+03	1.93
	12	314.00	312 -	318	314.35	6.55E+01	59.93	6.05E+02	3.43
	13	338.63	335 -	342	338.95	1.70E+02	75.34	8.34E+02	1.28
M	14	351.98	346 -	360	352.29	1.91E+03	98.38	4.49E+02	1.75
m	15	356.33	346 -	360	356.64	6.83E+01	76.11	4.81E+02	2.10
	16	462.48	459 -	466	462.68	9.78E+01	54.41	4.28E+02	1.86
	17	511.07	507 -	516	511.22	2.96E+02	62.86	3.96E+02	1.80
	18	583.44	579 -	588	583.52	3.56E+02	65.22	4.01E+02	1.98
	19	609.43	604 -	612	609.48	1.43E+03	92.52	4.38E+02	2.10
	20	615.28	614 -	618	615.33	4.02E+01	35.26	2.26E+02	1.39
	21	680.05	676 -	685	680.03	4.12E+01	45.73	2.76E+02	6.64
	22	727.82	724 -	732	727.75	6.23E+01	47.09	2.95E+02	1.25
	23	742.81	740 -	745	742.72	3.67E+01	30.76	1.57E+02	3.28
M	24	768.47	762 -	776	768.36	1.36E+02	41.61	2.14E+02	2.35
m	25	772.09	762 -	776	771.98	3.35E+01	41.37	1.94E+02	2.35
	26	785.88	783 -	789	785.76	6.15E+01	33.64	1.61E+02	2.17
	27	796.21	792 -	802	796.07	4.40E+01	49.56	3.08E+02	2.58
M	28	803.52	802 -	809	803.37	1.87E+01	17.54	7.08E+01	1.63
m	29	806.56	802 -	809	806.41	4.74E+01	30.82	1.37E+02	2.07
	30	861.08	858 -	864	860.88	2.90E+01	36.38	2.18E+02	2.12
	31	905.06	901 -	908	904.81	4.00E+01	37.74	2.08E+02	1.90
	32	912.33	908 -	922	912.08	2.54E+02	68.15	3.80E+02	2.18
	33	934.53	931 -	938	934.25	7.93E+01	39.85	2.11E+02	1.81
M	34	965.36	962 -	973	965.06	5.13E+01	35.85	1.64E+02	2.22
m	35	969.43	962 -	973	969.12	1.60E+02	38.01	1.66E+02	1.98
	36	1054.56	1052 -	1057	1054.16	2.28E+01	25.75	1.10E+02	1.28
	37	1069.41	1066 -	1072	1069.00	2.25E+01	27.29	1.19E+02	1.91
M	38	1120.89	1115 -	1128	1120.43	3.56E+02	48.25	1.69E+02	2.36
m	39	1126.16	1115 -	1128	1125.69	3.41E+01	28.21	1.23E+02	2.51
	40	1154.31	1149 -	1158	1153.82	6.14E+01	43.53	2.37E+02	2.36

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1238.80	1233	1244	1238.22	1.31E+02	59.19	3.73E+02	2.26
	42	1281.41	1277	1284	1280.79	2.75E+01	30.40	1.35E+02	2.93
	43	1378.53	1371	1385	1377.82	8.68E+01	48.36	2.08E+02	2.57
M	44	1402.20	1399	1412	1401.46	2.67E+01	15.62	4.06E+01	2.78
m	45	1408.71	1399	1412	1407.96	3.34E+01	27.59	9.64E+01	2.88
	46	1427.15	1423	1430	1426.39	2.45E+01	19.70	4.89E+01	3.89
M	47	1461.45	1454	1476	1460.65	1.33E+03	74.26	3.93E+01	2.36
m	48	1466.52	1454	1476	1465.72	4.89E+01	59.69	3.76E+01	2.91
M	49	1504.85	1502	1515	1504.01	1.42E+01	13.16	3.76E+01	2.93
m	50	1509.55	1502	1515	1508.70	2.33E+01	20.69	5.14E+01	2.66
	51	1589.90	1586	1592	1588.98	2.33E+01	18.31	4.14E+01	4.14
	52	1596.24	1593	1599	1595.32	1.70E+01	14.90	2.80E+01	4.67
	53	1661.73	1656	1665	1660.74	2.50E+01	19.49	4.00E+01	3.33
	54	1730.14	1725	1732	1729.08	5.02E+01	20.98	3.95E+01	1.33
	55	1765.37	1759	1770	1764.28	3.02E+02	36.11	1.20E+01	2.58
	56	1848.47	1843	1851	1847.30	3.65E+01	16.16	1.71E+01	3.06
	57	2046.15	2040	2049	2044.78	1.08E+01	10.49	8.40E+00	3.08
	58	2104.22	2099	2108	2102.80	1.62E+01	19.31	4.17E+01	2.80
	59	2118.49	2110	2121	2117.05	1.68E+01	17.55	3.04E+01	2.69
	60	2161.25	2156	2163	2159.78	9.00E+00	6.00	0.00E+00	1.33
M	61	2200.51	2198	2214	2199.00	1.13E+01	0.87	1.00E+00	2.39
m	62	2204.28	2198	2214	2202.76	6.81E+01	20.10	1.17E+01	2.63
	63	2236.76	2231	2238	2235.21	9.00E+00	7.75	4.00E+00	2.92
	64	2265.00	2261	2266	2263.43	7.00E+00	5.29	0.00E+00	3.00
	65	2293.70	2288	2295	2292.09	1.50E+01	10.39	8.00E+00	3.88
	66	2367.67	2362	2370	2365.99	8.17E+00	10.99	1.37E+01	1.40
	67	2448.62	2441	2453	2446.87	3.43E+01	15.76	1.33E+01	2.39
	68	2615.49	2609	2619	2613.58	1.21E+02	22.94	6.37E+00	2.94

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 6:19:57PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	63.37	61 -	67	3.37E+02	144.04	3.55E+03	1.14E+02
M	2	74.72	71 -	82	7.98E+02	133.65	2.71E+03	8.55E+01
m	3	77.22	71 -	82	1.44E+03	144.11	2.63E+03	8.44E+01
M	4	84.57	83 -	97	2.00E+02	106.94	2.39E+03	8.04E+01
m	5	89.27	83 -	97	2.77E+02	111.98	2.18E+03	7.67E+01
m	6	92.56	83 -	97	6.69E+02	112.67	1.96E+03	7.27E+01
	7	185.89	183 -	190	5.46E+02	119.65	2.02E+03	9.05E+01
M	8	238.46	234 -	247	1.12E+03	91.66	8.88E+02	4.90E+01
m	9	241.74	234 -	247	5.63E+02	98.78	8.58E+02	4.81E+01
	10	270.01	268 -	274	1.18E+02	76.67	9.94E+02	6.04E+01
	11	295.17	292 -	299	1.06E+03	103.67	1.10E+03	6.64E+01
	12	314.00	312 -	318	6.55E+01	59.93	6.05E+02	4.74E+01
	13	338.63	335 -	342	1.70E+02	75.34	8.34E+02	5.81E+01
M	14	351.98	346 -	360	1.91E+03	98.38	4.49E+02	3.48E+01
m	15	356.33	346 -	360	6.83E+01	76.11	4.81E+02	3.60E+01
	16	462.48	459 -	466	9.78E+01	54.41	4.28E+02	4.17E+01
	17	511.07	507 -	516	2.96E+02	62.86	3.96E+02	4.32E+01
	18	583.44	579 -	588	3.56E+02	65.22	4.01E+02	4.37E+01
	19	609.43	604 -	612	1.43E+03	92.52	4.38E+02	4.40E+01
	20	615.28	614 -	618	4.02E+01	35.26	2.26E+02	2.70E+01
	21	680.05	676 -	685	4.12E+01	45.73	2.76E+02	3.61E+01
	22	727.82	724 -	732	6.23E+01	47.09	2.95E+02	2.39E+01
	23	742.81	740 -	745	3.67E+01	30.76	1.57E+02	2.32E+01
M	24	768.47	762 -	776	1.36E+02	41.61	2.14E+02	2.41E+01
m	25	772.09	762 -	776	3.35E+01	41.37	1.94E+02	2.29E+01
	26	785.88	783 -	789	6.15E+01	33.64	1.61E+02	2.45E+01
	27	796.21	792 -	802	4.40E+01	49.56	3.08E+02	3.92E+01
M	28	803.52	802 -	809	1.87E+01	17.54	7.08E+01	1.38E+01
m	29	806.56	802 -	809	4.74E+01	30.82	1.37E+02	1.92E+01
	30	861.08	858 -	864	2.90E+01	36.38	2.18E+02	2.86E+01
	31	905.06	901 -	908	4.00E+01	37.74	2.08E+02	2.92E+01
	32	912.33	908 -	922	2.54E+02	68.15	3.80E+02	2.04E+01
	33	934.53	931 -	938	7.93E+01	39.85	2.11E+02	2.93E+01
M	34	965.36	962 -	973	5.13E+01	35.85	1.64E+02	2.11E+01
m	35	969.43	962 -	973	1.60E+02	38.01	1.66E+02	2.12E+01
	36	1054.56	1052 -	1057	2.28E+01	25.75	1.10E+02	1.97E+01
	37	1069.41	1066 -	1072	2.25E+01	27.29	1.19E+02	2.10E+01
M	38	1120.89	1115 -	1128	3.56E+02	48.25	1.69E+02	2.14E+01
m	39	1126.16	1115 -	1128	3.41E+01	28.21	1.23E+02	1.83E+01
	40	1154.31	1149 -	1158	6.14E+01	43.53	2.37E+02	3.34E+01
	41	1238.80	1233 -	1244	1.31E+02	59.19	3.73E+02	4.49E+01
	42	1281.41	1277 -	1284	2.75E+01	30.40	1.35E+02	2.35E+01
	43	1378.53	1371 -	1385	8.68E+01	48.36	2.08E+02	3.67E+01
M	44	1402.20	1399 -	1412	2.67E+01	15.62	4.06E+01	1.05E+01
m	45	1408.71	1399 -	1412	3.34E+01	27.59	9.64E+01	1.61E+01
	46	1427.15	1423 -	1430	2.45E+01	19.70	4.89E+01	1.40E+01
M	47	1461.45	1454 -	1476	1.33E+03	74.26	3.93E+01	1.03E+01
m	48	1466.52	1454 -	1476	4.89E+01	59.69	3.76E+01	1.01E+01
M	49	1504.85	1502 -	1515	1.42E+01	13.16	3.76E+01	1.01E+01
m	50	1509.55	1502 -	1515	2.33E+01	20.69	5.14E+01	1.18E+01
	51	1589.90	1586 -	1592	2.33E+01	18.31	4.14E+01	1.28E+01

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	52	1596.24	1593 -	1599	1.70E+01	14.90	2.80E+01	1.02E+01
	53	1661.73	1656 -	1665	2.50E+01	19.49	4.00E+01	6.58E+00
	54	1730.14	1725 -	1732	5.02E+01	20.98	3.95E+01	1.27E+01
	55	1765.37	1759 -	1770	3.02E+02	36.11	1.20E+01	8.05E+00
	56	1848.47	1843 -	1851	3.65E+01	16.16	1.71E+01	8.82E+00
	57	2046.15	2040 -	2049	1.08E+01	10.49	8.40E+00	6.72E+00
	58	2104.22	2099 -	2108	1.62E+01	19.31	4.17E+01	1.44E+01
	59	2118.49	2110 -	2121	1.68E+01	17.55	3.04E+01	1.28E+01
	60	2161.25	2156 -	2163	9.00E+00	6.00	0.00E+00	0.00E+00
M	61	2200.51	2198 -	2214	1.13E+01	0.87	1.00E+00	1.64E+00
m	62	2204.28	2198 -	2214	6.81E+01	20.10	1.17E+01	5.62E+00
	63	2236.76	2231 -	2238	9.00E+00	7.75	4.00E+00	4.03E+00
	64	2265.00	2261 -	2266	7.00E+00	5.29	0.00E+00	0.00E+00
	65	2293.70	2288 -	2295	1.50E+01	10.39	8.00E+00	5.70E+00
	66	2367.67	2362 -	2370	8.17E+00	10.99	1.37E+01	7.71E+00
	67	2448.62	2441 -	2453	3.43E+01	15.76	1.33E+01	8.67E+00
	68	2615.49	2609 -	2619	1.21E+02	22.94	6.37E+00	5.39E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 6:19:57PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	63.37	61 -	67	63.97	3.37E+02	144.04	3.55E+03	TH-234 TH-230
M	2	74.72	71 -	82	75.31	7.98E+02	133.65	2.71E+03	AM-243
m	3	77.22	71 -	82	77.81	1.44E+03	144.11	2.63E+03	.....
M	4	84.57	83 -	97	85.15	2.00E+02	106.94	2.39E+03	TH-231
m	5	89.27	83 -	97	89.85	2.77E+02	111.98	2.18E+03	LU-176
m	6	92.56	83 -	97	93.14	6.69E+02	112.67	1.96E+03	GA-67
	7	185.89	183 -	190	186.37	5.46E+02	119.65	2.02E+03	RA-226

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	8	238.46	234 -	247	238.88	1.12E+03	91.66	8.88E+02	PB-212
m	9	241.74	234 -	247	242.17	5.63E+02	98.78	8.58E+02	RA-224
	10	270.01	268 -	274	270.40	1.18E+02	76.67	9.94E+02	.....
	11	295.17	292 -	299	295.54	1.06E+03	103.67	1.10E+03	PB-214
	12	314.00	312 -	318	314.35	6.55E+01	59.93	6.05E+02	.....
	13	338.63	335 -	342	338.95	1.70E+02	75.34	8.34E+02	AC-228
M	14	351.98	346 -	360	352.29	1.91E+03	98.38	4.49E+02	PB-214
m	15	356.33	346 -	360	356.64	6.83E+01	76.11	4.81E+02	BA-133
	16	462.48	459 -	466	462.68	9.78E+01	54.41	4.28E+02	SB-125
	17	511.07	507 -	516	511.22	2.96E+02	62.86	3.96E+02	.....
	18	583.44	579 -	588	583.52	3.56E+02	65.22	4.01E+02	TL-208
	19	609.43	604 -	612	609.48	1.43E+03	92.52	4.38E+02	BI-214
	20	615.28	614 -	618	615.33	4.02E+01	35.26	2.26E+02	AG-108M
	21	680.05	676 -	685	680.03	4.12E+01	45.73	2.76E+02	.....
	22	727.82	724 -	732	727.75	6.23E+01	47.09	2.95E+02	BI-212
	23	742.81	740 -	745	742.72	3.67E+01	30.76	1.57E+02	.....
M	24	768.47	762 -	776	768.36	1.36E+02	41.61	2.14E+02	.....
m	25	772.09	762 -	776	771.98	3.35E+01	41.37	1.94E+02	.....
	26	785.88	783 -	789	785.76	6.15E+01	33.64	1.61E+02	.....
	27	796.21	792 -	802	796.07	4.40E+01	49.56	3.08E+02	CS-134
M	28	803.52	802 -	809	803.37	1.87E+01	17.54	7.08E+01	.....
m	29	806.56	802 -	809	806.41	4.74E+01	30.82	1.37E+02	.....
	30	861.08	858 -	864	860.88	2.90E+01	36.38	2.18E+02	TL-208
	31	905.06	901 -	908	904.81	4.00E+01	37.74	2.08E+02	.....
	32	912.33	908 -	922	912.08	2.54E+02	68.15	3.80E+02	TL-204
	33	934.53	931 -	938	934.25	7.93E+01	39.85	2.11E+02	.....
M	34	965.36	962 -	973	965.06	5.13E+01	35.85	1.64E+02	.....
m	35	969.43	962 -	973	969.12	1.60E+02	38.01	1.66E+02	AC-228
	36	1054.56	1052 -	1057	1054.16	2.28E+01	25.75	1.10E+02	.....
	37	1069.41	1066 -	1072	1069.00	2.25E+01	27.29	1.19E+02	.....
M	38	1120.89	1115 -	1128	1120.43	3.56E+02	48.25	1.69E+02	SC-46 TA-182 BI-214
m	39	1126.16	1115 -	1128	1125.69	3.41E+01	28.21	1.23E+02	.....
	40	1154.31	1149 -	1158	1153.82	6.14E+01	43.53	2.37E+02	EU-156
	41	1238.80	1233 -	1244	1238.22	1.31E+02	59.19	3.73E+02	CO-56
	42	1281.41	1277 -	1284	1280.79	2.75E+01	30.40	1.35E+02	.....
	43	1378.53	1371 -	1385	1377.82	8.68E+01	48.36	2.08E+02	.....
M	44	1402.20	1399 -	1412	1401.46	2.67E+01	15.62	4.06E+01	.....
m	45	1408.71	1399 -	1412	1407.96	3.34E+01	27.59	9.64E+01	EU-152
	46	1427.15	1423 -	1430	1426.39	2.45E+01	19.70	4.89E+01	.....
M	47	1461.45	1454 -	1476	1460.65	1.33E+03	74.26	3.93E+01	K-40
m	48	1466.52	1454 -	1476	1465.72	4.89E+01	59.69	3.76E+01	.....
M	49	1504.85	1502 -	1515	1504.01	1.42E+01	13.16	3.76E+01	.....
m	50	1509.55	1502 -	1515	1508.70	2.33E+01	20.69	5.14E+01	.....
	51	1589.90	1586 -	1592	1588.98	2.33E+01	18.31	4.14E+01	.....
	52	1596.24	1593 -	1599	1595.32	1.70E+01	14.90	2.80E+01	LA-140
	53	1661.73	1656 -	1665	1660.74	2.50E+01	19.49	4.00E+01	.....
	54	1730.14	1725 -	1732	1729.08	5.02E+01	20.98	3.95E+01	.....
	55	1765.37	1759 -	1770	1764.28	3.02E+02	36.11	1.20E+01	BI-214
	56	1848.47	1843 -	1851	1847.30	3.65E+01	16.16	1.71E+01	.....
	57	2046.15	2040 -	2049	2044.78	1.08E+01	10.49	8.40E+00	.....
	58	2104.22	2099 -	2108	2102.80	1.62E+01	19.31	4.17E+01	.....
	59	2118.49	2110 -	2121	2117.05	1.68E+01	17.55	3.04E+01	.....

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	60	2161.25	2156 -	2163	2159.78	9.00E+00	6.00	0.00E+00	.....
M	61	2200.51	2198 -	2214	2199.00	1.13E+01	0.87	1.00E+00	.....
m	62	2204.28	2198 -	2214	2202.76	6.81E+01	20.10	1.17E+01	BI-214
	63	2236.76	2231 -	2238	2235.21	9.00E+00	7.75	4.00E+00	.....
	64	2265.00	2261 -	2266	2263.43	7.00E+00	5.29	0.00E+00	.....
	65	2293.70	2288 -	2295	2292.09	1.50E+01	10.39	8.00E+00	.....
	66	2367.67	2362 -	2370	2365.99	8.17E+00	10.99	1.37E+01	.....
	67	2448.62	2441 -	2453	2446.87	3.43E+01	15.76	1.33E+01	.....
	68	2615.49	2609 -	2619	2613.58	1.21E+02	22.94	6.37E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 6:19:57PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	63.37	3.37E+02	144.04	2.70E-02	2.26E-03
M	2	74.72	7.98E+02	133.65	2.75E-02	2.38E-03
m	3	77.22	1.44E+03	144.11	2.75E-02	2.41E-03
M	4	84.57	2.00E+02	106.94	2.75E-02	2.48E-03
m	5	89.27	2.77E+02	111.98	2.74E-02	2.50E-03
m	6	92.56	6.69E+02	112.67	2.73E-02	2.45E-03
	7	185.89	5.46E+02	119.65	2.17E-02	1.68E-03
M	8	238.46	1.12E+03	91.66	1.89E-02	1.53E-03
m	9	241.74	5.63E+02	98.78	1.87E-02	1.52E-03
	10	270.01	1.18E+02	76.67	1.74E-02	1.43E-03
	11	295.17	1.06E+03	103.67	1.64E-02	1.37E-03
	12	314.00	6.55E+01	59.93	1.58E-02	1.33E-03
	13	338.63	1.70E+02	75.34	1.49E-02	1.27E-03
M	14	351.98	1.91E+03	98.38	1.45E-02	1.24E-03
m	15	356.33	6.83E+01	76.11	1.44E-02	1.23E-03
	16	462.48	9.78E+01	54.41	1.19E-02	1.10E-03
	17	511.07	2.96E+02	62.86	1.10E-02	1.07E-03
	18	583.44	3.56E+02	65.22	9.96E-03	1.02E-03
	19	609.43	1.43E+03	92.52	9.63E-03	1.01E-03
	20	615.28	4.02E+01	35.26	9.56E-03	1.00E-03
	21	680.05	4.12E+01	45.73	8.85E-03	9.43E-04

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	22	727.82	6.23E+01	47.09	8.41E-03	8.67E-04
	23	742.81	3.67E+01	30.76	8.28E-03	8.43E-04
M	24	768.47	1.36E+02	41.61	8.06E-03	8.02E-04
m	25	772.09	3.35E+01	41.37	8.03E-03	7.97E-04
	26	785.88	6.15E+01	33.64	7.93E-03	7.75E-04
	27	796.21	4.40E+01	49.56	7.85E-03	7.58E-04
M	28	803.52	1.87E+01	17.54	7.79E-03	7.47E-04
m	29	806.56	4.74E+01	30.82	7.77E-03	7.42E-04
	30	861.08	2.90E+01	36.38	7.40E-03	6.55E-04
	31	905.06	4.00E+01	37.74	7.12E-03	5.94E-04
	32	912.33	2.54E+02	68.15	7.08E-03	5.91E-04
	33	934.53	7.93E+01	39.85	6.95E-03	5.82E-04
M	34	965.36	5.13E+01	35.85	6.78E-03	5.71E-04
m	35	969.43	1.60E+02	38.01	6.76E-03	5.69E-04
	36	1054.56	2.28E+01	25.75	6.35E-03	5.36E-04
	37	1069.41	2.25E+01	27.29	6.29E-03	5.31E-04
M	38	1120.89	3.56E+02	48.25	6.07E-03	5.11E-04
m	39	1126.16	3.41E+01	28.21	6.05E-03	5.09E-04
	40	1154.31	6.14E+01	43.53	5.94E-03	4.98E-04
	41	1238.80	1.31E+02	59.19	5.64E-03	4.76E-04
	42	1281.41	2.75E+01	30.40	5.50E-03	4.66E-04
	43	1378.53	8.68E+01	48.36	5.22E-03	4.44E-04
M	44	1402.20	2.67E+01	15.62	5.16E-03	4.38E-04
m	45	1408.71	3.34E+01	27.59	5.14E-03	4.37E-04
	46	1427.15	2.45E+01	19.70	5.09E-03	4.33E-04
M	47	1461.45	1.33E+03	74.26	5.00E-03	4.25E-04
m	48	1466.52	4.89E+01	59.69	4.99E-03	4.23E-04
M	49	1504.85	1.42E+01	13.16	4.90E-03	4.15E-04
m	50	1509.55	2.33E+01	20.69	4.89E-03	4.13E-04
	51	1589.90	2.33E+01	18.31	4.71E-03	3.95E-04
	52	1596.24	1.70E+01	14.90	4.70E-03	3.93E-04
	53	1661.73	2.50E+01	19.49	4.57E-03	3.78E-04
	54	1730.14	5.02E+01	20.98	4.44E-03	3.62E-04
	55	1765.37	3.02E+02	36.11	4.37E-03	3.54E-04
	56	1848.47	3.65E+01	16.16	4.23E-03	3.38E-04
	57	2046.15	1.08E+01	10.49	3.94E-03	3.38E-04
	58	2104.22	1.62E+01	19.31	3.86E-03	3.38E-04
	59	2118.49	1.68E+01	17.55	3.84E-03	3.38E-04
	60	2161.25	9.00E+00	6.00	3.79E-03	3.38E-04
M	61	2200.51	1.13E+01	0.87	3.74E-03	3.38E-04
m	62	2204.28	6.81E+01	20.10	3.74E-03	3.38E-04
	63	2236.76	9.00E+00	7.75	3.70E-03	3.38E-04
	64	2265.00	7.00E+00	5.29	3.66E-03	3.38E-04
	65	2293.70	1.50E+01	10.39	3.63E-03	3.38E-04
	66	2367.67	8.17E+00	10.99	3.55E-03	3.38E-04
	67	2448.62	3.43E+01	15.76	3.47E-03	3.38E-04
	68	2615.49	1.21E+02	22.94	3.30E-03	3.38E-04

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 6:19:57PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	63.37	3.37E+02	144.04	8.94E+01	1.41E+01	2.48E+02	1.45E+02
M	2	74.72	7.98E+02	133.65			7.98E+02	1.34E+02
m	3	77.22	1.44E+03	144.11	7.20E+00	1.47E+00	1.43E+03	1.44E+02
M	4	84.57	2.00E+02	106.94	7.20E+00	1.33E+00	1.93E+02	1.07E+02
m	5	89.27	2.77E+02	111.98			2.77E+02	1.12E+02
m	6	92.56	6.69E+02	112.67	1.38E+02	1.72E+01	5.31E+02	1.14E+02
	7	185.89	5.46E+02	119.65	5.22E+01	7.59E+00	4.93E+02	1.20E+02
M	8	238.46	1.12E+03	91.66	2.13E+01	6.33E+00	1.10E+03	9.19E+01
m	9	241.74	5.63E+02	98.78			5.63E+02	9.88E+01
	10	270.01	1.18E+02	76.67	1.23E+00	4.98E+00	1.17E+02	7.68E+01
	11	295.17	1.06E+03	103.67			1.06E+03	1.04E+02
	12	314.00	6.55E+01	59.93			6.55E+01	5.99E+01
	13	338.63	1.70E+02	75.34			1.70E+02	7.53E+01
M	14	351.98	1.91E+03	98.38	5.79E+00	4.49E+00	1.90E+03	9.85E+01
m	15	356.33	6.83E+01	76.11			6.83E+01	7.61E+01
	16	462.48	9.78E+01	54.41			9.78E+01	5.44E+01
	17	511.07	2.96E+02	62.86	7.28E+01	5.30E+00	2.23E+02	6.31E+01
	18	583.44	3.56E+02	65.22	2.72E+00	3.05E+00	3.54E+02	6.53E+01
	19	609.43	1.43E+03	92.52	6.35E+00	4.02E+00	1.42E+03	9.26E+01
	20	615.28	4.02E+01	35.26			4.02E+01	3.53E+01
	21	680.05	4.12E+01	45.73			4.12E+01	4.57E+01
	22	727.82	6.23E+01	47.09			6.23E+01	4.71E+01
	23	742.81	3.67E+01	30.76			3.67E+01	3.08E+01
M	24	768.47	1.36E+02	41.61			1.36E+02	4.16E+01
m	25	772.09	3.35E+01	41.37			3.35E+01	4.14E+01
	26	785.88	6.15E+01	33.64			6.15E+01	3.36E+01
	27	796.21	4.40E+01	49.56			4.40E+01	4.96E+01
M	28	803.52	1.87E+01	17.54			1.87E+01	1.75E+01
m	29	806.56	4.74E+01	30.82			4.74E+01	3.08E+01
	30	861.08	2.90E+01	36.38			2.90E+01	3.64E+01
	31	905.06	4.00E+01	37.74			4.00E+01	3.77E+01
	32	912.33	2.54E+02	68.15	5.31E+00	3.00E+00	2.49E+02	6.82E+01
	33	934.53	7.93E+01	39.85			7.93E+01	3.98E+01
M	34	965.36	5.13E+01	35.85			5.13E+01	3.59E+01
m	35	969.43	1.60E+02	38.01			1.60E+02	3.80E+01

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	36	1054.56	2.28E+01	25.75			2.28E+01	2.57E+01
	37	1069.41	2.25E+01	27.29			2.25E+01	2.73E+01
M	38	1120.89	3.56E+02	48.25			3.56E+02	4.82E+01
m	39	1126.16	3.41E+01	28.21			3.41E+01	2.82E+01
	40	1154.31	6.14E+01	43.53			6.14E+01	4.35E+01
	41	1238.80	1.31E+02	59.19			1.31E+02	5.92E+01
	42	1281.41	2.75E+01	30.40			2.75E+01	3.04E+01
	43	1378.53	8.68E+01	48.36			8.68E+01	4.84E+01
M	44	1402.20	2.67E+01	15.62			2.67E+01	1.56E+01
m	45	1408.71	3.34E+01	27.59			3.34E+01	2.76E+01
	46	1427.15	2.45E+01	19.70			2.45E+01	1.97E+01
M	47	1461.45	1.33E+03	74.26	8.09E+00	2.23E+00	1.32E+03	7.43E+01
m	48	1466.52	4.89E+01	59.69			4.89E+01	5.97E+01
M	49	1504.85	1.42E+01	13.16			1.42E+01	1.32E+01
m	50	1509.55	2.33E+01	20.69			2.33E+01	2.07E+01
	51	1589.90	2.33E+01	18.31			2.33E+01	1.83E+01
	52	1596.24	1.70E+01	14.90			1.70E+01	1.49E+01
	53	1661.73	2.50E+01	19.49			2.50E+01	1.95E+01
	54	1730.14	5.02E+01	20.98			5.02E+01	2.10E+01
	55	1765.37	3.02E+02	36.11			3.02E+02	3.61E+01
	56	1848.47	3.65E+01	16.16			3.65E+01	1.62E+01
	57	2046.15	1.08E+01	10.49			1.08E+01	1.05E+01
	58	2104.22	1.62E+01	19.31			1.62E+01	1.93E+01
	59	2118.49	1.68E+01	17.55			1.68E+01	1.75E+01
	60	2161.25	9.00E+00	6.00			9.00E+00	6.00E+00
M	61	2200.51	1.13E+01	0.87			1.13E+01	8.66E-01
m	62	2204.28	6.81E+01	20.10			6.81E+01	2.01E+01
	63	2236.76	9.00E+00	7.75			9.00E+00	7.75E+00
	64	2265.00	7.00E+00	5.29			7.00E+00	5.29E+00
	65	2293.70	1.50E+01	10.39			1.50E+01	1.04E+01
	66	2367.67	8.17E+00	10.99			8.17E+00	1.10E+01
	67	2448.62	3.43E+01	15.76			3.43E+01	1.58E+01
	68	2615.49	1.21E+02	22.94	5.63E+00	1.38E+00	1.15E+02	2.30E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 6:19:57PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	63.37	3.37E+02	144.04	8.94E+01	1.41E+01	2.48E+02	1.45E+02
M	2	74.72	7.98E+02	133.65			7.98E+02	1.34E+02
m	3	77.22	1.44E+03	144.11	7.20E+00	1.47E+00	1.43E+03	1.44E+02
M	4	84.57	2.00E+02	106.94	7.20E+00	1.33E+00	1.93E+02	1.07E+02
m	5	89.27	2.77E+02	111.98			2.77E+02	1.12E+02
m	6	92.56	6.69E+02	112.67	1.38E+02	1.72E+01	5.31E+02	1.14E+02
	7	185.89	5.46E+02	119.65	5.22E+01	7.59E+00	4.93E+02	1.20E+02
M	8	238.46	1.12E+03	91.66	2.13E+01	6.33E+00	1.10E+03	9.19E+01
m	9	241.74	5.63E+02	98.78			5.63E+02	9.88E+01
	10	270.01	1.18E+02	76.67	1.23E+00	4.98E+00	1.17E+02	7.68E+01
	11	295.17	1.06E+03	103.67			1.06E+03	1.04E+02
	12	314.00	6.55E+01	59.93			6.55E+01	5.99E+01
	13	338.63	1.70E+02	75.34			1.70E+02	7.53E+01
M	14	351.98	1.91E+03	98.38	5.79E+00	4.49E+00	1.90E+03	9.85E+01
m	15	356.33	6.83E+01	76.11			6.83E+01	7.61E+01
	16	462.48	9.78E+01	54.41			9.78E+01	5.44E+01
	17	511.07	2.96E+02	62.86	7.28E+01	5.30E+00	2.23E+02	6.31E+01
	18	583.44	3.56E+02	65.22	2.72E+00	3.05E+00	3.54E+02	6.53E+01
	19	609.43	1.43E+03	92.52	6.35E+00	4.02E+00	1.42E+03	9.26E+01
	20	615.28	4.02E+01	35.26			4.02E+01	3.53E+01
	21	680.05	4.12E+01	45.73			4.12E+01	4.57E+01
	22	727.82	6.23E+01	47.09			6.23E+01	4.71E+01
	23	742.81	3.67E+01	30.76			3.67E+01	3.08E+01
M	24	768.47	1.36E+02	41.61			1.36E+02	4.16E+01
m	25	772.09	3.35E+01	41.37			3.35E+01	4.14E+01
	26	785.88	6.15E+01	33.64			6.15E+01	3.36E+01
	27	796.21	4.40E+01	49.56			4.40E+01	4.96E+01
M	28	803.52	1.87E+01	17.54			1.87E+01	1.75E+01
m	29	806.56	4.74E+01	30.82			4.74E+01	3.08E+01
	30	861.08	2.90E+01	36.38			2.90E+01	3.64E+01
	31	905.06	4.00E+01	37.74			4.00E+01	3.77E+01
	32	912.33	2.54E+02	68.15	5.31E+00	3.00E+00	2.49E+02	6.82E+01
	33	934.53	7.93E+01	39.85			7.93E+01	3.98E+01
M	34	965.36	5.13E+01	35.85			5.13E+01	3.59E+01
m	35	969.43	1.60E+02	38.01			1.60E+02	3.80E+01
	36	1054.56	2.28E+01	25.75			2.28E+01	2.57E+01
	37	1069.41	2.25E+01	27.29			2.25E+01	2.73E+01
M	38	1120.89	3.56E+02	48.25			3.56E+02	4.82E+01
m	39	1126.16	3.41E+01	28.21			3.41E+01	2.82E+01
	40	1154.31	6.14E+01	43.53			6.14E+01	4.35E+01
	41	1238.80	1.31E+02	59.19			1.31E+02	5.92E+01

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	42	1281.41	2.75E+01	30.40			2.75E+01	3.04E+01
	43	1378.53	8.68E+01	48.36			8.68E+01	4.84E+01
M	44	1402.20	2.67E+01	15.62			2.67E+01	1.56E+01
m	45	1408.71	3.34E+01	27.59			3.34E+01	2.76E+01
	46	1427.15	2.45E+01	19.70			2.45E+01	1.97E+01
M	47	1461.45	1.33E+03	74.26	8.09E+00	2.23E+00	1.32E+03	7.43E+01
m	48	1466.52	4.89E+01	59.69			4.89E+01	5.97E+01
M	49	1504.85	1.42E+01	13.16			1.42E+01	1.32E+01
m	50	1509.55	2.33E+01	20.69			2.33E+01	2.07E+01
	51	1589.90	2.33E+01	18.31			2.33E+01	1.83E+01
	52	1596.24	1.70E+01	14.90			1.70E+01	1.49E+01
	53	1661.73	2.50E+01	19.49			2.50E+01	1.95E+01
	54	1730.14	5.02E+01	20.98			5.02E+01	2.10E+01
	55	1765.37	3.02E+02	36.11			3.02E+02	3.61E+01
	56	1848.47	3.65E+01	16.16			3.65E+01	1.62E+01
	57	2046.15	1.08E+01	10.49			1.08E+01	1.05E+01
	58	2104.22	1.62E+01	19.31			1.62E+01	1.93E+01
	59	2118.49	1.68E+01	17.55			1.68E+01	1.75E+01
	60	2161.25	9.00E+00	6.00			9.00E+00	6.00E+00
M	61	2200.51	1.13E+01	0.87			1.13E+01	8.66E-01
m	62	2204.28	6.81E+01	20.10			6.81E+01	2.01E+01
	63	2236.76	9.00E+00	7.75			9.00E+00	7.75E+00
	64	2265.00	7.00E+00	5.29			7.00E+00	5.29E+00
	65	2293.70	1.50E+01	10.39			1.50E+01	1.04E+01
	66	2367.67	8.17E+00	10.99			8.17E+00	1.10E+01
	67	2448.62	3.43E+01	15.76			3.43E+01	1.58E+01
	68	2615.49	1.21E+02	22.94	5.63E+00	1.38E+00	1.15E+02	2.30E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.937	1460.81	*	10.67	2.70E+01	2.81E+00
TL-208	0.934	583.14	*	30.22	1.28E+00	2.71E-01
		860.37	*	4.48	9.56E-01	1.20E+00
		2614.66	*	35.85	1.06E+00	2.38E-01

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-212	0.711	727.17	*	11.80	6.85E-01	5.23E-01
		1620.62		2.75		
PB-212	0.889	238.63	*	44.60	1.43E+00	1.66E-01
		300.09		3.41		
BI-214	0.965	609.31	*	46.30	3.47E+00	4.28E-01
		1120.29	*	15.10	4.24E+00	6.76E-01
		1764.49	*	15.80	4.77E+00	6.89E-01
		2204.22	*	4.98	3.99E+00	1.23E+00
PB-214	0.999	295.21	*	19.19	3.66E+00	4.71E-01
		351.92	*	37.19	3.84E+00	3.82E-01
RA-224	0.911	240.98	*	3.95	8.32E+00	1.61E+00
RA-226	0.983	186.21	*	3.28	7.56E+00	1.40E+01
TH-234	0.999	63.29	*	3.80	2.63E+00	1.56E+00
AM-243	1.000	74.67	*	66.00	4.80E-01	9.06E-02

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 6:19:57PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	3	77.22	3.98571E-01	5.02		
M	4	84.57	5.36294E-02	27.70	Tol.	TH-231
m	5	89.27	7.69485E-02	20.21	Tol.	LU-176
m	6	92.56	1.47485E-01	10.73		
	10	270.01	3.24825E-02	32.85		
	12	314.00	1.82065E-02	45.72	Sum	
	13	338.63	4.72118E-02	22.16	Tol.	AC-228
m	15	356.33	1.89833E-02	55.69	Tol.	BA-133
	16	462.48	2.71599E-02	27.82	Tol.	SB-125
	17	511.07	6.20621E-02	14.12		
	20	615.28	1.11556E-02	43.90	Tol.	AG-108M
	21	680.05	1.14471E-02	55.48		
	23	742.81	1.01812E-02	41.96	D-Esc	
M	24	768.47	3.77879E-02	15.29	Sum	
m	25	772.09	9.31508E-03	61.68		

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	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	26	785.88	1.70833E-02	27.35		
	27	796.21	1.22222E-02	56.31	Sum	
M	28	803.52	5.19730E-03	46.86	Sum	
m	29	806.56	1.31748E-02	32.49		
	31	905.06	1.11092E-02	47.18	Sum	
	32	912.33	6.90381E-02	13.72	Tol.	TL-204
	33	934.53	2.20203E-02	25.13	Sum	
M	34	965.36	1.42374E-02	34.97	Sum	
m	35	969.43	4.43692E-02	11.90	Sum	
	36	1054.56	6.33013E-03	56.50		
	37	1069.41	6.25000E-03	60.63		
m	39	1126.16	9.47550E-03	41.35		
	40	1154.31	1.70417E-02	35.48	Tol.	EU-156
	41	1238.80	3.65155E-02	22.51	Tol.	CO-56
	42	1281.41	7.62573E-03	55.36		
	43	1378.53	2.41078E-02	27.86		
M	44	1402.20	7.41948E-03	29.24		
m	45	1408.71	9.27778E-03	41.30	Tol.	EU-152
	46	1427.15	6.81406E-03	40.15		
m	48	1466.52	1.35708E-02	61.09		
M	49	1504.85	3.93986E-03	46.40		
m	50	1509.55	6.46367E-03	44.45		
	51	1589.90	6.47096E-03	39.30	Sum	
	52	1596.24	4.72222E-03	43.82	Tol.	LA-140
	53	1661.73	6.94444E-03	38.99		
	54	1730.14	1.39524E-02	20.88	Sum	
	56	1848.47	1.01265E-02	22.16	Sum	
	57	2046.15	3.00000E-03	48.56		
	58	2104.22	4.48949E-03	59.75	S-Esc	
	59	2118.49	4.66580E-03	52.24		
	60	2161.25	2.50000E-03	33.33		
M	61	2200.51	3.13501E-03	3.84		
	63	2236.76	2.50000E-03	43.03		
	64	2265.00	1.94444E-03	37.80		
	65	2293.70	4.16667E-03	34.64		
	66	2367.67	2.26852E-03	67.28		
	67	2448.62	9.53930E-03	22.95		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.93	1460.81	*	10.67	2.70E+01	2.81E+00
TL-208	0.93	583.14	*	30.22	1.28E+00	2.71E-01
		860.37	*	4.48	9.56E-01	1.20E+00
		2614.66	*	35.85	1.06E+00	2.38E-01
BI-212	0.71	727.17	*	11.80	6.85E-01	5.23E-01
		1620.62		2.75		
PB-212	0.88	238.63	*	44.60	1.43E+00	1.66E-01
		300.09		3.41		
BI-214	0.96	609.31	*	46.30	3.47E+00	4.28E-01
		1120.29	*	15.10	4.24E+00	6.76E-01
		1764.49	*	15.80	4.77E+00	6.89E-01
		2204.22	*	4.98	3.99E+00	1.23E+00
PB-214	0.99	295.21	*	19.19	3.66E+00	4.71E-01
		351.92	*	37.19	3.84E+00	3.82E-01
RA-224	0.91	240.98	*	3.95	8.32E+00	1.61E+00
RA-226	0.98	186.21	*	3.28	7.56E+00	1.40E+01
TH-234	0.99	63.29	*	3.80	2.63E+00	1.56E+00
AM-243	1.00	74.67	*	66.00	4.80E-01	9.06E-02

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.937	2.70E+01	2.81E+00	
TL-208	0.934	1.15E+00	1.77E-01	
BI-212	0.711	6.85E-01	5.23E-01	
PB-212	0.889	1.43E+00	1.66E-01	
BI-214	0.965	3.93E+00	3.10E-01	
PB-214	0.999	3.77E+00	2.97E-01	
RA-224	0.911	8.32E+00	1.61E+00	
RA-226	0.983	7.56E+00	1.40E+01	
TH-234	0.999	2.63E+00	1.56E+00	
AM-243	1.000	4.80E-01	9.06E-02	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 6:19:57PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	3	77.22	3.98571E-01	5.02		
M	4	84.57	5.36294E-02	27.70	Tol.	TH-231
m	5	89.27	7.69485E-02	20.21	Tol.	LU-176
m	6	92.56	1.47485E-01	10.73		
	10	270.01	3.24825E-02	32.85		
	12	314.00	1.82065E-02	45.72	Sum	
	13	338.63	4.72118E-02	22.16	Tol.	AC-228
m	15	356.33	1.89833E-02	55.69	Tol.	BA-133
	16	462.48	2.71599E-02	27.82	Tol.	SB-125
	17	511.07	6.20621E-02	14.12		
	20	615.28	1.11556E-02	43.90	Tol.	AG-108M
	21	680.05	1.14471E-02	55.48		
	23	742.81	1.01812E-02	41.96	D-Esc	
M	24	768.47	3.77879E-02	15.29	Sum	
m	25	772.09	9.31508E-03	61.68		
	26	785.88	1.70833E-02	27.35		
	27	796.21	1.22222E-02	56.31	Sum	
M	28	803.52	5.19730E-03	46.86	Sum	
m	29	806.56	1.31748E-02	32.49		
	31	905.06	1.11092E-02	47.18	Sum	
	32	912.33	6.90381E-02	13.72	Tol.	TL-204
	33	934.53	2.20203E-02	25.13	Sum	
M	34	965.36	1.42374E-02	34.97	Sum	
m	35	969.43	4.43692E-02	11.90	Sum	
	36	1054.56	6.33013E-03	56.50		
	37	1069.41	6.25000E-03	60.63		
m	39	1126.16	9.47550E-03	41.35		
	40	1154.31	1.70417E-02	35.48	Tol.	EU-156
	41	1238.80	3.65155E-02	22.51	Tol.	CO-56
	42	1281.41	7.62573E-03	55.36		
	43	1378.53	2.41078E-02	27.86		
M	44	1402.20	7.41948E-03	29.24		
m	45	1408.71	9.27778E-03	41.30	Tol.	EU-152
	46	1427.15	6.81406E-03	40.15		
m	48	1466.52	1.35708E-02	61.09		

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	49	1504.85	3.93986E-03	46.40		
m	50	1509.55	6.46367E-03	44.45		
	51	1589.90	6.47096E-03	39.30	Sum	
	52	1596.24	4.72222E-03	43.82	Tol.	LA-140
	53	1661.73	6.94444E-03	38.99		
	54	1730.14	1.39524E-02	20.88	Sum	
	56	1848.47	1.01265E-02	22.16	Sum	
	57	2046.15	3.00000E-03	48.56		
	58	2104.22	4.48949E-03	59.75	S-Esc	
	59	2118.49	4.66580E-03	52.24		
	60	2161.25	2.50000E-03	33.33		
M	61	2200.51	3.13501E-03	3.84		
	63	2236.76	2.50000E-03	43.03		
	64	2265.00	1.94444E-03	37.80		
	65	2293.70	4.16667E-03	34.64		
	66	2367.67	2.26852E-03	67.28		
	67	2448.62	9.53930E-03	22.95		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		BE-7	477.59		10.42	1.30E+00	2.40E+00	2.40E+00
+		NA-22	1274.54		99.94	6.97E-03	8.43E-02	8.43E-02
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	7.06E-03	4.62E-02	4.62E-02
+		K-40	1460.81	*	10.67	2.70E+01	1.39E+00	1.39E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	2.52E-02	7.51E-02	7.51E-02
			78.34		96.00	4.11E-01		1.03E-01
+		SC-46	889.25		99.98	1.82E-02	1.62E-01	1.62E-01
			1120.51		99.99	1.38E+00		4.11E-01

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	V-48	983.52	99.98	2.20E+00	6.32E+00	6.57E+00
		1312.10	97.50	-5.57E-02		6.32E+00
+	CR-51	320.08	9.83	-3.06E-01	7.94E+00	7.94E+00
+	MN-54	834.83	99.97	-1.92E-02	9.67E-02	9.67E-02
+	CO-56	846.75	99.96	7.62E-02	1.75E-01	1.75E-01
		1037.75	14.03	8.03E-01		1.48E+00
		1238.25	67.00	7.71E-01		5.14E-01
		1771.40	15.51	-2.34E-01		9.18E-01
		2598.48	16.90	-9.42E-02		4.37E-01
+	CO-57	122.06	85.51	-1.01E-02	8.47E-02	8.47E-02
		136.48	10.60	3.72E-02		7.00E-01
+	CO-58	810.76	99.40	4.06E-02	1.79E-01	1.79E-01
+	FE-59	1099.22	56.50	-3.80E-01	6.84E-01	6.84E-01
		1291.56	43.20	1.82E-01		9.33E-01
+	CO-60	1173.22	100.00	-3.40E-02	8.00E-02	9.08E-02
		1332.49	100.00	5.61E-02		8.00E-02
+	ZN-65	1115.52	50.75	1.50E-02	2.44E-01	2.44E-01
+	GA-67	93.31	35.70	1.19E+09	4.10E+08	4.10E+08
		208.95	2.24	5.87E+08		5.26E+09
		300.22	16.00	7.85E+08		8.58E+08
+	SE-75	121.11	16.70	-2.97E-01	1.73E-01	5.85E-01
		136.00	59.20	9.21E-03		1.73E-01
		264.65	59.80	-5.03E-02		1.91E-01
		279.53	25.20	-4.42E-02		4.87E-01
		400.65	11.40	1.34E-01		1.07E+00
+	RB-82	776.52	13.00	-4.51E-01	8.14E+00	8.14E+00
+	RB-83	520.41	46.00	4.16E-02	3.35E-01	3.35E-01
		529.64	30.30	-2.32E-01		4.77E-01
		552.65	16.40	-7.28E-01		8.47E-01
+	KR-85	513.99	0.43	2.69E+01	2.13E+01	2.13E+01
+	SR-85	513.99	99.27	3.39E-01	2.67E-01	2.67E-01
+	Y-88	898.02	93.40	5.70E-02	1.22E-01	1.65E-01
		1836.01	99.38	1.26E-02		1.22E-01
+	MO-93	263.06	56.72	2.86E-02	6.36E-02	1.18E-01
		684.67	99.68	1.14E-02		6.76E-02
		1477.11	99.08	2.33E-03		6.36E-02
+	NB-93M	16.57	9.43	-5.01E-01	5.47E-01	5.47E-01
+	NB-94	702.63	100.00	-2.45E-02	7.13E-02	7.13E-02
		871.10	100.00	2.30E-02		7.64E-02
+	NB-95	765.79	99.81	1.06E+00	7.45E-01	7.45E-01
+	NB-95M	235.69	25.00	-4.51E+08	6.91E+07	6.91E+07
+	ZR-95	724.18	43.70	-9.71E-03	4.12E-01	5.45E-01
		756.72	55.30	1.00E-02		4.12E-01
+	MO-99	181.06	6.20	4.09E+10	5.67E+10	9.38E+10
		739.58	12.80	1.88E+09		5.67E+10
		778.00	4.50	5.13E+10		1.49E+11
+	RU-103	497.08	89.00	1.04E-01	4.26E-01	4.26E-01

Analysis Report for 1707092-17

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RU-106	621.84	9.80	2.74E-01	8.33E-01	8.33E-01
+	AG-108M	433.93	89.90	-1.07E-02	7.25E-02	7.25E-02
		614.37	90.40	-1.26E+00		1.12E-01
		722.95	90.50	-8.25E-04		7.94E-02
+	CD-109	88.03	3.72	-1.50E+00	2.48E+00	2.48E+00
+	AG-110M	657.75	93.14	-3.16E-02	9.75E-02	9.75E-02
		677.61	10.53	2.34E-02		8.60E-01
		706.67	16.46	0.00E+00		6.03E-01
		763.93	21.98	-1.29E+00		4.87E-01
		884.67	71.63	4.21E-02		1.38E-01
		1384.27	23.94	-4.05E-02		4.69E-01
+	CD-113M	263.70	0.02	-1.16E+02	2.84E+02	2.84E+02
+	SN-113	255.12	1.93	1.24E+00	1.89E-01	5.53E+00
		391.69	64.90	3.07E-02		1.89E-01
+	TE123M	159.00	84.10	-2.19E-02	1.27E-01	1.27E-01
+	SB-124	602.71	97.87	2.10E-02	2.38E-01	2.38E-01
		645.85	7.26	-4.43E-01		2.90E+00
		722.78	11.10	-2.13E-02		2.05E+00
		1691.02	49.00	6.78E-02		3.85E-01
+	I-125	35.49	6.49	-1.20E+00	2.95E+00	2.95E+00
+	SB-125	176.33	6.89	-3.30E-01	2.60E-01	8.75E-01
		427.89	29.33	1.31E-01		2.60E-01
		463.38	10.35	7.25E-01		7.68E-01
		600.56	17.80	1.84E-02		4.24E-01
		635.90	11.32	1.91E-01		6.16E-01
+	SB-126	414.70	83.30	-5.55E+00	2.00E+01	2.17E+01
		666.33	99.60	7.81E+00		2.08E+01
		695.00	99.60	4.93E+00		2.00E+01
		720.50	53.80	1.31E+01		3.70E+01
+	SN-126	87.57	37.00	1.86E-01	2.11E-01	2.11E-01
+	SB-127	473.00	25.00	5.48E+06	1.32E+07	1.89E+07
		685.20	35.70	2.22E+06		1.32E+07
		783.80	14.70	2.49E+06		4.01E+07
+	I-129	29.78	57.00	-2.71E-02	1.18E-01	1.18E-01
		33.60	13.20	-2.53E-02		4.75E-01
		39.58	7.52	-2.72E-01		7.79E-01
+	I-131	284.30	6.05	2.77E+03	4.42E+02	6.57E+03
		364.48	81.20	-6.38E+00		4.42E+02
		636.97	7.26	4.23E+02		5.05E+03
		722.89	1.80	-2.38E+02		2.29E+04
+	TE-132	49.72	13.10	-1.05E+09	1.24E+08	8.93E+08
		228.16	88.00	-5.07E+07		1.24E+08
+	BA-133	81.00	33.00	-1.06E+00	2.00E-01	2.17E-01
		302.84	17.80	2.60E-01		4.16E-01
		356.01	60.00	2.32E-01		2.00E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-5.26E+05	1.08E+05	1.08E+05
+	CS-134	563.23	8.38	-6.42E-04	1.01E-01	8.95E-01

Analysis Report for 1707092-17

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		Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
		CS-134	569.32	15.43	-4.21E-02	1.01E-01	4.85E-01
			604.70	97.60	-9.04E-03		1.01E-01
			795.84	85.40	6.91E-02		1.05E-01
			801.93	8.73	-1.03E+00		9.43E-01
+		CS-135	268.24	16.00	-6.38E-03	4.54E-01	4.54E-01
+	@	I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@		1260.41	28.60	1.00E+26		1.00E+26
	@		1678.03	9.54	1.00E+26		1.00E+26
+		CS-136	153.22	7.46	3.29E+01	1.33E+01	1.64E+02
			163.89	4.61	-2.76E+01		2.57E+02
			176.55	13.56	-3.11E+01		8.23E+01
			273.65	12.66	5.98E+00		1.15E+02
			340.57	48.50	5.86E-01		3.34E+01
			818.50	99.70	-3.04E+00		1.33E+01
			1048.07	79.60	-6.42E+00		2.00E+01
			1235.34	19.70	5.59E+01		1.31E+02
+		CS-137	661.65	85.12	-5.75E-02	8.46E-02	8.46E-02
+		LA-138	788.74	34.00	3.14E-02	9.06E-02	2.19E-01
			1435.80	66.00	1.69E-04		9.06E-02
+		CE-139	165.85	80.35	4.11E-02	1.26E-01	1.26E-01
+		BA-140	162.64	6.70	-8.29E+01	6.03E+01	2.04E+02
			304.84	4.50	-2.99E+02		3.43E+02
			423.70	3.20	-5.86E+01		4.96E+02
			437.55	2.00	9.97E+01		7.63E+02
			537.32	25.00	1.04E+01		6.03E+01
+		LA-140	328.77	20.50	2.58E+01	1.61E+01	8.21E+01
			487.03	45.50	2.06E+01		3.48E+01
			815.85	23.50	2.31E+01		6.86E+01
			1596.49	95.49	8.08E+00		1.61E+01
+		CE-141	145.44	48.40	1.64E-01	1.09E+00	1.09E+00
+	@	CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@		293.26	42.00	1.00E+26		1.00E+26
	@		664.55	5.20	1.00E+26		1.00E+26
+		CE-144	133.54	10.80	-9.87E-02	6.92E-01	6.92E-01
+		PM-144	476.78	42.00	1.08E-02	8.65E-02	1.95E-01
			618.01	98.60	-6.69E-04		9.09E-02
			696.49	99.49	0.00E+00		8.65E-02
+		PM-145	36.85	21.70	2.99E-02	1.55E-01	2.81E-01
			37.36	39.70	7.64E-02		1.55E-01
			42.30	15.10	-2.55E-01		3.85E-01
			72.40	2.31	-4.77E+00		3.64E+00
+		PM-146	453.90	39.94	1.62E-01	1.82E-01	1.82E-01
			735.90	14.01	1.29E-01		5.21E-01
			747.13	13.10	-1.82E-01		5.35E-01
+		ND-147	91.11	28.90	4.39E+02	1.64E+02	1.64E+02
			531.02	13.10	1.15E+01		2.86E+02
+		PM-149	285.90	3.10	6.95E+13	1.04E+14	1.04E+14
+		EU-152	121.78	20.50	-1.38E-01	2.71E-01	2.71E-01
			244.69	5.40	-1.84E-01		1.36E+00

Analysis Report for 1707092-17

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-152	344.27	19.13	-1.71E-02	2.71E-01	3.65E-01
		778.89	9.20	1.96E-01		7.49E-01
		964.01	10.40	-2.49E+00		8.74E-01
		1085.78	7.22	1.55E-01		1.09E+00
		1112.02	9.60	1.02E-01		9.07E-01
		1407.95	14.94	2.14E-01		6.08E-01
+	GD-153	97.43	31.30	6.54E-02	2.51E-01	2.51E-01
		103.18	22.20	-6.39E-02		3.34E-01
+	EU-154	123.07	40.50	4.66E-02	1.44E-01	1.44E-01
		723.30	19.70	-3.87E-03		3.72E-01
		873.19	11.50	3.60E-01		6.74E-01
		996.32	10.30	-8.44E-01		7.45E-01
		1004.76	17.90	1.44E-01		4.79E-01
		1274.45	35.50	1.86E-02		2.25E-01
+	EU-155	86.50	30.90	2.16E-01	2.61E-01	2.61E-01
		105.30	20.70	2.84E-02		2.81E-01
+	EU-156	811.77	10.40	2.35E+01	6.41E+01	6.41E+01
		1153.47	7.20	1.47E+02		1.45E+02
		1230.71	8.90	-1.75E+01		1.09E+02
+	HO-166M	184.41	72.60	3.23E-01	1.11E-01	1.11E-01
		280.45	29.60	-2.38E-02		2.29E-01
		410.94	11.10	4.01E-02		6.19E-01
		711.69	54.10	2.86E-02		1.31E-01
+	TM-171	66.72	0.14	1.81E+01	5.63E+01	5.63E+01
+	HF-172	67.35	5.31	4.96E-01	5.62E-01	1.48E+00
		125.81	11.30	-3.36E-01		5.62E-01
+	LU-172	181.53	20.60	4.11E+03	4.41E+03	9.41E+03
		900.72	29.81	-9.01E+01		8.54E+03
		1093.66	62.50	1.62E+03		4.41E+03
+	LU-173	100.72	5.24	3.11E-01	4.06E-01	1.25E+00
		272.11	21.20	-9.62E-02		4.06E-01
+	HF-175	343.40	84.00	-1.03E-02	2.24E-01	2.24E-01
+	LU-176	88.34	13.30	-3.62E-01	6.84E-02	5.98E-01
		201.83	86.00	-1.74E-02		7.11E-02
		306.78	94.00	9.24E-03		6.84E-02
+	HF-181	133.02	41.70	-1.03E-01	4.23E-01	7.24E-01
		345.85	17.20	-9.69E-02		2.15E+00
		482.03	82.80	5.46E-02		4.23E-01
+	TA-182	67.75	41.20	1.06E-01	3.15E-01	3.15E-01
		1121.30	34.90	2.83E+00		9.42E-01
		1189.05	16.23	-3.48E-01		1.00E+00
		1221.41	26.98	-4.58E-01		6.69E-01
		1231.02	11.44	-2.56E-01		1.60E+00
+	IR-192	308.46	29.68	2.74E-02	3.41E-01	5.42E-01
		468.07	48.10	4.56E-02		3.41E-01
+	HG-203	279.19	77.30	-3.58E-02	3.95E-01	3.95E-01
+	TL-204	374.74	94.11	2.32E-02	7.32E-02	7.32E-02
		899.15	99.16	1.88E-02		8.26E-02
		911.74	91.10	3.32E-01		1.52E-01

Analysis Report for 1707092-17

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BI-207	569.67		97.72	-8.87E-03	7.18E-02	7.18E-02
		1063.62		74.90	1.57E-02		9.41E-02
+	TL-208	583.14	*	30.22	1.28E+00	1.49E-01	3.28E-01
		860.37	*	4.48	9.56E-01		1.97E+00
		2614.66	*	35.85	1.06E+00		1.49E-01
+	BI-210M	262.00		45.00	-2.54E-02	1.46E-01	1.46E-01
		300.00		23.00	3.24E-01		3.47E-01
+	PB-210	46.50		4.25	1.88E+00	1.54E+00	1.54E+00
+	PB-211	404.84		2.90	3.08E-01	2.46E+00	2.46E+00
		831.96		2.90	4.10E-02		2.58E+00
+	BI-212	727.17	*	11.80	6.85E-01	8.33E-01	8.33E-01
		1620.62		2.75	5.17E-01		2.37E+00
+	PB-212	238.63	*	44.60	1.43E+00	2.98E-01	2.98E-01
		300.09		3.41	2.19E+00		2.34E+00
+	BI-214	609.31	*	46.30	3.47E+00	2.24E-01	2.24E-01
		1120.29	*	15.10	4.24E+00		1.05E+00
		1764.49	*	15.80	4.77E+00		2.97E-01
		2204.22	*	4.98	3.99E+00		1.65E+00
+	PB-214	295.21	*	19.19	3.66E+00	3.56E-01	4.69E-01
		351.92	*	37.19	3.84E+00		3.56E-01
+	RN-219	401.80		6.50	1.48E-01	1.07E+00	1.07E+00
+	RA-223	323.87		3.88	-1.38E+00	1.73E+00	1.73E+00
+	RA-224	240.98	*	3.95	8.32E+00	3.37E+00	3.37E+00
+	RA-225	40.00		31.00	-5.10E+00	2.10E+01	2.10E+01
+	RA-226	186.21	*	3.28	7.56E+00	2.85E+00	2.85E+00
+	TH-227	50.10		8.40	-4.41E-01	6.36E-01	7.25E-01
		236.00		11.50	-4.15E+00		6.36E-01
		256.20		6.30	9.07E-01		1.09E+00
+	AC-228	338.32		11.40	1.09E+00	4.75E-01	7.08E-01
		911.07		27.70	1.04E+00		4.75E-01
		969.11		16.60	1.08E+00		7.49E-01
+	TH-230	48.44		16.90	3.66E-01	3.87E-01	3.87E-01
		62.85		4.60	3.00E+00		1.66E+00
		67.67		0.37	6.42E+00		1.91E+01
+	PA-231	283.67		1.60	-9.34E-01	3.16E+00	4.20E+00
		302.67		2.30	1.97E+00		3.16E+00
+	TH-231	25.64		14.70	-2.42E+00	5.78E-01	5.78E-01
		84.21		6.40	-7.49E-01		1.14E+00
+	PA-233	311.98		38.60	-4.59E-01	2.17E+00	2.17E+00
+	PA-234	131.20		20.40	9.19E-02	2.91E-01	2.91E-01
		733.99		8.80	2.57E-01		7.88E-01
		946.00		12.00	-5.26E-02		6.68E-01
+	PA-234M	1001.03		0.92	2.88E+00	9.33E+00	9.33E+00
+	TH-234	63.29	*	3.80	2.63E+00	2.50E+00	2.50E+00
+	U-235	143.76		10.50	3.61E-01	5.86E-01	5.86E-01
		163.35		4.70	-1.36E-01		1.27E+00
		205.31		4.70	-7.45E-01		1.33E+00

Analysis Report for 1707092-17

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NP-237	86.50		12.60	5.10E-01	6.16E-01	6.16E-01
+	NP-239	106.10		22.70	5.94E+11	1.70E+12	1.70E+12
		228.18		10.70	-1.51E+12		3.69E+12
		277.60		14.10	2.87E+11		3.36E+12
+	AM-241	59.54		35.90	7.64E-03	1.83E-01	1.83E-01
+	AM-243	74.67	*	66.00	4.80E-01	2.09E-01	2.09E-01
+	CM-243	209.75		3.29	8.93E-01	4.96E-01	1.96E+00
		228.14		10.60	-2.23E-01		5.47E-01
		277.60		14.00	4.25E-02		4.96E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	2.40E+00	2.40E+00	1.30E+00	1.15E+00
	NA-22	1274.54		99.94	8.43E-02	8.43E-02	6.97E-03	3.93E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	4.62E-02	4.62E-02	7.06E-03	1.96E-02
+	K-40	1460.81	*	10.67	1.39E+00	1.39E+00	2.70E+01	6.66E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	7.51E-02	7.51E-02	2.52E-02	3.70E-02
		78.34		96.00	1.03E-01		4.11E-01	5.11E-02
	SC-46	889.25		99.98	1.62E-01	1.62E-01	1.82E-02	7.62E-02
		1120.51		99.99	4.11E-01		1.38E+00	2.00E-01
	V-48	983.52		99.98	6.57E+00	6.32E+00	2.20E+00	3.11E+00
		1312.10		97.50	6.32E+00		-5.57E-02	2.94E+00
	CR-51	320.08		9.83	7.94E+00	7.94E+00	-3.06E-01	3.85E+00

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
MN-54	834.83	99.97	9.67E-02	9.67E-02	-1.92E-02	4.59E-02
CO-56	846.75	99.96	1.75E-01	1.75E-01	7.62E-02	8.25E-02
	1037.75	14.03	1.48E+00		8.03E-01	7.02E-01
	1238.25	67.00	5.14E-01		7.71E-01	2.48E-01
	1771.40	15.51	9.18E-01		-2.34E-01	4.06E-01
	2598.48	16.90	4.37E-01		-9.42E-02	1.55E-01
CO-57	122.06	85.51	8.47E-02	8.47E-02	-1.01E-02	4.15E-02
	136.48	10.60	7.00E-01		3.72E-02	3.43E-01
CO-58	810.76	99.40	1.79E-01	1.79E-01	4.06E-02	8.46E-02
FE-59	1099.22	56.50	6.84E-01	6.84E-01	-3.80E-01	3.22E-01
	1291.56	43.20	9.33E-01		1.82E-01	4.37E-01
CO-60	1173.22	100.00	9.08E-02	8.00E-02	-3.40E-02	4.28E-02
	1332.49	100.00	8.00E-02		5.61E-02	3.72E-02
ZN-65	1115.52	50.75	2.44E-01	2.44E-01	1.50E-02	1.16E-01
GA-67	93.31	35.70	4.10E+08	4.10E+08	1.19E+09	2.02E+08
	208.95	2.24	5.26E+09		5.87E+08	2.57E+09
	300.22	16.00	8.58E+08		7.85E+08	4.18E+08
SE-75	121.11	16.70	5.85E-01	1.73E-01	-2.97E-01	2.87E-01
	136.00	59.20	1.73E-01		9.21E-03	8.48E-02
	264.65	59.80	1.91E-01		-5.03E-02	9.29E-02
	279.53	25.20	4.87E-01		-4.42E-02	2.37E-01
	400.65	11.40	1.07E+00		1.34E-01	5.20E-01
RB-82	776.52	13.00	8.14E+00	8.14E+00	-4.51E-01	3.85E+00
RB-83	520.41	46.00	3.35E-01	3.35E-01	4.16E-02	1.61E-01
	529.64	30.30	4.77E-01		-2.32E-01	2.28E-01
	552.65	16.40	8.47E-01		-7.28E-01	4.04E-01
KR-85	513.99	0.43	2.13E+01	2.13E+01	2.69E+01	1.03E+01
SR-85	513.99	99.27	2.67E-01	2.67E-01	3.39E-01	1.30E-01
Y-88	898.02	93.40	1.65E-01	1.22E-01	5.70E-02	7.82E-02
	1836.01	99.38	1.22E-01		1.26E-02	5.41E-02
MO-93	263.06	56.72	1.18E-01	6.36E-02	2.86E-02	5.74E-02
	684.67	99.68	6.76E-02		1.14E-02	3.21E-02
	1477.11	99.08	6.36E-02		2.33E-03	2.88E-02
NB-93M	16.57	9.43	5.47E-01	5.47E-01	-5.01E-01	2.59E-01
NB-94	702.63	100.00	7.13E-02	7.13E-02	-2.45E-02	3.39E-02
	871.10	100.00	7.64E-02		2.30E-02	3.62E-02
NB-95	765.79	99.81	7.45E-01	7.45E-01	1.06E+00	3.59E-01
NB-95M	235.69	25.00	6.91E+07	6.91E+07	-4.51E+08	3.38E+07
ZR-95	724.18	43.70	5.45E-01	4.12E-01	-9.71E-03	2.61E-01
	756.72	55.30	4.12E-01		1.00E-02	1.96E-01
MO-99	181.06	6.20	9.38E+10	5.67E+10	4.09E+10	4.58E+10
	739.58	12.80	5.67E+10		1.88E+09	2.70E+10
	778.00	4.50	1.49E+11		5.13E+10	7.03E+10
RU-103	497.08	89.00	4.26E-01	4.26E-01	1.04E-01	2.04E-01
RU-106	621.84	9.80	8.33E-01	8.33E-01	2.74E-01	3.97E-01
AG-108M	433.93	89.90	7.25E-02	7.25E-02	-1.07E-02	3.49E-02
	614.37	90.40	1.12E-01		-1.26E+00	5.41E-02
	722.95	90.50	7.94E-02		-8.25E-04	3.78E-02
CD-109	88.03	3.72	2.48E+00	2.48E+00	-1.50E+00	1.22E+00
AG-110M	657.75	93.14	9.75E-02	9.75E-02	-3.16E-02	4.64E-02
	677.61	10.53	8.60E-01		2.34E-02	4.09E-01
	706.67	16.46	6.03E-01		0.00E+00	2.87E-01
	763.93	21.98	4.87E-01		-1.29E+00	2.32E-01

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AG-110M	884.67	71.63	1.38E-01	9.75E-02	4.21E-02	6.53E-02
	1384.27	23.94	4.69E-01		-4.05E-02	2.19E-01
CD-113M	263.70	0.02	2.84E+02	2.84E+02	-1.16E+02	1.38E+02
SN-113	255.12	1.93	5.53E+00	1.89E-01	1.24E+00	2.69E+00
	391.69	64.90	1.89E-01		3.07E-02	9.16E-02
TE123M	159.00	84.10	1.27E-01	1.27E-01	-2.19E-02	6.21E-02
SB-124	602.71	97.87	2.38E-01	2.38E-01	2.10E-02	1.14E-01
	645.85	7.26	2.90E+00		-4.43E-01	1.38E+00
	722.78	11.10	2.05E+00		-2.13E-02	9.77E-01
	1691.02	49.00	3.85E-01		6.78E-02	1.71E-01
I-125	35.49	6.49	2.95E+00	2.95E+00	-1.20E+00	1.44E+00
SB-125	176.33	6.89	8.75E-01	2.60E-01	-3.30E-01	4.27E-01
	427.89	29.33	2.60E-01		1.31E-01	1.26E-01
	463.38	10.35	7.68E-01		7.25E-01	3.71E-01
	600.56	17.80	4.24E-01		1.84E-02	2.03E-01
	635.90	11.32	6.16E-01		1.91E-01	2.93E-01
SB-126	414.70	83.30	2.17E+01	2.00E+01	-5.55E+00	1.05E+01
	666.33	99.60	2.08E+01		7.81E+00	9.95E+00
	695.00	99.60	2.00E+01		4.93E+00	9.53E+00
	720.50	53.80	3.70E+01		1.31E+01	1.76E+01
SN-126	87.57	37.00	2.11E-01	2.11E-01	1.86E-01	1.04E-01
SB-127	473.00	25.00	1.89E+07	1.32E+07	5.48E+06	9.08E+06
	685.20	35.70	1.32E+07		2.22E+06	6.27E+06
	783.80	14.70	4.01E+07		2.49E+06	1.91E+07
I-129	29.78	57.00	1.18E-01	1.18E-01	-2.71E-02	5.77E-02
	33.60	13.20	4.75E-01		-2.53E-02	2.32E-01
	39.58	7.52	7.79E-01		-2.72E-01	3.81E-01
I-131	284.30	6.05	6.57E+03	4.42E+02	2.77E+03	3.20E+03
	364.48	81.20	4.42E+02		-6.38E+00	2.14E+02
	636.97	7.26	5.05E+03		4.23E+02	2.40E+03
	722.89	1.80	2.29E+04		-2.38E+02	1.09E+04
TE-132	49.72	13.10	8.93E+08	1.24E+08	-1.05E+09	4.38E+08
	228.16	88.00	1.24E+08		-5.07E+07	6.03E+07
BA-133	81.00	33.00	2.17E-01	2.00E-01	-1.06E+00	1.07E-01
	302.84	17.80	4.16E-01		2.60E-01	2.03E-01
	356.01	60.00	2.00E-01		2.32E-01	9.84E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	1.08E+05	1.08E+05	-5.26E+05	5.32E+04
CS-134	563.23	8.38	8.95E-01	1.01E-01	-6.42E-04	4.29E-01
	569.32	15.43	4.85E-01		-4.21E-02	2.32E-01
	604.70	97.60	1.01E-01		-9.04E-03	4.90E-02
	795.84	85.40	1.05E-01		6.91E-02	5.00E-02
	801.93	8.73	9.43E-01		-1.03E+00	4.48E-01
CS-135	268.24	16.00	4.54E-01	4.54E-01	-6.38E-03	2.22E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.64E+02	1.33E+01	3.29E+01	8.02E+01
	163.89	4.61	2.57E+02		-2.76E+01	1.26E+02
	176.55	13.56	8.23E+01		-3.11E+01	4.02E+01
	273.65	12.66	1.15E+02		5.98E+00	5.60E+01
	340.57	48.50	3.34E+01		5.86E-01	1.63E+01
	818.50	99.70	1.33E+01		-3.04E+00	6.27E+00

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-136	1048.07	79.60	2.00E+01	1.33E+01	-6.42E+00	9.40E+00
	1235.34	19.70	1.31E+02		5.59E+01	6.31E+01
CS-137	661.65	85.12	8.46E-02	8.46E-02	-5.75E-02	4.04E-02
LA-138	788.74	34.00	2.19E-01	9.06E-02	3.14E-02	1.04E-01
	1435.80	66.00	9.06E-02		1.69E-04	4.09E-02
CE-139	165.85	80.35	1.26E-01	1.26E-01	4.11E-02	6.15E-02
BA-140	162.64	6.70	2.04E+02	6.03E+01	-8.29E+01	9.97E+01
	304.84	4.50	3.43E+02		-2.99E+02	1.67E+02
	423.70	3.20	4.96E+02		-5.86E+01	2.40E+02
	437.55	2.00	7.63E+02		9.97E+01	3.68E+02
	537.32	25.00	6.03E+01		1.04E+01	2.89E+01
LA-140	328.77	20.50	8.21E+01	1.61E+01	2.58E+01	4.00E+01
	487.03	45.50	3.48E+01		2.06E+01	1.67E+01
	815.85	23.50	6.86E+01		2.31E+01	3.24E+01
	1596.49	95.49	1.61E+01		8.08E+00	7.28E+00
CE-141	145.44	48.40	1.09E+00	1.09E+00	1.64E-01	5.33E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	6.92E-01	6.92E-01	-9.87E-02	3.39E-01
PM-144	476.78	42.00	1.95E-01	8.65E-02	1.08E-02	9.37E-02
	618.01	98.60	9.09E-02		-6.69E-04	4.36E-02
	696.49	99.49	8.65E-02		0.00E+00	4.12E-02
PM-145	36.85	21.70	2.81E-01	1.55E-01	2.99E-02	1.37E-01
	37.36	39.70	1.55E-01		7.64E-02	7.60E-02
	42.30	15.10	3.85E-01		-2.55E-01	1.88E-01
	72.40	2.31	3.64E+00		-4.77E+00	1.80E+00
PM-146	453.90	39.94	1.82E-01	1.82E-01	1.62E-01	8.78E-02
	735.90	14.01	5.21E-01		1.29E-01	2.48E-01
	747.13	13.10	5.35E-01		-1.82E-01	2.53E-01
ND-147	91.11	28.90	1.64E+02	1.64E+02	4.39E+02	8.09E+01
	531.02	13.10	2.86E+02		1.15E+01	1.37E+02
PM-149	285.90	3.10	1.04E+14	1.04E+14	6.95E+13	5.09E+13
EU-152	121.78	20.50	2.71E-01	2.71E-01	-1.38E-01	1.33E-01
	244.69	5.40	1.36E+00		-1.84E-01	6.64E-01
	344.27	19.13	3.65E-01		-1.71E-02	1.77E-01
	778.89	9.20	7.49E-01		1.96E-01	3.54E-01
	964.01	10.40	8.74E-01		-2.49E+00	4.16E-01
	1085.78	7.22	1.09E+00		1.55E-01	5.13E-01
	1112.02	9.60	9.07E-01		1.02E-01	4.28E-01
	1407.95	14.94	6.08E-01		2.14E-01	2.85E-01
GD-153	97.43	31.30	2.51E-01	2.51E-01	6.54E-02	1.23E-01
	103.18	22.20	3.34E-01		-6.39E-02	1.64E-01
EU-154	123.07	40.50	1.44E-01	1.44E-01	4.66E-02	7.04E-02
	723.30	19.70	3.72E-01		-3.87E-03	1.77E-01
	873.19	11.50	6.74E-01		3.60E-01	3.19E-01
	996.32	10.30	7.45E-01		-8.44E-01	3.51E-01
	1004.76	17.90	4.79E-01		1.44E-01	2.27E-01
	1274.45	35.50	2.25E-01		1.86E-02	1.05E-01
EU-155	86.50	30.90	2.61E-01	2.61E-01	2.16E-01	1.29E-01
	105.30	20.70	2.81E-01		2.84E-02	1.38E-01
EU-156	811.77	10.40	6.41E+01	6.41E+01	2.35E+01	3.02E+01
	1153.47	7.20	1.45E+02		1.47E+02	6.91E+01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-156	1230.71		8.90	1.09E+02	6.41E+01	-1.75E+01	5.18E+01
	HO-166M	184.41		72.60	1.11E-01	1.11E-01	3.23E-01	5.45E-02
		280.45		29.60	2.29E-01		-2.38E-02	1.11E-01
		410.94		11.10	6.19E-01		4.01E-02	2.99E-01
		711.69		54.10	1.31E-01		2.86E-02	6.21E-02
	TM-171	66.72		0.14	5.63E+01	5.63E+01	1.81E+01	2.77E+01
	HF-172	67.35		5.31	1.48E+00	5.62E-01	4.96E-01	7.26E-01
		125.81		11.30	5.62E-01		-3.36E-01	2.75E-01
	LU-172	181.53		20.60	9.41E+03	4.41E+03	4.11E+03	4.60E+03
		900.72		29.81	8.54E+03		-9.01E+01	4.04E+03
		1093.66		62.50	4.41E+03		1.62E+03	2.08E+03
	LU-173	100.72		5.24	1.25E+00	4.06E-01	3.11E-01	6.15E-01
		272.11		21.20	4.06E-01		-9.62E-02	1.98E-01
	HF-175	343.40		84.00	2.24E-01	2.24E-01	-1.03E-02	1.09E-01
	LU-176	88.34		13.30	5.98E-01	6.84E-02	-3.62E-01	2.95E-01
		201.83		86.00	7.11E-02		-1.74E-02	3.47E-02
		306.78		94.00	6.84E-02		9.24E-03	3.32E-02
	HF-181	133.02		41.70	7.24E-01	4.23E-01	-1.03E-01	3.55E-01
		345.85		17.20	2.15E+00		-9.69E-02	1.04E+00
		482.03		82.80	4.23E-01		5.46E-02	2.04E-01
	TA-182	67.75		41.20	3.15E-01	3.15E-01	1.06E-01	1.55E-01
		1121.30		34.90	9.42E-01		2.83E+00	4.58E-01
		1189.05		16.23	1.00E+00		-3.48E-01	4.72E-01
		1221.41		26.98	6.69E-01		-4.58E-01	3.17E-01
		1231.02		11.44	1.60E+00		-2.56E-01	7.58E-01
	IR-192	308.46		29.68	5.42E-01	3.41E-01	2.74E-02	2.63E-01
		468.07		48.10	3.41E-01		4.56E-02	1.64E-01
	HG-203	279.19		77.30	3.95E-01	3.95E-01	-3.58E-02	1.93E-01
	TL-204	374.74		94.11	7.32E-02	7.32E-02	2.32E-02	3.54E-02
		899.15		99.16	8.26E-02		1.88E-02	3.91E-02
		911.74		91.10	1.52E-01		3.32E-01	7.36E-02
	BI-207	569.67		97.72	7.18E-02	7.18E-02	-8.87E-03	3.44E-02
		1063.62		74.90	9.41E-02		1.57E-02	4.39E-02
+	TL-208	583.14	*	30.22	3.28E-01	1.49E-01	1.28E+00	1.59E-01
		860.37	*	4.48	1.97E+00		9.56E-01	9.42E-01
		2614.66	*	35.85	1.49E-01		1.06E+00	6.22E-02
	BI-210M	262.00		45.00	1.46E-01	1.46E-01	-2.54E-02	7.12E-02
		300.00		23.00	3.47E-01		3.24E-01	1.69E-01
	PB-210	46.50		4.25	1.54E+00	1.54E+00	1.88E+00	7.54E-01
	PB-211	404.84		2.90	2.46E+00	2.46E+00	3.08E-01	1.19E+00
		831.96		2.90	2.58E+00		4.10E-02	1.22E+00
+	BI-212	727.17	*	11.80	8.33E-01	8.33E-01	6.85E-01	4.02E-01
		1620.62		2.75	2.37E+00		5.17E-01	1.07E+00
+	PB-212	238.63	*	44.60	2.98E-01	2.98E-01	1.43E+00	1.47E-01
		300.09		3.41	2.34E+00		2.19E+00	1.14E+00
+	BI-214	609.31	*	46.30	2.24E-01	2.24E-01	3.47E+00	1.08E-01
		1120.29	*	15.10	1.05E+00		4.24E+00	5.08E-01
		1764.49	*	15.80	2.97E-01		4.77E+00	1.27E-01
		2204.22	*	4.98	1.65E+00		3.99E+00	7.48E-01
+	PB-214	295.21	*	19.19	4.69E-01	3.56E-01	3.66E+00	2.30E-01
		351.92	*	37.19	3.56E-01		3.84E+00	1.75E-01
	RN-219	401.80		6.50	1.07E+00	1.07E+00	1.48E-01	5.16E-01
	RA-223	323.87		3.88	1.73E+00	1.73E+00	-1.38E+00	8.42E-01

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	RA-224	240.98	*	3.95	3.37E+00	3.37E+00	8.32E+00	1.67E+00
	RA-225	40.00		31.00	2.10E+01	2.10E+01	-5.10E+00	1.02E+01
+	RA-226	186.21	*	3.28	2.85E+00	2.85E+00	7.56E+00	1.40E+00
	TH-227	50.10		8.40	7.25E-01	6.36E-01	-4.41E-01	3.56E-01
		236.00		11.50	6.36E-01		-4.15E+00	3.11E-01
		256.20		6.30	1.09E+00		9.07E-01	5.33E-01
	AC-228	338.32		11.40	7.08E-01	4.75E-01	1.09E+00	3.46E-01
		911.07		27.70	4.75E-01		1.04E+00	2.30E-01
		969.11		16.60	7.49E-01		1.08E+00	3.61E-01
	TH-230	48.44		16.90	3.87E-01	3.87E-01	3.66E-01	1.90E-01
		62.85		4.60	1.66E+00		3.00E+00	8.17E-01
		67.67		0.37	1.91E+01		6.42E+00	9.41E+00
	PA-231	283.67		1.60	4.20E+00	3.16E+00	-9.34E-01	2.05E+00
		302.67		2.30	3.16E+00		1.97E+00	1.54E+00
	TH-231	25.64		14.70	5.78E-01	5.78E-01	-2.42E+00	2.83E-01
		84.21		6.40	1.14E+00		-7.49E-01	5.62E-01
	PA-233	311.98		38.60	2.17E+00	2.17E+00	-4.59E-01	1.05E+00
	PA-234	131.20		20.40	2.91E-01	2.91E-01	9.19E-02	1.43E-01
		733.99		8.80	7.88E-01		2.57E-01	3.74E-01
		946.00		12.00	6.68E-01		-5.26E-02	3.16E-01
	PA-234M	1001.03		0.92	9.33E+00	9.33E+00	2.88E+00	4.42E+00
+	TH-234	63.29	*	3.80	2.50E+00	2.50E+00	2.63E+00	1.24E+00
	U-235	143.76		10.50	5.86E-01	5.86E-01	3.61E-01	2.87E-01
		163.35		4.70	1.27E+00		-1.36E-01	6.21E-01
		205.31		4.70	1.33E+00		-7.45E-01	6.48E-01
	NP-237	86.50		12.60	6.16E-01	6.16E-01	5.10E-01	3.04E-01
	NP-239	106.10		22.70	1.70E+12	1.70E+12	5.94E+11	8.35E+11
		228.18		10.70	3.69E+12		-1.51E+12	1.80E+12
		277.60		14.10	3.36E+12		2.87E+11	1.64E+12
	AM-241	59.54		35.90	1.83E-01	1.83E-01	7.64E-03	8.97E-02
+	AM-243	74.67	*	66.00	2.09E-01	2.09E-01	4.80E-01	1.04E-01
	CM-243	209.75		3.29	1.96E+00	4.96E-01	8.93E-01	9.58E-01
		228.14		10.60	5.47E-01		-2.23E-01	2.66E-01
		277.60		14.00	4.96E-01		4.25E-02	2.42E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

Analysis Report for 1707092-17

HTC-A09-S001-1218-01

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: HTC-A09-S001-1218-01

Elapsed Live time: 3600
Elapsed Real Time: 3602

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	104	150	131	226	540	216
25:	142	140	131	125	110	103	115	149
33:	122	108	112	130	132	132	140	140
41:	130	121	147	148	139	163	272	198
49:	179	159	197	178	179	194	195	193
57:	186	215	229	224	238	237	296	524
65:	297	272	248	294	304	278	284	295
73:	308	376	702	613	801	1031	379	329
81:	266	264	240	309	342	245	376	478
89:	267	355	312	285	583	438	209	212
97:	166	192	191	189	185	160	160	161
105:	168	182	170	151	172	160	156	170
113:	197	181	166	146	159	159	160	132
121:	138	164	157	151	166	160	174	149
129:	176	197	151	150	171	167	146	166
137:	181	133	132	132	145	153	166	193
145:	174	154	170	149	189	144	173	154
153:	138	172	166	169	152	151	147	150
161:	140	136	133	151	136	151	149	138
169:	134	142	133	118	104	133	118	110
177:	117	122	115	131	128	145	113	120
185:	202	370	350	155	121	124	124	122
193:	154	107	116	111	121	116	120	114
201:	114	125	123	121	129	131	106	123
209:	144	141	103	119	110	116	101	108
217:	87	109	93	82	109	113	126	87
225:	97	108	99	101	76	88	93	106
233:	90	93	109	125	125	264	733	308
241:	192	381	280	121	98	84	85	81
249:	81	81	73	62	79	89	59	95
257:	88	76	78	85	70	62	63	84
265:	62	74	65	57	82	125	116	79
273:	81	75	82	66	94	88	70	66
281:	49	71	66	78	68	62	80	74
289:	73	68	57	55	75	109	484	606
297:	146	67	65	93	116	71	64	53
305:	56	56	67	56	49	51	49	38
313:	69	59	56	57	45	44	42	59
321:	53	51	59	61	59	45	66	84
329:	76	73	60	50	69	52	49	47
337:	54	94	170	56	71	46	61	47
345:	55	48	61	59	74	71	266	991
353:	708	101	66	47	65	54	42	34
361:	44	41	51	31	42	42	33	44

369:	44	40	35	47	37	45	52	34

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Channel								
377:	44	42	40	41	33	41	39	45
385:	38	41	50	51	43	50	41	49
393:	41	38	34	30	37	38	44	44
401:	41	42	44	45	44	50	40	53
409:	43	47	35	46	34	30	36	39
417:	46	30	43	36	41	36	40	28
425:	54	39	37	53	30	36	43	41
433:	33	32	26	26	36	33	41	41
441:	38	34	33	42	26	40	26	31
449:	27	29	38	36	38	34	43	43
457:	27	28	25	36	38	37	70	55
465:	27	24	30	29	28	36	30	35
473:	27	34	22	32	29	26	41	37
481:	36	26	19	35	25	26	37	38
489:	33	26	32	23	28	28	25	23
497:	30	23	22	38	23	25	19	25
505:	21	22	17	31	37	67	138	77
513:	45	34	28	20	20	35	25	30
521:	27	31	26	26	35	30	19	26
529:	23	26	20	24	32	27	24	27
537:	21	24	27	20	20	18	30	30
545:	35	26	26	23	29	26	24	15
553:	22	19	24	16	32	27	25	20
561:	27	18	37	27	26	19	21	27
569:	35	27	24	17	27	21	38	28
577:	26	23	21	31	32	42	169	135
585:	45	36	26	20	17	23	15	18
593:	26	16	30	18	27	23	21	29
601:	27	20	23	24	24	33	37	116
609:	620	619	149	22	29	36	48	28
617:	27	14	22	19	19	20	20	25
625:	20	14	18	18	17	21	21	15
633:	17	22	15	24	18	16	17	11
641:	18	17	25	20	18	14	23	17
649:	14	20	23	17	15	23	21	19
657:	23	20	16	20	18	28	21	17
665:	28	42	21	14	21	21	15	18
673:	25	16	16	11	16	24	24	23
681:	16	16	17	20	12	16	22	16
689:	12	17	21	27	20	18	22	19
697:	12	23	20	15	16	19	23	20
705:	16	24	20	24	15	28	20	22
713:	8	22	13	9	17	23	15	21
721:	22	16	19	22	18	11	55	32
729:	19	26	13	14	13	11	18	23
737:	25	12	19	13	21	27	17	27
745:	10	12	15	9	15	20	16	18
753:	25	19	15	29	20	14	17	24
761:	20	16	18	26	24	25	23	66
769:	64	21	23	30	19	18	15	11
777:	14	14	16	16	18	13	10	16
785:	31	41	24	10	10	13	14	9
793:	10	23	30	30	13	20	19	20

801:	16	8	24	19	14	38	26	13

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Channel								
809:	9	13	14	11	14	18	17	8
817:	16	13	14	9	14	10	17	20
825:	14	18	15	12	10	19	15	13
833:	17	15	23	18	18	16	18	22
841:	13	18	14	20	11	15	19	18
849:	10	8	6	11	10	12	12	22
857:	22	12	16	29	30	20	16	15
865:	14	13	19	13	11	18	11	17
873:	21	18	9	13	9	13	19	10
881:	20	18	12	10	11	15	16	8
889:	14	11	10	15	14	12	17	20
897:	12	19	17	13	17	10	21	21
905:	29	20	19	7	16	45	111	86
913:	35	16	22	13	19	15	19	16
921:	14	10	15	12	9	10	14	13
929:	15	18	9	17	24	54	37	13
937:	18	13	13	14	20	12	18	18
945:	10	18	7	15	20	17	14	21
953:	10	11	10	9	9	17	13	15
961:	9	12	16	18	36	22	17	38
969:	99	51	15	13	14	18	16	17
977:	12	12	12	14	12	9	16	13
985:	21	25	11	18	10	18	16	11
993:	11	14	10	15	13	9	13	22
1001:	26	20	12	10	13	14	11	10
1009:	11	12	19	12	9	11	8	7
1017:	14	4	11	15	18	12	17	7
1025:	15	14	13	17	8	8	9	11
1033:	12	13	12	17	14	17	20	13
1041:	13	9	19	10	9	10	10	9
1049:	22	16	14	10	21	14	14	9
1057:	10	5	13	9	13	8	9	10
1065:	10	7	10	17	19	9	14	6
1073:	11	11	17	10	19	14	10	14
1081:	6	7	13	5	15	17	12	11
1089:	9	13	9	11	14	14	16	18
1097:	7	17	15	10	10	9	17	16
1105:	12	13	10	9	16	13	9	14
1113:	15	16	12	19	13	23	53	149
1121:	130	53	14	11	16	26	14	10
1129:	10	21	13	12	12	18	16	11
1137:	8	8	15	15	15	13	8	14
1145:	13	15	12	9	10	17	18	15
1153:	15	23	31	23	18	10	18	16
1161:	20	12	6	14	11	14	12	25
1169:	12	17	19	16	14	10	8	7
1177:	13	15	16	16	16	11	12	16
1185:	13	13	8	17	13	13	13	14
1193:	22	10	17	23	9	15	15	14
1201:	12	9	14	14	21	14	13	15
1209:	17	7	6	18	14	15	13	19
1217:	18	17	21	12	13	18	15	13
1225:	20	24	16	15	17	14	19	17

1233:	13	16	16	25	41	67	50	18

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Channel								
1241:	15	21	18	18	14	20	10	13
1249:	14	11	16	11	7	18	15	13
1257:	9	15	8	9	6	11	10	12
1265:	16	11	14	7	6	6	9	12
1273:	5	10	9	7	11	8	10	16
1281:	17	13	12	8	8	12	10	14
1289:	6	10	14	11	8	10	9	7
1297:	9	13	9	10	8	14	10	6
1305:	6	6	14	13	8	9	10	7
1313:	5	9	5	11	6	9	5	10
1321:	5	6	10	11	5	8	4	2
1329:	8	6	8	7	12	4	12	4
1337:	7	8	6	7	14	7	5	5
1345:	9	7	8	11	5	4	7	3
1353:	7	5	6	12	5	5	9	10
1361:	6	2	5	6	5	3	3	8
1369:	6	3	4	6	6	5	7	16
1377:	34	34	20	7	5	8	11	14
1385:	14	7	7	9	5	7	4	10
1393:	6	4	3	7	5	7	3	7
1401:	11	19	2	6	4	6	19	20
1409:	13	4	6	6	5	6	7	6
1417:	3	10	7	6	7	2	3	4
1425:	11	6	8	8	6	3	4	6
1433:	3	8	4	1	3	4	5	4
1441:	4	8	4	5	8	6	5	2
1449:	7	6	8	5	4	3	7	10
1457:	7	25	140	404	542	201	26	8
1465:	19	17	12	6	4	1	2	4
1473:	6	2	7	0	4	3	8	3
1481:	8	3	4	6	2	2	3	2
1489:	4	3	3	5	3	7	9	7
1497:	6	3	8	3	4	4	2	10
1505:	4	3	4	14	14	5	5	6
1513:	8	5	2	3	3	4	3	4
1521:	5	6	6	1	3	4	4	2
1529:	4	0	6	2	5	5	8	5
1537:	5	4	3	5	3	4	4	3
1545:	5	4	3	4	3	5	3	5
1553:	2	8	3	1	5	4	6	7
1561:	3	3	4	3	5	1	3	1
1569:	7	3	1	1	0	4	2	3
1577:	5	5	2	4	3	13	4	6
1585:	5	4	8	8	11	5	7	1
1593:	3	9	6	5	1	6	1	3
1601:	0	7	1	4	2	2	2	2
1609:	1	2	5	0	4	1	3	3
1617:	1	3	5	10	5	3	2	4
1625:	3	2	4	2	4	9	5	4
1633:	3	0	6	1	3	0	1	3
1641:	1	3	2	2	3	4	0	4
1649:	1	2	2	4	2	1	3	1
1657:	3	6	3	6	10	5	8	2

1665:	1	3	2	0	4	1	3	0

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Channel								
1673:	0	2	3	1	2	3	1	0
1681:	3	0	2	1	3	1	5	2
1689:	1	1	3	6	4	3	3	2
1697:	1	2	2	1	1	0	3	4
1705:	2	3	2	3	0	2	2	1
1713:	4	0	2	3	1	2	4	3
1721:	4	3	2	1	2	2	5	9
1729:	29	9	10	4	3	1	0	4
1737:	2	2	1	1	2	1	5	1
1745:	2	2	3	1	0	3	0	1
1753:	1	3	2	3	6	1	0	1
1761:	6	17	55	103	88	20	6	6
1769:	5	1	0	0	2	1	3	0
1777:	1	1	1	3	0	1	2	0
1785:	2	1	2	1	5	2	1	2
1793:	1	1	0	1	5	3	3	1
1801:	3	4	2	3	3	1	1	1
1809:	5	0	0	0	1	1	1	3
1817:	2	3	4	3	2	1	3	3
1825:	2	1	1	2	2	2	4	0
1833:	4	1	3	2	9	3	2	3
1841:	2	0	3	1	3	10	8	12
1849:	3	5	0	1	3	1	1	5
1857:	1	5	3	2	0	3	1	2
1865:	1	0	1	2	2	1	2	4
1873:	0	0	2	3	0	1	0	0
1881:	3	1	1	1	0	0	4	1
1889:	2	3	2	3	3	3	3	3
1897:	2	1	1	1	0	2	1	3
1905:	3	2	0	1	2	4	2	5
1913:	1	7	2	0	2	1	2	1
1921:	2	2	3	1	0	3	0	1
1929:	1	0	0	1	0	1	3	3
1937:	2	1	1	0	2	2	0	1
1945:	0	1	0	1	1	2	2	4
1953:	2	4	0	3	4	2	0	3
1961:	2	2	0	0	3	2	0	0
1969:	0	2	2	2	2	1	4	1
1977:	2	2	2	2	1	2	1	0
1985:	3	0	1	2	0	0	0	0
1993:	0	2	1	1	0	1	0	2
2001:	0	0	2	0	3	3	2	0
2009:	3	2	1	1	0	2	1	4
2017:	2	2	0	0	1	1	2	0
2025:	2	2	2	2	2	2	2	3
2033:	1	1	2	1	2	4	0	2
2041:	2	1	0	1	3	3	2	1
2049:	0	0	1	3	2	0	2	0
2057:	1	2	0	0	5	1	2	4
2065:	1	1	0	2	1	1	4	0
2073:	1	1	0	0	1	1	1	1
2081:	0	0	1	1	1	1	1	2
2089:	1	0	0	0	2	1	0	3

2097:	3	4	2	2	5	8	8	5

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Channel								
2105:	2	2	2	1	2	1	2	2
2113:	1	0	1	5	7	8	3	1
2121:	1	1	2	2	1	1	1	3
2129:	2	3	1	1	0	0	1	1
2137:	0	1	1	0	3	1	0	0
2145:	0	1	1	1	2	1	1	1
2153:	2	0	0	0	0	1	4	1
2161:	2	1	0	0	1	0	0	0
2169:	2	0	0	1	1	1	1	3
2177:	3	0	2	3	2	3	2	1
2185:	0	0	2	1	0	0	2	2
2193:	0	2	0	3	1	0	5	1
2201:	7	21	28	14	9	4	1	2
2209:	2	2	1	1	2	0	2	1
2217:	1	2	2	1	1	1	0	1
2225:	2	0	3	1	1	0	1	0
2233:	0	2	4	2	2	0	0	0
2241:	0	1	3	1	1	1	1	1
2249:	0	1	2	1	0	0	2	1
2257:	0	2	1	0	0	2	1	3
2265:	1	0	0	0	1	0	2	0
2273:	1	2	0	0	0	0	0	1
2281:	3	1	2	2	1	2	1	0
2289:	2	1	4	4	4	4	0	1
2297:	0	2	1	1	3	1	0	0
2305:	1	1	4	1	2	0	2	1
2313:	1	0	1	0	0	1	1	3
2321:	1	2	0	1	2	2	0	2
2329:	1	2	4	1	0	3	1	1
2337:	2	1	1	0	0	1	2	1
2345:	1	4	1	0	2	1	1	1
2353:	3	2	1	3	2	2	3	0
2361:	0	1	2	0	1	2	5	2
2369:	1	1	1	1	1	2	1	1
2377:	2	0	1	3	0	2	3	2
2385:	2	1	2	2	0	0	3	2
2393:	0	2	0	1	3	2	2	2
2401:	0	0	0	0	1	1	4	1
2409:	2	1	2	1	2	3	1	0
2417:	1	0	1	1	2	3	1	0
2425:	2	2	1	2	0	0	1	1
2433:	1	2	1	1	0	2	2	0
2441:	0	1	2	0	3	9	11	5
2449:	3	2	2	1	2	0	1	3
2457:	1	0	2	1	0	1	2	1
2465:	2	3	0	0	0	1	0	1
2473:	0	2	2	1	0	0	1	1
2481:	2	0	0	0	0	1	0	1
2489:	1	0	0	1	1	1	1	2
2497:	3	1	1	2	0	0	2	1
2505:	2	1	1	0	0	3	0	0
2513:	0	1	1	0	1	0	1	0
2521:	1	0	0	0	1	0	0	0

2529:	0	0	0	2	1	0	0	1

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Channel								
2537:	0	1	0	0	0	0	0	0
2545:	2	0	0	0	0	0	0	0
2553:	0	0	0	0	0	0	0	1
2561:	1	2	0	2	1	2	3	1
2569:	0	2	0	0	0	1	0	2
2577:	0	0	0	1	0	0	0	0
2585:	2	0	1	0	0	0	0	0
2593:	0	0	1	0	0	0	0	0
2601:	1	1	1	0	1	1	0	0
2609:	0	2	3	17	40	31	22	6
2617:	1	2	0	1	0	0	0	0
2625:	0	0	0	0	1	1	0	2
2633:	0	1	0	0	0	2	0	0
2641:	2	0	0	1	0	0	0	1
2649:	0	0	0	0	0	0	1	1
2657:	1	1	0	0	0	0	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	0	0	2	0	1	0	2
2681:	0	0	0	0	0	0	0	0
2689:	0	0	0	0	0	1	1	0
2697:	0	0	0	0	0	0	0	0
2705:	0	0	0	0	0	0	0	0
2713:	0	1	0	0	0	0	1	0
2721:	1	0	0	0	1	0	0	3
2729:	1	1	0	0	0	0	1	0
2737:	1	0	0	0	0	2	0	1
2745:	0	0	2	1	0	0	1	0
2753:	0	2	1	0	0	0	0	1
2761:	0	0	1	0	2	0	0	2
2769:	0	0	0	0	1	1	1	0
2777:	0	0	1	0	0	0	0	0
2785:	1	0	0	1	0	0	0	0
2793:	0	1	1	0	0	0	1	0
2801:	0	0	1	0	0	0	1	0
2809:	0	0	0	0	0	0	0	0
2817:	0	0	0	1	0	0	0	0
2825:	0	0	1	2	0	0	0	0
2833:	0	0	2	1	0	0	0	0
2841:	0	0	0	0	0	1	1	0
2849:	0	0	2	1	1	0	0	0
2857:	0	0	0	0	0	0	0	1
2865:	1	0	1	0	0	0	0	1
2873:	1	0	0	0	0	0	0	0
2881:	0	1	0	0	0	1	0	0
2889:	0	0	0	0	0	0	1	0
2897:	1	1	1	0	0	0	0	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	0	0	0	1	0
2921:	0	1	0	0	0	0	0	0
2929:	0	1	0	0	0	1	0	0
2937:	0	0	0	1	0	0	0	0
2945:	1	0	0	0	0	0	0	0
2953:	1	1	0	0	0	1	0	1

2961:	0	0	0	0	1	0	0	1

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Channel								
2969:	0	0	0	0	0	1	1	0
2977:	2	0	0	0	0	0	0	0
2985:	1	0	0	0	0	0	0	0
2993:	0	0	0	0	1	1	0	1
3001:	1	1	1	0	1	0	0	0
3009:	1	0	1	0	1	0	0	0
3017:	0	0	0	1	1	0	0	0
3025:	0	1	0	0	1	0	1	0
3033:	1	0	0	1	0	0	0	0
3041:	0	0	0	1	2	0	0	0
3049:	0	1	0	0	0	0	0	0
3057:	0	0	0	0	0	0	1	0
3065:	0	0	0	1	0	0	1	0
3073:	0	0	0	1	0	0	0	0
3081:	0	1	0	0	1	0	0	0
3089:	0	0	0	0	0	0	0	1
3097:	0	0	0	0	0	1	0	0
3105:	0	0	0	0	0	0	0	0
3113:	0	0	0	0	0	0	1	0
3121:	0	0	0	1	0	0	0	0
3129:	0	1	0	0	0	0	1	0
3137:	0	0	0	0	0	0	0	1
3145:	0	0	1	1	0	0	0	0
3153:	1	0	0	1	2	0	0	0
3161:	0	0	1	0	0	0	0	0
3169:	0	0	0	0	0	1	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	0	0	1	0	0
3193:	1	0	0	2	0	0	0	0
3201:	1	0	0	0	0	1	0	0
3209:	1	1	0	0	0	1	0	0
3217:	1	0	0	0	0	1	0	0
3225:	0	0	1	0	0	0	0	0
3233:	0	0	0	0	0	0	0	1
3241:	0	1	0	0	0	0	0	0
3249:	0	1	0	0	0	0	0	0
3257:	0	0	0	1	0	1	0	0
3265:	1	1	0	0	0	0	1	0
3273:	0	0	0	0	2	0	0	0
3281:	0	1	0	0	0	0	1	0
3289:	0	0	0	0	0	0	1	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	0
3321:	0	0	0	0	1	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	1	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	1	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	1	1	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	0	0

3393:	0	0	0	0	0	0	0	0

Sample Title: HTC-A09-S001-1218-01

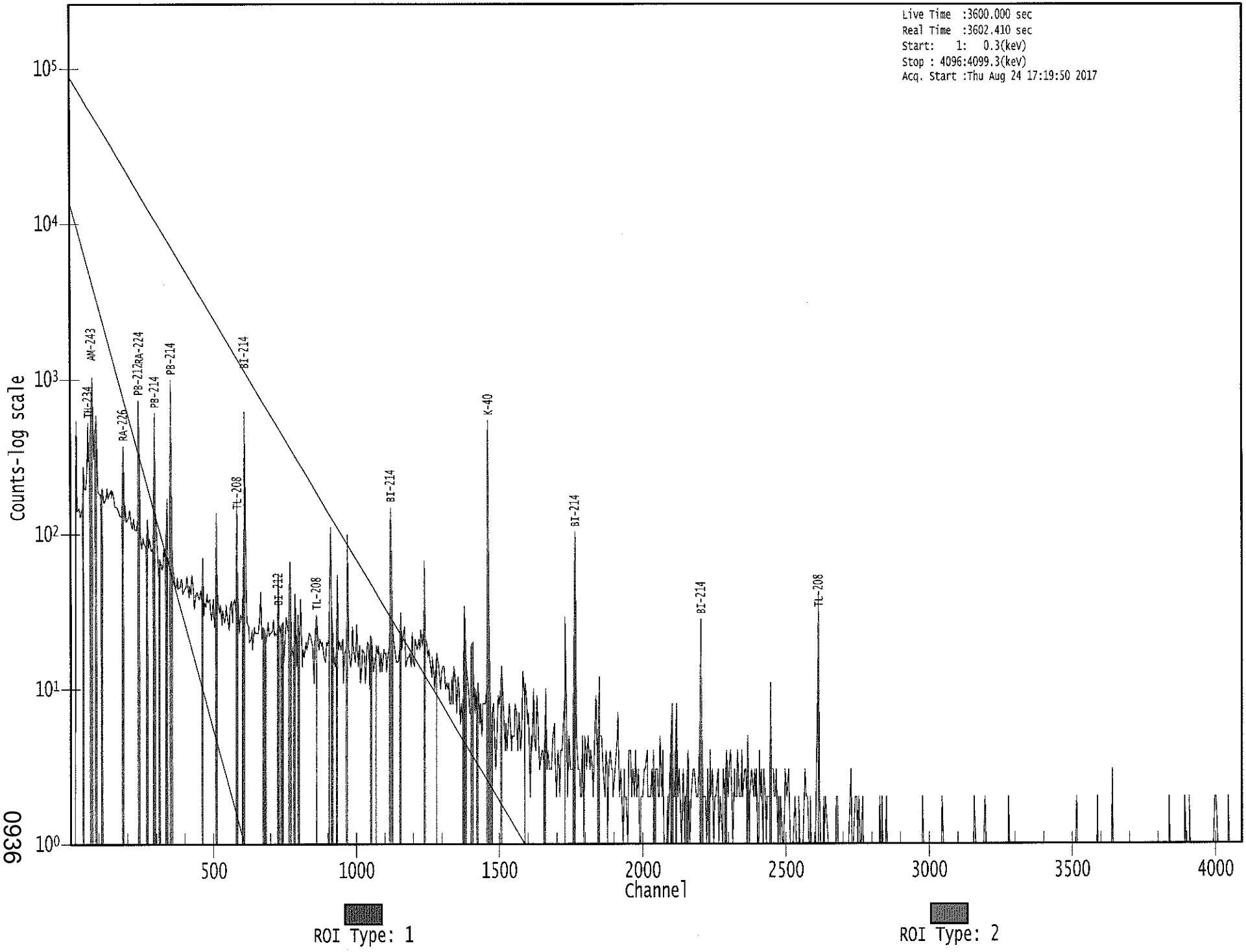
Channel								
3401:	0	0	0	0	0	1	0	0
3409:	0	0	0	1	1	0	0	1
3417:	0	1	0	0	0	0	0	0
3425:	1	0	1	0	0	0	0	0
3433:	0	0	1	0	0	0	0	0
3441:	1	0	0	1	0	1	0	0
3449:	0	0	0	0	0	0	1	0
3457:	0	1	0	0	0	0	0	0
3465:	0	0	1	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	1	1	1	0	0	0
3489:	0	0	0	1	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	1	0	0	0	1	0	1
3513:	0	0	0	2	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	1	0	0	0	0	1	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	1	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	1	0	0	0
3569:	1	0	0	1	0	0	0	0
3577:	0	0	1	1	0	0	0	0
3585:	1	0	0	2	0	1	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	1	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	1	0	0	3
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	1	0	0
3657:	0	0	0	1	1	1	0	0
3665:	0	0	1	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	1	0	0	0	0	0	0
3713:	0	0	0	1	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	1	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	1	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	1	0	0	0	0	1	0	0
3777:	0	1	0	0	0	0	0	1
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	1	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A09-S001-1218-01

Channel								
3833:	0	0	0	0	0	2	0	0
3841:	1	0	0	0	0	0	0	1
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	1	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	1	0	0	1
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	2	0	0	0
3897:	1	1	0	0	0	0	0	1
3905:	0	0	0	0	2	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	1	0	0
3929:	0	0	0	1	0	0	0	1
3937:	0	0	0	1	0	0	0	1
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	1
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	1	0	0	0	0
3977:	0	0	0	0	0	0	0	1
3985:	0	0	0	0	0	0	0	0
3993:	1	0	0	0	0	2	0	0
4001:	0	0	2	0	0	0	0	1
4009:	0	0	1	1	0	0	0	0
4017:	0	1	0	0	0	0	0	0
4025:	0	0	0	0	0	1	0	0
4033:	1	0	0	0	0	0	0	0
4041:	0	0	0	0	2	0	0	0
4049:	1	0	0	0	0	0	0	0
4057:	1	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	1	0	0	0	0	0	0	0
4089:	1	0	0	0	0	1	0	0

0000055928.CNF



0936

YCB 8/24/17

Apex-Gamma

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-18
Sample Description	: HTC-A09-S001-1824-01
Sample Type	: SOIL
Sample Size	: 5.471E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 7:43:55AM
Acquisition Started	: 8/24/2017 5:19:57PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.4 seconds
Dead Time	: 0.04 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 29 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 8/19/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55929

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 6:20:35PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.67	47.02	0.0000	0.00
2	68.83	69.15	0.0000	0.00
3	76.32	76.64	0.0000	0.00
4	87.28	87.58	0.0000	0.00
5	93.36	93.66	0.0000	0.00
6	105.55	105.83	0.0000	0.00
7	153.28	153.51	0.0000	0.00
8	185.95	186.14	0.0000	0.00
9	238.68	238.82	0.0000	0.00
10	241.93	242.07	0.0000	0.00
11	259.39	259.51	0.0000	0.00
12	270.19	270.30	0.0000	0.00
13	295.33	295.41	0.0000	0.00
14	300.18	300.25	0.0000	0.00
15	338.95	338.99	0.0000	0.00
16	351.96	351.98	0.0000	0.00
17	463.06	462.96	0.0000	0.00
18	511.19	511.04	0.0000	0.00
19	523.30	523.14	0.0000	0.00
20	583.54	583.32	0.0000	0.00
21	606.02	605.78	0.0000	0.00
22	609.54	609.29	0.0000	0.00
23	664.50	664.20	0.0000	0.00
24	698.89	698.56	0.0000	0.00
25	703.75	703.41	0.0000	0.00
26	726.88	726.52	0.0000	0.00
27	769.04	768.63	0.0000	0.00
28	841.96	841.49	0.0000	0.00
29	860.53	860.04	0.0000	0.00
30	911.87	911.33	0.0000	0.00
31	967.88	967.29	0.0000	0.00
32	1109.98	1109.26	0.0000	0.00
33	1120.78	1120.06	0.0000	0.00
34	1238.18	1237.34	0.0000	0.00
35	1280.93	1280.06	0.0000	0.00
36	1378.15	1377.19	0.0000	0.00
37	1408.46	1407.48	0.0000	0.00
38	1461.27	1460.25	0.0000	0.00
39	1474.93	1473.89	0.0000	0.00
40	1495.77	1494.72	0.0000	0.00
41	1508.86	1507.80	0.0000	0.00
42	1622.74	1621.58	0.0000	0.00

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1631.01	1629.84	0.0000	0.00
44	1656.05	1654.87	0.0000	0.00
45	1694.53	1693.32	0.0000	0.00
46	1705.29	1704.07	0.0000	0.00
47	1730.68	1729.44	0.0000	0.00
48	1765.14	1763.87	0.0000	0.00
49	1828.12	1826.80	0.0000	0.00
50	1886.04	1884.68	0.0000	0.00
51	1970.67	1969.24	0.0000	0.00
52	2053.18	2051.70	0.0000	0.00
53	2104.65	2103.12	0.0000	0.00
54	2115.91	2114.38	0.0000	0.00
55	2203.67	2202.08	0.0000	0.00
56	2377.28	2375.56	0.0000	0.00
57	2431.60	2429.85	0.0000	0.00
58	2439.35	2437.60	0.0000	0.00
59	2484.45	2482.66	0.0000	0.00
60	2615.10	2613.23	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 6:20:35PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	46.67	45 -	50	47.02	1.27E+02	73.86	9.99E+02	1.22
	2	68.83	67 -	71	69.15	8.28E+01	77.18	1.26E+03	2.71
	3	76.32	72 -	81	76.64	1.32E+03	151.55	2.51E+03	3.87
	4	87.28	86 -	89	87.58	9.12E+01	72.44	1.23E+03	1.46
	5	93.36	92 -	97	93.66	2.92E+02	87.70	1.26E+03	1.27
	6	105.55	104 -	108	105.83	6.60E+01	63.30	8.34E+02	3.24
	7	153.28	151 -	155	153.51	6.12E+01	58.68	7.12E+02	2.82
	8	185.95	183 -	189	186.14	2.47E+02	79.12	9.52E+02	1.28
M	9	238.68	234 -	246	238.82	8.93E+02	74.70	4.71E+02	1.61
m	10	241.93	234 -	246	242.07	2.88E+02	79.93	5.31E+02	2.07
	11	259.39	258 -	261	259.51	3.03E+01	34.29	2.61E+02	1.66
	12	270.19	267 -	273	270.30	6.22E+01	56.59	5.40E+02	2.63
M	13	295.33	290 -	306	295.41	4.45E+02	54.59	2.88E+02	1.76
m	14	300.18	290 -	306	300.25	8.80E+01	45.54	3.33E+02	1.92
	15	338.95	334 -	343	338.99	1.65E+02	67.22	5.42E+02	1.77
	16	351.96	348 -	355	351.98	6.92E+02	71.89	4.00E+02	1.40
	17	463.06	459 -	466	462.96	3.85E+01	42.47	2.73E+02	1.67
M	18	511.19	506 -	526	511.04	1.59E+02	41.37	1.72E+02	2.30
m	19	523.30	506 -	526	523.14	2.70E+01	30.72	1.08E+02	2.32
	20	583.54	579 -	587	583.32	2.35E+02	50.17	2.42E+02	1.72
M	21	606.02	604 -	613	605.78	1.90E+01	16.53	7.17E+01	2.45
m	22	609.54	604 -	613	609.29	5.74E+02	52.96	1.12E+02	1.76
	23	664.50	660 -	667	664.20	3.78E+01	34.70	1.74E+02	1.29
M	24	698.89	693 -	706	698.56	2.14E+01	28.23	1.30E+02	2.36
m	25	703.75	693 -	706	703.41	1.75E+01	27.66	1.09E+02	2.37
	26	726.88	722 -	731	726.52	5.09E+01	43.45	2.42E+02	2.21
	27	769.04	764 -	774	768.63	6.33E+01	42.35	1.95E+02	2.77
	28	841.96	837 -	847	841.49	3.46E+01	36.51	1.59E+02	3.18
	29	860.53	856 -	864	860.04	5.15E+01	30.96	1.13E+02	2.30
	30	911.87	908 -	916	911.33	1.79E+02	37.28	1.04E+02	2.00
	31	967.88	961 -	972	967.29	1.71E+02	42.28	1.38E+02	2.08
	32	1109.98	1106 -	1112	1109.26	2.15E+01	22.57	7.70E+01	2.44
	33	1120.78	1116 -	1125	1120.06	1.26E+02	41.11	1.68E+02	2.70
	34	1238.18	1234 -	1241	1237.34	5.39E+01	33.82	1.52E+02	1.51
	35	1280.93	1277 -	1283	1280.06	3.91E+01	21.91	5.77E+01	1.87
	36	1378.15	1372 -	1382	1377.19	4.88E+01	26.21	6.44E+01	2.13
	37	1408.46	1404 -	1412	1407.48	2.17E+01	20.17	4.86E+01	2.73
	38	1461.27	1453 -	1466	1460.25	1.04E+03	69.68	7.68E+01	2.38
	39	1474.93	1471 -	1479	1473.89	1.08E+01	14.61	2.43E+01	2.86
	40	1495.77	1489 -	1500	1494.72	1.52E+01	19.90	4.16E+01	1.27

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1508.86	1502 -	1514	1507.80	1.75E+01	20.04	3.90E+01	1.32
42	1622.74	1615 -	1627	1621.58	1.92E+01	15.45	1.76E+01	1.20
43	1631.01	1628 -	1633	1629.84	8.08E+00	8.12	7.83E+00	1.49
44	1656.05	1651 -	1658	1654.87	1.06E+01	9.38	6.86E+00	1.61
45	1694.53	1690 -	1696	1693.32	1.04E+01	8.97	7.14E+00	1.28
46	1705.29	1702 -	1706	1704.07	7.00E+00	6.96	4.00E+00	2.83
47	1730.68	1725 -	1734	1729.44	1.98E+01	15.91	2.43E+01	1.94
48	1765.14	1759 -	1768	1763.87	8.87E+01	22.18	1.85E+01	3.08
49	1828.12	1823 -	1830	1826.80	1.50E+01	7.75	0.00E+00	1.10
50	1886.04	1881 -	1888	1884.68	6.91E+00	8.72	8.18E+00	5.18
51	1970.67	1966 -	1973	1969.24	1.00E+01	9.38	8.00E+00	1.24
52	2053.18	2047 -	2055	2051.70	8.00E+00	9.41	8.00E+00	2.79
53	2104.65	2097 -	2107	2103.12	1.38E+01	14.73	2.03E+01	5.94
54	2115.91	2111 -	2117	2114.38	8.00E+00	5.66	0.00E+00	3.48
55	2203.67	2196 -	2207	2202.08	2.60E+01	10.20	0.00E+00	7.05
56	2377.28	2371 -	2378	2375.56	7.00E+00	8.72	8.00E+00	2.42
57	2431.60	2424 -	2434	2429.85	1.03E+01	9.07	5.46E+00	2.49
58	2439.35	2435 -	2440	2437.60	5.00E+00	4.47	0.00E+00	1.70
59	2484.45	2479 -	2485	2482.66	7.28E+00	6.95	3.44E+00	2.53
60	2615.10	2609 -	2618	2613.23	8.88E+01	20.54	8.34E+00	2.41

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 6:20:35PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	46.67	45 -	50	1.27E+02	73.86	9.99E+02	5.78E+01
2	68.83	67 -	71	8.28E+01	77.18	1.26E+03	6.16E+01
3	76.32	72 -	81	1.32E+03	151.55	2.51E+03	1.09E+02
4	87.28	86 -	89	9.12E+01	72.44	1.23E+03	5.74E+01
5	93.36	92 -	97	2.92E+02	87.70	1.26E+03	6.64E+01
6	105.55	104 -	108	6.60E+01	63.30	8.34E+02	5.03E+01
7	153.28	151 -	155	6.12E+01	58.68	7.12E+02	4.65E+01
8	185.95	183 -	189	2.47E+02	79.12	9.52E+02	5.97E+01

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	9	238.68	234 -	246	8.93E+02	74.70	4.71E+02	3.57E+01
m	10	241.93	234 -	246	2.88E+02	79.93	5.31E+02	3.79E+01
	11	259.39	258 -	261	3.03E+01	34.29	2.61E+02	2.67E+01
	12	270.19	267 -	273	6.22E+01	56.59	5.40E+02	4.47E+01
M	13	295.33	290 -	306	4.45E+02	54.59	2.88E+02	2.79E+01
m	14	300.18	290 -	306	8.80E+01	45.54	3.33E+02	3.00E+01
	15	338.95	334 -	343	1.65E+02	67.22	5.42E+02	5.11E+01
	16	351.96	348 -	355	6.92E+02	71.89	4.00E+02	4.03E+01
	17	463.06	459 -	466	3.85E+01	42.47	2.73E+02	3.34E+01
M	18	511.19	506 -	526	1.59E+02	41.37	1.72E+02	2.16E+01
m	19	523.30	506 -	526	2.70E+01	30.72	1.08E+02	1.71E+01
	20	583.54	579 -	587	2.35E+02	50.17	2.42E+02	3.26E+01
M	21	606.02	604 -	613	1.90E+01	16.53	7.17E+01	1.39E+01
m	22	609.54	604 -	613	5.74E+02	52.96	1.12E+02	1.74E+01
	23	664.50	660 -	667	3.78E+01	34.70	1.74E+02	2.67E+01
M	24	698.89	693 -	706	2.14E+01	28.23	1.30E+02	1.88E+01
m	25	703.75	693 -	706	1.75E+01	27.66	1.09E+02	1.71E+01
	26	726.88	722 -	731	5.09E+01	43.45	2.42E+02	3.37E+01
	27	769.04	764 -	774	6.33E+01	42.35	1.95E+02	3.23E+01
	28	841.96	837 -	847	3.46E+01	36.51	1.59E+02	2.84E+01
	29	860.53	856 -	864	5.15E+01	30.96	1.13E+02	2.25E+01
	30	911.87	908 -	916	1.79E+02	37.28	1.04E+02	2.14E+01
	31	967.88	961 -	972	1.71E+02	42.28	1.38E+02	2.73E+01
	32	1109.98	1106 -	1112	2.15E+01	22.57	7.70E+01	1.69E+01
	33	1120.78	1116 -	1125	1.26E+02	41.11	1.68E+02	3.53E+01
	34	1238.18	1234 -	1241	5.39E+01	33.82	1.52E+02	2.50E+01
	35	1280.93	1277 -	1283	3.91E+01	21.91	5.77E+01	1.48E+01
	36	1378.15	1372 -	1382	4.88E+01	26.21	6.44E+01	1.82E+01
	37	1408.46	1404 -	1412	2.17E+01	20.17	4.86E+01	1.47E+01
	38	1461.27	1453 -	1466	1.04E+03	69.68	7.68E+01	2.16E+01
	39	1474.93	1471 -	1479	1.08E+01	14.61	2.43E+01	1.07E+01
	40	1495.77	1489 -	1500	1.52E+01	19.90	4.16E+01	1.50E+01
	41	1508.86	1502 -	1514	1.75E+01	20.04	3.90E+01	1.50E+01
	42	1622.74	1615 -	1627	1.92E+01	15.45	1.76E+01	1.05E+01
	43	1631.01	1628 -	1633	8.08E+00	8.12	7.83E+00	4.77E+00
	44	1656.05	1651 -	1658	1.06E+01	9.38	6.86E+00	5.56E+00
	45	1694.53	1690 -	1696	1.04E+01	8.97	7.14E+00	5.12E+00
	46	1705.29	1702 -	1706	7.00E+00	6.96	4.00E+00	3.72E+00
	47	1730.68	1725 -	1734	1.98E+01	15.91	2.43E+01	1.08E+01
	48	1765.14	1759 -	1768	8.87E+01	22.18	1.85E+01	9.62E+00
	49	1828.12	1823 -	1830	1.50E+01	7.75	0.00E+00	0.00E+00
	50	1886.04	1881 -	1888	6.91E+00	8.72	8.18E+00	5.72E+00
	51	1970.67	1966 -	1973	1.00E+01	9.38	8.00E+00	5.70E+00
	52	2053.18	2047 -	2055	8.00E+00	9.41	8.00E+00	6.18E+00
	53	2104.65	2097 -	2107	1.38E+01	14.73	2.03E+01	1.05E+01
	54	2115.91	2111 -	2117	8.00E+00	5.66	0.00E+00	0.00E+00
	55	2203.67	2196 -	2207	2.60E+01	10.20	0.00E+00	0.00E+00
	56	2377.28	2371 -	2378	7.00E+00	8.72	8.00E+00	5.70E+00
	57	2431.60	2424 -	2434	1.03E+01	9.07	5.46E+00	5.27E+00
	58	2439.35	2435 -	2440	5.00E+00	4.47	0.00E+00	0.00E+00
	59	2484.45	2479 -	2485	7.28E+00	6.95	3.44E+00	3.60E+00

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
60	2615.10	2609 -	2618	8.88E+01	20.54	8.34E+00	6.71E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 6:20:35PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	46.67	45 -	50	47.02	1.27E+02	73.86	9.99E+02	PB-210
	2	68.83	67 -	71	69.15	8.28E+01	77.18	1.26E+03	TI-44
	3	76.32	72 -	81	76.64	1.32E+03	151.55	2.51E+03	.....
	4	87.28	86 -	89	87.58	9.12E+01	72.44	1.23E+03	SN-126
									CD-109
									NP-237
									EU-155
	5	93.36	92 -	97	93.66	2.92E+02	87.70	1.26E+03	GA-67
	6	105.55	104 -	108	105.83	6.60E+01	63.30	8.34E+02	EU-155
									NP-239
	7	153.28	151 -	155	153.51	6.12E+01	58.68	7.12E+02	CS-136
	8	185.95	183 -	189	186.14	2.47E+02	79.12	9.52E+02	RA-226
M	9	238.68	234 -	246	238.82	8.93E+02	74.70	4.71E+02	PB-212
m	10	241.93	234 -	246	242.07	2.88E+02	79.93	5.31E+02	RA-224
	11	259.39	258 -	261	259.51	3.03E+01	34.29	2.61E+02	.....
	12	270.19	267 -	273	270.30	6.22E+01	56.59	5.40E+02	.....
M	13	295.33	290 -	306	295.41	4.45E+02	54.59	2.88E+02	PB-214
m	14	300.18	290 -	306	300.25	8.80E+01	45.54	3.33E+02	GA-67
									PB-212
									BI-210M
	15	338.95	334 -	343	338.99	1.65E+02	67.22	5.42E+02	AC-228
	16	351.96	348 -	355	351.98	6.92E+02	71.89	4.00E+02	PB-214
	17	463.06	459 -	466	462.96	3.85E+01	42.47	2.73E+02	SB-125
M	18	511.19	506 -	526	511.04	1.59E+02	41.37	1.72E+02	.....
m	19	523.30	506 -	526	523.14	2.70E+01	30.72	1.08E+02	.....

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	20	583.54	579 -	587	583.32	2.35E+02	50.17	2.42E+02	TL-208
M	21	606.02	604 -	613	605.78	1.90E+01	16.53	7.17E+01	.....
m	22	609.54	604 -	613	609.29	5.74E+02	52.96	1.12E+02	BI-214
	23	664.50	660 -	667	664.20	3.78E+01	34.70	1.74E+02	CE-143
M	24	698.89	693 -	706	698.56	2.14E+01	28.23	1.30E+02	.....
m	25	703.75	693 -	706	703.41	1.75E+01	27.66	1.09E+02	.....
	26	726.88	722 -	731	726.52	5.09E+01	43.45	2.42E+02	BI-212
	27	769.04	764 -	774	768.63	6.33E+01	42.35	1.95E+02	.....
	28	841.96	837 -	847	841.49	3.46E+01	36.51	1.59E+02	.....
	29	860.53	856 -	864	860.04	5.15E+01	30.96	1.13E+02	TL-208
	30	911.87	908 -	916	911.33	1.79E+02	37.28	1.04E+02	TL-204 AC-228
	31	967.88	961 -	972	967.29	1.71E+02	42.28	1.38E+02	.....
	32	1109.98	1106 -	1112	1109.26	2.15E+01	22.57	7.70E+01	.....
	33	1120.78	1116 -	1125	1120.06	1.26E+02	41.11	1.68E+02	SC-46 BI-214 TA-182
	34	1238.18	1234 -	1241	1237.34	5.39E+01	33.82	1.52E+02	CO-56
	35	1280.93	1277 -	1283	1280.06	3.91E+01	21.91	5.77E+01	.....
	36	1378.15	1372 -	1382	1377.19	4.88E+01	26.21	6.44E+01	.....
	37	1408.46	1404 -	1412	1407.48	2.17E+01	20.17	4.86E+01	EU-152
	38	1461.27	1453 -	1466	1460.25	1.04E+03	69.68	7.68E+01	K-40
	39	1474.93	1471 -	1479	1473.89	1.08E+01	14.61	2.43E+01	.....
	40	1495.77	1489 -	1500	1494.72	1.52E+01	19.90	4.16E+01	.....
	41	1508.86	1502 -	1514	1507.80	1.75E+01	20.04	3.90E+01	.....
	42	1622.74	1615 -	1627	1621.58	1.92E+01	15.45	1.76E+01	.....
	43	1631.01	1628 -	1633	1629.84	8.08E+00	8.12	7.83E+00	.....
	44	1656.05	1651 -	1658	1654.87	1.06E+01	9.38	6.86E+00	.....
	45	1694.53	1690 -	1696	1693.32	1.04E+01	8.97	7.14E+00	.....
	46	1705.29	1702 -	1706	1704.07	7.00E+00	6.96	4.00E+00	.....
	47	1730.68	1725 -	1734	1729.44	1.98E+01	15.91	2.43E+01	.....
	48	1765.14	1759 -	1768	1763.87	8.87E+01	22.18	1.85E+01	BI-214
	49	1828.12	1823 -	1830	1826.80	1.50E+01	7.75	0.00E+00	.....
	50	1886.04	1881 -	1888	1884.68	6.91E+00	8.72	8.18E+00	.....
	51	1970.67	1966 -	1973	1969.24	1.00E+01	9.38	8.00E+00	.....
	52	2053.18	2047 -	2055	2051.70	8.00E+00	9.41	8.00E+00	.....
	53	2104.65	2097 -	2107	2103.12	1.38E+01	14.73	2.03E+01	.....
	54	2115.91	2111 -	2117	2114.38	8.00E+00	5.66	0.00E+00	.....
	55	2203.67	2196 -	2207	2202.08	2.60E+01	10.20	0.00E+00	BI-214
	56	2377.28	2371 -	2378	2375.56	7.00E+00	8.72	8.00E+00	.....
	57	2431.60	2424 -	2434	2429.85	1.03E+01	9.07	5.46E+00	.....
	58	2439.35	2435 -	2440	2437.60	5.00E+00	4.47	0.00E+00	.....
	59	2484.45	2479 -	2485	2482.66	7.28E+00	6.95	3.44E+00	.....
	60	2615.10	2609 -	2618	2613.23	8.88E+01	20.54	8.34E+00	TL-208

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 6:20:35PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.67	1.27E+02	73.86	1.59E-02	1.67E-03
	2	68.83	8.28E+01	77.18	2.52E-02	1.92E-03
	3	76.32	1.32E+03	151.55	2.63E-02	2.12E-03
	4	87.28	9.12E+01	72.44	2.70E-02	2.40E-03
	5	93.36	2.92E+02	87.70	2.70E-02	2.32E-03
	6	105.55	6.60E+01	63.30	2.65E-02	2.09E-03
	7	153.28	6.12E+01	58.68	2.28E-02	1.67E-03
	8	185.95	2.47E+02	79.12	2.03E-02	1.53E-03
M	9	238.68	8.93E+02	74.70	1.72E-02	1.30E-03
m	10	241.93	2.88E+02	79.93	1.71E-02	1.28E-03
	11	259.39	3.03E+01	34.29	1.63E-02	1.21E-03
	12	270.19	6.22E+01	56.59	1.58E-02	1.16E-03
M	13	295.33	4.45E+02	54.59	1.48E-02	1.10E-03
m	14	300.18	8.80E+01	45.54	1.47E-02	1.09E-03
	15	338.95	1.65E+02	67.22	1.34E-02	1.04E-03
	16	351.96	6.92E+02	71.89	1.31E-02	1.02E-03
	17	463.06	3.85E+01	42.47	1.06E-02	9.07E-04
M	18	511.19	1.59E+02	41.37	9.87E-03	8.65E-04
m	19	523.30	2.70E+01	30.72	9.69E-03	8.54E-04
	20	583.54	2.35E+02	50.17	8.90E-03	8.02E-04
M	21	606.02	1.90E+01	16.53	8.64E-03	7.82E-04
m	22	609.54	5.74E+02	52.96	8.60E-03	7.79E-04
	23	664.50	3.78E+01	34.70	8.03E-03	7.31E-04
M	24	698.89	2.14E+01	28.23	7.71E-03	6.98E-04
m	25	703.75	1.75E+01	27.66	7.67E-03	6.93E-04
	26	726.88	5.09E+01	43.45	7.47E-03	6.71E-04
	27	769.04	6.33E+01	42.35	7.14E-03	6.31E-04
	28	841.96	3.46E+01	36.51	6.63E-03	5.60E-04
	29	860.53	5.15E+01	30.96	6.51E-03	5.42E-04
	30	911.87	1.79E+02	37.28	6.21E-03	5.01E-04
	31	967.88	1.71E+02	42.28	5.91E-03	4.82E-04
	32	1109.98	2.15E+01	22.57	5.28E-03	4.32E-04
	33	1120.78	1.26E+02	41.11	5.24E-03	4.28E-04
	34	1238.18	5.39E+01	33.82	4.84E-03	4.16E-04

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
35	1280.93	3.91E+01	21.91	4.71E-03	4.20E-04
36	1378.15	4.88E+01	26.21	4.45E-03	4.12E-04
37	1408.46	2.17E+01	20.17	4.38E-03	4.03E-04
38	1461.27	1.04E+03	69.68	4.26E-03	3.87E-04
39	1474.93	1.08E+01	14.61	4.23E-03	3.84E-04
40	1495.77	1.52E+01	19.90	4.19E-03	3.78E-04
41	1508.86	1.75E+01	20.04	4.16E-03	3.74E-04
42	1622.74	1.92E+01	15.45	3.96E-03	3.41E-04
43	1631.01	8.08E+00	8.12	3.94E-03	3.38E-04
44	1656.05	1.06E+01	9.38	3.90E-03	3.31E-04
45	1694.53	1.04E+01	8.97	3.84E-03	3.20E-04
46	1705.29	7.00E+00	6.96	3.83E-03	3.17E-04
47	1730.68	1.98E+01	15.91	3.79E-03	3.10E-04
48	1765.14	8.87E+01	22.18	3.75E-03	3.00E-04
49	1828.12	1.50E+01	7.75	3.67E-03	2.81E-04
50	1886.04	6.91E+00	8.72	3.60E-03	2.79E-04
51	1970.67	1.00E+01	9.38	3.52E-03	2.79E-04
52	2053.18	8.00E+00	9.41	3.45E-03	2.79E-04
53	2104.65	1.38E+01	14.73	3.41E-03	2.79E-04
54	2115.91	8.00E+00	5.66	3.40E-03	2.79E-04
55	2203.67	2.60E+01	10.20	3.34E-03	2.79E-04
56	2377.28	7.00E+00	8.72	3.26E-03	2.79E-04
57	2431.60	1.03E+01	9.07	3.24E-03	2.79E-04
58	2439.35	5.00E+00	4.47	3.24E-03	2.79E-04
59	2484.45	7.28E+00	6.95	3.22E-03	2.79E-04
60	2615.10	8.88E+01	20.54	3.20E-03	2.79E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 6:20:35PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	46.67	1.27E+02	73.86	3.74E+01	5.77E+00	8.91E+01	7.41E+01
2	68.83	8.28E+01	77.18			8.28E+01	7.72E+01
3	76.32	1.32E+03	151.55			1.32E+03	1.52E+02
4	87.28	9.12E+01	72.44			9.12E+01	7.24E+01

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	5	93.36	2.92E+02	87.70	4.88E+01	1.30E+00	2.43E+02	8.77E+01
	6	105.55	6.60E+01	63.30			6.60E+01	6.33E+01
	7	153.28	6.12E+01	58.68			6.12E+01	5.87E+01
	8	185.95	2.47E+02	79.12	3.48E+01	7.32E+00	2.12E+02	7.95E+01
M	9	238.68	8.93E+02	74.70	7.09E+00	6.85E+00	8.86E+02	7.50E+01
m	10	241.93	2.88E+02	79.93			2.88E+02	7.99E+01
	11	259.39	3.03E+01	34.29			3.03E+01	3.43E+01
	12	270.19	6.22E+01	56.59			6.22E+01	5.66E+01
M	13	295.33	4.45E+02	54.59			4.45E+02	5.46E+01
m	14	300.18	8.80E+01	45.54			8.80E+01	4.55E+01
	15	338.95	1.65E+02	67.22			1.65E+02	6.72E+01
	16	351.96	6.92E+02	71.89	1.04E+01	5.08E+00	6.82E+02	7.21E+01
	17	463.06	3.85E+01	42.47			3.85E+01	4.25E+01
M	18	511.19	1.59E+02	41.37	7.08E+01	4.94E+00	8.85E+01	4.17E+01
m	19	523.30	2.70E+01	30.72			2.70E+01	3.07E+01
	20	583.54	2.35E+02	50.17	5.65E+00	3.57E+00	2.30E+02	5.03E+01
M	21	606.02	1.90E+01	16.53			1.90E+01	1.65E+01
m	22	609.54	5.74E+02	52.96	1.07E+01	3.96E+00	5.63E+02	5.31E+01
	23	664.50	3.78E+01	34.70			3.78E+01	3.47E+01
M	24	698.89	2.14E+01	28.23			2.14E+01	2.82E+01
m	25	703.75	1.75E+01	27.66			1.75E+01	2.77E+01
	26	726.88	5.09E+01	43.45			5.09E+01	4.35E+01
	27	769.04	6.33E+01	42.35			6.33E+01	4.23E+01
	28	841.96	3.46E+01	36.51			3.46E+01	3.65E+01
	29	860.53	5.15E+01	30.96			5.15E+01	3.10E+01
	30	911.87	1.79E+02	37.28	2.63E+00	2.49E+00	1.76E+02	3.74E+01
	31	967.88	1.71E+02	42.28			1.71E+02	4.23E+01
	32	1109.98	2.15E+01	22.57			2.15E+01	2.26E+01
	33	1120.78	1.26E+02	41.11	2.45E+00	2.38E+00	1.23E+02	4.12E+01
	34	1238.18	5.39E+01	33.82			5.39E+01	3.38E+01
	35	1280.93	3.91E+01	21.91			3.91E+01	2.19E+01
	36	1378.15	4.88E+01	26.21			4.88E+01	2.62E+01
	37	1408.46	2.17E+01	20.17			2.17E+01	2.02E+01
	38	1461.27	1.04E+03	69.68	5.90E+00	2.63E+00	1.03E+03	6.97E+01
	39	1474.93	1.08E+01	14.61			1.08E+01	1.46E+01
	40	1495.77	1.52E+01	19.90			1.52E+01	1.99E+01
	41	1508.86	1.75E+01	20.04			1.75E+01	2.00E+01
	42	1622.74	1.92E+01	15.45			1.92E+01	1.55E+01
	43	1631.01	8.08E+00	8.12			8.08E+00	8.12E+00
	44	1656.05	1.06E+01	9.38			1.06E+01	9.38E+00
	45	1694.53	1.04E+01	8.97			1.04E+01	8.97E+00
	46	1705.29	7.00E+00	6.96			7.00E+00	6.96E+00
	47	1730.68	1.98E+01	15.91			1.98E+01	1.59E+01
	48	1765.14	8.87E+01	22.18	3.33E+00	1.73E+00	8.54E+01	2.22E+01
	49	1828.12	1.50E+01	7.75			1.50E+01	7.75E+00
	50	1886.04	6.91E+00	8.72			6.91E+00	8.72E+00
	51	1970.67	1.00E+01	9.38			1.00E+01	9.38E+00
	52	2053.18	8.00E+00	9.41			8.00E+00	9.41E+00
	53	2104.65	1.38E+01	14.73			1.38E+01	1.47E+01
	54	2115.91	8.00E+00	5.66			8.00E+00	5.66E+00
	55	2203.67	2.60E+01	10.20			2.60E+01	1.02E+01
	56	2377.28	7.00E+00	8.72			7.00E+00	8.72E+00
	57	2431.60	1.03E+01	9.07			1.03E+01	9.07E+00
	58	2439.35	5.00E+00	4.47			5.00E+00	4.47E+00

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
59	2484.45	7.28E+00	6.95			7.28E+00	6.95E+00
60	2615.10	8.88E+01	20.54	4.77E+00	1.52E+00	8.41E+01	2.06E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 6:20:35PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	46.67	1.27E+02	73.86	3.74E+01	5.77E+00	8.91E+01	7.41E+01
	2	68.83	8.28E+01	77.18			8.28E+01	7.72E+01
	3	76.32	1.32E+03	151.55			1.32E+03	1.52E+02
	4	87.28	9.12E+01	72.44			9.12E+01	7.24E+01
	5	93.36	2.92E+02	87.70	4.88E+01	1.30E+00	2.43E+02	8.77E+01
	6	105.55	6.60E+01	63.30			6.60E+01	6.33E+01
	7	153.28	6.12E+01	58.68			6.12E+01	5.87E+01
	8	185.95	2.47E+02	79.12	3.48E+01	7.32E+00	2.12E+02	7.95E+01
M	9	238.68	8.93E+02	74.70	7.09E+00	6.85E+00	8.86E+02	7.50E+01
m	10	241.93	2.88E+02	79.93			2.88E+02	7.99E+01
	11	259.39	3.03E+01	34.29			3.03E+01	3.43E+01
	12	270.19	6.22E+01	56.59			6.22E+01	5.66E+01
M	13	295.33	4.45E+02	54.59			4.45E+02	5.46E+01
m	14	300.18	8.80E+01	45.54			8.80E+01	4.55E+01
	15	338.95	1.65E+02	67.22			1.65E+02	6.72E+01
	16	351.96	6.92E+02	71.89	1.04E+01	5.08E+00	6.82E+02	7.21E+01
	17	463.06	3.85E+01	42.47			3.85E+01	4.25E+01
M	18	511.19	1.59E+02	41.37	7.08E+01	4.94E+00	8.85E+01	4.17E+01
m	19	523.30	2.70E+01	30.72			2.70E+01	3.07E+01
	20	583.54	2.35E+02	50.17	5.65E+00	3.57E+00	2.30E+02	5.03E+01
M	21	606.02	1.90E+01	16.53			1.90E+01	1.65E+01
m	22	609.54	5.74E+02	52.96	1.07E+01	3.96E+00	5.63E+02	5.31E+01
	23	664.50	3.78E+01	34.70			3.78E+01	3.47E+01
M	24	698.89	2.14E+01	28.23			2.14E+01	2.82E+01
m	25	703.75	1.75E+01	27.66			1.75E+01	2.77E+01
	26	726.88	5.09E+01	43.45			5.09E+01	4.35E+01

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
27	769.04	6.33E+01	42.35			6.33E+01	4.23E+01
28	841.96	3.46E+01	36.51			3.46E+01	3.65E+01
29	860.53	5.15E+01	30.96			5.15E+01	3.10E+01
30	911.87	1.79E+02	37.28	2.63E+00	2.49E+00	1.76E+02	3.74E+01
31	967.88	1.71E+02	42.28			1.71E+02	4.23E+01
32	1109.98	2.15E+01	22.57			2.15E+01	2.26E+01
33	1120.78	1.26E+02	41.11	2.45E+00	2.38E+00	1.23E+02	4.12E+01
34	1238.18	5.39E+01	33.82			5.39E+01	3.38E+01
35	1280.93	3.91E+01	21.91			3.91E+01	2.19E+01
36	1378.15	4.88E+01	26.21			4.88E+01	2.62E+01
37	1408.46	2.17E+01	20.17			2.17E+01	2.02E+01
38	1461.27	1.04E+03	69.68	5.90E+00	2.63E+00	1.03E+03	6.97E+01
39	1474.93	1.08E+01	14.61			1.08E+01	1.46E+01
40	1495.77	1.52E+01	19.90			1.52E+01	1.99E+01
41	1508.86	1.75E+01	20.04			1.75E+01	2.00E+01
42	1622.74	1.92E+01	15.45			1.92E+01	1.55E+01
43	1631.01	8.08E+00	8.12			8.08E+00	8.12E+00
44	1656.05	1.06E+01	9.38			1.06E+01	9.38E+00
45	1694.53	1.04E+01	8.97			1.04E+01	8.97E+00
46	1705.29	7.00E+00	6.96			7.00E+00	6.96E+00
47	1730.68	1.98E+01	15.91			1.98E+01	1.59E+01
48	1765.14	8.87E+01	22.18	3.33E+00	1.73E+00	8.54E+01	2.22E+01
49	1828.12	1.50E+01	7.75			1.50E+01	7.75E+00
50	1886.04	6.91E+00	8.72			6.91E+00	8.72E+00
51	1970.67	1.00E+01	9.38			1.00E+01	9.38E+00
52	2053.18	8.00E+00	9.41			8.00E+00	9.41E+00
53	2104.65	1.38E+01	14.73			1.38E+01	1.47E+01
54	2115.91	8.00E+00	5.66			8.00E+00	5.66E+00
55	2203.67	2.60E+01	10.20			2.60E+01	1.02E+01
56	2377.28	7.00E+00	8.72			7.00E+00	8.72E+00
57	2431.60	1.03E+01	9.07			1.03E+01	9.07E+00
58	2439.35	5.00E+00	4.47			5.00E+00	4.47E+00
59	2484.45	7.28E+00	6.95			7.28E+00	6.95E+00
60	2615.10	8.88E+01	20.54	4.77E+00	1.52E+00	8.41E+01	2.06E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.967	1460.81	*	10.67	3.12E+01	3.59E+00
EU-155	0.940	86.50	*	30.90	1.56E-01	1.25E-01
		105.30	*	20.70	1.72E-01	1.65E-01
TL-208	0.973	583.14	*	30.22	1.17E+00	2.77E-01
		860.37	*	4.48	2.42E+00	1.47E+00
		2614.66	*	35.85	1.01E+00	2.62E-01
PB-210	0.995	46.50	*	4.25	1.82E+00	1.53E+00
BI-212	0.757	727.17	*	11.80	7.93E-01	6.80E-01
		1620.62		2.75		
PB-212	1.000	238.63	*	44.60	1.58E+00	1.79E-01
		300.09	*	3.41	2.41E+00	1.26E+00
BI-214	0.973	609.31	*	46.30	1.94E+00	2.54E-01
		1120.29	*	15.10	2.14E+00	7.35E-01
		1764.49	*	15.80	1.98E+00	5.40E-01
		2204.22	*	4.98	2.14E+00	8.60E-01
PB-214	0.999	295.21	*	19.19	2.14E+00	3.07E-01
		351.92	*	37.19	1.93E+00	2.53E-01
RA-224	0.865	240.98	*	3.95	5.85E+00	1.68E+00
RA-226	0.989	186.21	*	3.28	4.37E+00	8.17E+00
AC-228	0.511	338.32	*	11.40	1.48E+00	6.13E-01
		911.07	*	27.70	1.41E+00	3.19E-01
		969.11		16.60		

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 6:20:35PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	68.83	2.30065E-02	46.59	Tol.	TI-44
3	76.32	3.65865E-01	5.75		
5	93.36	6.74715E-02	18.06	Sum	
7	153.28	1.69924E-02	47.96		
11	259.39	8.42995E-03	56.50		
12	270.19	1.72900E-02	45.46		
17	463.06	1.07056E-02	55.10	Tol.	SB-125

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	18	511.19	2.45845E-02	23.54		
m	19	523.30	7.49610E-03	56.91		
M	21	606.02	5.27925E-03	43.49		
	23	664.50	1.05000E-02	45.90	Tol.	CE-143
M	24	698.89	5.93473E-03	66.07		
m	25	703.75	4.86860E-03	78.90	Sum	
	27	769.04	1.75940E-02	33.43	Sum	
	28	841.96	9.62232E-03	52.70		
	31	967.88	4.75052E-02	12.36	Sum	
	32	1109.98	5.97222E-03	52.49		
	34	1238.18	1.49840E-02	31.35	Tol.	CO-56
	35	1280.93	1.08701E-02	28.00		
	36	1378.15	1.35562E-02	26.85		
	37	1408.46	6.03261E-03	46.43	Tol.	EU-152
	39	1474.93	3.00725E-03	67.48		
	40	1495.77	4.22839E-03	65.36	Sum	
	41	1508.86	4.86487E-03	57.21	Sum	
	42	1622.74	5.33730E-03	40.21		
	43	1631.01	2.24537E-03	50.25		
	44	1656.05	2.93651E-03	44.37		
	45	1694.53	2.89683E-03	43.02		
	46	1705.29	1.94444E-03	49.74	Sum	
	47	1730.68	5.50781E-03	40.11	Sum	
	49	1828.12	4.16667E-03	25.82		
	50	1886.04	1.91919E-03	63.09		
	51	1970.67	2.77778E-03	46.90		
	52	2053.18	2.22222E-03	58.80		
	53	2104.65	3.84259E-03	53.24	S-Esc	
	54	2115.91	2.22222E-03	35.36		
	56	2377.28	1.94444E-03	62.27		
	57	2431.60	2.85256E-03	44.16		
	58	2439.35	1.38889E-03	44.72		
	59	2484.45	2.02160E-03	47.72		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.96	1460.81	*	10.67	3.12E+01	3.59E+00
EU-155	0.94	86.50	*	30.90	1.56E-01	1.25E-01
		105.30	*	20.70	1.72E-01	1.65E-01
TL-208	0.97	583.14	*	30.22	1.17E+00	2.77E-01
		860.37	*	4.48	2.42E+00	1.47E+00
		2614.66	*	35.85	1.01E+00	2.62E-01
PB-210	0.99	46.50	*	4.25	1.82E+00	1.53E+00
BI-212	0.75	727.17	*	11.80	7.93E-01	6.80E-01
		1620.62		2.75		
PB-212	1.00	238.63	*	44.60	1.58E+00	1.79E-01
		300.09	*	3.41	2.41E+00	1.26E+00
BI-214	0.97	609.31	*	46.30	1.94E+00	2.54E-01
		1120.29	*	15.10	2.14E+00	7.35E-01
		1764.49	*	15.80	1.98E+00	5.40E-01
		2204.22	*	4.98	2.14E+00	8.60E-01
PB-214	0.99	295.21	*	19.19	2.14E+00	3.07E-01
		351.92	*	37.19	1.93E+00	2.53E-01
RA-224	0.86	240.98	*	3.95	5.85E+00	1.68E+00
RA-226	0.98	186.21	*	3.28	4.37E+00	8.17E+00
AC-228	0.51	338.32	*	11.40	1.48E+00	6.13E-01
		911.07	*	27.70	1.41E+00	3.19E-01
		969.11		16.60		

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.967	3.12E+01	3.59E+00	
X	CD-109	0.912			
X	SN-126	0.986			
	EU-155	0.940	1.62E-01	9.95E-02	
	TL-208	0.973	1.11E+00	1.89E-01	

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	PB-210	0.995	1.82E+00	1.53E+00	
	BI-212	0.757	7.93E-01	6.80E-01	
	PB-212	1.000	1.60E+00	1.77E-01	
	BI-214	0.973	1.98E+00	2.12E-01	
	PB-214	0.999	2.01E+00	1.95E-01	
	RA-224	0.865	5.85E+00	1.68E+00	
	RA-226	0.989	4.37E+00	8.17E+00	
	AC-228	0.511	1.42E+00	2.83E-01	
X	NP-237	0.909			

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 6:20:35PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	68.83	2.30065E-02	46.59	Tol.	TI-44
	3	76.32	3.65865E-01	5.75		
	5	93.36	6.74715E-02	18.06	Sum	
	7	153.28	1.69924E-02	47.96		
	11	259.39	8.42995E-03	56.50		
	12	270.19	1.72900E-02	45.46		
	17	463.06	1.07056E-02	55.10	Tol.	SB-125
M	18	511.19	2.45845E-02	23.54		
m	19	523.30	7.49610E-03	56.91		
M	21	606.02	5.27925E-03	43.49		
	23	664.50	1.05000E-02	45.90	Tol.	CE-143
M	24	698.89	5.93473E-03	66.07		
m	25	703.75	4.86860E-03	78.90	Sum	
	27	769.04	1.75940E-02	33.43	Sum	
	28	841.96	9.62232E-03	52.70		
	31	967.88	4.75052E-02	12.36	Sum	
	32	1109.98	5.97222E-03	52.49		
	34	1238.18	1.49840E-02	31.35	Tol.	CO-56
	35	1280.93	1.08701E-02	28.00		
	36	1378.15	1.35562E-02	26.85		
	37	1408.46	6.03261E-03	46.43	Tol.	EU-152
	39	1474.93	3.00725E-03	67.48		
	40	1495.77	4.22839E-03	65.36	Sum	
	41	1508.86	4.86487E-03	57.21	Sum	
	42	1622.74	5.33730E-03	40.21		
	43	1631.01	2.24537E-03	50.25		
	44	1656.05	2.93651E-03	44.37		
	45	1694.53	2.89683E-03	43.02		
	46	1705.29	1.94444E-03	49.74	Sum	
	47	1730.68	5.50781E-03	40.11	Sum	
	49	1828.12	4.16667E-03	25.82		
	50	1886.04	1.91919E-03	63.09		
	51	1970.67	2.77778E-03	46.90		
	52	2053.18	2.22222E-03	58.80		
	53	2104.65	3.84259E-03	53.24	S-Esc	

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
54	2115.91	2.22222E-03	35.36		
56	2377.28	1.94444E-03	62.27		
57	2431.60	2.85256E-03	44.16		
58	2439.35	1.38889E-03	44.72		
59	2484.45	2.02160E-03	47.72		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	-5.03E-01	2.21E+00	2.21E+00
+	NA-22	1274.54		99.94	5.68E-04	1.13E-01	1.13E-01
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	1.39E-02	6.76E-02	6.76E-02
+	K-40	1460.81	*	10.67	3.12E+01	1.42E+00	1.42E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-2.17E-02	5.62E-02	5.62E-02
		78.34		96.00	1.03E-01		7.12E-02
+	SC-46	889.25		99.98	-9.44E-02	1.83E-01	1.83E-01
		1120.51		99.99	8.01E-01		4.01E-01
+	V-48	983.52		99.98	-1.65E+00	6.36E+00	6.36E+00
		1312.10		97.50	-5.23E-01		7.46E+00
+	CR-51	320.08		9.83	1.23E+00	7.39E+00	7.39E+00
+	MN-54	834.83		99.97	1.49E-03	1.03E-01	1.03E-01
+	CO-56	846.75		99.96	-2.19E-02	1.84E-01	1.84E-01
		1037.75		14.03	-8.06E-01		1.62E+00
		1238.25		67.00	5.29E-01		5.60E-01
		1771.40		15.51	-3.63E-01		9.09E-01
		2598.48		16.90	-1.71E-01		8.66E-01
+	CO-57	122.06		85.51	-1.31E-02	6.13E-02	6.13E-02
		136.48		10.60	-2.00E-01		6.62E-01
+	CO-58	810.76		99.40	-8.10E-03	2.19E-01	2.19E-01
+	FE-59	1099.22		56.50	-3.58E-01	8.47E-01	8.47E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	FE-59	1291.56		43.20	-4.40E-03	8.47E-01	1.08E+00
+	CO-60	1173.22		100.00	4.02E-02	1.08E-01	1.09E-01
		1332.49		100.00	2.97E-02		1.08E-01
+	ZN-65	1115.52		50.75	1.61E-02	2.75E-01	2.75E-01
+	GA-67	93.31		35.70	6.82E+08	3.08E+08	3.08E+08
		208.95		2.24	4.85E+09		5.57E+09
		300.22		16.00	2.08E+08		7.84E+08
+	SE-75	121.11		16.70	9.65E-02	1.64E-01	4.39E-01
		136.00		59.20	2.88E-02		1.64E-01
		264.65		59.80	1.27E-02		1.66E-01
		279.53		25.20	2.23E-01		4.80E-01
		400.65		11.40	6.95E-01		1.03E+00
+	RB-82	776.52		13.00	1.71E+00	8.81E+00	8.81E+00
+	RB-83	520.41		46.00	-9.34E-02	2.74E-01	2.74E-01
		529.64		30.30	6.35E-02		4.46E-01
		552.65		16.40	-2.21E-01		8.24E-01
+	KR-85	513.99		0.43	-4.62E+00	1.76E+01	1.76E+01
+	SR-85	513.99		99.27	-5.80E-02	2.21E-01	2.21E-01
+	Y-88	898.02		93.40	-3.17E-03	1.15E-01	1.93E-01
		1836.01		99.38	-1.27E-02		1.15E-01
+	MO-93	263.06		56.72	1.20E-02	7.73E-02	9.63E-02
		684.67		99.68	4.51E-03		7.73E-02
		1477.11		99.08	4.45E-02		8.65E-02
+	NB-93M	16.57		9.43	0.00E+00	8.02E+00	8.02E+00
+	NB-94	702.63		100.00	2.99E-02	8.33E-02	8.33E-02
		871.10		100.00	4.04E-02		8.63E-02
+	NB-95	765.79		99.81	0.00E+00	7.29E-01	7.29E-01
+	NB-95M	235.69		25.00	-7.08E+08	7.78E+07	7.78E+07
+	ZR-95	724.18		43.70	6.55E-02	4.62E-01	6.70E-01
		756.72		55.30	-1.59E-02		4.62E-01
+	MO-99	181.06		6.20	1.25E+10	6.55E+10	9.38E+10
		739.58		12.80	3.22E+10		6.55E+10
		778.00		4.50	-3.89E+10		1.69E+11
+	RU-103	497.08		89.00	-5.82E-02	3.86E-01	3.86E-01
+	RU-106	621.84		9.80	1.35E-01	9.06E-01	9.06E-01
+	AG-108M	433.93		89.90	-3.88E-03	6.67E-02	6.67E-02
		614.37		90.40	1.92E-02		9.24E-02
		722.95		90.50	-6.47E-03		1.00E-01
+	CD-109	88.03	*	3.72	1.45E+00	1.87E+00	1.87E+00
+	AG-110M	657.75		93.14	-5.08E-02	1.06E-01	1.06E-01
		677.61		10.53	-5.56E-02		9.54E-01
		706.67		16.46	-6.09E-02		6.12E-01
		763.93		21.98	6.72E-02		5.66E-01
		884.67		71.63	1.09E-02		1.46E-01
		1384.27		23.94	-5.24E-02		4.59E-01
+	CD-113M	263.70		0.02	9.83E+01	2.45E+02	2.45E+02
+	SN-113	255.12		1.93	3.24E+00	1.56E-01	5.44E+00
		391.69		64.90	-6.01E-02		1.56E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE123M	159.00		84.10	1.09E-01	1.22E-01	1.22E-01
+	SB-124	602.71		97.87	-3.21E-02	2.50E-01	2.50E-01
		645.85		7.26	-1.27E+00		3.35E+00
		722.78		11.10	-1.27E-01		2.49E+00
		1691.02		49.00	-2.31E-02		4.79E-01
+	I-125	35.49		6.49	-3.98E+01	8.14E+00	8.14E+00
+	SB-125	176.33		6.89	4.47E-01	2.15E-01	8.88E-01
		427.89		29.33	-7.25E-02		2.15E-01
		463.38		10.35	4.87E-01		7.16E-01
		600.56		17.80	1.11E-01		4.76E-01
		635.90		11.32	-2.33E-01		6.88E-01
+	SB-126	414.70		83.30	-7.99E+00	2.05E+01	2.05E+01
		666.33		99.60	-2.46E-01		2.42E+01
		695.00		99.60	4.99E-01		2.26E+01
		720.50		53.80	-5.25E+00		4.35E+01
+	SN-126	87.57	*	37.00	1.25E-01	1.62E-01	1.62E-01
+	SB-127	473.00		25.00	-2.09E+06	1.50E+07	1.71E+07
		685.20		35.70	-9.91E+05		1.50E+07
		783.80		14.70	1.99E+07		4.49E+07
+	I-129	29.78		57.00	2.28E-01	5.05E-01	5.05E-01
		33.60		13.20	1.03E+01		2.43E+00
		39.58		7.52	1.48E+00		1.52E+00
+	I-131	284.30		6.05	2.01E+03	3.93E+02	5.78E+03
		364.48		81.20	-1.87E+02		3.93E+02
		636.97		7.26	-1.44E+03		5.70E+03
		722.89		1.80	-1.87E+03		2.89E+04
+	TE-132	49.72		13.10	-3.69E+07	1.31E+08	8.76E+08
		228.16		88.00	4.99E+07		1.31E+08
+	BA-133	81.00		33.00	-2.04E-02	9.87E-02	1.46E-01
		302.84		17.80	-2.92E-02		3.59E-01
		356.01		60.00	1.59E-02		9.87E-02
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-1.02E+04	7.25E+04	7.25E+04
+	CS-134	563.23		8.38	3.07E-01	9.18E-02	8.85E-01
		569.32		15.43	-6.50E-02		4.74E-01
		604.70		97.60	1.31E-02		9.18E-02
		795.84		85.40	-1.22E-02		1.11E-01
		801.93		8.73	2.19E-01		1.09E+00
+	CS-135	268.24		16.00	-1.50E-01	3.93E-01	3.93E-01
+	@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41		28.60	1.00E+26		1.00E+26
	@	1678.03		9.54	1.00E+26		1.00E+26
+	CS-136	153.22		7.46	1.40E+02	1.67E+01	1.56E+02
		163.89		4.61	-2.96E+01		2.36E+02
		176.55		13.56	4.20E+01		8.35E+01
		273.65		12.66	-2.45E+01		9.62E+01
		340.57		48.50	2.19E+01		3.08E+01
		818.50		99.70	2.87E+00		1.67E+01
		1048.07		79.60	-5.71E+00		2.32E+01

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		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
		CS-136	1235.34		19.70	-6.08E+00	1.67E+01	1.56E+02
+		CS-137	661.65		85.12	-1.21E-02	9.53E-02	9.53E-02
+		LA-138	788.74		34.00	5.45E-02	1.27E-01	2.60E-01
			1435.80		66.00	5.56E-03		1.27E-01
+		CE-139	165.85		80.35	4.23E-02	1.17E-01	1.17E-01
+		BA-140	162.64		6.70	-2.05E+01	6.02E+01	1.90E+02
			304.84		4.50	3.71E+01		2.96E+02
			423.70		3.20	1.74E+01		4.42E+02
			437.55		2.00	1.16E+02		7.19E+02
			537.32		25.00	1.54E+01		6.02E+01
+		LA-140	328.77		20.50	3.56E+01	2.15E+01	7.91E+01
			487.03		45.50	1.66E+01		3.28E+01
			815.85		23.50	4.17E+01		8.42E+01
			1596.49		95.49	2.07E+00		2.15E+01
+		CE-141	145.44		48.40	5.70E-01	1.04E+00	1.04E+00
+	@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26
	@		293.26		42.00	1.00E+26		1.00E+26
	@		664.55		5.20	1.00E+26		1.00E+26
+		CE-144	133.54		10.80	-7.99E-02	4.97E-01	4.97E-01
+		PM-144	476.78		42.00	-4.11E-02	9.33E-02	1.80E-01
			618.01		98.60	-3.44E-03		9.33E-02
			696.49		99.49	2.20E-02		1.01E-01
+		PM-145	36.85		21.70	-3.32E-01	3.41E-01	6.45E-01
			37.36		39.70	-6.56E-02		3.41E-01
			42.30		15.10	6.11E-03		5.40E-01
			72.40		2.31	-1.27E+01		2.42E+00
+		PM-146	453.90		39.94	-5.31E-03	1.53E-01	1.53E-01
			735.90		14.01	-1.82E-01		5.93E-01
			747.13		13.10	-2.97E-01		6.01E-01
+		ND-147	91.11		28.90	1.48E+02	1.04E+02	1.04E+02
			531.02		13.10	7.54E+01		2.78E+02
+		PM-149	285.90		3.10	1.90E+13	8.60E+13	8.60E+13
+		EU-152	121.78		20.50	-4.28E-02	2.00E-01	2.00E-01
			244.69		5.40	-2.36E+00		1.24E+00
			344.27		19.13	7.00E-02		3.12E-01
			778.89		9.20	-1.98E-01		8.62E-01
			964.01		10.40	-5.64E-01		1.11E+00
			1085.78		7.22	-7.30E-01		1.25E+00
			1112.02		9.60	-5.66E-02		1.10E+00
			1407.95		14.94	1.30E-01		7.36E-01
+		GD-153	97.43		31.30	-5.39E-02	1.79E-01	1.79E-01
			103.18		22.20	-2.74E-02		2.40E-01
+		EU-154	123.07		40.50	-5.29E-02	1.02E-01	1.02E-01
			723.30		19.70	-3.03E-02		4.70E-01
			873.19		11.50	2.14E-01		7.46E-01
			996.32		10.30	-1.78E-01		9.21E-01
			1004.76		17.90	3.94E-01		5.77E-01
			1274.45		35.50	1.52E-03		3.03E-01
+		EU-155	86.50	*	30.90	1.56E-01	2.01E-01	2.01E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-155	105.30	*	20.70	1.72E-01	2.01E-01	2.69E-01
+	EU-156	811.77		10.40	-3.23E+01	7.38E+01	7.38E+01
		1153.47		7.20	4.30E+01		1.61E+02
		1230.71		8.90	-4.37E+01		1.43E+02
+	HO-166M	184.41		72.60	2.21E-01	1.08E-01	1.08E-01
		280.45		29.60	-1.33E-01		2.15E-01
		410.94		11.10	2.33E-01		5.94E-01
		711.69		54.10	-1.32E-02		1.48E-01
+	TM-171	66.72		0.14	-2.29E+01	4.01E+01	4.01E+01
+	HF-172	67.35		5.31	-4.27E-01	4.24E-01	1.11E+00
		125.81		11.30	-1.58E-02		4.24E-01
+	LU-172	181.53		20.60	1.43E+03	5.52E+03	9.60E+03
		900.72		29.81	-4.27E+03		1.00E+04
		1093.66		62.50	8.88E+02		5.52E+03
+	LU-173	100.72		5.24	4.26E-01	3.66E-01	9.25E-01
		272.11		21.20	1.39E-01		3.66E-01
+	HF-175	343.40		84.00	-6.76E-02	1.87E-01	1.87E-01
+	LU-176	88.34		13.30	2.31E-01	6.07E-02	4.38E-01
		201.83		86.00	-2.76E-02		7.12E-02
		306.78		94.00	-3.03E-03		6.07E-02
+	HF-181	133.02		41.70	7.22E-02	3.99E-01	5.27E-01
		345.85		17.20	1.29E-02		1.76E+00
		482.03		82.80	5.02E-02		3.99E-01
+	TA-182	67.75		41.20	-9.10E-02	2.36E-01	2.36E-01
		1121.30		34.90	1.73E+00		9.03E-01
		1189.05		16.23	-3.37E-03		1.40E+00
		1221.41		26.98	-2.34E-01		8.36E-01
		1231.02		11.44	-6.39E-01		2.09E+00
+	IR-192	308.46		29.68	5.30E-01	3.08E-01	5.29E-01
		468.07		48.10	7.91E-03		3.08E-01
+	HG-203	279.19		77.30	1.91E-01	3.94E-01	3.94E-01
+	TL-204	374.74		94.11	4.71E-03	6.93E-02	6.93E-02
		899.15		99.16	-1.63E-02		9.71E-02
		911.74		91.10	3.91E-01		1.80E-01
+	BI-207	569.67		97.72	-9.41E-03	6.86E-02	6.86E-02
		1063.62		74.90	4.09E-02		1.32E-01
+	TL-208	583.14	*	30.22	1.17E+00	2.17E-01	3.51E-01
		860.37	*	4.48	2.42E+00		2.25E+00
		2614.66	*	35.85	1.01E+00		2.17E-01
+	BI-210M	262.00		45.00	-4.03E-03	1.24E-01	1.24E-01
		300.00		23.00	7.77E-02		2.93E-01
+	PB-210	46.50	*	4.25	1.82E+00	2.46E+00	2.46E+00
+	PB-211	404.84		2.90	-1.47E-01	2.13E+00	2.13E+00
		831.96		2.90	9.34E-01		3.08E+00
+	BI-212	727.17	*	11.80	7.93E-01	1.09E+00	1.09E+00
		1620.62		2.75	5.04E-01		3.09E+00
+	PB-212	238.63	*	44.60	1.58E+00	2.81E-01	2.81E-01
		300.09	*	3.41	2.41E+00		4.33E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BI-214	609.31	*	46.30	1.94E+00	2.22E-01	2.22E-01
		1120.29	*	15.10	2.14E+00		1.28E+00
		1764.49	*	15.80	1.98E+00		5.35E-01
		2204.22	*	4.98	2.14E+00		2.23E-01
+	PB-214	295.21	*	19.19	2.14E+00	2.38E-01	7.57E-01
		351.92	*	37.19	1.93E+00		2.38E-01
+	RN-219	401.80		6.50	1.41E-01	9.79E-01	9.79E-01
+	RA-223	323.87		3.88	-5.69E-01	1.50E+00	1.50E+00
+	RA-224	240.98	*	3.95	5.85E+00	3.21E+00	3.21E+00
+	RA-225	40.00		31.00	3.84E+01	3.95E+01	3.95E+01
+	RA-226	186.21	*	3.28	4.37E+00	2.56E+00	2.56E+00
+	TH-227	50.10		8.40	-3.00E-02	7.12E-01	7.12E-01
		236.00		11.50	-6.51E+00		7.15E-01
		256.20		6.30	1.56E-01		8.69E-01
+	AC-228	338.32	*	11.40	1.48E+00	3.67E-01	9.40E-01
		911.07	*	27.70	1.41E+00		3.67E-01
		969.11		16.60	9.91E-01		8.65E-01
+	TH-230	48.44		16.90	-4.01E-01	3.83E-01	3.83E-01
		62.85		4.60	2.16E+00		1.39E+00
		67.67		0.37	-5.52E+00		1.43E+01
+	PA-231	283.67		1.60	1.32E+00	2.73E+00	3.79E+00
		302.67		2.30	-2.22E-01		2.73E+00
+	TH-231	25.64		14.70	0.00E+00	1.43E-01	1.43E-01
		84.21		6.40	4.96E-01		7.87E-01
+	PA-233	311.98		38.60	1.01E+00	2.00E+00	2.00E+00
+	PA-234	131.20		20.40	3.87E-03	2.15E-01	2.15E-01
		733.99		8.80	-5.38E-01		8.76E-01
		946.00		12.00	-3.58E-01		6.95E-01
+	PA-234M	1001.03		0.92	4.66E+00	1.11E+01	1.11E+01
+	TH-234	63.29		3.80	3.40E+00	1.69E+00	1.69E+00
+	U-235	143.76		10.50	1.44E-01	5.55E-01	5.55E-01
		163.35		4.70	-1.46E-01		1.17E+00
		205.31		4.70	7.49E-01		1.37E+00
+	NP-237	86.50	*	12.60	3.68E-01	4.75E-01	4.75E-01
+	NP-239	106.10		22.70	6.43E+11	1.32E+12	1.32E+12
		228.18		10.70	1.49E+12		3.90E+12
		277.60		14.10	7.32E+11		3.23E+12
+	AM-241	59.54		35.90	3.25E-02	1.54E-01	1.54E-01
+	AM-243	74.67		66.00	-1.52E-01	1.13E-01	1.13E-01
+	CM-243	209.75		3.29	8.14E-01	4.78E-01	1.99E+00
		228.14		10.60	2.20E-01		5.77E-01
		277.60		14.00	1.08E-01		4.78E-01

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+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	2.21E+00	2.21E+00	-5.03E-01	1.04E+00
	NA-22	1274.54		99.94	1.13E-01	1.13E-01	5.68E-04	5.24E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	6.76E-02	6.76E-02	1.39E-02	2.88E-02
+	K-40	1460.81	*	10.67	1.42E+00	1.42E+00	3.12E+01	6.67E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	5.62E-02	5.62E-02	-2.17E-02	2.73E-02
		78.34		96.00	7.12E-02		1.03E-01	3.49E-02
	SC-46	889.25		99.98	1.83E-01	1.83E-01	-9.44E-02	8.50E-02
		1120.51		99.99	4.01E-01		8.01E-01	1.93E-01
	V-48	983.52		99.98	6.36E+00	6.36E+00	-1.65E+00	2.93E+00
		1312.10		97.50	7.46E+00		-5.23E-01	3.41E+00
	CR-51	320.08		9.83	7.39E+00	7.39E+00	1.23E+00	3.53E+00
	MN-54	834.83		99.97	1.03E-01	1.03E-01	1.49E-03	4.78E-02
	CO-56	846.75		99.96	1.84E-01	1.84E-01	-2.19E-02	8.53E-02
		1037.75		14.03	1.62E+00		-8.06E-01	7.51E-01
		1238.25		67.00	5.60E-01		5.29E-01	2.66E-01
		1771.40		15.51	9.09E-01		-3.63E-01	3.77E-01
		2598.48		16.90	8.66E-01		-1.71E-01	3.50E-01
	CO-57	122.06		85.51	6.13E-02	6.13E-02	-1.31E-02	2.95E-02
		136.48		10.60	6.62E-01		-2.00E-01	3.22E-01
	CO-58	810.76		99.40	2.19E-01	2.19E-01	-8.10E-03	1.02E-01
	FE-59	1099.22		56.50	8.47E-01	8.47E-01	-3.58E-01	3.94E-01
		1291.56		43.20	1.08E+00		-4.40E-03	4.98E-01
	CO-60	1173.22		100.00	1.09E-01	1.08E-01	4.02E-02	5.07E-02
		1332.49		100.00	1.08E-01		2.97E-02	4.97E-02
	ZN-65	1115.52		50.75	2.75E-01	2.75E-01	1.61E-02	1.28E-01
	GA-67	93.31		35.70	3.08E+08	3.08E+08	6.82E+08	1.50E+08

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Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
GA-67	208.95		2.24	5.57E+09	3.08E+08	4.85E+09	2.70E+09
	300.22		16.00	7.84E+08		2.08E+08	3.77E+08
SE-75	121.11		16.70	4.39E-01	1.64E-01	9.65E-02	2.11E-01
	136.00		59.20	1.64E-01		2.88E-02	7.97E-02
	264.65		59.80	1.66E-01		1.27E-02	7.94E-02
	279.53		25.20	4.80E-01		2.23E-01	2.32E-01
	400.65		11.40	1.03E+00		6.95E-01	4.92E-01
RB-82	776.52		13.00	8.81E+00	8.81E+00	1.71E+00	4.10E+00
RB-83	520.41		46.00	2.74E-01	2.74E-01	-9.34E-02	1.28E-01
	529.64		30.30	4.46E-01		6.35E-02	2.09E-01
	552.65		16.40	8.24E-01		-2.21E-01	3.85E-01
KR-85	513.99		0.43	1.76E+01	1.76E+01	-4.62E+00	8.35E+00
SR-85	513.99		99.27	2.21E-01	2.21E-01	-5.80E-02	1.05E-01
Y-88	898.02		93.40	1.93E-01	1.15E-01	-3.17E-03	9.05E-02
	1836.01		99.38	1.15E-01		-1.27E-02	4.77E-02
MO-93	263.06		56.72	9.63E-02	7.73E-02	1.20E-02	4.61E-02
	684.67		99.68	7.73E-02		4.51E-03	3.62E-02
	1477.11		99.08	8.65E-02		4.45E-02	3.88E-02
NB-93M	16.57		9.43	8.02E+00	8.02E+00	0.00E+00	0.00E+00
NB-94	702.63		100.00	8.33E-02	8.33E-02	2.99E-02	3.92E-02
	871.10		100.00	8.63E-02		4.04E-02	4.02E-02
NB-95	765.79		99.81	7.29E-01	7.29E-01	0.00E+00	3.46E-01
NB-95M	235.69		25.00	7.78E+07	7.78E+07	-7.08E+08	3.79E+07
ZR-95	724.18		43.70	6.70E-01	4.62E-01	6.55E-02	3.18E-01
	756.72		55.30	4.62E-01		-1.59E-02	2.17E-01
MO-99	181.06		6.20	9.38E+10	6.55E+10	1.25E+10	4.55E+10
	739.58		12.80	6.55E+10		3.22E+10	3.08E+10
	778.00		4.50	1.69E+11		-3.89E+10	7.89E+10
RU-103	497.08		89.00	3.86E-01	3.86E-01	-5.82E-02	1.81E-01
RU-106	621.84		9.80	9.06E-01	9.06E-01	1.35E-01	4.26E-01
AG-108M	433.93		89.90	6.67E-02	6.67E-02	-3.88E-03	3.15E-02
	614.37		90.40	9.24E-02		1.92E-02	4.38E-02
	722.95		90.50	1.00E-01		-6.47E-03	4.73E-02
CD-109	88.03	*	3.72	1.87E+00	1.87E+00	1.45E+00	9.13E-01
AG-110M	657.75		93.14	1.06E-01	1.06E-01	-5.08E-02	4.97E-02
	677.61		10.53	9.54E-01		-5.56E-02	4.48E-01
	706.67		16.46	6.12E-01		-6.09E-02	2.87E-01
	763.93		21.98	5.66E-01		6.72E-02	2.67E-01
	884.67		71.63	1.46E-01		1.09E-02	6.74E-02
	1384.27		23.94	4.59E-01		-5.24E-02	2.06E-01
CD-113M	263.70		0.02	2.45E+02	2.45E+02	9.83E+01	1.17E+02
SN-113	255.12		1.93	5.44E+00	1.56E-01	3.24E+00	2.62E+00
	391.69		64.90	1.56E-01		-6.01E-02	7.35E-02
TE123M	159.00		84.10	1.22E-01	1.22E-01	1.09E-01	5.91E-02
SB-124	602.71		97.87	2.50E-01	2.50E-01	-3.21E-02	1.18E-01
	645.85		7.26	3.35E+00		-1.27E+00	1.58E+00
	722.78		11.10	2.49E+00		-1.27E-01	1.17E+00
	1691.02		49.00	4.79E-01		-2.31E-02	2.08E-01
I-125	35.49		6.49	8.14E+00	8.14E+00	-3.98E+01	3.95E+00
SB-125	176.33		6.89	8.88E-01	2.15E-01	4.47E-01	4.30E-01
	427.89		29.33	2.15E-01		-7.25E-02	1.02E-01
	463.38		10.35	7.16E-01		4.87E-01	3.40E-01
	600.56		17.80	4.76E-01		1.11E-01	2.25E-01

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Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-125	635.90		11.32	6.88E-01	2.15E-01	-2.33E-01	3.23E-01
SB-126	414.70		83.30	2.05E+01	2.05E+01	-7.99E+00	9.74E+00
	666.33		99.60	2.42E+01		-2.46E-01	1.14E+01
	695.00		99.60	2.26E+01		4.99E-01	1.06E+01
	720.50		53.80	4.35E+01		-5.25E+00	2.05E+01
SN-126	87.57	*	37.00	1.62E-01	1.62E-01	1.25E-01	7.90E-02
SB-127	473.00		25.00	1.71E+07	1.50E+07	-2.09E+06	8.04E+06
	685.20		35.70	1.50E+07		-9.91E+05	7.03E+06
	783.80		14.70	4.49E+07		1.99E+07	2.12E+07
I-129	29.78		57.00	5.05E-01	5.05E-01	2.28E-01	2.44E-01
	33.60		13.20	2.43E+00		1.03E+01	1.19E+00
	39.58		7.52	1.52E+00		1.48E+00	7.37E-01
I-131	284.30		6.05	5.78E+03	3.93E+02	2.01E+03	2.77E+03
	364.48		81.20	3.93E+02		-1.87E+02	1.86E+02
	636.97		7.26	5.70E+03		-1.44E+03	2.67E+03
	722.89		1.80	2.89E+04		-1.87E+03	1.37E+04
TE-132	49.72		13.10	8.76E+08	1.31E+08	-3.69E+07	4.23E+08
	228.16		88.00	1.31E+08		4.99E+07	6.32E+07
BA-133	81.00		33.00	1.46E-01	9.87E-02	-2.04E-02	7.08E-02
	302.84		17.80	3.59E-01		-2.92E-02	1.72E-01
	356.01		60.00	9.87E-02		1.59E-02	4.69E-02
@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00		38.00	7.25E+04	7.25E+04	-1.02E+04	3.52E+04
CS-134	563.23		8.38	8.85E-01	9.18E-02	3.07E-01	4.16E-01
	569.32		15.43	4.74E-01		-6.50E-02	2.22E-01
	604.70		97.60	9.18E-02		1.31E-02	4.35E-02
	795.84		85.40	1.11E-01		-1.22E-02	5.18E-02
	801.93		8.73	1.09E+00		2.19E-01	5.14E-01
CS-135	268.24		16.00	3.93E-01	3.93E-01	-1.50E-01	1.89E-01
@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41		28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03		9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22		7.46	1.56E+02	1.67E+01	1.40E+02	7.61E+01
	163.89		4.61	2.36E+02		-2.96E+01	1.14E+02
	176.55		13.56	8.35E+01		4.20E+01	4.05E+01
	273.65		12.66	9.62E+01		-2.45E+01	4.62E+01
	340.57		48.50	3.08E+01		2.19E+01	1.48E+01
	818.50		99.70	1.67E+01		2.87E+00	7.83E+00
	1048.07		79.60	2.32E+01		-5.71E+00	1.07E+01
	1235.34		19.70	1.56E+02		-6.08E+00	7.41E+01
CS-137	661.65		85.12	9.53E-02	9.53E-02	-1.21E-02	4.49E-02
LA-138	788.74		34.00	2.60E-01	1.27E-01	5.45E-02	1.22E-01
	1435.80		66.00	1.27E-01		5.56E-03	5.71E-02
CE-139	165.85		80.35	1.17E-01	1.17E-01	4.23E-02	5.68E-02
BA-140	162.64		6.70	1.90E+02	6.02E+01	-2.05E+01	9.21E+01
	304.84		4.50	2.96E+02		3.71E+01	1.42E+02
	423.70		3.20	4.42E+02		1.74E+01	2.09E+02
	437.55		2.00	7.19E+02		1.16E+02	3.40E+02
	537.32		25.00	6.02E+01		1.54E+01	2.83E+01
LA-140	328.77		20.50	7.91E+01	2.15E+01	3.56E+01	3.80E+01
	487.03		45.50	3.28E+01		1.66E+01	1.55E+01
	815.85		23.50	8.42E+01		4.17E+01	3.94E+01
	1596.49		95.49	2.15E+01		2.07E+00	9.65E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	CE-141	145.44		48.40	1.04E+00	1.04E+00	5.70E-01	5.06E-01
@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		293.26		42.00	1.00E+26		1.00E+26	1.00E+20
@		664.55		5.20	1.00E+26		1.00E+26	1.00E+20
	CE-144	133.54		10.80	4.97E-01	4.97E-01	-7.99E-02	2.39E-01
	PM-144	476.78		42.00	1.80E-01	9.33E-02	-4.11E-02	8.48E-02
		618.01		98.60	9.33E-02		-3.44E-03	4.40E-02
		696.49		99.49	1.01E-01		2.20E-02	4.74E-02
	PM-145	36.85		21.70	6.45E-01	3.41E-01	-3.32E-01	3.13E-01
		37.36		39.70	3.41E-01		-6.56E-02	1.65E-01
		42.30		15.10	5.40E-01		6.11E-03	2.60E-01
		72.40		2.31	2.42E+00		-1.27E+01	1.18E+00
	PM-146	453.90		39.94	1.53E-01	1.53E-01	-5.31E-03	7.18E-02
		735.90		14.01	5.93E-01		-1.82E-01	2.78E-01
		747.13		13.10	6.01E-01		-2.97E-01	2.81E-01
	ND-147	91.11		28.90	1.04E+02	1.04E+02	1.48E+02	5.08E+01
		531.02		13.10	2.78E+02		7.54E+01	1.30E+02
	PM-149	285.90		3.10	8.60E+13	8.60E+13	1.90E+13	4.12E+13
	EU-152	121.78		20.50	2.00E-01	2.00E-01	-4.28E-02	9.65E-02
		244.69		5.40	1.24E+00		-2.36E+00	5.97E-01
		344.27		19.13	3.12E-01		7.00E-02	1.49E-01
		778.89		9.20	8.62E-01		-1.98E-01	4.02E-01
		964.01		10.40	1.11E+00		-5.64E-01	5.22E-01
		1085.78		7.22	1.25E+00		-7.30E-01	5.77E-01
		1112.02		9.60	1.10E+00		-5.66E-02	5.15E-01
		1407.95		14.94	7.36E-01		1.30E-01	3.39E-01
	GD-153	97.43		31.30	1.79E-01	1.79E-01	-5.39E-02	8.65E-02
		103.18		22.20	2.40E-01		-2.74E-02	1.16E-01
	EU-154	123.07		40.50	1.02E-01	1.02E-01	-5.29E-02	4.93E-02
		723.30		19.70	4.70E-01		-3.03E-02	2.22E-01
		873.19		11.50	7.46E-01		2.14E-01	3.47E-01
		996.32		10.30	9.21E-01		-1.78E-01	4.29E-01
		1004.76		17.90	5.77E-01		3.94E-01	2.70E-01
		1274.45		35.50	3.03E-01		1.52E-03	1.40E-01
+	EU-155	86.50	*	30.90	2.01E-01	2.01E-01	1.56E-01	9.83E-02
		105.30	*	20.70	2.69E-01		1.72E-01	1.31E-01
	EU-156	811.77		10.40	7.38E+01	7.38E+01	-3.23E+01	3.43E+01
		1153.47		7.20	1.61E+02		4.30E+01	7.57E+01
		1230.71		8.90	1.43E+02		-4.37E+01	6.72E+01
	HO-166M	184.41		72.60	1.08E-01	1.08E-01	2.21E-01	5.25E-02
		280.45		29.60	2.15E-01		-1.33E-01	1.03E-01
		410.94		11.10	5.94E-01		2.33E-01	2.83E-01
		711.69		54.10	1.48E-01		-1.32E-02	6.95E-02
	TM-171	66.72		0.14	4.01E+01	4.01E+01	-2.29E+01	1.95E+01
	HF-172	67.35		5.31	1.11E+00	4.24E-01	-4.27E-01	5.39E-01
		125.81		11.30	4.24E-01		-1.58E-02	2.05E-01
	LU-172	181.53		20.60	9.60E+03	5.52E+03	1.43E+03	4.66E+03
		900.72		29.81	1.00E+04		-4.27E+03	4.68E+03
		1093.66		62.50	5.52E+03		8.88E+02	2.58E+03
	LU-173	100.72		5.24	9.25E-01	3.66E-01	4.26E-01	4.48E-01
		272.11		21.20	3.66E-01		1.39E-01	1.77E-01
	HF-175	343.40		84.00	1.87E-01	1.87E-01	-6.76E-02	8.90E-02
	LU-176	88.34		13.30	4.38E-01	6.07E-02	2.31E-01	2.14E-01

Analysis Report for 1707092-18

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	LU-176	201.83		86.00	7.12E-02	6.07E-02	-2.76E-02	3.45E-02
		306.78		94.00	6.07E-02		-3.03E-03	2.90E-02
	HF-181	133.02		41.70	5.27E-01	3.99E-01	7.22E-02	2.54E-01
		345.85		17.20	1.76E+00		1.29E-02	8.38E-01
		482.03		82.80	3.99E-01		5.02E-02	1.88E-01
	TA-182	67.75		41.20	2.36E-01	2.36E-01	-9.10E-02	1.15E-01
		1121.30		34.90	9.03E-01		1.73E+00	4.33E-01
		1189.05		16.23	1.40E+00		-3.37E-03	6.59E-01
		1221.41		26.98	8.36E-01		-2.34E-01	3.92E-01
		1231.02		11.44	2.09E+00		-6.39E-01	9.83E-01
	IR-192	308.46		29.68	5.29E-01	3.08E-01	5.30E-01	2.53E-01
		468.07		48.10	3.08E-01		7.91E-03	1.45E-01
	HG-203	279.19		77.30	3.94E-01	3.94E-01	1.91E-01	1.90E-01
	TL-204	374.74		94.11	6.93E-02	6.93E-02	4.71E-03	3.30E-02
		899.15		99.16	9.71E-02		-1.63E-02	4.54E-02
		911.74		91.10	1.80E-01		3.91E-01	8.66E-02
	BI-207	569.67		97.72	6.86E-02	6.86E-02	-9.41E-03	3.22E-02
		1063.62		74.90	1.32E-01		4.09E-02	6.12E-02
+	TL-208	583.14	*	30.22	3.51E-01	2.17E-01	1.17E+00	1.68E-01
		860.37	*	4.48	2.25E+00		2.42E+00	1.06E+00
		2614.66	*	35.85	2.17E-01		1.01E+00	9.24E-02
	BI-210M	262.00		45.00	1.24E-01	1.24E-01	-4.03E-03	5.92E-02
		300.00		23.00	2.93E-01		7.77E-02	1.41E-01
+	PB-210	46.50	*	4.25	2.46E+00	2.46E+00	1.82E+00	1.20E+00
	PB-211	404.84		2.90	2.13E+00	2.13E+00	-1.47E-01	1.01E+00
		831.96		2.90	3.08E+00		9.34E-01	1.44E+00
+	BI-212	727.17	*	11.80	1.09E+00	1.09E+00	7.93E-01	5.26E-01
		1620.62		2.75	3.09E+00		5.04E-01	1.37E+00
+	PB-212	238.63	*	44.60	2.81E-01	2.81E-01	1.58E+00	1.38E-01
		300.09	*	3.41	4.33E+00		2.41E+00	2.13E+00
+	BI-214	609.31	*	46.30	2.22E-01	2.22E-01	1.94E+00	1.06E-01
		1120.29	*	15.10	1.28E+00		2.14E+00	6.16E-01
		1764.49	*	15.80	5.35E-01		1.98E+00	2.36E-01
		2204.22	*	4.98	2.23E-01		2.14E+00	0.00E+00
+	PB-214	295.21	*	19.19	7.57E-01	2.38E-01	2.14E+00	3.72E-01
		351.92	*	37.19	2.38E-01		1.93E+00	1.15E-01
	RN-219	401.80		6.50	9.79E-01	9.79E-01	1.41E-01	4.65E-01
	RA-223	323.87		3.88	1.50E+00	1.50E+00	-5.69E-01	7.14E-01
+	RA-224	240.98	*	3.95	3.21E+00	3.21E+00	5.85E+00	1.58E+00
	RA-225	40.00		31.00	3.95E+01	3.95E+01	3.84E+01	1.92E+01
+	RA-226	186.21	*	3.28	2.56E+00	2.56E+00	4.37E+00	1.25E+00
	TH-227	50.10		8.40	7.12E-01	7.12E-01	-3.00E-02	3.44E-01
		236.00		11.50	7.15E-01		-6.51E+00	3.48E-01
		256.20		6.30	8.69E-01		1.56E-01	4.17E-01
+	AC-228	338.32	*	11.40	9.40E-01	3.67E-01	1.48E+00	4.58E-01
		911.07	*	27.70	3.67E-01		1.41E+00	1.73E-01
		969.11		16.60	8.65E-01		9.91E-01	4.13E-01
	TH-230	48.44		16.90	3.83E-01	3.83E-01	-4.01E-01	1.85E-01
		62.85		4.60	1.39E+00		2.16E+00	6.78E-01
		67.67		0.37	1.43E+01		-5.52E+00	6.96E+00
	PA-231	283.67		1.60	3.79E+00	2.73E+00	1.32E+00	1.82E+00
		302.67		2.30	2.73E+00		-2.22E-01	1.31E+00
	TH-231	25.64		14.70	1.43E-01	1.43E-01	0.00E+00	0.00E+00

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TH-231	84.21		6.40	7.87E-01	1.43E-01	4.96E-01	3.83E-01
PA-233	311.98		38.60	2.00E+00	2.00E+00	1.01E+00	9.57E-01
PA-234	131.20		20.40	2.15E-01	2.15E-01	3.87E-03	1.04E-01
	733.99		8.80	8.76E-01		-5.38E-01	4.10E-01
	946.00		12.00	6.95E-01		-3.58E-01	3.22E-01
PA-234M	1001.03		0.92	1.11E+01	1.11E+01	4.66E+00	5.19E+00
TH-234	63.29		3.80	1.69E+00	1.69E+00	3.40E+00	8.26E-01
U-235	143.76		10.50	5.55E-01	5.55E-01	1.44E-01	2.70E-01
	163.35		4.70	1.17E+00		-1.46E-01	5.65E-01
	205.31		4.70	1.37E+00		7.49E-01	6.65E-01
NP-237	86.50	*	12.60	4.75E-01	4.75E-01	3.68E-01	2.32E-01
NP-239	106.10		22.70	1.32E+12	1.32E+12	6.43E+11	6.38E+11
	228.18		10.70	3.90E+12		1.49E+12	1.88E+12
	277.60		14.10	3.23E+12		7.32E+11	1.56E+12
AM-241	59.54		35.90	1.54E-01	1.54E-01	3.25E-02	7.49E-02
AM-243	74.67		66.00	1.13E-01	1.13E-01	-1.52E-01	5.53E-02
CM-243	209.75		3.29	1.99E+00	4.78E-01	8.14E-01	9.66E-01
	228.14		10.60	5.77E-01		2.20E-01	2.79E-01
	277.60		14.00	4.78E-01		1.08E-01	2.30E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

Analysis Report for 1707092-18

HTC-A09-S001-1824-01

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: HTC-A09-S001-1824-01

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	47	96	142	149
33:	167	676	159	109	120	115	115	129
41:	113	77	87	83	66	96	185	104
49:	88	87	92	83	103	116	103	109
57:	92	111	97	154	109	115	189	230
65:	129	105	115	145	145	171	138	138
73:	162	175	453	265	477	504	128	138
81:	133	98	127	140	166	120	226	259
89:	101	219	149	112	304	181	108	112
97:	107	76	109	104	91	97	73	89
105:	105	97	104	88	82	91	92	95
113:	95	99	82	96	75	82	72	86
121:	86	75	79	85	96	74	98	93
129:	103	107	71	89	82	75	82	81
137:	84	78	73	92	84	87	69	107
145:	87	87	81	82	83	70	70	87
153:	78	101	81	63	76	83	71	78
161:	69	56	73	75	66	64	69	79
169:	58	83	76	68	57	58	67	63
177:	61	71	69	57	76	82	66	83
185:	81	241	124	61	67	60	73	70
193:	62	56	57	73	58	60	75	55
201:	72	55	78	61	68	69	72	63
209:	88	84	61	50	56	62	69	58
217:	56	43	67	61	53	50	58	66
225:	53	59	57	53	51	47	44	48
233:	60	39	62	60	60	254	595	137
241:	106	181	112	50	37	39	47	48
249:	53	40	53	39	48	41	36	34
257:	43	28	54	53	26	36	40	27
265:	39	38	34	44	47	64	61	52
273:	30	51	45	32	56	67	51	36
281:	45	50	35	43	37	29	28	33
289:	29	31	33	33	34	49	240	204
297:	40	27	38	71	53	33	41	25
305:	37	21	33	28	33	38	43	23
313:	25	28	21	30	32	23	38	34
321:	30	27	26	30	28	34	36	58
329:	48	35	34	37	37	31	29	33
337:	23	88	111	34	34	29	24	19
345:	27	37	23	28	22	29	153	462
353:	148	29	21	28	25	23	23	24
361:	30	23	27	20	17	23	25	24

369:	25	29	17	27	23	23	34	26

Sample Title: HTC-A09-S001-1824-01

Channel								
377:	27	25	26	24	24	15	21	21
385:	21	26	26	21	25	17	21	23
393:	25	11	22	24	22	24	26	23
401:	18	35	34	16	22	29	16	18
409:	33	29	23	19	27	24	19	25
417:	20	32	22	26	21	21	27	23
425:	16	20	21	16	22	18	27	17
433:	15	24	20	22	15	23	25	16
441:	20	13	18	19	23	21	19	22
449:	26	17	21	10	14	26	15	23
457:	17	17	21	16	15	28	37	21
465:	19	18	13	15	21	14	13	14
473:	18	20	21	19	19	16	17	21
481:	22	21	19	12	12	25	22	19
489:	18	16	11	7	18	14	15	13
497:	14	21	12	19	14	13	16	14
505:	20	12	16	18	25	67	82	52
513:	21	22	12	13	13	8	14	15
521:	11	16	23	12	13	5	9	15
529:	9	18	21	16	18	15	16	25
537:	13	14	15	15	11	10	20	10
545:	13	19	15	15	18	16	13	11
553:	12	15	17	13	15	16	12	12
561:	11	21	18	18	15	12	17	15
569:	12	15	20	25	14	15	11	16
577:	19	15	14	15	17	39	137	81
585:	22	16	15	10	8	8	9	11
593:	15	13	12	12	23	11	15	8
601:	19	12	16	8	20	15	20	73
609:	310	197	31	14	9	12	13	19
617:	14	13	11	8	13	7	23	13
625:	9	4	14	12	12	9	21	7
633:	13	11	12	9	11	13	10	11
641:	15	14	11	15	8	9	9	16
649:	18	14	16	19	12	10	7	15
657:	12	11	10	14	13	12	19	13
665:	29	16	9	11	12	6	17	13
673:	14	6	9	7	14	16	11	15
681:	9	10	11	10	17	8	11	8
689:	9	12	8	14	8	15	9	12
697:	9	21	15	14	9	14	10	17
705:	10	7	7	13	9	15	10	13
713:	10	10	14	17	14	13	14	14
721:	9	13	13	16	14	22	34	29
729:	10	9	12	14	9	11	4	12
737:	8	14	18	8	17	10	14	7
745:	8	13	9	15	10	4	7	18
753:	7	12	13	14	17	12	9	9
761:	15	11	13	12	12	16	21	28
769:	25	12	11	11	9	4	9	9
777:	6	9	14	6	12	13	15	8
785:	18	21	6	12	8	12	6	10
793:	10	15	18	7	7	10	18	9

801:	9	7	11	14	9	15	9	8

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Channel								
809:	8	4	12	14	11	4	11	10
817:	14	9	7	7	12	11	9	9
825:	7	14	6	11	13	13	8	12
833:	11	9	9	8	7	7	13	19
841:	14	15	6	5	12	10	6	8
849:	6	11	8	12	12	13	10	6
857:	11	7	17	28	21	9	5	4
865:	6	9	5	7	10	12	9	10
873:	10	8	8	5	7	6	7	11
881:	10	9	7	6	5	11	5	4
889:	8	6	10	10	14	15	9	8
897:	13	10	10	10	9	11	8	13
905:	18	9	7	4	10	41	84	48
913:	12	14	10	8	4	3	12	10
921:	5	4	8	6	6	6	9	12
929:	7	9	5	12	5	23	11	7
937:	5	5	12	7	12	6	6	6
945:	7	5	15	8	10	12	9	11
953:	7	3	10	4	10	7	11	7
961:	6	14	18	23	18	13	16	37
969:	54	22	13	6	4	12	5	11
977:	12	8	6	13	7	7	4	8
985:	3	5	7	10	10	8	9	7
993:	4	6	9	11	14	7	10	3
1001:	20	13	7	6	7	13	6	7
1009:	5	11	8	9	7	7	7	11
1017:	15	10	7	10	5	12	7	5
1025:	5	10	6	9	11	7	9	11
1033:	11	7	5	4	12	11	9	10
1041:	15	7	14	12	9	5	5	7
1049:	9	9	13	4	9	5	6	8
1057:	7	7	8	6	10	5	8	10
1065:	11	11	8	5	7	6	6	9
1073:	6	6	12	16	9	10	7	13
1081:	6	6	5	5	8	8	10	6
1089:	10	10	13	10	8	13	8	7
1097:	11	8	9	9	9	8	14	9
1105:	6	5	7	9	14	13	8	4
1113:	7	10	14	8	16	6	45	58
1121:	44	16	5	8	4	8	11	9
1129:	7	10	12	9	6	10	9	11
1137:	9	14	9	6	10	5	6	9
1145:	10	7	6	9	11	8	8	11
1153:	14	9	18	12	12	7	9	7
1161:	8	9	9	13	13	11	5	5
1169:	13	7	11	7	4	11	7	9
1177:	6	10	6	7	7	13	16	6
1185:	9	17	9	13	15	11	9	9
1193:	16	12	3	22	13	8	13	7
1201:	10	12	6	7	8	13	7	10
1209:	11	13	12	7	10	13	11	6
1217:	15	5	12	14	9	13	13	12
1225:	19	11	8	20	4	12	17	19

1233:	7	15	13	17	20	34	15	11

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Channel								
1241:	5	12	9	6	7	6	5	8
1249:	11	9	11	5	11	8	7	8
1257:	4	5	6	4	5	3	8	3
1265:	8	8	8	4	8	6	2	12
1273:	10	10	8	2	8	7	8	16
1281:	21	5	3	4	9	6	11	7
1289:	7	6	1	8	5	10	9	0
1297:	7	6	6	8	9	7	4	11
1305:	6	6	6	2	5	6	6	9
1313:	2	8	6	5	3	11	5	3
1321:	10	6	4	6	11	4	3	6
1329:	7	6	8	5	9	3	9	4
1337:	8	3	5	3	2	1	4	5
1345:	3	2	4	3	2	4	3	1
1353:	3	4	4	4	3	4	7	1
1361:	2	4	4	3	3	4	4	3
1369:	3	1	8	0	10	3	5	10
1377:	17	20	3	5	4	4	0	4
1385:	8	2	5	4	1	1	2	2
1393:	1	1	1	3	7	3	4	5
1401:	8	6	3	3	2	10	9	12
1409:	2	1	5	2	3	3	2	2
1417:	4	3	5	4	3	4	2	4
1425:	2	2	4	2	3	3	2	2
1433:	1	3	5	3	1	4	5	4
1441:	1	2	2	2	4	4	4	2
1449:	3	1	1	3	2	1	7	8
1457:	12	57	146	369	360	95	14	5
1465:	2	1	5	1	4	4	0	7
1473:	2	5	3	3	1	2	0	2
1481:	2	0	4	2	0	3	0	3
1489:	1	1	4	3	1	6	5	10
1497:	1	1	2	1	2	0	2	3
1505:	0	2	3	10	4	6	2	1
1513:	2	2	2	4	1	3	1	1
1521:	2	2	1	1	4	3	4	3
1529:	2	2	0	2	3	2	2	3
1537:	0	1	3	3	1	1	2	6
1545:	1	1	2	2	5	1	0	3
1553:	1	4	1	2	2	1	1	0
1561:	1	3	2	3	1	1	3	0
1569:	1	1	1	0	1	2	0	0
1577:	1	0	1	2	4	1	1	0
1585:	3	2	5	4	3	4	5	4
1593:	3	3	2	3	2	3	0	0
1601:	4	2	2	1	2	0	3	2
1609:	3	2	1	1	1	3	0	2
1617:	2	3	1	3	9	1	1	1
1625:	3	2	0	0	5	3	2	2
1633:	0	2	3	1	3	0	0	3
1641:	1	0	3	1	1	2	3	2
1649:	1	1	1	2	0	3	5	1
1657:	2	0	0	1	3	2	0	0

1665:	0	0	0	4	4	0	2	1

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Channel								
1673:	2	1	2	3	1	2	0	2
1681:	2	2	1	2	1	3	0	0
1689:	0	0	2	1	2	7	2	0
1697:	2	2	1	0	2	0	4	1
1705:	4	0	0	1	1	3	1	1
1713:	0	1	2	2	2	2	1	0
1721:	1	3	2	1	2	1	3	3
1729:	8	9	1	1	3	1	1	1
1737:	1	0	1	3	0	2	1	1
1745:	1	1	1	2	1	1	0	2
1753:	2	1	0	1	3	2	2	3
1761:	1	11	24	29	23	3	2	0
1769:	0	0	1	0	0	2	2	2
1777:	0	0	2	1	2	1	0	1
1785:	1	1	0	1	0	0	1	2
1793:	2	1	3	0	0	0	1	1
1801:	1	2	1	1	0	0	2	5
1809:	1	1	0	1	0	0	0	0
1817:	2	0	0	0	2	0	0	2
1825:	0	6	1	3	3	0	0	2
1833:	0	0	0	2	2	1	1	0
1841:	0	0	3	1	2	3	4	2
1849:	2	1	3	0	0	0	1	2
1857:	1	2	0	2	1	2	1	0
1865:	1	1	1	1	0	0	1	1
1873:	2	2	1	1	0	1	1	0
1881:	0	2	1	0	4	1	3	0
1889:	2	0	0	1	1	0	2	2
1897:	0	0	0	1	0	1	2	0
1905:	1	0	1	2	0	1	0	0
1913:	4	2	2	1	1	2	2	3
1921:	0	1	1	2	1	2	1	1
1929:	0	1	0	0	1	2	0	1
1937:	2	2	3	0	1	1	1	1
1945:	1	2	1	3	1	0	0	2
1953:	1	0	0	0	0	1	2	0
1961:	1	1	0	0	1	0	2	1
1969:	6	2	1	1	1	0	2	2
1977:	0	0	1	1	0	1	4	0
1985:	1	2	1	1	1	1	0	1
1993:	1	0	1	0	2	0	0	1
2001:	0	2	0	1	2	1	4	1
2009:	0	2	1	3	1	0	2	0
2017:	0	0	2	0	2	1	1	0
2025:	1	0	1	1	0	3	1	1
2033:	0	0	2	1	0	0	2	3
2041:	0	0	3	2	0	1	1	2
2049:	0	1	2	2	3	1	0	0
2057:	1	0	1	0	0	0	2	0
2065:	0	2	0	2	1	0	0	2
2073:	1	1	1	1	0	2	1	2
2081:	1	2	1	0	0	0	1	1
2089:	1	0	0	1	2	2	2	2

2097:	2	0	2	2	6	1	4	1

Sample Title: HTC-A09-S001-1824-01

Channel								
2105:	2	4	0	0	1	0	0	0
2113:	2	3	1	2	0	0	1	2
2121:	0	0	2	0	0	0	3	1
2129:	1	2	1	0	0	0	1	2
2137:	0	1	0	0	0	0	1	0
2145:	0	0	0	0	0	0	0	2
2153:	0	2	0	1	1	1	0	1
2161:	1	2	1	1	1	0	2	1
2169:	1	0	2	0	2	0	0	0
2177:	1	0	0	1	0	1	1	0
2185:	2	1	1	0	0	0	1	2
2193:	1	2	0	0	1	1	5	1
2201:	2	2	5	4	3	2	0	0
2209:	0	2	0	1	0	0	0	3
2217:	0	1	1	0	1	1	1	1
2225:	1	1	1	1	2	1	0	1
2233:	0	0	0	0	1	1	0	0
2241:	0	0	0	1	0	0	0	0
2249:	3	1	0	2	0	0	0	0
2257:	1	2	2	2	2	0	1	1
2265:	2	0	2	1	1	1	0	0
2273:	1	0	3	1	0	1	2	1
2281:	1	1	0	1	1	0	3	0
2289:	0	1	0	0	2	2	2	1
2297:	0	2	1	0	0	0	0	0
2305:	1	2	0	1	1	3	2	2
2313:	3	3	0	0	3	1	2	0
2321:	2	2	2	0	2	0	3	2
2329:	1	0	1	0	0	1	0	1
2337:	1	1	1	2	1	1	0	1
2345:	1	0	0	2	0	2	2	2
2353:	1	2	1	1	0	0	1	2
2361:	0	1	2	0	2	2	1	1
2369:	0	1	0	1	1	1	2	3
2377:	3	0	1	1	0	1	0	0
2385:	0	1	0	2	1	1	1	1
2393:	1	0	1	2	0	1	1	3
2401:	1	1	0	0	1	0	0	0
2409:	0	2	0	4	0	1	2	3
2417:	1	1	2	0	0	2	1	0
2425:	1	1	2	2	0	0	4	1
2433:	2	0	0	0	2	3	0	0
2441:	0	0	0	0	1	1	2	0
2449:	0	1	1	0	0	2	1	0
2457:	1	0	1	0	0	1	0	0
2465:	1	0	0	0	2	1	1	0
2473:	1	1	0	1	0	1	0	1
2481:	1	2	3	2	0	0	1	1
2489:	0	0	0	0	1	0	1	1
2497:	0	0	0	0	1	1	0	0
2505:	1	0	0	0	1	1	0	0
2513:	0	0	0	1	0	3	0	1
2521:	1	0	0	0	0	0	0	1

2529:	0	0	1	0	2	0	0	0

Sample Title: HTC-A09-S001-1824-01

Channel								
2537:	0	0	0	0	0	0	1	0
2545:	1	0	1	0	0	0	0	0
2553:	0	1	0	0	2	1	0	0
2561:	0	0	0	0	0	1	0	0
2569:	0	1	0	0	1	0	0	0
2577:	0	1	0	0	0	0	0	0
2585:	0	0	0	0	0	2	1	0
2593:	0	0	0	0	0	1	2	1
2601:	2	0	0	1	0	0	1	2
2609:	0	4	10	11	26	29	10	2
2617:	1	0	0	1	0	2	0	0
2625:	0	1	0	0	0	1	0	2
2633:	0	0	0	1	0	0	0	0
2641:	0	0	0	0	0	0	0	1
2649:	1	0	1	0	0	1	0	1
2657:	0	0	0	0	0	0	0	0
2665:	0	0	0	0	0	0	1	0
2673:	0	0	0	0	0	0	0	0
2681:	0	1	0	0	0	0	0	0
2689:	0	0	0	1	1	0	2	0
2697:	0	0	0	0	0	1	0	0
2705:	0	0	1	3	0	0	0	1
2713:	0	0	0	0	0	0	0	0
2721:	0	0	0	1	0	0	1	0
2729:	0	0	0	0	0	1	0	0
2737:	0	0	0	0	0	1	1	0
2745:	0	0	0	1	0	0	0	0
2753:	0	0	1	1	0	0	0	0
2761:	0	0	2	1	0	0	0	0
2769:	0	0	0	0	0	0	0	0
2777:	1	0	0	0	0	0	0	1
2785:	0	0	0	1	0	0	0	0
2793:	0	0	1	0	2	0	0	0
2801:	0	0	0	1	1	0	0	0
2809:	0	1	0	0	1	0	1	1
2817:	0	0	0	1	1	1	0	2
2825:	0	0	0	1	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	0	0	0	0	0
2849:	0	0	0	0	0	0	0	0
2857:	0	0	0	1	0	0	1	0
2865:	0	0	0	0	0	0	0	0
2873:	0	0	0	0	1	0	0	0
2881:	0	0	0	0	1	1	0	0
2889:	1	0	0	0	1	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	1	0	0	0	0	1	0	0
2913:	0	0	0	1	1	0	0	0
2921:	0	0	0	0	0	2	1	1
2929:	0	0	0	0	0	1	0	0
2937:	0	0	0	0	0	0	0	1
2945:	0	0	0	0	0	0	0	1
2953:	0	0	0	0	0	0	0	1

2961:	0	0	0	0	0	1	0	0

Sample Title: HTC-A09-S001-1824-01

Channel								
2969:	0	0	1	0	1	1	1	0
2977:	0	0	0	0	0	1	0	0
2985:	0	0	1	0	0	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	0	0	0	0	0	0	0	0
3009:	1	0	0	0	1	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	1	0	0	0	1	0
3033:	0	0	2	0	0	1	1	0
3041:	0	0	0	0	0	0	0	1
3049:	0	0	0	0	0	1	1	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	0	0	0	0	0	0	0
3081:	0	0	1	0	1	0	0	0
3089:	0	0	0	0	0	0	0	0
3097:	0	1	0	0	1	0	0	0
3105:	0	1	0	0	0	0	0	0
3113:	0	0	0	0	0	0	0	0
3121:	0	0	0	1	0	0	0	0
3129:	0	0	0	1	0	0	0	0
3137:	0	1	0	1	0	0	1	1
3145:	0	0	0	0	0	0	0	1
3153:	0	0	0	0	0	0	0	0
3161:	0	2	0	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	1	0	1	0	1	0
3201:	0	1	1	0	0	0	1	0
3209:	1	0	0	0	1	1	0	1
3217:	0	0	0	0	0	1	0	0
3225:	1	2	0	1	1	0	1	0
3233:	0	1	0	1	0	0	0	0
3241:	0	0	0	0	0	0	0	1
3249:	1	0	0	0	0	0	1	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	2	1	0	1	0	0	0
3281:	0	0	0	0	0	1	0	0
3289:	1	1	0	0	0	2	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	1	0	0	0	0
3313:	0	1	0	0	0	0	0	0
3321:	0	1	0	0	0	0	0	0
3329:	0	0	0	0	0	0	1	0
3337:	0	0	1	0	1	0	0	0
3345:	1	0	0	0	1	0	0	0
3353:	0	0	0	1	0	1	0	0
3361:	0	0	1	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	1	0	0	0	0	0	0	0
3385:	0	0	0	0	1	0	0	0

3393:	0	0	0	0	0	0	2	0

Sample Title: HTC-A09-S001-1824-01

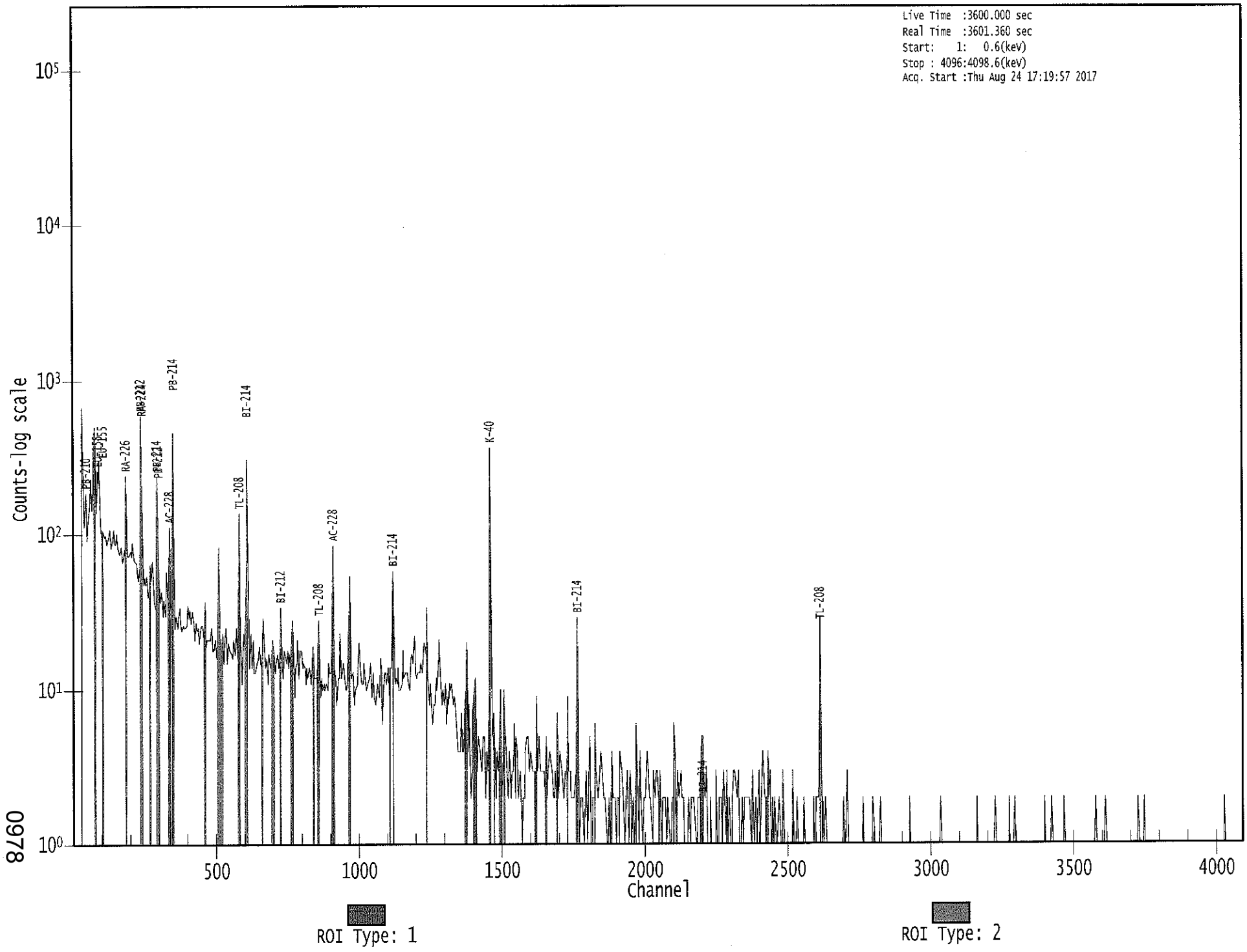
Channel								
3401:	1	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	1	0	0	0	2	0
3425:	0	0	1	1	0	0	0	0
3433:	1	0	0	0	0	0	0	0
3441:	0	0	1	0	0	1	0	0
3449:	0	0	0	0	0	0	0	0
3457:	1	0	0	0	0	0	0	0
3465:	0	2	0	0	0	0	1	0
3473:	0	0	0	0	0	0	0	0
3481:	1	0	0	0	1	0	0	0
3489:	0	0	1	0	0	0	0	1
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	1
3521:	0	0	0	0	0	0	1	0
3529:	0	0	0	0	0	0	1	0
3537:	0	0	0	0	0	0	0	0
3545:	1	0	0	0	0	0	0	0
3553:	0	0	1	0	0	0	1	1
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	1	0	0	0
3577:	0	2	0	0	0	1	0	0
3585:	0	0	0	1	0	1	0	1
3593:	0	1	1	0	0	0	0	0
3601:	0	0	0	0	0	0	1	0
3609:	0	0	2	0	1	2	0	0
3617:	1	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	1	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	1	0	0	1	0	0
3657:	0	0	0	0	0	0	1	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	1	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	1	0
3705:	0	0	1	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	1	0	0	2	0	0
3729:	0	0	1	0	0	0	0	0
3737:	0	0	1	0	1	0	0	1
3745:	0	0	0	2	0	0	0	0
3753:	0	0	0	1	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	1	0	0	0
3785:	1	0	1	1	0	0	0	0
3793:	0	1	1	0	0	0	0	1
3801:	0	0	0	0	1	0	0	1
3809:	0	0	0	0	0	0	1	0
3817:	0	1	0	0	0	0	0	1

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A09-S001-1824-01

Channel								
3833:	0	0	0	0	0	1	0	0
3841:	0	0	0	0	0	0	0	0
3849:	1	0	0	0	0	0	0	0
3857:	0	0	0	1	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	1	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	1
3889:	0	0	0	0	0	0	1	0
3897:	0	0	1	0	0	0	1	0
3905:	0	0	0	0	0	0	0	1
3913:	0	0	0	1	0	0	0	1
3921:	0	1	0	0	0	0	1	1
3929:	0	0	0	0	1	0	0	0
3937:	0	1	0	0	0	0	0	0
3945:	0	0	1	0	0	0	0	0
3953:	0	0	1	0	0	0	0	0
3961:	0	1	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	1	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	1	1	0	0	0	0	0	0
4001:	0	1	0	0	0	1	0	0
4009:	0	0	0	0	0	1	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	2	2	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	1	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	1	0	0	0
4081:	0	0	1	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000055929.CNF



0978

KO 8/24/17

Apex-Gamma

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-19
Sample Description	: HTC-A09-S001-2430-01
Sample Type	: SOIL
Sample Size	: 6.487E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 7:44:21AM
Acquisition Started	: 8/24/2017 5:20:10PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3608.6 seconds
Dead Time	: 0.24 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 9 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55930

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 6:21:10PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.62	46.93	0.0000	0.00
2	76.38	76.69	0.0000	0.00
3	87.57	87.87	0.0000	0.00
4	93.12	93.41	0.0000	0.00
5	145.26	145.54	0.0000	0.00
6	166.92	167.19	0.0000	0.00
7	186.21	186.48	0.0000	0.00
8	210.13	210.38	0.0000	0.00
9	238.93	239.18	0.0000	0.00
10	242.14	242.39	0.0000	0.00
11	295.56	295.79	0.0000	0.00
12	338.46	338.67	0.0000	0.00
13	352.21	352.42	0.0000	0.00
14	400.81	401.01	0.0000	0.00
15	434.44	434.62	0.0000	0.00
16	454.42	454.60	0.0000	0.00
17	463.24	463.41	0.0000	0.00
18	511.41	511.57	0.0000	0.00
19	553.84	553.98	0.0000	0.00
20	583.55	583.68	0.0000	0.00
21	609.58	609.70	0.0000	0.00
22	728.29	728.38	0.0000	0.00
23	768.95	769.02	0.0000	0.00
24	787.50	787.56	0.0000	0.00
25	795.14	795.20	0.0000	0.00
26	861.84	861.88	0.0000	0.00
27	906.95	906.97	0.0000	0.00
28	911.45	911.47	0.0000	0.00
29	969.55	969.55	0.0000	0.00
30	998.46	998.45	0.0000	0.00
31	1120.54	1120.49	0.0000	0.00
32	1315.99	1315.87	0.0000	0.00
33	1377.97	1377.83	0.0000	0.00
34	1405.48	1405.33	0.0000	0.00
35	1461.05	1460.89	0.0000	0.00
36	1511.00	1510.82	0.0000	0.00
37	1730.33	1730.07	0.0000	0.00
38	1764.95	1764.68	0.0000	0.00
39	1793.59	1793.31	0.0000	0.00
40	1820.79	1820.51	0.0000	0.00
41	1847.15	1846.86	0.0000	0.00
42	2069.38	2069.01	0.0000	0.00

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	2104.00	2103.62	0.0000	0.00
44	2204.13	2203.71	0.0000	0.00
45	2604.75	2604.20	0.0000	0.00
46	2614.93	2614.37	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 6:21:10PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	46.62	44 -	50	46.93	1.58E+02	95.83	1.57E+03	1.95
	2	76.38	71 -	82	76.69	1.63E+03	190.43	3.70E+03	3.97
	3	87.57	86 -	91	87.87	1.42E+02	108.42	2.25E+03	1.93
	4	93.12	91 -	96	93.41	3.31E+02	101.18	1.77E+03	1.94
	5	145.26	143 -	148	145.54	9.80E+01	73.17	9.96E+02	2.72
	6	166.92	165 -	170	167.19	6.21E+01	66.17	8.28E+02	3.06
	7	186.21	183 -	189	186.48	2.96E+02	79.03	9.14E+02	1.91
	8	210.13	208 -	214	210.38	7.14E+01	70.61	8.49E+02	2.29
M	9	238.93	234 -	247	239.18	8.66E+02	88.59	6.91E+02	2.26
m	10	242.14	234 -	247	242.39	2.27E+02	86.49	6.30E+02	2.27
	11	295.56	292 -	300	295.79	3.98E+02	79.75	7.45E+02	2.16
	12	338.46	333 -	342	338.67	1.85E+02	69.52	5.85E+02	2.17
	13	352.21	347 -	357	352.42	7.22E+02	86.65	6.15E+02	2.25
	14	400.81	398 -	404	401.01	3.50E+01	43.90	3.24E+02	1.83
	15	434.44	432 -	437	434.62	4.74E+01	35.06	2.09E+02	3.64
	16	454.42	450 -	459	454.60	6.82E+01	47.42	2.76E+02	6.78
	17	463.24	460 -	468	463.41	7.24E+01	47.29	3.05E+02	3.35
	18	511.41	506 -	518	511.57	1.72E+02	58.66	3.20E+02	3.00
	19	553.84	552 -	556	553.98	2.54E+01	24.93	1.13E+02	2.92
	20	583.55	580 -	588	583.68	2.20E+02	49.33	2.40E+02	2.30
	21	609.58	605 -	615	609.70	4.62E+02	63.52	2.92E+02	2.18
	22	728.29	723 -	733	728.38	5.74E+01	44.12	2.23E+02	1.96
	23	768.95	763 -	775	769.02	5.09E+01	51.78	2.88E+02	4.19
	24	787.50	784 -	791	787.56	3.95E+01	31.50	1.37E+02	3.74
	25	795.14	792 -	799	795.20	4.17E+01	30.20	1.25E+02	1.57
	26	861.84	857 -	866	861.88	4.95E+01	33.14	1.25E+02	1.66
M	27	906.95	907 -	916	906.97	1.49E+01	0.00	0.00E+00	4.53
m	28	911.45	907 -	916	911.47	1.92E+02	34.67	8.03E+01	2.48
	29	969.55	966 -	975	969.55	6.09E+01	44.86	2.34E+02	2.33
	30	998.46	994 -	1005	998.45	3.36E+01	33.94	1.31E+02	6.60
	31	1120.54	1116 -	1124	1120.49	8.87E+01	37.10	1.57E+02	2.36
	32	1315.99	1311 -	1321	1315.87	2.32E+01	25.91	7.76E+01	2.80
	33	1377.97	1373 -	1383	1377.83	3.03E+01	23.03	5.34E+01	2.01
	34	1405.48	1397 -	1413	1405.33	3.80E+01	29.43	6.80E+01	9.28
	35	1461.05	1455 -	1466	1460.89	8.01E+02	59.90	4.80E+01	2.56
	36	1511.00	1506 -	1517	1510.82	3.14E+01	17.66	2.13E+01	2.52
	37	1730.33	1726 -	1733	1730.07	1.44E+01	12.33	1.52E+01	2.93
	38	1764.95	1760 -	1768	1764.68	8.32E+01	20.51	1.36E+01	2.33
	39	1793.59	1790 -	1796	1793.31	5.21E+00	6.34	3.57E+00	2.55
	40	1820.79	1817 -	1823	1820.51	7.39E+00	6.95	3.22E+00	2.90

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1847.15	1841 -	1853	1846.86	1.76E+01	11.24	6.86E+00	6.44
42	2069.38	2065 -	2071	2069.01	6.13E+00	6.65	3.75E+00	1.11
43	2104.00	2099 -	2107	2103.62	1.30E+01	7.21	0.00E+00	1.28
44	2204.13	2199 -	2207	2203.71	1.68E+01	14.60	2.24E+01	3.08
45	2604.75	2600 -	2606	2604.20	5.00E+00	4.47	0.00E+00	2.75
46	2614.93	2609 -	2619	2614.37	6.70E+01	16.37	0.00E+00	3.16

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 6:21:10PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.62	44 -	50	1.58E+02	95.83	1.57E+03	7.60E+01
	2	76.38	71 -	82	1.63E+03	190.43	3.70E+03	1.42E+02
	3	87.57	86 -	91	1.42E+02	108.42	2.25E+03	8.69E+01
	4	93.12	91 -	96	3.31E+02	101.18	1.77E+03	1.75E+02
	5	145.26	143 -	148	9.80E+01	73.17	9.96E+02	5.79E+01
	6	166.92	165 -	170	6.21E+01	66.17	8.28E+02	5.28E+01
	7	186.21	183 -	189	2.96E+02	79.03	9.14E+02	5.85E+01
	8	210.13	208 -	214	7.14E+01	70.61	8.49E+02	5.64E+01
M	9	238.93	234 -	247	8.66E+02	88.59	6.91E+02	4.32E+01
m	10	242.14	234 -	247	2.27E+02	86.49	6.30E+02	4.13E+01
	11	295.56	292 -	300	3.98E+02	79.75	7.45E+02	5.68E+01
	12	338.46	333 -	342	1.85E+02	69.52	5.85E+02	5.26E+01
	13	352.21	347 -	357	7.22E+02	86.65	6.15E+02	5.59E+01
	14	400.81	398 -	404	3.50E+01	43.90	3.24E+02	3.47E+01
	15	434.44	432 -	437	4.74E+01	35.06	2.09E+02	2.65E+01
	16	454.42	450 -	459	6.82E+01	47.42	2.76E+02	3.65E+01
	17	463.24	460 -	468	7.24E+01	47.29	3.05E+02	3.63E+01
	18	511.41	506 -	518	1.72E+02	58.66	3.20E+02	2.62E+01
	19	553.84	552 -	556	2.54E+01	24.93	1.13E+02	1.87E+01
	20	583.55	580 -	588	2.20E+02	49.33	2.40E+02	3.24E+01
	21	609.58	605 -	615	4.62E+02	63.52	2.92E+02	3.84E+01

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	22	728.29	723 -	733	5.74E+01	44.12	2.23E+02	3.41E+01
	23	768.95	763 -	775	5.09E+01	51.78	2.88E+02	4.09E+01
	24	787.50	784 -	791	3.95E+01	31.50	1.37E+02	2.37E+01
	25	795.14	792 -	799	4.17E+01	30.20	1.25E+02	2.24E+01
	26	861.84	857 -	866	4.95E+01	33.14	1.25E+02	2.47E+01
M	27	906.95	907 -	916	1.49E+01	0.00	0.00E+00	0.00E+00
m	28	911.45	907 -	916	1.92E+02	34.67	8.03E+01	1.47E+01
	29	969.55	966 -	975	6.09E+01	44.86	2.34E+02	3.46E+01
	30	998.46	994 -	1005	3.36E+01	33.94	1.31E+02	2.62E+01
	31	1120.54	1116 -	1124	8.87E+01	37.10	1.57E+02	2.63E+01
	32	1315.99	1311 -	1321	2.32E+01	25.91	7.76E+01	1.98E+01
	33	1377.97	1373 -	1383	3.03E+01	23.03	5.34E+01	1.66E+01
	34	1405.48	1397 -	1413	3.80E+01	29.43	6.80E+01	2.20E+01
	35	1461.05	1455 -	1466	8.01E+02	59.90	4.80E+01	1.61E+01
	36	1511.00	1506 -	1517	3.14E+01	17.66	2.13E+01	1.12E+01
	37	1730.33	1726 -	1733	1.44E+01	12.33	1.52E+01	7.99E+00
	38	1764.95	1760 -	1768	8.32E+01	20.51	1.36E+01	7.71E+00
	39	1793.59	1790 -	1796	5.21E+00	6.34	3.57E+00	3.62E+00
	40	1820.79	1817 -	1823	7.39E+00	6.95	3.22E+00	3.55E+00
	41	1847.15	1841 -	1853	1.76E+01	11.24	6.86E+00	6.15E+00
	42	2069.38	2065 -	2071	6.13E+00	6.65	3.75E+00	3.65E+00
	43	2104.00	2099 -	2107	1.30E+01	7.21	0.00E+00	0.00E+00
	44	2204.13	2199 -	2207	1.68E+01	14.60	2.24E+01	9.93E+00
	45	2604.75	2600 -	2606	5.00E+00	4.47	0.00E+00	0.00E+00
	46	2614.93	2609 -	2619	6.70E+01	16.37	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 6:21:10PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	46.62	44 -	50	46.93	1.58E+02	95.83	1.57E+03	PB-210
	2	76.38	71 -	82	76.69	1.63E+03	190.43	3.70E+03	.....
	3	87.57	86 -	91	87.87	1.42E+02	108.42	2.25E+03	SN-126
									CD-109
									LU-176
	4	93.12	91 -	96	93.41	3.31E+02	101.18	1.77E+03	GA-67
	5	145.26	143 -	148	145.54	9.80E+01	73.17	9.96E+02	CE-141
	6	166.92	165 -	170	167.19	6.21E+01	66.17	8.28E+02	.....
	7	186.21	183 -	189	186.48	2.96E+02	79.03	9.14E+02	RA-226
	8	210.13	208 -	214	210.38	7.14E+01	70.61	8.49E+02	CM-243
M	9	238.93	234 -	247	239.18	8.66E+02	88.59	6.91E+02	PB-212
m	10	242.14	234 -	247	242.39	2.27E+02	86.49	6.30E+02	.....
	11	295.56	292 -	300	295.79	3.98E+02	79.75	7.45E+02	PB-214
	12	338.46	333 -	342	338.67	1.85E+02	69.52	5.85E+02	AC-228
	13	352.21	347 -	357	352.42	7.22E+02	86.65	6.15E+02	PB-214
	14	400.81	398 -	404	401.01	3.50E+01	43.90	3.24E+02	SE-75
									RN-219
	15	434.44	432 -	437	434.62	4.74E+01	35.06	2.09E+02	AG-108M
	16	454.42	450 -	459	454.60	6.82E+01	47.42	2.76E+02	PM-146
	17	463.24	460 -	468	463.41	7.24E+01	47.29	3.05E+02	SB-125
	18	511.41	506 -	518	511.57	1.72E+02	58.66	3.20E+02	.....
	19	553.84	552 -	556	553.98	2.54E+01	24.93	1.13E+02	.....
	20	583.55	580 -	588	583.68	2.20E+02	49.33	2.40E+02	TL-208
	21	609.58	605 -	615	609.70	4.62E+02	63.52	2.92E+02	BI-214
	22	728.29	723 -	733	728.38	5.74E+01	44.12	2.23E+02	.....
	23	768.95	763 -	775	769.02	5.09E+01	51.78	2.88E+02	.....
	24	787.50	784 -	791	787.56	3.95E+01	31.50	1.37E+02	.....
	25	795.14	792 -	799	795.20	4.17E+01	30.20	1.25E+02	CS-134
	26	861.84	857 -	866	861.88	4.95E+01	33.14	1.25E+02	.....
M	27	906.95	907 -	916	906.97	1.49E+01	0.00	0.00E+00	.....
m	28	911.45	907 -	916	911.47	1.92E+02	34.67	8.03E+01	TL-204
									AC-228
	29	969.55	966 -	975	969.55	6.09E+01	44.86	2.34E+02	AC-228
	30	998.46	994 -	1005	998.45	3.36E+01	33.94	1.31E+02	.....
	31	1120.54	1116 -	1124	1120.49	8.87E+01	37.10	1.57E+02	SC-46
									BI-214
									TA-182
	32	1315.99	1311 -	1321	1315.87	2.32E+01	25.91	7.76E+01	.....
	33	1377.97	1373 -	1383	1377.83	3.03E+01	23.03	5.34E+01	.....
	34	1405.48	1397 -	1413	1405.33	3.80E+01	29.43	6.80E+01	.....
	35	1461.05	1455 -	1466	1460.89	8.01E+02	59.90	4.80E+01	K-40
	36	1511.00	1506 -	1517	1510.82	3.14E+01	17.66	2.13E+01	.....
	37	1730.33	1726 -	1733	1730.07	1.44E+01	12.33	1.52E+01	.....
	38	1764.95	1760 -	1768	1764.68	8.32E+01	20.51	1.36E+01	BI-214
	39	1793.59	1790 -	1796	1793.31	5.21E+00	6.34	3.57E+00	.....
	40	1820.79	1817 -	1823	1820.51	7.39E+00	6.95	3.22E+00	.....
	41	1847.15	1841 -	1853	1846.86	1.76E+01	11.24	6.86E+00	.....
	42	2069.38	2065 -	2071	2069.01	6.13E+00	6.65	3.75E+00	.....
	43	2104.00	2099 -	2107	2103.62	1.30E+01	7.21	0.00E+00	.....
	44	2204.13	2199 -	2207	2203.71	1.68E+01	14.60	2.24E+01	BI-214
	45	2604.75	2600 -	2606	2604.20	5.00E+00	4.47	0.00E+00	.....
	46	2614.93	2609 -	2619	2614.37	6.70E+01	16.37	0.00E+00	TL-208

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 6:21:10PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.62	1.58E+02	95.83	1.73E-02	1.73E-03
	2	76.38	1.63E+03	190.43	2.67E-02	2.04E-03
	3	87.57	1.42E+02	108.42	2.72E-02	2.25E-03
	4	93.12	3.31E+02	101.18	2.71E-02	2.24E-03
	5	145.26	9.80E+01	73.17	2.31E-02	1.86E-03
	6	166.92	6.21E+01	66.17	2.11E-02	1.62E-03
	7	186.21	2.96E+02	79.03	1.96E-02	1.55E-03
	8	210.13	7.14E+01	70.61	1.79E-02	1.45E-03
M	9	238.93	8.66E+02	88.59	1.61E-02	1.34E-03
m	10	242.14	2.27E+02	86.49	1.59E-02	1.33E-03
	11	295.56	3.98E+02	79.75	1.35E-02	1.15E-03
	12	338.46	1.85E+02	69.52	1.19E-02	1.06E-03
	13	352.21	7.22E+02	86.65	1.15E-02	1.03E-03
	14	400.81	3.50E+01	43.90	1.03E-02	9.40E-04
	15	434.44	4.74E+01	35.06	9.56E-03	8.96E-04
	16	454.42	6.82E+01	47.42	9.18E-03	8.69E-04
	17	463.24	7.24E+01	47.29	9.02E-03	8.58E-04
	18	511.41	1.72E+02	58.66	8.25E-03	7.94E-04
	19	553.84	2.54E+01	24.93	7.67E-03	7.38E-04
	20	583.55	2.20E+02	49.33	7.32E-03	6.98E-04
	21	609.58	4.62E+02	63.52	7.04E-03	6.64E-04
	22	728.29	5.74E+01	44.12	6.00E-03	5.36E-04
	23	768.95	5.09E+01	51.78	5.72E-03	5.00E-04
	24	787.50	3.95E+01	31.50	5.60E-03	4.84E-04
	25	795.14	4.17E+01	30.20	5.55E-03	4.77E-04
	26	861.84	4.95E+01	33.14	5.17E-03	4.18E-04
M	27	906.95	1.49E+01	0.00	4.94E-03	3.85E-04
m	28	911.45	1.92E+02	34.67	4.92E-03	3.84E-04
	29	969.55	6.09E+01	44.86	4.66E-03	3.74E-04
	30	998.46	3.36E+01	33.94	4.54E-03	3.70E-04
	31	1120.54	8.87E+01	37.10	4.12E-03	3.50E-04
	32	1315.99	2.32E+01	25.91	3.60E-03	3.00E-04
	33	1377.97	3.03E+01	23.03	3.47E-03	2.88E-04
	34	1405.48	3.80E+01	29.43	3.41E-03	2.84E-04

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
35	1461.05	8.01E+02	59.90	3.31E-03	2.75E-04
36	1511.00	3.14E+01	17.66	3.22E-03	2.67E-04
37	1730.33	1.44E+01	12.33	2.91E-03	2.32E-04
38	1764.95	8.32E+01	20.51	2.86E-03	2.26E-04
39	1793.59	5.21E+00	6.34	2.83E-03	2.22E-04
40	1820.79	7.39E+00	6.95	2.80E-03	2.17E-04
41	1847.15	1.76E+01	11.24	2.77E-03	2.15E-04
42	2069.38	6.13E+00	6.65	2.57E-03	2.15E-04
43	2104.00	1.30E+01	7.21	2.54E-03	2.15E-04
44	2204.13	1.68E+01	14.60	2.46E-03	2.15E-04
45	2604.75	5.00E+00	4.47	2.24E-03	2.15E-04
46	2614.93	6.70E+01	16.37	2.24E-03	2.15E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 6:21:10PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.62	1.58E+02	95.83	4.47E+01	1.09E+01	1.13E+02	9.64E+01
	2	76.38	1.63E+03	190.43			1.63E+03	1.90E+02
	3	87.57	1.42E+02	108.42			1.42E+02	1.08E+02
	4	93.12	3.31E+02	101.18	7.98E+01	7.31E+00	2.51E+02	1.01E+02
	5	145.26	9.80E+01	73.17			9.80E+01	7.32E+01
	6	166.92	6.21E+01	66.17			6.21E+01	6.62E+01
	7	186.21	2.96E+02	79.03	3.06E+01	5.82E+00	2.66E+02	7.92E+01
	8	210.13	7.14E+01	70.61			7.14E+01	7.06E+01
M	9	238.93	8.66E+02	88.59	1.40E+01	2.71E+00	8.52E+02	8.86E+01
m	10	242.14	2.27E+02	86.49			2.27E+02	8.65E+01
	11	295.56	3.98E+02	79.75			3.98E+02	7.98E+01
	12	338.46	1.85E+02	69.52			1.85E+02	6.95E+01
	13	352.21	7.22E+02	86.65	6.53E+00	4.43E+00	7.16E+02	8.68E+01
	14	400.81	3.50E+01	43.90			3.50E+01	4.39E+01
	15	434.44	4.74E+01	35.06			4.74E+01	3.51E+01
	16	454.42	6.82E+01	47.42			6.82E+01	4.74E+01
	17	463.24	7.24E+01	47.29			7.24E+01	4.73E+01
	18	511.41	1.72E+02	58.66	5.21E+01	4.74E+00	1.20E+02	5.88E+01

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	19	553.84	2.54E+01	24.93			2.54E+01	2.49E+01
	20	583.55	2.20E+02	49.33			2.20E+02	4.93E+01
	21	609.58	4.62E+02	63.52	3.25E+00	2.97E+00	4.59E+02	6.36E+01
	22	728.29	5.74E+01	44.12			5.74E+01	4.41E+01
	23	768.95	5.09E+01	51.78			5.09E+01	5.18E+01
	24	787.50	3.95E+01	31.50			3.95E+01	3.15E+01
	25	795.14	4.17E+01	30.20	0.00E+00	0.00E+00	4.17E+01	3.02E+01
	26	861.84	4.95E+01	33.14			4.95E+01	3.31E+01
M	27	906.95	1.49E+01	0.00			1.49E+01	0.00E+00
m	28	911.45	1.92E+02	34.67	2.85E+00	2.76E+00	1.90E+02	3.48E+01
	29	969.55	6.09E+01	44.86			6.09E+01	4.49E+01
	30	998.46	3.36E+01	33.94			3.36E+01	3.39E+01
	31	1120.54	8.87E+01	37.10			8.87E+01	3.71E+01
	32	1315.99	2.32E+01	25.91			2.32E+01	2.59E+01
	33	1377.97	3.03E+01	23.03			3.03E+01	2.30E+01
	34	1405.48	3.80E+01	29.43			3.80E+01	2.94E+01
	35	1461.05	8.01E+02	59.90	1.00E+00	1.77E+00	8.00E+02	5.99E+01
	36	1511.00	3.14E+01	17.66			3.14E+01	1.77E+01
	37	1730.33	1.44E+01	12.33			1.44E+01	1.23E+01
	38	1764.95	8.32E+01	20.51			8.32E+01	2.05E+01
	39	1793.59	5.21E+00	6.34			5.21E+00	6.34E+00
	40	1820.79	7.39E+00	6.95			7.39E+00	6.95E+00
	41	1847.15	1.76E+01	11.24			1.76E+01	1.12E+01
	42	2069.38	6.13E+00	6.65			6.13E+00	6.65E+00
	43	2104.00	1.30E+01	7.21			1.30E+01	7.21E+00
	44	2204.13	1.68E+01	14.60			1.68E+01	1.46E+01
	45	2604.75	5.00E+00	4.47			5.00E+00	4.47E+00
	46	2614.93	6.70E+01	16.37	1.86E+00	1.12E+00	6.51E+01	1.64E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 6:21:10PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	46.62	1.58E+02	95.83	4.47E+01	1.09E+01	1.13E+02	9.64E+01
	2	76.38	1.63E+03	190.43			1.63E+03	1.90E+02
	3	87.57	1.42E+02	108.42			1.42E+02	1.08E+02
	4	93.12	3.31E+02	101.18	7.98E+01	7.31E+00	2.51E+02	1.01E+02
	5	145.26	9.80E+01	73.17			9.80E+01	7.32E+01
	6	166.92	6.21E+01	66.17			6.21E+01	6.62E+01
	7	186.21	2.96E+02	79.03	3.06E+01	5.82E+00	2.66E+02	7.92E+01
	8	210.13	7.14E+01	70.61			7.14E+01	7.06E+01
M	9	238.93	8.66E+02	88.59	1.40E+01	2.71E+00	8.52E+02	8.86E+01
m	10	242.14	2.27E+02	86.49			2.27E+02	8.65E+01
	11	295.56	3.98E+02	79.75			3.98E+02	7.98E+01
	12	338.46	1.85E+02	69.52			1.85E+02	6.95E+01
	13	352.21	7.22E+02	86.65	6.53E+00	4.43E+00	7.16E+02	8.68E+01
	14	400.81	3.50E+01	43.90			3.50E+01	4.39E+01
	15	434.44	4.74E+01	35.06			4.74E+01	3.51E+01
	16	454.42	6.82E+01	47.42			6.82E+01	4.74E+01
	17	463.24	7.24E+01	47.29			7.24E+01	4.73E+01
	18	511.41	1.72E+02	58.66	5.21E+01	4.74E+00	1.20E+02	5.88E+01
	19	553.84	2.54E+01	24.93			2.54E+01	2.49E+01
	20	583.55	2.20E+02	49.33			2.20E+02	4.93E+01
	21	609.58	4.62E+02	63.52	3.25E+00	2.97E+00	4.59E+02	6.36E+01
	22	728.29	5.74E+01	44.12			5.74E+01	4.41E+01
	23	768.95	5.09E+01	51.78			5.09E+01	5.18E+01
	24	787.50	3.95E+01	31.50			3.95E+01	3.15E+01
	25	795.14	4.17E+01	30.20	0.00E+00	0.00E+00	4.17E+01	3.02E+01
	26	861.84	4.95E+01	33.14			4.95E+01	3.31E+01
M	27	906.95	1.49E+01	0.00			1.49E+01	0.00E+00
m	28	911.45	1.92E+02	34.67	2.85E+00	2.76E+00	1.90E+02	3.48E+01
	29	969.55	6.09E+01	44.86			6.09E+01	4.49E+01
	30	998.46	3.36E+01	33.94			3.36E+01	3.39E+01
	31	1120.54	8.87E+01	37.10			8.87E+01	3.71E+01
	32	1315.99	2.32E+01	25.91			2.32E+01	2.59E+01
	33	1377.97	3.03E+01	23.03			3.03E+01	2.30E+01
	34	1405.48	3.80E+01	29.43			3.80E+01	2.94E+01
	35	1461.05	8.01E+02	59.90	1.00E+00	1.77E+00	8.00E+02	5.99E+01
	36	1511.00	3.14E+01	17.66			3.14E+01	1.77E+01
	37	1730.33	1.44E+01	12.33			1.44E+01	1.23E+01
	38	1764.95	8.32E+01	20.51			8.32E+01	2.05E+01
	39	1793.59	5.21E+00	6.34			5.21E+00	6.34E+00
	40	1820.79	7.39E+00	6.95			7.39E+00	6.95E+00
	41	1847.15	1.76E+01	11.24			1.76E+01	1.12E+01
	42	2069.38	6.13E+00	6.65			6.13E+00	6.65E+00
	43	2104.00	1.30E+01	7.21			1.30E+01	7.21E+00
	44	2204.13	1.68E+01	14.60			1.68E+01	1.46E+01
	45	2604.75	5.00E+00	4.47			5.00E+00	4.47E+00
	46	2614.93	6.70E+01	16.37	1.86E+00	1.12E+00	6.51E+01	1.64E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.991	1460.81	*	10.67	2.62E+01	2.98E+00
CD-109	0.966	88.03	*	3.72	1.89E+00	1.46E+00
SN-126	1.000	87.57	*	37.00	1.64E-01	1.26E-01
CE-141	0.949	145.44	*	48.40	8.64E-01	8.06E-01
PM-146	0.410	453.90	*	39.94	2.23E-01	1.56E-01
		735.90		14.01		
		747.13		13.10		
TL-208	0.871	583.14	*	30.22	1.15E+00	2.80E-01
		860.37		4.48		
		2614.66	*	35.85	9.39E-01	2.53E-01
PB-210	0.998	46.50	*	4.25	1.80E+00	1.54E+00
PB-212	0.883	238.63	*	44.60	1.37E+00	1.83E-01
		300.09		3.41		
BI-214	0.985	609.31	*	46.30	1.63E+00	2.73E-01
		1120.29	*	15.10	1.65E+00	7.05E-01
		1764.49	*	15.80	2.13E+00	5.51E-01
		2204.22	*	4.98	1.59E+00	1.38E+00
PB-214	0.985	295.21	*	19.19	1.78E+00	3.88E-01
		351.92	*	37.19	1.93E+00	2.91E-01
RN-219	0.856	401.80	*	6.50	6.07E-01	7.63E-01
RA-226	1.000	186.21	*	3.28	4.79E+00	8.88E+00
AC-228	0.979	338.32	*	11.40	1.57E+00	6.07E-01
		911.07	*	27.70	1.61E+00	3.21E-01
		969.11	*	16.60	9.11E-01	6.75E-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 6:21:10PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	76.38	4.51819E-01	5.85		
	4	93.12	6.96628E-02	20.22	Sum	
	6	166.92	1.72596E-02	53.25		
	8	210.13	1.98454E-02	49.41	Tol.	CM-243
m	10	242.14	6.31763E-02	19.01		
	15	434.44	1.31753E-02	36.96	Tol.	AG-108M
	17	463.24	2.01160E-02	32.65	Tol.	SB-125
	18	511.41	3.32753E-02	24.56		
	19	553.84	7.06301E-03	49.03		
	22	728.29	1.59583E-02	38.40	Sum	
	23	768.95	1.41275E-02	50.91	Sum	
	24	787.50	1.09606E-02	39.91		
	25	795.14	1.15865E-02	36.20	Sum	
	26	861.84	1.37500E-02	33.47		
M	27	906.95	4.12959E-03	0.00		
	30	998.46	9.33221E-03	50.51	Sum	
	32	1315.99	6.44713E-03	55.82		
	33	1377.97	8.41618E-03	38.01		
	34	1405.48	1.05556E-02	38.72		
	36	1511.00	8.71032E-03	28.17		
	37	1730.33	4.00253E-03	42.78	Sum	
	39	1793.59	1.44841E-03	60.84		
	40	1820.79	2.05247E-03	47.00		
	41	1847.15	4.88095E-03	31.97		
	42	2069.38	1.70139E-03	54.30		
	43	2104.00	3.61111E-03	27.74	S-Esc	
	45	2604.75	1.38889E-03	44.72	Sum	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81	*	10.67	2.62E+01	2.98E+00
CD-109	0.96	88.03	*	3.72	1.89E+00	1.46E+00
SN-126	1.00	87.57	*	37.00	1.64E-01	1.26E-01
CE-141	0.94	145.44	*	48.40	8.64E-01	8.06E-01
PM-146	0.41	453.90	*	39.94	2.23E-01	1.56E-01
		735.90		14.01		
		747.13		13.10		
TL-208	0.87	583.14	*	30.22	1.15E+00	2.80E-01
		860.37		4.48		
		2614.66	*	35.85	9.39E-01	2.53E-01
PB-210	0.99	46.50	*	4.25	1.80E+00	1.54E+00
PB-212	0.88	238.63	*	44.60	1.37E+00	1.83E-01
		300.09		3.41		
BI-214	0.98	609.31	*	46.30	1.63E+00	2.73E-01
		1120.29	*	15.10	1.65E+00	7.05E-01
		1764.49	*	15.80	2.13E+00	5.51E-01
		2204.22	*	4.98	1.59E+00	1.38E+00
PB-214	0.98	295.21	*	19.19	1.78E+00	3.88E-01
		351.92	*	37.19	1.93E+00	2.91E-01
RN-219	0.85	401.80	*	6.50	6.07E-01	7.63E-01
RA-226	1.00	186.21	*	3.28	4.79E+00	8.88E+00
AC-228	0.97	338.32	*	11.40	1.57E+00	6.07E-01
		911.07	*	27.70	1.61E+00	3.21E-01
		969.11	*	16.60	9.11E-01	6.75E-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.991	2.62E+01	2.98E+00	
?	CD-109	0.966	1.89E+00	1.46E+00	
?	SN-126	1.000	1.64E-01	1.26E-01	
	CE-141	0.949	8.64E-01	8.06E-01	
	PM-146	0.410	2.23E-01	1.56E-01	
	TL-208	0.871	1.03E+00	1.88E-01	
	PB-210	0.998	1.80E+00	1.54E+00	
	PB-212	0.883	1.37E+00	1.83E-01	
	BI-214	0.985	1.72E+00	2.28E-01	
	PB-214	0.985	1.88E+00	2.33E-01	
	RN-219	0.856	6.07E-01	7.63E-01	
	RA-226	1.000	4.79E+00	8.88E+00	
	AC-228	0.979	1.50E+00	2.62E-01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 6:21:10PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	76.38	4.51819E-01	5.85		
	4	93.12	6.96628E-02	20.22	Sum	
	6	166.92	1.72596E-02	53.25		
	8	210.13	1.98454E-02	49.41	Tol.	CM-243
m	10	242.14	6.31763E-02	19.01		
	15	434.44	1.31753E-02	36.96	Tol.	AG-108M
	17	463.24	2.01160E-02	32.65	Tol.	SB-125
	18	511.41	3.32753E-02	24.56		
	19	553.84	7.06301E-03	49.03		
	22	728.29	1.59583E-02	38.40	Sum	
	23	768.95	1.41275E-02	50.91	Sum	
	24	787.50	1.09606E-02	39.91		
	25	795.14	1.15865E-02	36.20	Sum	
	26	861.84	1.37500E-02	33.47		
M	27	906.95	4.12959E-03	0.00		
	30	998.46	9.33221E-03	50.51	Sum	
	32	1315.99	6.44713E-03	55.82		
	33	1377.97	8.41618E-03	38.01		
	34	1405.48	1.05556E-02	38.72		
	36	1511.00	8.71032E-03	28.17		
	37	1730.33	4.00253E-03	42.78	Sum	
	39	1793.59	1.44841E-03	60.84		
	40	1820.79	2.05247E-03	47.00		
	41	1847.15	4.88095E-03	31.97		
	42	2069.38	1.70139E-03	54.30		
	43	2104.00	3.61111E-03	27.74	S-Esc	
	45	2604.75	1.38889E-03	44.72	Sum	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		BE-7	477.59		10.42	5.85E-01	2.78E+00	2.78E+00
+		NA-22	1274.54		99.94	3.84E-02	1.25E-01	1.25E-01
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	4.96E-02	8.29E-02	8.29E-02
+		K-40	1460.81	*	10.67	2.62E+01	1.16E+00	1.16E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	-4.49E-02	6.71E-02	6.71E-02
			78.34		96.00	2.50E-01		8.69E-02
+		SC-46	889.25		99.98	-1.64E-01	1.97E-01	1.97E-01
			1120.51		99.99	5.75E-01		3.85E-01
+		V-48	983.52		99.98	2.65E+00	7.55E+00	7.55E+00
			1312.10		97.50	1.05E+00		7.87E+00
+		CR-51	320.08		9.83	-3.71E+00	7.95E+00	7.95E+00
+		MN-54	834.83		99.97	-3.58E-02	1.12E-01	1.12E-01
+		CO-56	846.75		99.96	-1.22E-01	1.85E-01	1.85E-01
			1037.75		14.03	-1.05E+00		1.54E+00
			1238.25		67.00	1.88E-01		5.46E-01
			1771.40		15.51	-2.84E-01		1.15E+00
			2598.48		16.90	0.00E+00		2.00E-01
+		CO-57	122.06		85.51	9.63E-04	7.30E-02	7.30E-02
			136.48		10.60	-4.57E-01		5.82E-01
+		CO-58	810.76		99.40	-5.57E-02	2.19E-01	2.19E-01
+		FE-59	1099.22		56.50	-1.21E-01	8.95E-01	8.95E-01
			1291.56		43.20	3.03E-01		1.17E+00
+		CO-60	1173.22		100.00	-1.85E-02	1.00E-01	1.28E-01
			1332.49		100.00	-2.71E-02		1.00E-01
+		ZN-65	1115.52		50.75	3.89E-02	2.97E-01	2.97E-01
+		GA-67	93.31		35.70	7.82E+08	3.37E+08	3.37E+08
			208.95		2.24	5.30E+08		5.83E+09
			300.22		16.00	2.66E+08		9.61E+08
+		SE-75	121.11		16.70	1.93E-01	1.44E-01	5.12E-01
			136.00		59.20	-1.22E-01		1.44E-01
			264.65		59.80	-1.63E-01		1.85E-01
			279.53		25.20	-4.29E-02		4.78E-01
			400.65		11.40	3.19E-01		1.20E+00
+		RB-82	776.52		13.00	-8.97E-01	9.84E+00	9.84E+00
+		RB-83	520.41		46.00	-1.07E-01	3.42E-01	3.42E-01
			529.64		30.30	-2.05E-01		5.59E-01
			552.65		16.40	-5.97E-02		1.07E+00

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	KR-85	513.99		0.43	3.48E+01	2.34E+01	2.34E+01
+	SR-85	513.99		99.27	4.38E-01	2.94E-01	2.94E-01
+	Y-88	898.02		93.40	-6.95E-02	1.05E-01	1.96E-01
		1836.01		99.38	-1.69E-02		1.05E-01
+	MO-93	263.06		56.72	-3.16E-02	7.51E-02	1.14E-01
		684.67		99.68	-5.67E-03		8.82E-02
		1477.11		99.08	-8.33E-03		7.51E-02
+	NB-93M	16.57		9.43	1.83E+01	7.28E+01	7.28E+01
+	NB-94	702.63		100.00	4.22E-02	9.22E-02	9.37E-02
		871.10		100.00	4.71E-02		9.22E-02
+	NB-95	765.79		99.81	-2.77E-02	7.68E-01	7.68E-01
+	NB-95M	235.69		25.00	1.03E+08	9.80E+07	9.80E+07
+	ZR-95	724.18		43.70	7.48E-02	4.83E-01	6.71E-01
		756.72		55.30	-5.58E-02		4.83E-01
+	MO-99	181.06		6.20	-4.06E+09	6.45E+10	8.53E+10
		739.58		12.80	3.18E+09		6.45E+10
		778.00		4.50	-2.11E+10		1.85E+11
+	RU-103	497.08		89.00	-9.74E-02	4.58E-01	4.58E-01
+	RU-106	621.84		9.80	-3.18E-01	8.53E-01	8.53E-01
+	AG-108M	433.93		89.90	6.53E-03	8.49E-02	8.49E-02
		614.37		90.40	6.08E-03		1.17E-01
		722.95		90.50	1.91E-02		9.83E-02
+	CD-109	88.03	*	3.72	1.89E+00	2.35E+00	2.35E+00
+	AG-110M	657.75		93.14	-3.12E-02	1.07E-01	1.07E-01
		677.61		10.53	2.31E-02		1.06E+00
		706.67		16.46	2.38E-02		7.21E-01
		763.93		21.98	-2.95E-02		5.87E-01
		884.67		71.63	4.34E-02		1.64E-01
		1384.27		23.94	5.08E-02		4.35E-01
+	CD-113M	263.70		0.02	-1.29E+02	2.75E+02	2.75E+02
+	SN-113	255.12		1.93	-1.71E+00	2.15E-01	6.19E+00
		391.69		64.90	1.69E-02		2.15E-01
+	TE123M	159.00		84.10	-7.31E-03	1.14E-01	1.14E-01
+	SB-124	602.71		97.87	4.18E-02	2.67E-01	2.67E-01
		645.85		7.26	-7.58E-01		3.51E+00
		722.78		11.10	4.94E-01		2.54E+00
		1691.02		49.00	1.27E-01		5.41E-01
+	I-125	35.49		6.49	-3.82E-01	6.50E+00	6.50E+00
+	SB-125	176.33		6.89	-1.79E-01	2.53E-01	8.26E-01
		427.89		29.33	-6.79E-02		2.53E-01
		463.38		10.35	9.81E-01		8.99E-01
		600.56		17.80	2.05E-01		5.18E-01
		635.90		11.32	9.11E-02		7.57E-01
+	SB-126	414.70		83.30	-1.02E+01	2.34E+01	2.39E+01
		666.33		99.60	-4.29E+00		2.34E+01
		695.00		99.60	5.27E+00		2.36E+01
		720.50		53.80	4.15E+00		4.51E+01
+	SN-126	87.57	*	37.00	1.64E-01	2.04E-01	2.04E-01

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-127	473.00		25.00	-1.46E+07	1.72E+07	2.08E+07
		685.20		35.70	-1.11E+06		1.72E+07
		783.80		14.70	1.34E+07		4.79E+07
+	I-129	29.78		57.00	8.11E-02	3.99E-01	3.99E-01
		33.60		13.20	2.98E-01		1.16E+00
		39.58		7.52	8.78E-01		1.38E+00
+	I-131	284.30		6.05	3.21E+03	4.79E+02	6.34E+03
		364.48		81.20	1.64E+02		4.79E+02
		636.97		7.26	-6.84E+02		6.35E+03
		722.89		1.80	5.52E+03		2.84E+04
+	TE-132	49.72		13.10	-4.83E+07	1.38E+08	1.07E+09
		228.16		88.00	-6.41E+07		1.38E+08
+	BA-133	81.00		33.00	-7.79E-01	1.87E-01	1.87E-01
		302.84		17.80	-2.54E-02		4.06E-01
		356.01		60.00	2.99E-02		1.91E-01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-3.87E+05	9.30E+04	9.30E+04
+	CS-134	563.23		8.38	5.28E-01	1.07E-01	1.12E+00
		569.32		15.43	-8.14E-02		5.59E-01
		604.70		97.60	8.64E-03		1.07E-01
		795.84		85.40	9.03E-02		1.30E-01
		801.93		8.73	-1.41E-01		1.04E+00
+	CS-135	268.24		16.00	1.21E-01	4.31E-01	4.31E-01
+	@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41		28.60	1.00E+26		1.00E+26
	@	1678.03		9.54	1.00E+26		1.00E+26
+	CS-136	153.22		7.46	-4.88E-01	1.69E+01	1.44E+02
		163.89		4.61	-7.63E+00		2.27E+02
		176.55		13.56	-1.69E+01		7.78E+01
		273.65		12.66	7.13E+00		1.13E+02
		340.57		48.50	-6.73E+00		3.57E+01
		818.50		99.70	2.98E+00		1.69E+01
		1048.07		79.60	-3.31E+00		2.52E+01
		1235.34		19.70	5.98E+01		1.50E+02
+	CS-137	661.65		85.12	-4.75E-02	9.33E-02	9.33E-02
+	LA-138	788.74		34.00	1.19E-01	1.40E-01	2.97E-01
		1435.80		66.00	2.32E-02		1.40E-01
+	CE-139	165.85		80.35	1.36E-04	1.08E-01	1.08E-01
+	BA-140	162.64		6.70	3.13E+01	7.04E+01	1.81E+02
		304.84		4.50	2.95E+01		3.54E+02
		423.70		3.20	-6.60E+01		4.99E+02
		437.55		2.00	-8.71E+01		8.92E+02
		537.32		25.00	-7.51E+00		7.04E+01
+	LA-140	328.77		20.50	3.20E+01	2.27E+01	8.08E+01
		487.03		45.50	-9.86E+00		3.76E+01
		815.85		23.50	3.75E+01		8.43E+01
		1596.49		95.49	6.29E+00		2.27E+01
+	CE-141	145.44	*	48.40	8.64E-01	1.05E+00	1.05E+00
+	@ CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 1707092-19

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	CE-143	293.26		42.00	1.00E+26	1.00E+26	1.00E+26
@		664.55		5.20	1.00E+26		1.00E+26
+	CE-144	133.54		10.80	5.51E-02	5.96E-01	5.96E-01
+	PM-144	476.78		42.00	2.67E-02	8.74E-02	2.22E-01
		618.01		98.60	-1.80E-02		8.74E-02
		696.49		99.49	-5.53E-02		1.00E-01
+	PM-145	36.85		21.70	-9.37E-02	2.94E-01	5.58E-01
		37.36		39.70	-1.06E-01		2.94E-01
		42.30		15.10	2.17E-01		5.89E-01
		72.40		2.31	-8.62E+00		3.18E+00
+	PM-146	453.90	*	39.94	2.23E-01	2.48E-01	2.48E-01
		735.90		14.01	5.32E-01		6.30E-01
		747.13		13.10	-2.26E-01		6.36E-01
+	ND-147	91.11		28.90	-8.30E+01	1.30E+02	1.30E+02
		531.02		13.10	-2.60E+02		3.22E+02
+	PM-149	285.90		3.10	6.32E+13	1.00E+14	1.00E+14
+	EU-152	121.78		20.50	3.15E-03	2.38E-01	2.38E-01
		244.69		5.40	-1.92E+00		1.53E+00
		344.27		19.13	-1.94E-01		3.63E-01
		778.89		9.20	3.99E-01		1.00E+00
		964.01		10.40	8.16E-02		1.15E+00
		1085.78		7.22	-4.98E-01		1.34E+00
		1112.02		9.60	-3.13E-02		1.19E+00
		1407.95		14.94	2.34E-01		6.78E-01
+	GD-153	97.43		31.30	-9.37E-02	2.01E-01	2.01E-01
		103.18		22.20	2.08E-02		2.90E-01
+	EU-154	123.07		40.50	-7.18E-02	1.19E-01	1.19E-01
		723.30		19.70	8.96E-02		4.61E-01
		873.19		11.50	6.05E-02		7.92E-01
		996.32		10.30	-4.06E-01		9.30E-01
		1004.76		17.90	4.02E-02		5.25E-01
		1274.45		35.50	1.03E-01		3.35E-01
+	EU-155	86.50		30.90	2.74E-01	2.22E-01	2.22E-01
		105.30		20.70	-6.31E-02		2.41E-01
+	EU-156	811.77		10.40	-2.44E+01	7.61E+01	7.61E+01
		1153.47		7.20	-2.19E+01		1.69E+02
		1230.71		8.90	-8.10E+01		1.37E+02
+	HO-166M	184.41		72.60	1.96E-01	9.48E-02	9.48E-02
		280.45		29.60	-6.93E-02		2.26E-01
		410.94		11.10	2.07E-02		6.74E-01
		711.69		54.10	2.63E-02		1.62E-01
+	TM-171	66.72		0.14	-3.15E+01	5.18E+01	5.18E+01
+	HF-172	67.35		5.31	-8.84E-01	4.83E-01	1.32E+00
		125.81		11.30	-2.77E-01		4.83E-01
+	LU-172	181.53		20.60	-1.15E+02	5.37E+03	8.59E+03
		900.72		29.81	-3.92E+03		9.83E+03
		1093.66		62.50	-7.65E+02		5.37E+03
+	LU-173	100.72		5.24	1.19E-01	3.90E-01	1.05E+00
		272.11		21.20	1.61E-01		3.90E-01

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	HF-175	343.40		84.00	-1.18E-01	2.20E-01	2.20E-01
+	LU-176	88.34		13.30	5.07E-01	6.41E-02	5.06E-01
		201.83		86.00	-1.01E-02		6.41E-02
		306.78		94.00	1.42E-02		7.05E-02
+	HF-181	133.02		41.70	1.64E-01	4.81E-01	6.43E-01
		345.85		17.20	-1.11E+00		2.01E+00
		482.03		82.80	-4.68E-02		4.81E-01
+	TA-182	67.75		41.20	-1.88E-01	2.82E-01	2.82E-01
		1121.30		34.90	1.21E+00		8.81E-01
		1189.05		16.23	3.49E-02		1.38E+00
		1221.41		26.98	1.54E-01		9.33E-01
		1231.02		11.44	-1.18E+00		2.01E+00
+	IR-192	308.46		29.68	-1.25E-01	4.22E-01	5.61E-01
		468.07		48.10	5.67E-02		4.22E-01
+	HG-203	279.19		77.30	4.86E-02	3.94E-01	3.94E-01
+	TL-204	374.74		94.11	-3.43E-02	7.72E-02	7.72E-02
		899.15		99.16	-3.29E-02		9.70E-02
		911.74		91.10	4.63E-01		1.96E-01
+	BI-207	569.67		97.72	2.87E-03	8.30E-02	8.30E-02
		1063.62		74.90	-5.03E-03		1.35E-01
+	TL-208	583.14	*	30.22	1.15E+00	1.09E-01	3.53E-01
		860.37		4.48	7.53E-01		2.30E+00
		2614.66	*	35.85	9.39E-01		1.09E-01
+	BI-210M	262.00		45.00	-3.10E-02	1.41E-01	1.41E-01
		300.00		23.00	9.93E-02		3.59E-01
+	PB-210	46.50	*	4.25	1.80E+00	2.50E+00	2.50E+00
+	PB-211	404.84		2.90	-7.12E-01	2.50E+00	2.50E+00
		831.96		2.90	-1.04E+00		3.05E+00
+	BI-212	727.17		11.80	5.90E-01	9.07E-01	9.07E-01
		1620.62		2.75	9.38E-01		3.09E+00
+	PB-212	238.63	*	44.60	1.37E+00	2.82E-01	2.82E-01
		300.09		3.41	6.70E-01		2.42E+00
+	BI-214	609.31	*	46.30	1.63E+00	2.84E-01	2.84E-01
		1120.29	*	15.10	1.65E+00		1.03E+00
		1764.49	*	15.80	2.13E+00		4.63E-01
		2204.22	*	4.98	1.59E+00		2.13E+00
+	PB-214	295.21	*	19.19	1.78E+00	3.10E-01	5.21E-01
		351.92	*	37.19	1.93E+00		3.10E-01
+	RN-219	401.80	*	6.50	6.07E-01	1.25E+00	1.25E+00
+	RA-223	323.87		3.88	-8.61E-01	1.71E+00	1.71E+00
+	RA-224	240.98		3.95	1.84E+01	3.26E+00	3.26E+00
+	RA-225	40.00		31.00	2.29E+01	3.61E+01	3.61E+01
+	RA-226	186.21	*	3.28	4.79E+00	2.19E+00	2.19E+00
+	TH-227	50.10		8.40	-3.94E-02	8.71E-01	8.71E-01
		236.00		11.50	9.52E-01		9.01E-01
		256.20		6.30	-3.21E-01		1.04E+00
+	AC-228	338.32	*	11.40	1.57E+00	4.07E-01	9.17E-01
		911.07	*	27.70	1.61E+00		4.07E-01

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	9.11E-01	4.07E-01	1.07E+00
+	TH-230	48.44		16.90	2.67E-01	4.75E-01	4.75E-01
		62.85		4.60	1.58E+00		1.54E+00
		67.67		0.37	-1.14E+01		1.71E+01
+	PA-231	283.67		1.60	-1.50E-02	3.08E+00	4.12E+00
		302.67		2.30	-1.93E-01		3.08E+00
+	TH-231	25.64		14.70	3.15E-01	9.42E-01	2.87E+00
		84.21		6.40	-3.05E-01		9.42E-01
+	PA-233	311.98		38.60	-1.18E+00	2.15E+00	2.15E+00
+	PA-234	131.20		20.40	2.62E-01	2.66E-01	2.66E-01
		733.99		8.80	6.14E-02		9.61E-01
		946.00		12.00	-1.96E-01		7.14E-01
+	PA-234M	1001.03		0.92	-2.93E-01	1.08E+01	1.08E+01
+	TH-234	63.29		3.80	2.86E+00	1.87E+00	1.87E+00
+	U-235	143.76		10.50	-9.11E-02	4.96E-01	4.96E-01
		163.35		4.70	-3.77E-02		1.12E+00
		205.31		4.70	-4.51E-01		1.38E+00
+	NP-237	86.50		12.60	6.47E-01	5.24E-01	5.24E-01
+	NP-239	106.10		22.70	-3.81E+11	1.45E+12	1.45E+12
		228.18		10.70	-1.91E+12		4.11E+12
		277.60		14.10	-3.11E+11		3.31E+12
+	AM-241	59.54		35.90	-4.24E-02	1.85E-01	1.85E-01
+	AM-243	74.67		66.00	2.05E-01	1.33E-01	1.33E-01
+	CM-243	209.75		3.29	1.68E+00	4.90E-01	2.15E+00
		228.14		10.60	-2.83E-01		6.09E-01
		277.60		14.00	-4.59E-02		4.90E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	2.78E+00	2.78E+00	5.85E-01	1.33E+00
	NA-22	1274.54		99.94	1.25E-01	1.25E-01	3.84E-02	5.82E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	8.29E-02	8.29E-02	4.96E-02	3.59E-02
+	K-40	1460.81	*	10.67	1.16E+00	1.16E+00	2.62E+01	5.33E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	6.71E-02	6.71E-02	-4.49E-02	3.29E-02
		78.34		96.00	8.69E-02		2.50E-01	4.28E-02
	SC-46	889.25		99.98	1.97E-01	1.97E-01	-1.64E-01	9.11E-02
		1120.51		99.99	3.85E-01		5.75E-01	1.84E-01
	V-48	983.52		99.98	7.55E+00	7.55E+00	2.65E+00	3.51E+00
		1312.10		97.50	7.87E+00		1.05E+00	3.59E+00
	CR-51	320.08		9.83	7.95E+00	7.95E+00	-3.71E+00	3.82E+00
	MN-54	834.83		99.97	1.12E-01	1.12E-01	-3.58E-02	5.22E-02
	CO-56	846.75		99.96	1.85E-01	1.85E-01	-1.22E-01	8.51E-02
		1037.75		14.03	1.54E+00		-1.05E+00	7.09E-01
		1238.25		67.00	5.46E-01		1.88E-01	2.58E-01
		1771.40		15.51	1.15E+00		-2.84E-01	4.88E-01
		2598.48		16.90	2.00E-01		0.00E+00	0.00E+00
	CO-57	122.06		85.51	7.30E-02	7.30E-02	9.63E-04	3.55E-02
		136.48		10.60	5.82E-01		-4.57E-01	2.83E-01
	CO-58	810.76		99.40	2.19E-01	2.19E-01	-5.57E-02	1.02E-01
	FE-59	1099.22		56.50	8.95E-01	8.95E-01	-1.21E-01	4.16E-01
		1291.56		43.20	1.17E+00		3.03E-01	5.38E-01
	CO-60	1173.22		100.00	1.28E-01	1.00E-01	-1.85E-02	5.98E-02
		1332.49		100.00	1.00E-01		-2.71E-02	4.57E-02
	ZN-65	1115.52		50.75	2.97E-01	2.97E-01	3.89E-02	1.39E-01
	GA-67	93.31		35.70	3.37E+08	3.37E+08	7.82E+08	1.66E+08
		208.95		2.24	5.83E+09		5.30E+08	2.84E+09
		300.22		16.00	9.61E+08		2.66E+08	4.67E+08
	SE-75	121.11		16.70	5.12E-01	1.44E-01	1.93E-01	2.49E-01
		136.00		59.20	1.44E-01		-1.22E-01	6.99E-02
		264.65		59.80	1.85E-01		-1.63E-01	8.96E-02
		279.53		25.20	4.78E-01		-4.29E-02	2.31E-01
		400.65		11.40	1.20E+00		3.19E-01	5.77E-01
	RB-82	776.52		13.00	9.84E+00	9.84E+00	-8.97E-01	4.59E+00
	RB-83	520.41		46.00	3.42E-01	3.42E-01	-1.07E-01	1.62E-01
		529.64		30.30	5.59E-01		-2.05E-01	2.65E-01
		552.65		16.40	1.07E+00		-5.97E-02	5.09E-01
	KR-85	513.99		0.43	2.34E+01	2.34E+01	3.48E+01	1.13E+01
	SR-85	513.99		99.27	2.94E-01	2.94E-01	4.38E-01	1.41E-01
	Y-88	898.02		93.40	1.96E-01	1.05E-01	-6.95E-02	9.16E-02
		1836.01		99.38	1.05E-01		-1.69E-02	4.18E-02
	MO-93	263.06		56.72	1.14E-01	7.51E-02	-3.16E-02	5.50E-02
		684.67		99.68	8.82E-02		-5.67E-03	4.16E-02
		1477.11		99.08	7.51E-02		-8.33E-03	3.26E-02
	NB-93M	16.57		9.43	7.28E+01	7.28E+01	1.83E+01	3.56E+01
	NB-94	702.63		100.00	9.37E-02	9.22E-02	4.22E-02	4.43E-02
		871.10		100.00	9.22E-02		4.71E-02	4.30E-02
	NB-95	765.79		99.81	7.68E-01	7.68E-01	-2.77E-02	3.64E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	NB-95M	235.69		25.00	9.80E+07	9.80E+07	1.03E+08	4.81E+07
	ZR-95	724.18		43.70	6.71E-01	4.83E-01	7.48E-02	3.18E-01
		756.72		55.30	4.83E-01		-5.58E-02	2.27E-01
	MO-99	181.06		6.20	8.53E+10	6.45E+10	-4.06E+09	4.14E+10
		739.58		12.80	6.45E+10		3.18E+09	3.02E+10
		778.00		4.50	1.85E+11		-2.11E+10	8.63E+10
	RU-103	497.08		89.00	4.58E-01	4.58E-01	-9.74E-02	2.17E-01
	RU-106	621.84		9.80	8.53E-01	8.53E-01	-3.18E-01	3.99E-01
	AG-108M	433.93		89.90	8.49E-02	8.49E-02	6.53E-03	4.06E-02
		614.37		90.40	1.17E-01		6.08E-03	5.58E-02
		722.95		90.50	9.83E-02		1.91E-02	4.63E-02
+	CD-109	88.03	*	3.72	2.35E+00	2.35E+00	1.89E+00	1.16E+00
	AG-110M	657.75		93.14	1.07E-01	1.07E-01	-3.12E-02	5.03E-02
		677.61		10.53	1.06E+00		2.31E-02	4.98E-01
		706.67		16.46	7.21E-01		2.38E-02	3.40E-01
		763.93		21.98	5.87E-01		-2.95E-02	2.77E-01
		884.67		71.63	1.64E-01		4.34E-02	7.62E-02
		1384.27		23.94	4.35E-01		5.08E-02	1.92E-01
	CD-113M	263.70		0.02	2.75E+02	2.75E+02	-1.29E+02	1.33E+02
	SN-113	255.12		1.93	6.19E+00	2.15E-01	-1.71E+00	3.00E+00
		391.69		64.90	2.15E-01		1.69E-02	1.03E-01
	TE123M	159.00		84.10	1.14E-01	1.14E-01	-7.31E-03	5.57E-02
	SB-124	602.71		97.87	2.67E-01	2.67E-01	4.18E-02	1.27E-01
		645.85		7.26	3.51E+00		-7.58E-01	1.65E+00
		722.78		11.10	2.54E+00		4.94E-01	1.20E+00
		1691.02		49.00	5.41E-01		1.27E-01	2.36E-01
	I-125	35.49		6.49	6.50E+00	6.50E+00	-3.82E-01	3.17E+00
	SB-125	176.33		6.89	8.26E-01	2.53E-01	-1.79E-01	4.01E-01
		427.89		29.33	2.53E-01		-6.79E-02	1.21E-01
		463.38		10.35	8.99E-01		9.81E-01	4.32E-01
		600.56		17.80	5.18E-01		2.05E-01	2.46E-01
		635.90		11.32	7.57E-01		9.11E-02	3.57E-01
	SB-126	414.70		83.30	2.39E+01	2.34E+01	-1.02E+01	1.14E+01
		666.33		99.60	2.34E+01		-4.29E+00	1.11E+01
		695.00		99.60	2.36E+01		5.27E+00	1.11E+01
		720.50		53.80	4.51E+01		4.15E+00	2.12E+01
+	SN-126	87.57	*	37.00	2.04E-01	2.04E-01	1.64E-01	1.00E-01
	SB-127	473.00		25.00	2.08E+07	1.72E+07	-1.46E+07	9.90E+06
		685.20		35.70	1.72E+07		-1.11E+06	8.12E+06
		783.80		14.70	4.79E+07		1.34E+07	2.26E+07
	I-129	29.78		57.00	3.99E-01	3.99E-01	8.11E-02	1.95E-01
		33.60		13.20	1.16E+00		2.98E-01	5.68E-01
		39.58		7.52	1.38E+00		8.78E-01	6.73E-01
	I-131	284.30		6.05	6.34E+03	4.79E+02	3.21E+03	3.06E+03
		364.48		81.20	4.79E+02		1.64E+02	2.29E+02
		636.97		7.26	6.35E+03		-6.84E+02	2.99E+03
		722.89		1.80	2.84E+04		5.52E+03	1.34E+04
	TE-132	49.72		13.10	1.07E+09	1.38E+08	-4.83E+07	5.23E+08
		228.16		88.00	1.38E+08		-6.41E+07	6.70E+07
	BA-133	81.00		33.00	1.87E-01	1.87E-01	-7.79E-01	9.18E-02
		302.84		17.80	4.06E-01		-2.54E-02	1.96E-01
		356.01		60.00	1.91E-01		2.99E-02	9.30E-02
	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	XE-133	81.00		38.00	9.30E+04	9.30E+04	-3.87E+05	4.56E+04
	CS-134	563.23		8.38	1.12E+00	1.07E-01	5.28E-01	5.31E-01
		569.32		15.43	5.59E-01		-8.14E-02	2.64E-01
		604.70		97.60	1.07E-01		8.64E-03	5.10E-02
		795.84		85.40	1.30E-01		9.03E-02	6.14E-02
		801.93		8.73	1.04E+00		-1.41E-01	4.84E-01
	CS-135	268.24		16.00	4.31E-01	4.31E-01	1.21E-01	2.09E-01
@	I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1260.41		28.60	1.00E+26		1.00E+26	1.00E+20
@		1678.03		9.54	1.00E+26		1.00E+26	1.00E+20
	CS-136	153.22		7.46	1.44E+02	1.69E+01	-4.88E-01	7.03E+01
		163.89		4.61	2.27E+02		-7.63E+00	1.10E+02
		176.55		13.56	7.78E+01		-1.69E+01	3.78E+01
		273.65		12.66	1.13E+02		7.13E+00	5.47E+01
		340.57		48.50	3.57E+01		-6.73E+00	1.73E+01
		818.50		99.70	1.69E+01		2.98E+00	7.85E+00
		1048.07		79.60	2.52E+01		-3.31E+00	1.17E+01
		1235.34		19.70	1.50E+02		5.98E+01	7.07E+01
	CS-137	661.65		85.12	9.33E-02	9.33E-02	-4.75E-02	4.38E-02
	LA-138	788.74		34.00	2.97E-01	1.40E-01	1.19E-01	1.40E-01
		1435.80		66.00	1.40E-01		2.32E-02	6.32E-02
	CE-139	165.85		80.35	1.08E-01	1.08E-01	1.36E-04	5.24E-02
	BA-140	162.64		6.70	1.81E+02	7.04E+01	3.13E+01	8.78E+01
		304.84		4.50	3.54E+02		2.95E+01	1.71E+02
		423.70		3.20	4.99E+02		-6.60E+01	2.38E+02
		437.55		2.00	8.92E+02		-8.71E+01	4.27E+02
		537.32		25.00	7.04E+01		-7.51E+00	3.34E+01
	LA-140	328.77		20.50	8.08E+01	2.27E+01	3.20E+01	3.90E+01
		487.03		45.50	3.76E+01		-9.86E+00	1.79E+01
		815.85		23.50	8.43E+01		3.75E+01	3.93E+01
		1596.49		95.49	2.27E+01		6.29E+00	1.01E+01
+	CE-141	145.44	*	48.40	1.05E+00	1.05E+00	8.64E-01	5.11E-01
@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		293.26		42.00	1.00E+26		1.00E+26	1.00E+20
@		664.55		5.20	1.00E+26		1.00E+26	1.00E+20
	CE-144	133.54		10.80	5.96E-01	5.96E-01	5.51E-02	2.90E-01
	PM-144	476.78		42.00	2.22E-01	8.74E-02	2.67E-02	1.06E-01
		618.01		98.60	8.74E-02		-1.80E-02	4.09E-02
		696.49		99.49	1.00E-01		-5.53E-02	4.69E-02
	PM-145	36.85		21.70	5.58E-01	2.94E-01	-9.37E-02	2.72E-01
		37.36		39.70	2.94E-01		-1.06E-01	1.43E-01
		42.30		15.10	5.89E-01		2.17E-01	2.87E-01
		72.40		2.31	3.18E+00		-8.62E+00	1.56E+00
+	PM-146	453.90	*	39.94	2.48E-01	2.48E-01	2.23E-01	1.20E-01
		735.90		14.01	6.30E-01		5.32E-01	2.95E-01
		747.13		13.10	6.36E-01		-2.26E-01	2.97E-01
	ND-147	91.11		28.90	1.30E+02	1.30E+02	-8.30E+01	6.38E+01
		531.02		13.10	3.22E+02		-2.60E+02	1.52E+02
	PM-149	285.90		3.10	1.00E+14	1.00E+14	6.32E+13	4.85E+13
	EU-152	121.78		20.50	2.38E-01	2.38E-01	3.15E-03	1.16E-01
		244.69		5.40	1.53E+00		-1.92E+00	7.46E-01
		344.27		19.13	3.63E-01		-1.94E-01	1.74E-01
		778.89		9.20	1.00E+00		3.99E-01	4.70E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-152	964.01		10.40	1.15E+00	2.38E-01	8.16E-02	5.43E-01
		1085.78		7.22	1.34E+00		-4.98E-01	6.20E-01
		1112.02		9.60	1.19E+00		-3.13E-02	5.53E-01
		1407.95		14.94	6.78E-01		2.34E-01	3.08E-01
	GD-153	97.43		31.30	2.01E-01	2.01E-01	-9.37E-02	9.78E-02
		103.18		22.20	2.90E-01		2.08E-02	1.42E-01
	EU-154	123.07		40.50	1.19E-01	1.19E-01	-7.18E-02	5.80E-02
		723.30		19.70	4.61E-01		8.96E-02	2.17E-01
		873.19		11.50	7.92E-01		6.05E-02	3.69E-01
		996.32		10.30	9.30E-01		-4.06E-01	4.31E-01
		1004.76		17.90	5.25E-01		4.02E-02	2.43E-01
		1274.45		35.50	3.35E-01		1.03E-01	1.56E-01
	EU-155	86.50		30.90	2.22E-01	2.22E-01	2.74E-01	1.09E-01
		105.30		20.70	2.41E-01		-6.31E-02	1.17E-01
	EU-156	811.77		10.40	7.61E+01	7.61E+01	-2.44E+01	3.54E+01
		1153.47		7.20	1.69E+02		-2.19E+01	7.93E+01
		1230.71		8.90	1.37E+02		-8.10E+01	6.41E+01
	HO-166M	184.41		72.60	9.48E-02	9.48E-02	1.96E-01	4.63E-02
		280.45		29.60	2.26E-01		-6.93E-02	1.09E-01
		410.94		11.10	6.74E-01		2.07E-02	3.23E-01
		711.69		54.10	1.62E-01		2.63E-02	7.62E-02
	TM-171	66.72		0.14	5.18E+01	5.18E+01	-3.15E+01	2.54E+01
	HF-172	67.35		5.31	1.32E+00	4.83E-01	-8.84E-01	6.49E-01
		125.81		11.30	4.83E-01		-2.77E-01	2.36E-01
	LU-172	181.53		20.60	8.59E+03	5.37E+03	-1.15E+02	4.17E+03
		900.72		29.81	9.83E+03		-3.92E+03	4.57E+03
		1093.66		62.50	5.37E+03		-7.65E+02	2.49E+03
	LU-173	100.72		5.24	1.05E+00	3.90E-01	1.19E-01	5.14E-01
		272.11		21.20	3.90E-01		1.61E-01	1.89E-01
	HF-175	343.40		84.00	2.20E-01	2.20E-01	-1.18E-01	1.06E-01
	LU-176	88.34		13.30	5.06E-01	6.41E-02	5.07E-01	2.49E-01
		201.83		86.00	6.41E-02		-1.01E-02	3.10E-02
		306.78		94.00	7.05E-02		1.42E-02	3.40E-02
	HF-181	133.02		41.70	6.43E-01	4.81E-01	1.64E-01	3.13E-01
		345.85		17.20	2.01E+00		-1.11E+00	9.63E-01
		482.03		82.80	4.81E-01		-4.68E-02	2.29E-01
	TA-182	67.75		41.20	2.82E-01	2.82E-01	-1.88E-01	1.38E-01
		1121.30		34.90	8.81E-01		1.21E+00	4.20E-01
		1189.05		16.23	1.38E+00		3.49E-02	6.47E-01
		1221.41		26.98	9.33E-01		1.54E-01	4.39E-01
		1231.02		11.44	2.01E+00		-1.18E+00	9.37E-01
	IR-192	308.46		29.68	5.61E-01	4.22E-01	-1.25E-01	2.70E-01
		468.07		48.10	4.22E-01		5.67E-02	2.02E-01
	HG-203	279.19		77.30	3.94E-01	3.94E-01	4.86E-02	1.90E-01
	TL-204	374.74		94.11	7.72E-02	7.72E-02	-3.43E-02	3.70E-02
		899.15		99.16	9.70E-02		-3.29E-02	4.52E-02
		911.74		91.10	1.96E-01		4.63E-01	9.44E-02
	BI-207	569.67		97.72	8.30E-02	8.30E-02	2.87E-03	3.94E-02
		1063.62		74.90	1.35E-01		-5.03E-03	6.29E-02
+	TL-208	583.14	*	30.22	3.53E-01	1.09E-01	1.15E+00	1.70E-01
		860.37		4.48	2.30E+00		7.53E-01	1.08E+00
		2614.66	*	35.85	1.09E-01		9.39E-01	3.50E-02
	BI-210M	262.00		45.00	1.41E-01	1.41E-01	-3.10E-02	6.84E-02

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-210M	300.00		23.00	3.59E-01	1.41E-01	9.93E-02	1.74E-01
+	PB-210	46.50	*	4.25	2.50E+00	2.50E+00	1.80E+00	1.23E+00
	PB-211	404.84		2.90	2.50E+00	2.50E+00	-7.12E-01	1.20E+00
		831.96		2.90	3.05E+00		-1.04E+00	1.43E+00
	BI-212	727.17		11.80	9.07E-01	9.07E-01	5.90E-01	4.31E-01
		1620.62		2.75	3.09E+00		9.38E-01	1.36E+00
+	PB-212	238.63	*	44.60	2.82E-01	2.82E-01	1.37E+00	1.39E-01
		300.09		3.41	2.42E+00		6.70E-01	1.18E+00
+	BI-214	609.31	*	46.30	2.84E-01	2.84E-01	1.63E+00	1.37E-01
		1120.29	*	15.10	1.03E+00		1.65E+00	4.90E-01
		1764.49	*	15.80	4.63E-01		2.13E+00	1.97E-01
		2204.22	*	4.98	2.13E+00		1.59E+00	9.37E-01
+	PB-214	295.21	*	19.19	5.21E-01	3.10E-01	1.78E+00	2.55E-01
		351.92	*	37.19	3.10E-01		1.93E+00	1.52E-01
+	RN-219	401.80	*	6.50	1.25E+00	1.25E+00	6.07E-01	6.03E-01
	RA-223	323.87		3.88	1.71E+00	1.71E+00	-8.61E-01	8.21E-01
	RA-224	240.98		3.95	3.26E+00	3.26E+00	1.84E+01	1.60E+00
	RA-225	40.00		31.00	3.61E+01	3.61E+01	2.29E+01	1.76E+01
+	RA-226	186.21	*	3.28	2.19E+00	2.19E+00	4.79E+00	1.07E+00
	TH-227	50.10		8.40	8.71E-01	8.71E-01	-3.94E-02	4.26E-01
		236.00		11.50	9.01E-01		9.52E-01	4.42E-01
		256.20		6.30	1.04E+00		-3.21E-01	5.05E-01
+	AC-228	338.32	*	11.40	9.17E-01	4.07E-01	1.57E+00	4.47E-01
		911.07	*	27.70	4.07E-01		1.61E+00	1.92E-01
		969.11	*	16.60	1.07E+00		9.11E-01	5.17E-01
	TH-230	48.44		16.90	4.75E-01	4.75E-01	2.67E-01	2.33E-01
		62.85		4.60	1.54E+00		1.58E+00	7.56E-01
		67.67		0.37	1.71E+01		-1.14E+01	8.39E+00
	PA-231	283.67		1.60	4.12E+00	3.08E+00	-1.50E-02	1.99E+00
		302.67		2.30	3.08E+00		-1.93E-01	1.49E+00
	TH-231	25.64		14.70	2.87E+00	9.42E-01	3.15E-01	1.40E+00
		84.21		6.40	9.42E-01		-3.05E-01	4.62E-01
	PA-233	311.98		38.60	2.15E+00	2.15E+00	-1.18E+00	1.03E+00
	PA-234	131.20		20.40	2.66E-01	2.66E-01	2.62E-01	1.30E-01
		733.99		8.80	9.61E-01		6.14E-02	4.51E-01
		946.00		12.00	7.14E-01		-1.96E-01	3.30E-01
	PA-234M	1001.03		0.92	1.08E+01	1.08E+01	-2.93E-01	5.04E+00
	TH-234	63.29		3.80	1.87E+00	1.87E+00	2.86E+00	9.16E-01
	U-235	143.76		10.50	4.96E-01	4.96E-01	-9.11E-02	2.42E-01
		163.35		4.70	1.12E+00		-3.77E-02	5.44E-01
		205.31		4.70	1.38E+00		-4.51E-01	6.74E-01
	NP-237	86.50		12.60	5.24E-01	5.24E-01	6.47E-01	2.57E-01
	NP-239	106.10		22.70	1.45E+12	1.45E+12	-3.81E+11	7.08E+11
		228.18		10.70	4.11E+12		-1.91E+12	2.00E+12
		277.60		14.10	3.31E+12		-3.11E+11	1.60E+12
	AM-241	59.54		35.90	1.85E-01	1.85E-01	-4.24E-02	9.04E-02
	AM-243	74.67		66.00	1.33E-01	1.33E-01	2.05E-01	6.56E-02
	CM-243	209.75		3.29	2.15E+00	4.90E-01	1.68E+00	1.05E+00
		228.14		10.60	6.09E-01		-2.83E-01	2.95E-01
		277.60		14.00	4.90E-01		-4.59E-02	2.37E-01

Analysis Report for 1707092-19

HTC-A09-S001-2430-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: HTC-A09-S001-2430-01

Elapsed Live time: 3600
Elapsed Real Time: 3609

Channel								
1:	0	0	0	0	0	0	0	0
9:	7	177	188	165	137	136	112	134
17:	123	118	117	101	113	85	96	108
25:	99	107	96	106	104	99	103	99
33:	99	116	109	99	96	114	114	106
41:	117	113	100	92	115	140	188	157
49:	125	125	125	124	128	158	140	114
57:	130	141	154	170	153	171	188	261
65:	213	164	154	198	183	160	175	185
73:	194	229	424	457	510	557	282	159
81:	161	144	142	166	186	157	234	271
89:	222	190	195	204	265	296	149	107
97:	105	103	106	107	115	109	106	101
105:	114	122	94	99	115	114	94	101
113:	114	116	106	107	89	90	83	109
121:	85	94	107	89	84	122	97	101
129:	113	123	119	103	118	88	89	87
137:	85	74	89	102	95	84	74	96
145:	134	91	111	90	82	100	108	87
153:	89	112	86	100	100	83	86	84
161:	98	90	91	70	65	99	76	91
169:	81	64	76	68	80	70	90	75
177:	66	80	70	85	82	62	83	72
185:	85	162	204	89	58	61	69	84
193:	66	69	77	64	69	72	76	73
201:	77	71	56	57	65	69	74	55
209:	82	96	82	61	68	52	64	84
217:	74	51	49	67	59	55	57	68
225:	60	49	61	54	47	53	50	61
233:	54	57	54	69	89	193	430	302
241:	134	148	130	81	48	52	33	51
249:	47	48	55	46	36	55	42	43
257:	51	48	48	47	52	27	36	38
265:	43	44	37	46	40	56	64	54
273:	45	53	38	54	40	54	45	40
281:	31	37	45	33	48	37	41	36
289:	36	29	33	31	24	61	161	237
297:	132	37	47	40	58	42	35	30
305:	37	39	44	35	26	28	33	22
313:	37	34	29	37	27	38	24	32
321:	31	28	21	36	31	36	33	41
329:	44	37	30	27	27	32	38	35
337:	39	63	96	67	43	37	26	18
345:	25	31	27	34	34	34	107	313
353:	301	105	26	23	26	28	31	18
361:	21	22	21	33	30	31	25	19

369:	14	36	22	23	31	19	28	26

Sample Title: HTC-A09-S001-2430-01

Channel								
377:	27	26	31	30	27	26	25	24
385:	27	31	31	29	40	26	28	27
393:	26	24	32	30	24	24	25	38
401:	33	25	27	25	20	29	30	17
409:	24	36	28	28	19	27	21	23
417:	24	23	21	27	19	15	25	22
425:	16	19	27	18	21	24	16	16
433:	27	31	27	34	17	20	28	26
441:	18	25	23	22	22	18	18	10
449:	19	16	18	26	26	28	25	18
457:	15	23	11	11	17	28	37	38
465:	30	24	21	19	25	21	18	17
473:	19	18	22	16	21	31	21	14
481:	25	16	25	19	21	13	21	19
489:	17	17	15	25	16	13	17	20
497:	15	8	12	22	15	13	12	20
505:	18	10	22	21	16	38	57	54
513:	33	25	11	20	14	11	11	17
521:	17	16	13	15	14	28	18	20
529:	17	16	12	20	10	14	21	20
537:	17	8	20	12	18	18	24	19
545:	13	21	10	17	9	18	13	14
553:	22	15	22	9	11	11	18	22
561:	25	17	16	16	19	15	13	17
569:	19	13	20	10	21	10	20	19
577:	13	10	17	8	16	28	90	104
585:	50	13	16	15	13	15	10	13
593:	10	17	17	17	14	22	14	22
601:	12	12	20	15	11	14	15	56
609:	149	216	94	14	11	16	12	15
617:	9	13	6	10	9	9	12	14
625:	9	12	14	10	13	9	14	13
633:	13	10	16	14	13	15	9	13
641:	9	19	15	12	11	9	15	17
649:	9	14	14	4	16	9	12	11
657:	10	9	12	5	16	11	14	14
665:	9	21	17	7	12	16	15	6
673:	9	14	10	9	11	18	15	11
681:	15	10	17	12	15	13	16	9
689:	19	9	12	10	21	14	6	13
697:	11	13	15	8	14	15	17	18
705:	15	17	12	7	14	11	9	14
713:	15	16	9	11	15	12	10	14
721:	14	15	11	12	11	11	36	29
729:	17	13	16	11	2	14	9	15
737:	10	14	14	9	4	11	14	9
745:	10	10	10	10	7	11	9	13
753:	15	5	16	15	10	16	10	11
761:	11	12	13	14	12	16	19	14
769:	25	23	19	13	12	9	6	14
777:	14	8	3	14	11	16	12	8
785:	9	19	20	20	18	6	8	7
793:	15	10	24	16	15	9	8	8

801:	12	4	8	10	12	8	14	9

Sample Title: HTC-A09-S001-2430-01

Channel								
809:	8	12	6	8	8	8	8	10
817:	8	12	11	8	5	9	12	4
825:	10	8	11	7	7	11	11	10
833:	9	11	8	15	12	3	6	18
841:	11	5	8	7	9	3	8	7
849:	7	6	13	12	8	8	8	11
857:	6	10	10	12	25	15	9	8
865:	14	3	6	12	9	10	11	9
873:	6	10	6	10	9	5	8	10
881:	3	10	7	11	12	6	7	7
889:	6	9	11	9	15	11	14	6
897:	15	6	9	9	9	8	14	5
905:	18	4	8	14	7	28	79	70
913:	26	6	7	5	6	7	6	15
921:	8	7	13	6	9	9	6	6
929:	10	7	7	8	12	21	11	8
937:	10	8	15	5	11	8	8	4
945:	7	6	11	6	7	10	5	3
953:	6	9	6	8	10	4	10	7
961:	5	11	10	18	19	17	14	23
969:	36	35	17	10	9	9	8	8
977:	5	11	5	8	9	9	10	4
985:	10	5	12	6	7	5	8	10
993:	4	3	8	16	7	5	11	9
1001:	13	12	5	6	4	10	6	8
1009:	10	6	7	11	8	6	3	6
1017:	7	5	5	10	7	11	11	9
1025:	8	4	8	11	10	5	10	4
1033:	5	9	5	10	7	7	7	4
1041:	5	15	8	10	7	7	11	8
1049:	10	6	9	6	12	8	8	10
1057:	9	6	7	7	8	11	7	8
1065:	9	6	7	9	9	6	9	11
1073:	12	9	6	10	10	6	4	8
1081:	6	12	7	4	11	8	7	5
1089:	6	11	6	8	6	4	16	6
1097:	10	7	11	8	7	10	6	11
1105:	13	8	8	12	11	8	7	9
1113:	10	10	10	9	9	9	21	44
1121:	38	20	9	8	8	12	11	8
1129:	6	11	11	8	9	8	7	9
1137:	11	5	11	7	8	9	10	4
1145:	7	12	9	7	8	14	7	9
1153:	8	14	12	12	16	14	5	6
1161:	12	6	9	8	7	10	7	19
1169:	6	9	9	8	10	14	10	12
1177:	6	14	8	9	9	13	10	10
1185:	6	11	8	11	11	6	11	11
1193:	10	12	13	14	13	8	7	6
1201:	10	11	7	5	14	4	4	7
1209:	14	12	7	16	15	10	16	12
1217:	16	14	16	14	7	11	14	8
1225:	8	10	13	8	9	13	8	9

1233:	11	10	12	17	12	27	14	10

Sample Title: HTC-A09-S001-2430-01

Channel								
1241:	9	15	11	11	12	14	11	6
1249:	7	9	9	8	9	9	12	3
1257:	8	9	1	5	5	5	4	10
1265:	11	5	11	8	7	6	5	11
1273:	6	7	6	11	9	7	5	6
1281:	8	7	9	6	6	3	6	5
1289:	7	5	6	8	5	8	8	3
1297:	3	7	6	6	6	11	8	5
1305:	2	3	5	5	6	5	1	5
1313:	6	5	8	9	10	3	7	3
1321:	5	3	3	9	4	8	9	6
1329:	7	4	3	7	4	5	4	5
1337:	5	6	7	4	3	7	4	4
1345:	4	5	2	2	6	4	4	1
1353:	2	4	6	3	4	4	1	2
1361:	8	6	3	4	3	3	2	3
1369:	1	4	3	3	3	5	4	5
1377:	8	12	6	6	4	2	2	2
1385:	4	4	2	1	4	6	7	1
1393:	5	3	4	2	2	3	3	4
1401:	6	8	2	7	1	2	4	9
1409:	8	6	3	2	2	2	3	2
1417:	3	4	4	2	1	1	2	0
1425:	3	3	2	5	2	2	4	3
1433:	1	7	3	4	3	7	2	4
1441:	2	2	1	5	3	4	4	4
1449:	2	2	4	5	0	3	1	2
1457:	4	9	69	205	304	177	46	5
1465:	3	0	4	3	1	2	5	4
1473:	3	0	1	5	3	0	2	1
1481:	0	0	1	0	4	0	1	2
1489:	3	2	1	2	2	2	1	5
1497:	2	2	3	4	3	0	2	1
1505:	2	1	2	4	10	7	5	3
1513:	3	2	3	2	0	1	4	1
1521:	5	2	3	3	1	1	2	1
1529:	2	3	3	3	1	1	1	5
1537:	4	2	1	3	3	2	1	3
1545:	0	3	2	0	2	1	0	2
1553:	3	3	3	0	3	3	1	1
1561:	3	2	3	2	1	2	1	1
1569:	3	3	2	2	1	1	2	0
1577:	0	4	2	0	1	3	1	4
1585:	3	4	1	5	3	2	3	5
1593:	6	2	3	2	1	2	1	1
1601:	2	1	1	1	1	4	1	2
1609:	3	0	4	3	2	2	1	2
1617:	1	0	2	5	3	1	1	3
1625:	0	2	3	3	2	1	3	1
1633:	2	2	0	0	4	1	3	3
1641:	1	1	1	1	1	0	1	4
1649:	1	2	0	4	0	2	0	0
1657:	1	0	0	3	1	2	1	2

1665:	0	3	2	4	1	1	2	0

Sample Title: HTC-A09-S001-2430-01

Channel								
1673:	2	1	3	0	1	2	0	5
1681:	0	0	1	1	2	1	2	1
1689:	1	4	2	0	2	3	1	1
1697:	1	1	1	1	0	0	1	4
1705:	2	1	1	0	2	1	0	2
1713:	1	0	4	0	1	1	0	0
1721:	1	2	1	1	1	2	1	1
1729:	5	6	5	2	0	1	0	0
1737:	1	2	1	1	2	0	1	0
1745:	1	4	1	2	3	3	3	3
1753:	0	0	0	0	0	3	1	1
1761:	1	1	9	31	31	11	5	0
1769:	1	1	2	0	1	1	0	2
1777:	0	4	1	2	1	3	1	2
1785:	2	1	1	0	0	0	1	0
1793:	3	1	2	0	1	0	1	1
1801:	2	0	1	2	0	2	3	2
1809:	0	2	2	1	0	0	2	0
1817:	1	1	0	3	1	3	0	0
1825:	0	0	1	1	0	0	1	0
1833:	0	1	1	1	2	0	0	0
1841:	0	2	1	2	0	3	4	3
1849:	1	1	2	2	0	1	0	2
1857:	2	1	1	1	0	0	0	1
1865:	0	0	0	1	1	2	1	3
1873:	1	1	0	1	3	0	0	0
1881:	0	1	2	0	0	1	0	0
1889:	1	2	1	4	0	1	1	1
1897:	0	0	0	2	0	1	1	0
1905:	1	1	2	1	1	1	3	1
1913:	2	2	1	0	0	0	1	1
1921:	0	3	2	0	0	2	0	0
1929:	0	2	0	2	0	0	0	1
1937:	1	0	1	3	1	2	1	0
1945:	1	0	1	1	1	0	1	1
1953:	0	0	0	1	0	1	0	0
1961:	1	0	0	1	2	1	2	0
1969:	0	0	1	2	2	1	0	2
1977:	0	1	1	3	1	0	0	0
1985:	0	1	1	1	0	0	0	1
1993:	1	2	1	2	2	1	2	0
2001:	2	1	1	2	1	1	2	0
2009:	0	0	0	0	1	0	0	4
2017:	0	0	2	0	3	0	0	0
2025:	1	0	1	0	0	1	0	1
2033:	0	1	1	0	0	0	0	0
2041:	0	3	1	1	2	1	0	2
2049:	1	1	2	2	0	2	1	2
2057:	0	1	0	1	1	0	0	0
2065:	1	0	0	2	1	4	0	0
2073:	2	2	0	1	0	1	1	0
2081:	3	2	1	0	0	2	4	0
2089:	1	2	0	1	0	0	1	0

2097:	0	0	0	0	0	1	7	2

Sample Title: HTC-A09-S001-2430-01

Channel								
2105:	2	1	0	0	2	2	2	0
2113:	2	0	1	0	1	4	1	1
2121:	0	0	1	0	0	0	0	0
2129:	0	1	1	1	1	0	1	0
2137:	1	0	3	0	0	0	0	2
2145:	1	1	0	1	2	1	0	0
2153:	2	0	0	0	1	0	1	0
2161:	1	1	0	0	0	0	0	2
2169:	0	2	0	0	2	3	2	2
2177:	1	0	4	0	1	1	0	1
2185:	3	0	1	1	1	1	0	3
2193:	0	0	2	1	2	0	2	0
2201:	0	2	9	4	9	2	0	3
2209:	0	1	1	1	1	0	1	1
2217:	0	2	0	1	1	0	2	2
2225:	1	0	0	2	0	1	1	0
2233:	1	2	2	0	2	0	0	2
2241:	1	0	1	1	2	0	0	2
2249:	0	1	0	1	0	0	1	0
2257:	1	0	0	1	0	0	0	2
2265:	0	0	0	1	1	1	1	2
2273:	0	2	1	3	3	0	1	0
2281:	0	3	1	2	0	2	1	1
2289:	1	1	1	0	0	0	0	1
2297:	1	0	0	2	1	2	1	1
2305:	1	0	0	2	1	3	2	1
2313:	3	0	1	1	1	0	0	1
2321:	0	1	1	0	2	0	3	1
2329:	3	1	4	1	1	2	0	1
2337:	0	0	0	0	3	0	1	4
2345:	2	1	2	2	1	2	0	1
2353:	0	0	0	0	0	0	0	4
2361:	0	1	0	1	1	0	1	2
2369:	1	1	2	0	0	3	1	0
2377:	0	1	0	2	0	1	2	2
2385:	2	0	0	1	0	1	0	0
2393:	0	1	2	0	0	0	0	0
2401:	0	1	0	0	1	1	0	1
2409:	1	0	1	1	0	0	0	0
2417:	2	1	2	1	1	1	0	0
2425:	1	1	1	1	1	1	1	0
2433:	0	0	0	1	0	1	0	0
2441:	0	0	2	0	1	0	2	1
2449:	2	1	1	0	3	1	0	1
2457:	1	1	1	2	0	1	0	1
2465:	1	0	0	0	0	0	0	0
2473:	0	1	0	0	3	0	0	0
2481:	0	2	0	1	0	2	0	0
2489:	2	2	0	0	0	0	0	0
2497:	1	1	0	0	1	1	0	0
2505:	2	0	1	0	1	1	1	0
2513:	0	1	0	0	0	0	2	0
2521:	0	0	0	1	0	1	0	1

2529:	0	1	0	0	0	0	1	0

Sample Title: HTC-A09-S001-2430-01

Channel								
2537:	0	0	1	1	1	1	1	0
2545:	0	0	0	0	0	0	0	0
2553:	0	1	0	0	1	0	0	0
2561:	0	0	0	0	0	0	0	0
2569:	0	0	0	1	0	0	0	1
2577:	0	0	1	0	1	0	1	1
2585:	0	0	0	0	0	0	0	0
2593:	0	0	0	0	0	0	0	0
2601:	0	0	2	0	3	0	0	0
2609:	0	1	0	7	10	17	18	9
2617:	3	2	0	0	0	0	0	0
2625:	0	0	1	0	0	1	0	1
2633:	1	0	0	0	0	0	0	2
2641:	0	0	0	0	0	0	0	0
2649:	0	1	0	0	0	0	0	0
2657:	1	1	0	0	2	0	0	0
2665:	1	0	0	0	1	0	0	0
2673:	0	0	0	0	0	0	0	1
2681:	0	0	0	0	0	0	1	1
2689:	0	0	0	1	0	0	0	1
2697:	0	0	0	0	0	0	0	0
2705:	1	2	2	0	0	1	0	1
2713:	0	0	0	1	1	0	0	1
2721:	1	1	0	0	0	0	0	0
2729:	0	0	0	0	0	0	0	0
2737:	0	0	0	0	1	0	0	0
2745:	0	0	0	0	0	0	1	0
2753:	0	1	0	0	0	0	0	1
2761:	0	0	0	0	2	0	0	0
2769:	0	0	1	0	0	0	0	0
2777:	0	0	0	0	1	0	0	0
2785:	0	1	0	0	0	0	0	0
2793:	0	0	0	0	0	0	0	0
2801:	0	0	2	0	0	0	0	0
2809:	0	1	0	1	0	2	0	0
2817:	0	1	0	1	0	0	0	0
2825:	0	0	0	0	1	0	2	0
2833:	0	1	0	0	0	0	0	0
2841:	1	0	0	0	0	0	0	0
2849:	0	0	0	0	0	0	0	0
2857:	0	0	0	1	0	0	1	0
2865:	0	0	0	0	0	0	1	0
2873:	1	1	0	0	0	0	1	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	0	1	0	0	0
2897:	0	0	0	2	0	0	0	0
2905:	0	0	1	0	0	0	1	1
2913:	0	0	0	0	0	0	0	0
2921:	0	0	1	1	1	0	0	1
2929:	0	0	0	1	0	0	0	1
2937:	0	0	0	0	0	0	0	0
2945:	1	0	1	0	0	0	0	0
2953:	0	0	0	0	0	0	0	1

2961:	0	0	0	2	0	1	0	0

Sample Title: HTC-A09-S001-2430-01

Channel								
2969:	0	0	0	0	0	0	0	0
2977:	0	1	1	0	0	0	0	0
2985:	1	0	0	1	1	0	0	0
2993:	1	2	0	0	0	0	0	0
3001:	0	0	0	1	0	0	0	0
3009:	0	0	0	0	0	0	0	0
3017:	0	1	0	0	0	0	0	0
3025:	0	0	0	0	0	0	0	0
3033:	1	0	0	0	0	0	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	0	0	0	0	1
3073:	0	0	0	1	0	0	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	0	0	1	0	0
3097:	0	0	0	1	0	0	0	1
3105:	0	0	0	0	0	0	1	0
3113:	0	0	0	0	0	0	0	0
3121:	0	0	0	0	0	0	0	0
3129:	0	0	0	0	1	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	1	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	1	1	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	0	2	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	1	0	0	0	0
3201:	0	0	0	0	0	0	1	0
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	1	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	1	0	0	0	0	0
3249:	1	0	0	1	1	1	0	0
3257:	0	0	0	0	1	0	0	0
3265:	0	0	0	0	0	0	1	1
3273:	1	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	1	1	0	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	1
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	1	0	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	1	0	1	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	1	0	0	0	0
3377:	0	0	0	0	0	0	0	0
3385:	1	0	0	0	0	0	0	0

3393:	0	0	0	0	0	0	0	0

Sample Title: HTC-A09-S001-2430-01

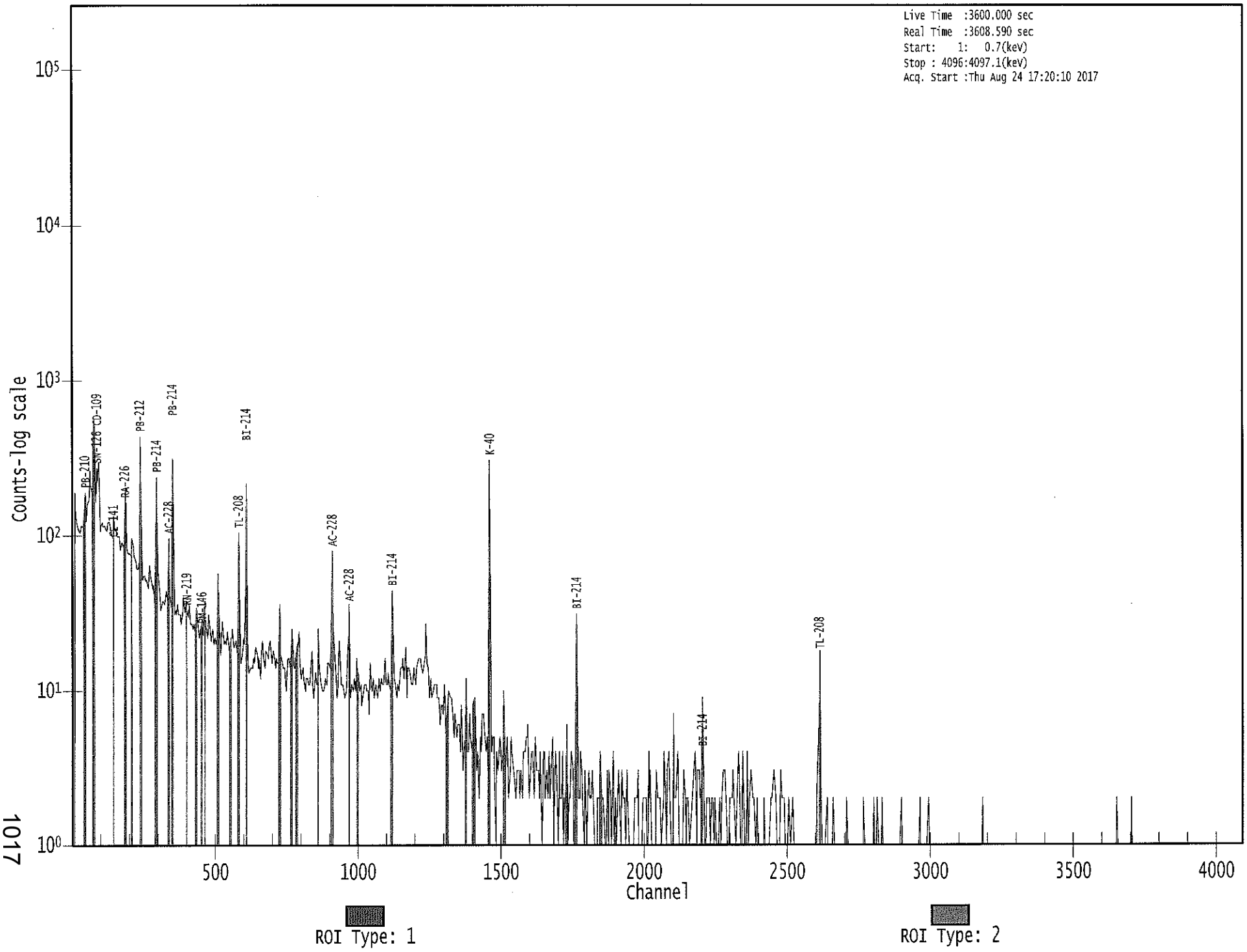
Channel								
3401:	0	0	0	0	1	0	0	0
3409:	0	0	1	0	1	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	1	0	0	1	0	0	0	0
3433:	0	1	0	0	1	0	0	0
3441:	0	0	0	0	1	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	1	1	1	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	1	1	1	0	1	1	0	0
3489:	0	1	0	0	0	0	0	0
3497:	0	0	0	0	0	0	1	0
3505:	0	0	1	1	1	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	1	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	1
3537:	0	0	0	0	0	0	0	1
3545:	0	0	1	0	0	0	0	0
3553:	0	0	0	0	1	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	1	0	0	1	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	1	0
3593:	0	0	0	0	0	0	0	0
3601:	0	1	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	1	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	2	0	0	0	1
3657:	0	0	0	1	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	1	0	0
3697:	0	0	0	0	0	0	2	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	1	0	0	0	1	0	0	0
3745:	0	0	0	0	1	0	0	0
3753:	0	0	0	0	0	0	1	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	1	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	1	0
3809:	0	0	0	0	0	0	0	1
3817:	0	0	0	0	0	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A09-S001-2430-01

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	1	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	1	1	0	0	0	0	0
3873:	0	0	0	1	0	0	1	0
3881:	0	1	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	1	0	0
3905:	0	0	1	0	0	1	0	0
3913:	0	0	0	0	0	0	0	1
3921:	0	0	0	0	0	0	0	1
3929:	0	0	0	0	0	0	0	1
3937:	0	0	0	0	1	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	1	0	0
3961:	0	0	0	0	0	0	1	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	1	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	1	0	1	0	0	0	0	0
4025:	0	0	0	1	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	1	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	1	0	0	0	1
4089:	0	0	0	0	0	0	0	0

0000055930.CNF



Apex-Gamma

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Analysis Report for 1707092-20

HTC-A09-S001-3036-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707092-20
Sample Description	: HTC-A09-S001-3036-01
Sample Type	: SOIL
Sample Size	: 6.849E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 7:44:49AM
Acquisition Started	: 8/24/2017 6:10:02PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3602.0 seconds
Dead Time	: 0.06 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 15 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55931

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 7:10:05PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.19	45.24	0.0000	0.00
2	62.95	62.01	0.0000	0.00
3	76.36	75.42	0.0000	0.00
4	87.95	87.01	0.0000	0.00
5	92.98	92.04	0.0000	0.00
6	130.21	129.29	0.0000	0.00
7	138.50	137.57	0.0000	0.00
8	152.67	151.75	0.0000	0.00
9	186.65	185.75	0.0000	0.00
10	226.04	225.14	0.0000	0.00
11	238.77	237.87	0.0000	0.00
12	241.73	240.84	0.0000	0.00
13	270.29	269.40	0.0000	0.00
14	290.33	289.45	0.0000	0.00
15	295.33	294.45	0.0000	0.00
16	339.08	338.22	0.0000	0.00
17	351.96	351.11	0.0000	0.00
18	416.48	415.65	0.0000	0.00
19	510.87	510.07	0.0000	0.00
20	583.32	582.55	0.0000	0.00
21	609.53	608.77	0.0000	0.00
22	726.90	726.19	0.0000	0.00
23	794.40	793.71	0.0000	0.00
24	859.97	859.31	0.0000	0.00
25	880.87	880.22	0.0000	0.00
26	910.52	909.88	0.0000	0.00
27	950.11	949.49	0.0000	0.00
28	964.13	963.51	0.0000	0.00
29	969.10	968.48	0.0000	0.00
30	1016.50	1015.91	0.0000	0.00
31	1120.12	1119.58	0.0000	0.00
32	1376.61	1376.19	0.0000	0.00
33	1460.85	1460.47	0.0000	0.00
34	1491.37	1491.01	0.0000	0.00
35	1509.83	1509.48	0.0000	0.00
36	1597.04	1596.73	0.0000	0.00
37	1723.11	1722.88	0.0000	0.00
38	1729.53	1729.29	0.0000	0.00
39	1747.95	1747.73	0.0000	0.00
40	1764.15	1763.93	0.0000	0.00
41	1855.44	1855.27	0.0000	0.00
42	1931.78	1931.66	0.0000	0.00

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	2100.74	2100.72	0.0000	0.00
44	2371.34	2371.50	0.0000	0.00
45	2614.39	2614.70	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 7:10:05PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	46.19	42 -	48	45.24	1.15E+02	83.45	1.18E+03	1.63
	2	62.95	58 -	66	62.01	1.73E+02	126.74	2.38E+03	4.00
	3	76.36	69 -	81	75.42	1.21E+03	189.50	3.65E+03	3.93
M	4	87.95	82 -	96	87.01	3.96E+02	135.98	2.42E+03	3.87
m	5	92.98	82 -	96	92.04	2.96E+02	103.08	1.53E+03	2.46
	6	130.21	126 -	133	129.29	1.25E+02	86.28	1.15E+03	4.77
	7	138.50	134 -	141	137.57	1.22E+02	86.65	1.17E+03	4.30
	8	152.67	149 -	154	151.75	6.13E+01	66.54	8.35E+02	3.43
	9	186.65	181 -	191	185.75	2.56E+02	102.36	1.25E+03	2.13
	10	226.04	223 -	228	225.14	5.09E+01	52.18	5.08E+02	1.48
M	11	238.77	232 -	245	237.87	6.25E+02	78.81	6.29E+02	2.33
m	12	241.73	232 -	245	240.84	1.78E+02	80.05	5.56E+02	2.33
	13	270.29	266 -	273	269.40	5.71E+01	62.67	6.18E+02	2.78
M	14	290.33	288 -	302	289.45	3.69E+01	31.30	2.20E+02	2.60
m	15	295.33	288 -	302	294.45	3.36E+02	58.95	3.85E+02	2.43
	16	339.08	334 -	343	338.22	1.80E+02	61.78	4.35E+02	2.86
	17	351.96	346 -	356	351.11	4.82E+02	75.26	4.92E+02	2.02
	18	416.48	411 -	421	415.65	5.51E+01	53.37	3.46E+02	4.15
	19	510.87	505 -	517	510.07	1.47E+02	56.89	3.10E+02	2.65
	20	583.32	578 -	587	582.55	1.36E+02	50.13	2.71E+02	2.16
	21	609.53	603 -	615	608.77	3.15E+02	61.98	2.98E+02	2.56
	22	726.90	721 -	729	726.19	3.47E+01	34.83	1.63E+02	2.64
	23	794.40	790 -	797	793.71	2.25E+01	27.20	1.09E+02	4.53
	24	859.97	855 -	864	859.31	4.92E+01	28.16	8.56E+01	4.69
	25	880.87	877 -	884	880.22	2.31E+01	22.45	6.97E+01	1.56
	26	910.52	904 -	914	909.88	7.88E+01	37.80	1.48E+02	2.40
M	27	950.11	944 -	972	949.49	3.96E+01	24.23	4.18E+01	2.96
m	28	964.13	944 -	972	963.51	3.29E+01	24.72	5.60E+01	2.97
m	29	969.10	944 -	972	968.48	7.70E+01	27.91	6.53E+01	2.97
	30	1016.50	1012 -	1019	1015.91	2.09E+01	21.07	6.03E+01	1.55
	31	1120.12	1113 -	1126	1119.58	1.07E+02	41.87	1.48E+02	3.45
	32	1376.61	1372 -	1379	1376.19	3.00E+01	13.86	1.19E+01	2.49
	33	1460.85	1455 -	1467	1460.47	5.10E+02	49.19	4.23E+01	2.86
	34	1491.37	1488 -	1494	1491.01	1.02E+01	8.75	5.54E+00	1.13
	35	1509.83	1503 -	1516	1509.48	1.80E+01	22.52	4.59E+01	9.29
	36	1597.04	1586 -	1605	1596.73	3.73E+01	19.70	1.94E+01	17.59
	37	1723.11	1720 -	1725	1722.88	8.00E+00	5.66	0.00E+00	2.92
	38	1729.53	1726 -	1732	1729.29	1.70E+01	8.25	0.00E+00	2.98
	39	1747.95	1745 -	1750	1747.73	5.64E+00	6.08	2.71E+00	2.48
	40	1764.15	1759 -	1770	1763.93	5.65E+01	16.61	6.95E+00	2.68

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1855.44	1852 -	1858	1855.27	1.10E+01	6.63	0.00E+00	4.20
42	1931.78	1927 -	1935	1931.66	6.91E+00	9.19	8.18E+00	2.79
43	2100.74	2096 -	2105	2100.72	1.50E+01	11.40	1.00E+01	3.45
44	2371.34	2368 -	2374	2371.50	6.92E+00	9.21	1.02E+01	2.55
45	2614.39	2609 -	2619	2614.70	5.40E+01	14.70	0.00E+00	3.35

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 7:10:05PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.19	42 -	48	1.15E+02	83.45	1.18E+03	6.63E+01
	2	62.95	58 -	66	1.73E+02	126.74	2.38E+03	1.02E+02
	3	76.36	69 -	81	1.21E+03	189.50	3.65E+03	1.45E+02
M	4	87.95	82 -	96	3.96E+02	135.98	2.42E+03	8.08E+01
m	5	92.98	82 -	96	2.96E+02	103.08	1.53E+03	6.44E+01
	6	130.21	126 -	133	1.25E+02	86.28	1.15E+03	6.85E+01
	7	138.50	134 -	141	1.22E+02	86.65	1.17E+03	6.89E+01
	8	152.67	149 -	154	6.13E+01	66.54	8.35E+02	5.32E+01
	9	186.65	181 -	191	2.56E+02	102.36	1.25E+03	7.99E+01
	10	226.04	223 -	228	5.09E+01	52.18	5.08E+02	4.13E+01
M	11	238.77	232 -	245	6.25E+02	78.81	6.29E+02	4.12E+01
m	12	241.73	232 -	245	1.78E+02	80.05	5.56E+02	3.88E+01
	13	270.29	266 -	273	5.71E+01	62.67	6.18E+02	5.00E+01
M	14	290.33	288 -	302	3.69E+01	31.30	2.20E+02	2.44E+01
m	15	295.33	288 -	302	3.36E+02	58.95	3.85E+02	3.23E+01
	16	339.08	334 -	343	1.80E+02	61.78	4.35E+02	4.57E+01
	17	351.96	346 -	356	4.82E+02	75.26	4.92E+02	5.03E+01
	18	416.48	411 -	421	5.51E+01	53.37	3.46E+02	4.21E+01
	19	510.87	505 -	517	1.47E+02	56.89	3.10E+02	4.23E+01
	20	583.32	578 -	587	1.36E+02	50.13	2.71E+02	3.65E+01
	21	609.53	603 -	615	3.15E+02	61.98	2.98E+02	4.18E+01
	22	726.90	721 -	729	3.47E+01	34.83	1.63E+02	2.69E+01

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	23	794.40	790 -	797	2.25E+01	27.20	1.09E+02	2.10E+01
	24	859.97	855 -	864	4.92E+01	28.16	8.56E+01	2.01E+01
	25	880.87	877 -	884	2.31E+01	22.45	6.97E+01	1.67E+01
	26	910.52	904 -	914	7.88E+01	37.80	1.48E+02	2.74E+01
M	27	950.11	944 -	972	3.96E+01	24.23	4.18E+01	1.06E+01
m	28	964.13	944 -	972	3.29E+01	24.72	5.60E+01	1.23E+01
m	29	969.10	944 -	972	7.70E+01	27.91	6.53E+01	1.33E+01
	30	1016.50	1012 -	1019	2.09E+01	21.07	6.03E+01	1.56E+01
	31	1120.12	1113 -	1126	1.07E+02	41.87	1.48E+02	2.99E+01
	32	1376.61	1372 -	1379	3.00E+01	13.86	1.19E+01	6.97E+00
	33	1460.85	1455 -	1467	5.10E+02	49.19	4.23E+01	1.60E+01
	34	1491.37	1488 -	1494	1.02E+01	8.75	5.54E+00	4.90E+00
	35	1509.83	1503 -	1516	1.80E+01	22.52	4.59E+01	1.71E+01
	36	1597.04	1586 -	1605	3.73E+01	19.70	1.94E+01	1.27E+01
	37	1723.11	1720 -	1725	8.00E+00	5.66	0.00E+00	0.00E+00
	38	1729.53	1726 -	1732	1.70E+01	8.25	0.00E+00	0.00E+00
	39	1747.95	1745 -	1750	5.64E+00	6.08	2.71E+00	3.12E+00
	40	1764.15	1759 -	1770	5.65E+01	16.61	6.95E+00	5.81E+00
	41	1855.44	1852 -	1858	1.10E+01	6.63	0.00E+00	0.00E+00
	42	1931.78	1927 -	1935	6.91E+00	9.19	8.18E+00	6.20E+00
	43	2100.74	2096 -	2105	1.50E+01	11.40	1.00E+01	6.88E+00
	44	2371.34	2368 -	2374	6.92E+00	9.21	1.02E+01	6.21E+00
	45	2614.39	2609 -	2619	5.40E+01	14.70	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 7:10:05PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	46.19	42 -	48	45.24	1.15E+02	83.45	1.18E+03	PB-210
2	62.95	58 -	66	62.01	1.73E+02	126.74	2.38E+03	TH-230

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									TH-234
	3	76.36	69 -	81	75.42	1.21E+03	189.50	3.65E+03	.....
M	4	87.95	82 -	96	87.01	3.96E+02	135.98	2.42E+03	CD-109
									SN-126
									LU-176
m	5	92.98	82 -	96	92.04	2.96E+02	103.08	1.53E+03	GA-67
	6	130.21	126 -	133	129.29	1.25E+02	86.28	1.15E+03	PA-234
	7	138.50	134 -	141	137.57	1.22E+02	86.65	1.17E+03	.....
	8	152.67	149 -	154	151.75	6.13E+01	66.54	8.35E+02	CS-136
	9	186.65	181 -	191	185.75	2.56E+02	102.36	1.25E+03	RA-226
	10	226.04	223 -	228	225.14	5.09E+01	52.18	5.08E+02	.....
M	11	238.77	232 -	245	237.87	6.25E+02	78.81	6.29E+02	PB-212
m	12	241.73	232 -	245	240.84	1.78E+02	80.05	5.56E+02	RA-224
	13	270.29	266 -	273	269.40	5.71E+01	62.67	6.18E+02	.....
M	14	290.33	288 -	302	289.45	3.69E+01	31.30	2.20E+02	.....
m	15	295.33	288 -	302	294.45	3.36E+02	58.95	3.85E+02	PB-214
	16	339.08	334 -	343	338.22	1.80E+02	61.78	4.35E+02	AC-228
	17	351.96	346 -	356	351.11	4.82E+02	75.26	4.92E+02	PB-214
	18	416.48	411 -	421	415.65	5.51E+01	53.37	3.46E+02	.....
	19	510.87	505 -	517	510.07	1.47E+02	56.89	3.10E+02	.....
	20	583.32	578 -	587	582.55	1.36E+02	50.13	2.71E+02	TL-208
	21	609.53	603 -	615	608.77	3.15E+02	61.98	2.98E+02	BI-214
	22	726.90	721 -	729	726.19	3.47E+01	34.83	1.63E+02	BI-212
	23	794.40	790 -	797	793.71	2.25E+01	27.20	1.09E+02	.....
	24	859.97	855 -	864	859.31	4.92E+01	28.16	8.56E+01	TL-208
	25	880.87	877 -	884	880.22	2.31E+01	22.45	6.97E+01	.....
	26	910.52	904 -	914	909.88	7.88E+01	37.80	1.48E+02	AC-228
M	27	950.11	944 -	972	949.49	3.96E+01	24.23	4.18E+01	.....
m	28	964.13	944 -	972	963.51	3.29E+01	24.72	5.60E+01	EU-152
m	29	969.10	944 -	972	968.48	7.70E+01	27.91	6.53E+01	AC-228
	30	1016.50	1012 -	1019	1015.91	2.09E+01	21.07	6.03E+01	.....
	31	1120.12	1113 -	1126	1119.58	1.07E+02	41.87	1.48E+02	BI-214
									SC-46
	32	1376.61	1372 -	1379	1376.19	3.00E+01	13.86	1.19E+01	.....
	33	1460.85	1455 -	1467	1460.47	5.10E+02	49.19	4.23E+01	K-40
	34	1491.37	1488 -	1494	1491.01	1.02E+01	8.75	5.54E+00	.....
	35	1509.83	1503 -	1516	1509.48	1.80E+01	22.52	4.59E+01	.....
	36	1597.04	1586 -	1605	1596.73	3.73E+01	19.70	1.94E+01	LA-140
	37	1723.11	1720 -	1725	1722.88	8.00E+00	5.66	0.00E+00	.....
	38	1729.53	1726 -	1732	1729.29	1.70E+01	8.25	0.00E+00	.....
	39	1747.95	1745 -	1750	1747.73	5.64E+00	6.08	2.71E+00	.....
	40	1764.15	1759 -	1770	1763.93	5.65E+01	16.61	6.95E+00	BI-214
	41	1855.44	1852 -	1858	1855.27	1.10E+01	6.63	0.00E+00	.....
	42	1931.78	1927 -	1935	1931.66	6.91E+00	9.19	8.18E+00	.....
	43	2100.74	2096 -	2105	2100.72	1.50E+01	11.40	1.00E+01	.....
	44	2371.34	2368 -	2374	2371.50	6.92E+00	9.21	1.02E+01	.....
	45	2614.39	2609 -	2619	2614.70	5.40E+01	14.70	0.00E+00	TL-208

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 7:10:05PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.19	1.15E+02	83.45	1.63E-02	1.56E-03
	2	62.95	1.73E+02	126.74	2.15E-02	1.63E-03
	3	76.36	1.21E+03	189.50	2.33E-02	1.92E-03
M	4	87.95	3.96E+02	135.98	2.37E-02	2.16E-03
m	5	92.98	2.96E+02	103.08	2.37E-02	2.09E-03
	6	130.21	1.25E+02	86.28	2.14E-02	1.62E-03
	7	138.50	1.22E+02	86.65	2.08E-02	1.59E-03
	8	152.67	6.13E+01	66.54	1.96E-02	1.54E-03
	9	186.65	2.56E+02	102.36	1.69E-02	1.39E-03
	10	226.04	5.09E+01	52.18	1.43E-02	1.20E-03
M	11	238.77	6.25E+02	78.81	1.36E-02	1.14E-03
m	12	241.73	1.78E+02	80.05	1.34E-02	1.13E-03
	13	270.29	5.71E+01	62.67	1.20E-02	9.90E-04
M	14	290.33	3.69E+01	31.30	1.12E-02	9.23E-04
m	15	295.33	3.36E+02	58.95	1.10E-02	9.13E-04
	16	339.08	1.80E+02	61.78	9.58E-03	8.21E-04
	17	351.96	4.82E+02	75.26	9.22E-03	7.94E-04
	18	416.48	5.51E+01	53.37	7.74E-03	7.00E-04
	19	510.87	1.47E+02	56.89	6.28E-03	6.61E-04
	20	583.32	1.36E+02	50.13	5.50E-03	6.31E-04
	21	609.53	3.15E+02	61.98	5.27E-03	6.20E-04
	22	726.90	3.47E+01	34.83	4.45E-03	5.17E-04
	23	794.40	2.25E+01	27.20	4.10E-03	4.32E-04
	24	859.97	4.92E+01	28.16	3.81E-03	3.50E-04
	25	880.87	2.31E+01	22.45	3.73E-03	3.23E-04
	26	910.52	7.88E+01	37.80	3.62E-03	2.99E-04
M	27	950.11	3.96E+01	24.23	3.49E-03	2.90E-04
m	28	964.13	3.29E+01	24.72	3.44E-03	2.86E-04
m	29	969.10	7.70E+01	27.91	3.43E-03	2.85E-04
	30	1016.50	2.09E+01	21.07	3.28E-03	2.74E-04
	31	1120.12	1.07E+02	41.87	3.02E-03	2.50E-04
	32	1376.61	3.00E+01	13.86	2.52E-03	2.20E-04
	33	1460.85	5.10E+02	49.19	2.38E-03	2.08E-04
	34	1491.37	1.02E+01	8.75	2.34E-03	2.03E-04

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
35	1509.83	1.80E+01	22.52	2.31E-03	2.00E-04
36	1597.04	3.73E+01	19.70	2.20E-03	1.87E-04
37	1723.11	8.00E+00	5.66	2.05E-03	1.68E-04
38	1729.53	1.70E+01	8.25	2.04E-03	1.67E-04
39	1747.95	5.64E+00	6.08	2.02E-03	1.64E-04
40	1764.15	5.65E+01	16.61	2.00E-03	1.62E-04
41	1855.44	1.10E+01	6.63	1.90E-03	1.51E-04
42	1931.78	6.91E+00	9.19	1.82E-03	1.51E-04
43	2100.74	1.50E+01	11.40	1.67E-03	1.51E-04
44	2371.34	6.92E+00	9.21	1.45E-03	1.51E-04
45	2614.39	5.40E+01	14.70	1.28E-03	1.51E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 7:10:05PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.19	1.15E+02	83.45	2.81E+01	8.29E+00	8.64E+01	8.39E+01
	2	62.95	1.73E+02	126.74	5.67E+01	8.57E+00	1.16E+02	1.27E+02
	3	76.36	1.21E+03	189.50			1.21E+03	1.90E+02
M	4	87.95	3.96E+02	135.98			3.96E+02	1.36E+02
m	5	92.98	2.96E+02	103.08	5.99E+01	8.61E+00	2.36E+02	1.03E+02
	6	130.21	1.25E+02	86.28			1.25E+02	8.63E+01
	7	138.50	1.22E+02	86.65			1.22E+02	8.66E+01
	8	152.67	6.13E+01	66.54			6.13E+01	6.65E+01
	9	186.65	2.56E+02	102.36	2.43E+01	7.50E+00	2.32E+02	1.03E+02
	10	226.04	5.09E+01	52.18			5.09E+01	5.22E+01
M	11	238.77	6.25E+02	78.81	1.06E+01	6.01E+00	6.14E+02	7.90E+01
m	12	241.73	1.78E+02	80.05			1.78E+02	8.00E+01
	13	270.29	5.71E+01	62.67			5.71E+01	6.27E+01
M	14	290.33	3.69E+01	31.30			3.69E+01	3.13E+01
m	15	295.33	3.36E+02	58.95			3.36E+02	5.90E+01
	16	339.08	1.80E+02	61.78			1.80E+02	6.18E+01
	17	351.96	4.82E+02	75.26			4.82E+02	7.53E+01
	18	416.48	5.51E+01	53.37			5.51E+01	5.34E+01
	19	510.87	1.47E+02	56.89	4.55E+01	4.99E+00	1.02E+02	5.71E+01

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	20	583.32	1.36E+02	50.13			1.36E+02	5.01E+01
	21	609.53	3.15E+02	61.98			3.15E+02	6.20E+01
	22	726.90	3.47E+01	34.83			3.47E+01	3.48E+01
	23	794.40	2.25E+01	27.20			2.25E+01	2.72E+01
	24	859.97	4.92E+01	28.16			4.92E+01	2.82E+01
	25	880.87	2.31E+01	22.45			2.31E+01	2.24E+01
	26	910.52	7.88E+01	37.80			7.88E+01	3.78E+01
M	27	950.11	3.96E+01	24.23			3.96E+01	2.42E+01
m	28	964.13	3.29E+01	24.72			3.29E+01	2.47E+01
m	29	969.10	7.70E+01	27.91			7.70E+01	2.79E+01
	30	1016.50	2.09E+01	21.07			2.09E+01	2.11E+01
	31	1120.12	1.07E+02	41.87			1.07E+02	4.19E+01
	32	1376.61	3.00E+01	13.86			3.00E+01	1.39E+01
	33	1460.85	5.10E+02	49.19			5.10E+02	4.92E+01
	34	1491.37	1.02E+01	8.75			1.02E+01	8.75E+00
	35	1509.83	1.80E+01	22.52			1.80E+01	2.25E+01
	36	1597.04	3.73E+01	19.70			3.73E+01	1.97E+01
	37	1723.11	8.00E+00	5.66			8.00E+00	5.66E+00
	38	1729.53	1.70E+01	8.25			1.70E+01	8.25E+00
	39	1747.95	5.64E+00	6.08			5.64E+00	6.08E+00
	40	1764.15	5.65E+01	16.61			5.65E+01	1.66E+01
	41	1855.44	1.10E+01	6.63			1.10E+01	6.63E+00
	42	1931.78	6.91E+00	9.19			6.91E+00	9.19E+00
	43	2100.74	1.50E+01	11.40			1.50E+01	1.14E+01
	44	2371.34	6.92E+00	9.21			6.92E+00	9.21E+00
	45	2614.39	5.40E+01	14.70			5.40E+01	1.47E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 7:10:05PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	46.19	1.15E+02	83.45	2.81E+01	8.29E+00	8.64E+01	8.39E+01
2	62.95	1.73E+02	126.74	5.67E+01	8.57E+00	1.16E+02	1.27E+02

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	3	76.36	1.21E+03	189.50			1.21E+03	1.90E+02
M	4	87.95	3.96E+02	135.98			3.96E+02	1.36E+02
m	5	92.98	2.96E+02	103.08	5.99E+01	8.61E+00	2.36E+02	1.03E+02
	6	130.21	1.25E+02	86.28			1.25E+02	8.63E+01
	7	138.50	1.22E+02	86.65			1.22E+02	8.66E+01
	8	152.67	6.13E+01	66.54			6.13E+01	6.65E+01
	9	186.65	2.56E+02	102.36	2.43E+01	7.50E+00	2.32E+02	1.03E+02
	10	226.04	5.09E+01	52.18			5.09E+01	5.22E+01
M	11	238.77	6.25E+02	78.81	1.06E+01	6.01E+00	6.14E+02	7.90E+01
m	12	241.73	1.78E+02	80.05			1.78E+02	8.00E+01
	13	270.29	5.71E+01	62.67			5.71E+01	6.27E+01
M	14	290.33	3.69E+01	31.30			3.69E+01	3.13E+01
m	15	295.33	3.36E+02	58.95			3.36E+02	5.90E+01
	16	339.08	1.80E+02	61.78			1.80E+02	6.18E+01
	17	351.96	4.82E+02	75.26			4.82E+02	7.53E+01
	18	416.48	5.51E+01	53.37			5.51E+01	5.34E+01
	19	510.87	1.47E+02	56.89	4.55E+01	4.99E+00	1.02E+02	5.71E+01
	20	583.32	1.36E+02	50.13			1.36E+02	5.01E+01
	21	609.53	3.15E+02	61.98			3.15E+02	6.20E+01
	22	726.90	3.47E+01	34.83			3.47E+01	3.48E+01
	23	794.40	2.25E+01	27.20			2.25E+01	2.72E+01
	24	859.97	4.92E+01	28.16			4.92E+01	2.82E+01
	25	880.87	2.31E+01	22.45			2.31E+01	2.24E+01
	26	910.52	7.88E+01	37.80			7.88E+01	3.78E+01
M	27	950.11	3.96E+01	24.23			3.96E+01	2.42E+01
m	28	964.13	3.29E+01	24.72			3.29E+01	2.47E+01
m	29	969.10	7.70E+01	27.91			7.70E+01	2.79E+01
	30	1016.50	2.09E+01	21.07			2.09E+01	2.11E+01
	31	1120.12	1.07E+02	41.87			1.07E+02	4.19E+01
	32	1376.61	3.00E+01	13.86			3.00E+01	1.39E+01
	33	1460.85	5.10E+02	49.19			5.10E+02	4.92E+01
	34	1491.37	1.02E+01	8.75			1.02E+01	8.75E+00
	35	1509.83	1.80E+01	22.52			1.80E+01	2.25E+01
	36	1597.04	3.73E+01	19.70			3.73E+01	1.97E+01
	37	1723.11	8.00E+00	5.66			8.00E+00	5.66E+00
	38	1729.53	1.70E+01	8.25			1.70E+01	8.25E+00
	39	1747.95	5.64E+00	6.08			5.64E+00	6.08E+00
	40	1764.15	5.65E+01	16.61			5.65E+01	1.66E+01
	41	1855.44	1.10E+01	6.63			1.10E+01	6.63E+00
	42	1931.78	6.91E+00	9.19			6.91E+00	9.19E+00
	43	2100.74	1.50E+01	11.40			1.50E+01	1.14E+01
	44	2371.34	6.92E+00	9.21			6.92E+00	9.21E+00
	45	2614.39	5.40E+01	14.70			5.40E+01	1.47E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	1.000	1460.81	*	10.67	2.20E+01	2.89E+00
CD-109	0.999	88.03	*	3.72	5.73E+00	2.06E+00
SN-126	0.977	87.57	*	37.00	4.96E-01	1.76E-01
TL-208	0.990	583.14	*	30.22	8.98E-01	3.46E-01
		860.37	*	4.48	3.16E+00	1.83E+00
		2614.66	*	35.85	1.29E+00	3.83E-01
PB-210	0.985	46.50	*	4.25	1.38E+00	1.34E+00
BI-212	0.767	727.17	*	11.80	7.25E-01	7.32E-01
		1620.62		2.75		
PB-212	0.895	238.63	*	44.60	1.11E+00	1.71E-01
		300.09		3.41		
BI-214	0.929	609.31	*	46.30	1.41E+00	3.24E-01
		1120.29	*	15.10	2.57E+00	1.03E+00
		1764.49	*	15.80	1.96E+00	5.98E-01
		2204.22		4.98		
PB-214	0.999	295.21	*	19.19	1.74E+00	3.38E-01
		351.92	*	37.19	1.54E+00	2.75E-01
RA-224	0.915	240.98	*	3.95	3.69E+00	1.68E+00
RA-226	0.969	186.21	*	3.28	4.59E+00	8.64E+00
AC-228	0.958	338.32	*	11.40	1.81E+00	6.39E-01
		911.07	*	27.70	8.61E-01	4.19E-01
		969.11	*	16.60	1.48E+00	5.52E-01
PA-234	0.442	131.20	*	20.40	3.12E-01	2.17E-01
		733.99		8.80		
		946.00		12.00		
TH-234	0.982	63.29	*	3.80	1.56E+00	1.71E+00

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 7:10:05PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	3	76.36	3.35410E-01	7.85		
m	5	92.98	6.56165E-02	21.89	Sum	
	7	138.50	3.38666E-02	35.54		
	8	152.67	1.70152E-02	54.31	Tol.	CS-136
	10	226.04	1.41444E-02	51.24		
	13	270.29	1.58561E-02	54.90		
M	14	290.33	1.02423E-02	42.45		
	18	416.48	1.52973E-02	48.45		
	19	510.87	2.82070E-02	28.12		
	23	794.40	6.25361E-03	60.42		
	25	880.87	6.42720E-03	48.51		
M	27	950.11	1.09987E-02	30.59	S-Esc	
m	28	964.13	9.12793E-03	37.61	Tol.	EU-152
	30	1016.50	5.79521E-03	50.50		
	32	1376.61	8.34491E-03	23.06		
	34	1491.37	2.84188E-03	42.75		
	35	1509.83	5.01016E-03	62.42		
	36	1597.04	1.03546E-02	26.42	Tol.	LA-140
	37	1723.11	2.22222E-03	35.36		
	38	1729.53	4.72222E-03	24.25	Sum	
	39	1747.95	1.56746E-03	53.90		
	41	1855.44	3.05556E-03	30.15		
	42	1931.78	1.91919E-03	66.52		
	43	2100.74	4.16667E-03	38.01		
	44	2371.34	1.92130E-03	66.55	Sum	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	1.00	1460.81	*	10.67	2.20E+01	2.89E+00
CD-109	0.99	88.03	*	3.72	5.73E+00	2.06E+00
SN-126	0.97	87.57	*	37.00	4.96E-01	1.76E-01
TL-208	0.99	583.14	*	30.22	8.98E-01	3.46E-01
		860.37	*	4.48	3.16E+00	1.83E+00
		2614.66	*	35.85	1.29E+00	3.83E-01
PB-210	0.98	46.50	*	4.25	1.38E+00	1.34E+00
BI-212	0.76	727.17	*	11.80	7.25E-01	7.32E-01
		1620.62		2.75		
PB-212	0.89	238.63	*	44.60	1.11E+00	1.71E-01
		300.09		3.41		
BI-214	0.92	609.31	*	46.30	1.41E+00	3.24E-01
		1120.29	*	15.10	2.57E+00	1.03E+00
		1764.49	*	15.80	1.96E+00	5.98E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	1.74E+00	3.38E-01
		351.92	*	37.19	1.54E+00	2.75E-01
RA-224	0.91	240.98	*	3.95	3.69E+00	1.68E+00
RA-226	0.96	186.21	*	3.28	4.59E+00	8.64E+00
AC-228	0.95	338.32	*	11.40	1.81E+00	6.39E-01
		911.07	*	27.70	8.61E-01	4.19E-01
		969.11	*	16.60	1.48E+00	5.52E-01
PA-234	0.44	131.20	*	20.40	3.12E-01	2.17E-01
		733.99		8.80		
		946.00		12.00		
TH-234	0.98	63.29	*	3.80	1.56E+00	1.71E+00

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	1.000	2.20E+01	2.89E+00	
?	CD-109	0.999	5.73E+00	2.06E+00	
?	SN-126	0.977	4.96E-01	1.76E-01	
	TL-208	0.990	1.11E+00	2.54E-01	
	PB-210	0.985	1.38E+00	1.34E+00	
	BI-212	0.767	7.25E-01	7.32E-01	
	PB-212	0.895	1.11E+00	1.71E-01	
	BI-214	0.929	1.61E+00	2.75E-01	
	PB-214	0.999	1.62E+00	2.13E-01	
	RA-224	0.915	3.69E+00	1.68E+00	
	RA-226	0.969	4.59E+00	8.64E+00	
	AC-228	0.958	1.24E+00	2.96E-01	
	PA-234	0.442	3.12E-01	2.17E-01	
	TH-234	0.982	1.56E+00	1.71E+00	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 7:10:05PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	3	76.36	3.35410E-01	7.85		
m	5	92.98	6.56165E-02	21.89	Sum	
	7	138.50	3.38666E-02	35.54		
	8	152.67	1.70152E-02	54.31	Tol.	CS-136
	10	226.04	1.41444E-02	51.24		
	13	270.29	1.58561E-02	54.90		
M	14	290.33	1.02423E-02	42.45		
	18	416.48	1.52973E-02	48.45		
	19	510.87	2.82070E-02	28.12		
	23	794.40	6.25361E-03	60.42		
	25	880.87	6.42720E-03	48.51		
M	27	950.11	1.09987E-02	30.59	S-Esc	
m	28	964.13	9.12793E-03	37.61	Tol.	EU-152
	30	1016.50	5.79521E-03	50.50		
	32	1376.61	8.34491E-03	23.06		
	34	1491.37	2.84188E-03	42.75		
	35	1509.83	5.01016E-03	62.42		
	36	1597.04	1.03546E-02	26.42	Tol.	LA-140
	37	1723.11	2.22222E-03	35.36		
	38	1729.53	4.72222E-03	24.25	Sum	
	39	1747.95	1.56746E-03	53.90		
	41	1855.44	3.05556E-03	30.15		
	42	1931.78	1.91919E-03	66.52		
	43	2100.74	4.16667E-03	38.01		
	44	2371.34	1.92130E-03	66.55	Sum	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		BE-7	477.59		10.42	-1.35E+00	2.91E+00	2.91E+00
+		NA-22	1274.54		99.94	-1.07E-01	1.41E-01	1.41E-01
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	0.00E+00		1.00E+26
+		AL-26	1808.65		99.76	-3.38E-02	7.94E-02	7.94E-02
+		K-40	1460.81	*	10.67	2.20E+01	1.50E+00	1.50E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	1.70E-03	8.10E-02	8.10E-02
			78.34		96.00	4.42E-01		1.04E-01
+		SC-46	889.25		99.98	-6.61E-02	2.64E-01	2.64E-01
			1120.51		99.99	7.99E-01		5.01E-01
+		V-48	983.52		99.98	3.64E+00	1.06E+01	1.06E+01
			1312.10		97.50	-2.88E+00		1.15E+01
+		CR-51	320.08		9.83	-2.71E-01	9.15E+00	9.15E+00
+		MN-54	834.83		99.97	2.07E-02	1.56E-01	1.56E-01
+		CO-56	846.75		99.96	-1.76E-02	2.93E-01	2.93E-01
			1037.75		14.03	6.47E-01		2.33E+00
			1238.25		67.00	3.20E-01		6.82E-01
			1771.40		15.51	-1.93E-01		1.36E+00
			2598.48		16.90	3.65E-01		1.31E+00
+		CO-57	122.06		85.51	5.96E-02	8.96E-02	8.96E-02
			136.48		10.60	9.32E-02		7.51E-01
+		CO-58	810.76		99.40	-5.94E-04	3.13E-01	3.13E-01
+		FE-59	1099.22		56.50	2.63E-01	1.18E+00	1.18E+00
			1291.56		43.20	3.15E-01		1.66E+00
+		CO-60	1173.22		100.00	4.87E-02	1.56E-01	1.70E-01
			1332.49		100.00	5.39E-02		1.56E-01
+		ZN-65	1115.52		50.75	-3.06E-02	4.52E-01	4.52E-01
+		GA-67	93.31		35.70	4.94E+08	3.90E+08	3.90E+08
			208.95		2.24	2.62E+09		6.00E+09
			300.22		16.00	-2.48E+09		9.65E+08
+		SE-75	121.11		16.70	4.98E-01	1.82E-01	6.39E-01
			136.00		59.20	-1.45E-01		1.82E-01
			264.65		59.80	1.85E-02		2.05E-01
			279.53		25.20	-8.97E-02		5.18E-01
			400.65		11.40	1.13E+00		1.37E+00
+		RB-82	776.52		13.00	-6.66E+00	1.45E+01	1.45E+01
+		RB-83	520.41		46.00	1.26E-01	4.19E-01	4.19E-01
			529.64		30.30	2.19E-02		6.37E-01
			552.65		16.40	-6.10E-01		1.16E+00
+		KR-85	513.99		0.43	2.40E+01	2.69E+01	2.69E+01
+		SR-85	513.99		99.27	3.01E-01	3.38E-01	3.38E-01

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02		93.40	6.17E-02	1.56E-01	2.73E-01
		1836.01		99.38	-5.27E-02		1.56E-01
+	MO-93	263.06		56.72	-4.45E-02	9.59E-02	1.21E-01
		684.67		99.68	4.11E-02		1.11E-01
		1477.11		99.08	-4.97E-02		9.59E-02
+	NB-93M	16.57		9.43	1.58E+01	7.92E+00	7.92E+00
+	NB-94	702.63		100.00	-3.81E-02	1.10E-01	1.10E-01
		871.10		100.00	1.18E-01		1.22E-01
+	NB-95	765.79		99.81	5.10E-01	1.04E+00	1.04E+00
+	NB-95M	235.69		25.00	1.66E+08	1.03E+08	1.03E+08
+	ZR-95	724.18		43.70	-7.14E-02	6.53E-01	8.83E-01
		756.72		55.30	-1.13E-01		6.53E-01
+	MO-99	181.06		6.20	1.30E+10	8.17E+10	1.03E+11
		739.58		12.80	-3.41E+10		8.17E+10
		778.00		4.50	-1.31E+11		2.81E+11
+	RU-103	497.08		89.00	1.23E-01	5.48E-01	5.48E-01
+	RU-106	621.84		9.80	-4.34E-01	1.10E+00	1.10E+00
+	AG-108M	433.93		89.90	-1.03E-03	9.11E-02	9.11E-02
		614.37		90.40	1.69E-02		1.05E-01
		722.95		90.50	-6.78E-03		1.40E-01
+	CD-109	88.03	*	3.72	5.73E+00	4.23E+00	4.23E+00
+	AG-110M	657.75		93.14	3.18E-02	1.75E-01	1.75E-01
		677.61		10.53	-4.18E-02		1.37E+00
		706.67		16.46	-6.83E-01		9.16E-01
		763.93		21.98	4.30E-01		8.32E-01
		884.67		71.63	-8.62E-03		2.19E-01
		1384.27		23.94	-3.95E-01		5.81E-01
+	CD-113M	263.70		0.02	-1.57E+01	2.98E+02	2.98E+02
+	SN-113	255.12		1.93	4.41E+00	2.34E-01	6.88E+00
		391.69		64.90	2.12E-02		2.34E-01
+	TE123M	159.00		84.10	-5.39E-02	1.31E-01	1.31E-01
+	SB-124	602.71		97.87	-4.54E-03	3.03E-01	3.03E-01
		645.85		7.26	2.25E-01		4.04E+00
		722.78		11.10	-1.75E-01		3.63E+00
		1691.02		49.00	-1.89E-01		5.42E-01
+	I-125	35.49		6.49	1.56E-01	5.47E+00	5.47E+00
+	SB-125	176.33		6.89	2.81E-02	3.09E-01	9.77E-01
		427.89		29.33	1.25E-01		3.09E-01
		463.38		10.35	5.51E-01		9.31E-01
		600.56		17.80	-8.20E-02		5.69E-01
		635.90		11.32	7.61E-02		9.09E-01
+	SB-126	414.70		83.30	1.77E+01	2.85E+01	2.85E+01
		666.33		99.60	-1.77E+01		3.37E+01
		695.00		99.60	5.89E+00		3.16E+01
		720.50		53.80	2.45E+00		6.11E+01
+	SN-126	87.57	*	37.00	4.96E-01	3.66E-01	3.66E-01
+	SB-127	473.00		25.00	-6.81E+05	2.17E+07	2.44E+07
		685.20		35.70	8.06E+06		2.17E+07

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-127	783.80	14.70	3.18E+07	2.17E+07	6.53E+07
+	I-129	29.78	57.00	-1.98E-01	2.66E-01	2.66E-01
		33.60	13.20	-2.53E-01		9.13E-01
		39.58	7.52	8.59E-02		1.27E+00
+	I-131	284.30	6.05	4.47E+03	4.89E+02	7.08E+03
		364.48	81.20	-2.46E+02		4.89E+02
		636.97	7.26	-7.21E+02		7.46E+03
		722.89	1.80	-1.96E+03		4.06E+04
+	TE-132	49.72	13.10	-2.40E+08	1.53E+08	1.13E+09
		228.16	88.00	3.78E+06		1.53E+08
+	BA-133	81.00	33.00	-5.63E-01	1.70E-01	2.42E-01
		302.84	17.80	-1.06E-02		4.31E-01
		356.01	60.00	3.38E-03		1.70E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-2.81E+05	1.21E+05	1.21E+05
+	CS-134	563.23	8.38	-1.99E-01	1.22E-01	1.12E+00
		569.32	15.43	2.74E-01		6.68E-01
		604.70	97.60	5.22E-03		1.22E-01
		795.84	85.40	2.73E-03		1.61E-01
		801.93	8.73	2.83E-01		1.48E+00
+	CS-135	268.24	16.00	8.20E-03	4.84E-01	4.84E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	6.42E+01	2.40E+01	1.68E+02
		163.89	4.61	-1.22E+02		2.65E+02
		176.55	13.56	-3.19E+00		9.17E+01
		273.65	12.66	9.65E+00		1.24E+02
		340.57	48.50	5.36E+01		3.97E+01
		818.50	99.70	-2.38E+00		2.40E+01
		1048.07	79.60	3.34E+01		3.47E+01
		1235.34	19.70	6.00E+01		1.93E+02
+	CS-137	661.65	85.12	2.36E-02	1.51E-01	1.51E-01
+	LA-138	788.74	34.00	-6.99E-03	1.50E-01	3.46E-01
		1435.80	66.00	7.80E-03		1.50E-01
+	CE-139	165.85	80.35	1.23E-01	1.32E-01	1.32E-01
+	BA-140	162.64	6.70	-7.79E+01	8.04E+01	2.13E+02
		304.84	4.50	4.74E+01		3.63E+02
		423.70	3.20	-1.65E+02		5.51E+02
		437.55	2.00	-1.81E+02		9.22E+02
		537.32	25.00	1.02E+01		8.04E+01
+	LA-140	328.77	20.50	3.35E+01	3.08E+01	9.23E+01
		487.03	45.50	-1.37E+01		4.02E+01
		815.85	23.50	-7.39E+00		1.16E+02
		1596.49	95.49	5.29E+00		3.08E+01
+	CE-141	145.44	48.40	8.51E-02	1.08E+00	1.08E+00
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CE-144	133.54	10.80	-4.27E-01	7.09E-01	7.09E-01
+	PM-144	476.78	42.00	3.11E-02	1.09E-01	2.45E-01
		618.01	98.60	-1.51E-02		1.09E-01
		696.49	99.49	-2.08E-02		1.39E-01
+	PM-145	36.85	21.70	3.09E-03	2.62E-01	4.90E-01
		37.36	39.70	1.65E-03		2.62E-01
		42.30	15.10	-9.18E-02		5.90E-01
		72.40	2.31	-1.00E+01		3.70E+00
+	PM-146	453.90	39.94	2.46E-02	2.06E-01	2.06E-01
		735.90	14.01	-2.17E-02		7.81E-01
		747.13	13.10	-3.07E-01		9.05E-01
+	ND-147	91.11	28.90	2.57E+02	1.55E+02	1.55E+02
		531.02	13.10	-3.65E+01		3.68E+02
+	PM-149	285.90	3.10	1.99E+13	1.11E+14	1.11E+14
+	EU-152	121.78	20.50	1.95E-01	2.93E-01	2.93E-01
		244.69	5.40	1.23E-02		1.46E+00
		344.27	19.13	2.77E-03		4.05E-01
		778.89	9.20	7.63E-02		1.45E+00
		964.01	10.40	-2.45E+00		1.47E+00
		1085.78	7.22	8.19E-01		1.88E+00
		1112.02	9.60	1.73E-01		1.44E+00
		1407.95	14.94	1.15E-01		8.76E-01
+	GD-153	97.43	31.30	2.01E-03	2.64E-01	2.64E-01
		103.18	22.20	-1.38E-01		3.43E-01
+	EU-154	123.07	40.50	2.87E-02	1.49E-01	1.49E-01
		723.30	19.70	-5.45E-02		6.74E-01
		873.19	11.50	1.54E-01		9.56E-01
		996.32	10.30	1.39E-01		1.26E+00
		1004.76	17.90	5.20E-01		8.01E-01
		1274.45	35.50	-2.87E-01		3.77E-01
+	EU-155	86.50	30.90	3.02E-01	2.61E-01	2.61E-01
		105.30	20.70	3.12E-02		2.92E-01
+	EU-156	811.77	10.40	5.15E+01	1.11E+02	1.11E+02
		1153.47	7.20	4.28E+01		2.18E+02
		1230.71	8.90	1.37E+01		2.09E+02
+	HO-166M	184.41	72.60	1.50E-01	1.06E-01	1.06E-01
		280.45	29.60	-2.04E-01		2.42E-01
		410.94	11.10	-3.51E-02		7.04E-01
		711.69	54.10	2.45E-02		2.20E-01
+	TM-171	66.72	0.14	1.27E+00	6.08E+01	6.08E+01
+	HF-172	67.35	5.31	3.35E-02	5.85E-01	1.60E+00
		125.81	11.30	-2.95E-02		5.85E-01
+	LU-172	181.53	20.60	1.46E+03	6.97E+03	1.05E+04
		900.72	29.81	1.97E+03		1.40E+04
		1093.66	62.50	1.33E+03		6.97E+03
+	LU-173	100.72	5.24	-3.07E-01	4.32E-01	1.24E+00
		272.11	21.20	1.19E-01		4.32E-01
+	HF-175	343.40	84.00	1.68E-03	2.45E-01	2.45E-01
+	LU-176	88.34	13.30	1.54E-01	7.53E-02	5.86E-01

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-176	201.83		86.00	8.06E-03	7.53E-02	7.93E-02
		306.78		94.00	1.11E-02		7.53E-02
+	HF-181	133.02		41.70	-5.78E-01	5.05E-01	7.37E-01
		345.85		17.20	1.58E-02		2.26E+00
		482.03		82.80	-3.37E-02		5.05E-01
+	TA-182	67.75		41.20	7.15E-03	3.40E-01	3.40E-01
		1121.30		34.90	1.76E+00		1.14E+00
		1189.05		16.23	-3.60E-01		1.87E+00
		1221.41		26.98	-3.17E-01		1.28E+00
		1231.02		11.44	-1.13E+00		2.92E+00
+	IR-192	308.46		29.68	2.27E-01	4.53E-01	6.16E-01
		468.07		48.10	-7.66E-02		4.53E-01
+	HG-203	279.19		77.30	8.76E-02	4.31E-01	4.31E-01
+	TL-204	374.74		94.11	4.40E-02	8.28E-02	8.28E-02
		899.15		99.16	-2.37E-02		1.37E-01
		911.74		91.10	1.21E-01		2.00E-01
+	BI-207	569.67		97.72	3.98E-02	9.67E-02	9.67E-02
		1063.62		74.90	4.58E-02		1.89E-01
+	TL-208	583.14	*	30.22	8.98E-01	6.47E-02	4.99E-01
		860.37	*	4.48	3.16E+00		2.75E+00
		2614.66	*	35.85	1.29E+00		6.47E-02
+	BI-210M	262.00		45.00	-8.36E-02	1.49E-01	1.49E-01
		300.00		23.00	-9.20E-01		3.57E-01
+	PB-210	46.50	*	4.25	1.38E+00	2.19E+00	2.19E+00
+	PB-211	404.84		2.90	-1.46E+00	2.70E+00	2.70E+00
		831.96		2.90	5.50E-01		4.19E+00
+	BI-212	727.17	*	11.80	7.25E-01	1.18E+00	1.18E+00
		1620.62		2.75	-1.01E+00		3.46E+00
+	PB-212	238.63	*	44.60	1.11E+00	3.01E-01	3.01E-01
		300.09		3.41	-6.21E+00		2.41E+00
+	BI-214	609.31	*	46.30	1.41E+00	3.88E-01	3.88E-01
		1120.29	*	15.10	2.57E+00		1.51E+00
		1764.49	*	15.80	1.96E+00		4.97E-01
		2204.22		4.98	7.76E-01		2.80E+00
+	PB-214	295.21	*	19.19	1.74E+00	3.30E-01	7.25E-01
		351.92	*	37.19	1.54E+00		3.30E-01
+	RN-219	401.80		6.50	1.05E+00	1.36E+00	1.36E+00
+	RA-223	323.87		3.88	-1.06E+00	1.95E+00	1.95E+00
+	RA-224	240.98	*	3.95	3.69E+00	3.39E+00	3.39E+00
+	RA-225	40.00		31.00	2.26E+00	3.35E+01	3.35E+01
+	RA-226	186.21	*	3.28	4.59E+00	3.25E+00	3.25E+00
+	TH-227	50.10		8.40	-1.95E-01	9.20E-01	9.20E-01
		236.00		11.50	1.52E+00		9.45E-01
		256.20		6.30	1.04E+00		1.17E+00
+	AC-228	338.32	*	11.40	1.81E+00	6.29E-01	9.46E-01
		911.07	*	27.70	8.61E-01		6.29E-01
		969.11	*	16.60	1.48E+00		1.69E+00
+	TH-230	48.44		16.90	-1.21E-01	4.79E-01	4.79E-01

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-230	62.85		4.60	1.97E+00	4.79E-01	1.75E+00
		67.67		0.37	4.34E-01		2.06E+01
+	PA-231	283.67		1.60	2.92E+00	3.27E+00	4.63E+00
		302.67		2.30	-8.04E-02		3.27E+00
+	TH-231	25.64		14.70	2.70E-01	1.14E+00	1.55E+00
		84.21		6.40	-9.74E-01		1.14E+00
+	PA-233	311.98		38.60	-9.69E-01	2.36E+00	2.36E+00
+	PA-234	131.20	*	20.40	3.12E-01	3.50E-01	3.50E-01
		733.99		8.80	4.04E-01		1.23E+00
		946.00		12.00	-1.96E-02		9.96E-01
+	PA-234M	1001.03		0.92	4.09E+00	1.47E+01	1.47E+01
+	TH-234	63.29	*	3.80	1.56E+00	2.80E+00	2.80E+00
+	U-235	143.76		10.50	2.01E-01	5.91E-01	5.91E-01
		163.35		4.70	-4.81E-01		1.31E+00
		205.31		4.70	-8.35E-01		1.47E+00
+	NP-237	86.50		12.60	7.12E-01	6.15E-01	6.15E-01
+	NP-239	106.10		22.70	2.73E+11	1.78E+12	1.78E+12
		228.18		10.70	1.13E+11		4.57E+12
		277.60		14.10	1.84E+12		3.71E+12
+	AM-241	59.54		35.90	-2.28E-04	2.18E-01	2.18E-01
+	AM-243	74.67		66.00	7.16E-01	1.55E-01	1.55E-01
+	CM-243	209.75		3.29	4.87E-01	5.43E-01	2.15E+00
		228.14		10.60	1.65E-02		6.69E-01
		277.60		14.00	2.69E-01		5.43E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	2.91E+00	2.91E+00	-1.35E+00	1.38E+00
	NA-22	1274.54		99.94	1.41E-01	1.41E-01	-1.07E-01	6.45E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		0.00E+00	1.00E+20
	AL-26	1808.65		99.76	7.94E-02	7.94E-02	-3.38E-02	3.21E-02
+	K-40	1460.81	*	10.67	1.50E+00	1.50E+00	2.20E+01	6.91E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	8.10E-02	8.10E-02	1.70E-03	3.98E-02
		78.34		96.00	1.04E-01		4.42E-01	5.12E-02
	SC-46	889.25		99.98	2.64E-01	2.64E-01	-6.61E-02	1.23E-01
		1120.51		99.99	5.01E-01		7.99E-01	2.39E-01
	V-48	983.52		99.98	1.06E+01	1.06E+01	3.64E+00	4.98E+00
		1312.10		97.50	1.15E+01		-2.88E+00	5.29E+00
	CR-51	320.08		9.83	9.15E+00	9.15E+00	-2.71E-01	4.39E+00
	MN-54	834.83		99.97	1.56E-01	1.56E-01	2.07E-02	7.32E-02
	CO-56	846.75		99.96	2.93E-01	2.93E-01	-1.76E-02	1.37E-01
		1037.75		14.03	2.33E+00		6.47E-01	1.08E+00
		1238.25		67.00	6.82E-01		3.20E-01	3.22E-01
		1771.40		15.51	1.36E+00		-1.93E-01	5.65E-01
		2598.48		16.90	1.31E+00		3.65E-01	4.90E-01
	CO-57	122.06		85.51	8.96E-02	8.96E-02	5.96E-02	4.38E-02
		136.48		10.60	7.51E-01		9.32E-02	3.67E-01
	CO-58	810.76		99.40	3.13E-01	3.13E-01	-5.94E-04	1.47E-01
	FE-59	1099.22		56.50	1.18E+00	1.18E+00	2.63E-01	5.47E-01
		1291.56		43.20	1.66E+00		3.15E-01	7.69E-01
	CO-60	1173.22		100.00	1.70E-01	1.56E-01	4.87E-02	7.96E-02
		1332.49		100.00	1.56E-01		5.39E-02	7.22E-02
	ZN-65	1115.52		50.75	4.52E-01	4.52E-01	-3.06E-02	2.13E-01
	GA-67	93.31		35.70	3.90E+08	3.90E+08	4.94E+08	1.92E+08
		208.95		2.24	6.00E+09		2.62E+09	2.92E+09
		300.22		16.00	9.65E+08		-2.48E+09	4.66E+08
	SE-75	121.11		16.70	6.39E-01	1.82E-01	4.98E-01	3.12E-01
		136.00		59.20	1.82E-01		-1.45E-01	8.90E-02
		264.65		59.80	2.05E-01		1.85E-02	9.90E-02
		279.53		25.20	5.18E-01		-8.97E-02	2.50E-01
		400.65		11.40	1.37E+00		1.13E+00	6.57E-01
	RB-82	776.52		13.00	1.45E+01	1.45E+01	-6.66E+00	6.86E+00
	RB-83	520.41		46.00	4.19E-01	4.19E-01	1.26E-01	1.98E-01
		529.64		30.30	6.37E-01		2.19E-02	3.00E-01
		552.65		16.40	1.16E+00		-6.10E-01	5.44E-01
	KR-85	513.99		0.43	2.69E+01	2.69E+01	2.40E+01	1.29E+01
	SR-85	513.99		99.27	3.38E-01	3.38E-01	3.01E-01	1.62E-01
	Y-88	898.02		93.40	2.73E-01	1.56E-01	6.17E-02	1.28E-01
		1836.01		99.38	1.56E-01		-5.27E-02	6.29E-02
	MO-93	263.06		56.72	1.21E-01	9.59E-02	-4.45E-02	5.82E-02
		684.67		99.68	1.11E-01		4.11E-02	5.21E-02
		1477.11		99.08	9.59E-02		-4.97E-02	4.15E-02
	NB-93M	16.57		9.43	7.92E+00	7.92E+00	1.58E+01	3.85E+00
	NB-94	702.63		100.00	1.10E-01	1.10E-01	-3.81E-02	5.17E-02
		871.10		100.00	1.22E-01		1.18E-01	5.70E-02
	NB-95	765.79		99.81	1.04E+00	1.04E+00	5.10E-01	4.93E-01
	NB-95M	235.69		25.00	1.03E+08	1.03E+08	1.66E+08	5.07E+07
	ZR-95	724.18		43.70	8.83E-01	6.53E-01	-7.14E-02	4.19E-01

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	ZR-95	756.72		55.30	6.53E-01	6.53E-01	-1.13E-01	3.08E-01
	MO-99	181.06		6.20	1.03E+11	8.17E+10	1.30E+10	5.01E+10
		739.58		12.80	8.17E+10		-3.41E+10	3.82E+10
		778.00		4.50	2.81E+11		-1.31E+11	1.33E+11
	RU-103	497.08		89.00	5.48E-01	5.48E-01	1.23E-01	2.59E-01
	RU-106	621.84		9.80	1.10E+00	1.10E+00	-4.34E-01	5.16E-01
	AG-108M	433.93		89.90	9.11E-02	9.11E-02	-1.03E-03	4.33E-02
		614.37		90.40	1.05E-01		1.69E-02	4.95E-02
		722.95		90.50	1.40E-01		-6.78E-03	6.64E-02
+	CD-109	88.03	*	3.72	4.23E+00	4.23E+00	5.73E+00	2.10E+00
	AG-110M	657.75		93.14	1.75E-01	1.75E-01	3.18E-02	8.33E-02
		677.61		10.53	1.37E+00		-4.18E-02	6.45E-01
		706.67		16.46	9.16E-01		-6.83E-01	4.32E-01
		763.93		21.98	8.32E-01		4.30E-01	3.95E-01
		884.67		71.63	2.19E-01		-8.62E-03	1.02E-01
		1384.27		23.94	5.81E-01		-3.95E-01	2.58E-01
	CD-113M	263.70		0.02	2.98E+02	2.98E+02	-1.57E+01	1.44E+02
	SN-113	255.12		1.93	6.88E+00	2.34E-01	4.41E+00	3.33E+00
		391.69		64.90	2.34E-01		2.12E-02	1.12E-01
	TE123M	159.00		84.10	1.31E-01	1.31E-01	-5.39E-02	6.37E-02
	SB-124	602.71		97.87	3.03E-01	3.03E-01	-4.54E-03	1.42E-01
		645.85		7.26	4.04E+00		2.25E-01	1.89E+00
		722.78		11.10	3.63E+00		-1.75E-01	1.72E+00
		1691.02		49.00	5.42E-01		-1.89E-01	2.25E-01
	I-125	35.49		6.49	5.47E+00	5.47E+00	1.56E-01	2.67E+00
	SB-125	176.33		6.89	9.77E-01	3.09E-01	2.81E-02	4.75E-01
		427.89		29.33	3.09E-01		1.25E-01	1.47E-01
		463.38		10.35	9.31E-01		5.51E-01	4.44E-01
		600.56		17.80	5.69E-01		-8.20E-02	2.68E-01
		635.90		11.32	9.09E-01		7.61E-02	4.27E-01
	SB-126	414.70		83.30	2.85E+01	2.85E+01	1.77E+01	1.36E+01
		666.33		99.60	3.37E+01		-1.77E+01	1.60E+01
		695.00		99.60	3.16E+01		5.89E+00	1.49E+01
		720.50		53.80	6.11E+01		2.45E+00	2.88E+01
+	SN-126	87.57	*	37.00	3.66E-01	3.66E-01	4.96E-01	1.81E-01
	SB-127	473.00		25.00	2.44E+07	2.17E+07	-6.81E+05	1.16E+07
		685.20		35.70	2.17E+07		8.06E+06	1.02E+07
		783.80		14.70	6.53E+07		3.18E+07	3.09E+07
	I-129	29.78		57.00	2.66E-01	2.66E-01	-1.98E-01	1.29E-01
		33.60		13.20	9.13E-01		-2.53E-01	4.45E-01
		39.58		7.52	1.27E+00		8.59E-02	6.21E-01
	I-131	284.30		6.05	7.08E+03	4.89E+02	4.47E+03	3.42E+03
		364.48		81.20	4.89E+02		-2.46E+02	2.32E+02
		636.97		7.26	7.46E+03		-7.21E+02	3.50E+03
		722.89		1.80	4.06E+04		-1.96E+03	1.92E+04
	TE-132	49.72		13.10	1.13E+09	1.53E+08	-2.40E+08	5.55E+08
		228.16		88.00	1.53E+08		3.78E+06	7.42E+07
	BA-133	81.00		33.00	2.42E-01	1.70E-01	-5.63E-01	1.19E-01
		302.84		17.80	4.31E-01		-1.06E-02	2.08E-01
		356.01		60.00	1.70E-01		3.38E-03	8.23E-02
	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	1.21E+05	1.21E+05	-2.81E+05	5.96E+04
	CS-134	563.23		8.38	1.12E+00	1.22E-01	-1.99E-01	5.27E-01

Analysis Report for 1707092-20

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	569.32	15.43	6.68E-01	1.22E-01	2.74E-01	3.15E-01
	604.70	97.60	1.22E-01		5.22E-03	5.81E-02
	795.84	85.40	1.61E-01		2.73E-03	7.59E-02
	801.93	8.73	1.48E+00		2.83E-01	6.92E-01
CS-135	268.24	16.00	4.84E-01	4.84E-01	8.20E-03	2.35E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.68E+02	2.40E+01	6.42E+01	8.19E+01
	163.89	4.61	2.65E+02		-1.22E+02	1.29E+02
	176.55	13.56	9.17E+01		-3.19E+00	4.46E+01
	273.65	12.66	1.24E+02		9.65E+00	6.01E+01
	340.57	48.50	3.97E+01		5.36E+01	1.92E+01
	818.50	99.70	2.40E+01		-2.38E+00	1.12E+01
	1048.07	79.60	3.47E+01		3.34E+01	1.62E+01
	1235.34	19.70	1.93E+02		6.00E+01	9.10E+01
CS-137	661.65	85.12	1.51E-01	1.51E-01	2.36E-02	7.17E-02
LA-138	788.74	34.00	3.46E-01	1.50E-01	-6.99E-03	1.63E-01
	1435.80	66.00	1.50E-01		7.80E-03	6.58E-02
CE-139	165.85	80.35	1.32E-01	1.32E-01	1.23E-01	6.41E-02
BA-140	162.64	6.70	2.13E+02	8.04E+01	-7.79E+01	1.04E+02
	304.84	4.50	3.63E+02		4.74E+01	1.75E+02
	423.70	3.20	5.51E+02		-1.65E+02	2.61E+02
	437.55	2.00	9.22E+02		-1.81E+02	4.38E+02
	537.32	25.00	8.04E+01		1.02E+01	3.79E+01
LA-140	328.77	20.50	9.23E+01	3.08E+01	3.35E+01	4.44E+01
	487.03	45.50	4.02E+01		-1.37E+01	1.90E+01
	815.85	23.50	1.16E+02		-7.39E+00	5.44E+01
	1596.49	95.49	3.08E+01		5.29E+00	1.38E+01
CE-141	145.44	48.40	1.08E+00	1.08E+00	8.51E-02	5.27E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	7.09E-01	7.09E-01	-4.27E-01	3.46E-01
PM-144	476.78	42.00	2.45E-01	1.09E-01	3.11E-02	1.16E-01
	618.01	98.60	1.09E-01		-1.51E-02	5.08E-02
	696.49	99.49	1.39E-01		-2.08E-02	6.56E-02
PM-145	36.85	21.70	4.90E-01	2.62E-01	3.09E-03	2.39E-01
	37.36	39.70	2.62E-01		1.65E-03	1.28E-01
	42.30	15.10	5.90E-01		-9.18E-02	2.88E-01
	72.40	2.31	3.70E+00		-1.00E+01	1.82E+00
PM-146	453.90	39.94	2.06E-01	2.06E-01	2.46E-02	9.78E-02
	735.90	14.01	7.81E-01		-2.17E-02	3.66E-01
	747.13	13.10	9.05E-01		-3.07E-01	4.26E-01
ND-147	91.11	28.90	1.55E+02	1.55E+02	2.57E+02	7.65E+01
	531.02	13.10	3.68E+02		-3.65E+01	1.73E+02
PM-149	285.90	3.10	1.11E+14	1.11E+14	1.99E+13	5.37E+13
EU-152	121.78	20.50	2.93E-01	2.93E-01	1.95E-01	1.43E-01
	244.69	5.40	1.46E+00		1.23E-02	7.11E-01
	344.27	19.13	4.05E-01		2.77E-03	1.94E-01
	778.89	9.20	1.45E+00		7.63E-02	6.87E-01
	964.01	10.40	1.47E+00		-2.45E+00	6.93E-01
	1085.78	7.22	1.88E+00		8.19E-01	8.73E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-152	1112.02		9.60	1.44E+00	2.93E-01	1.73E-01	6.70E-01
		1407.95		14.94	8.76E-01		1.15E-01	3.97E-01
	GD-153	97.43		31.30	2.64E-01	2.64E-01	2.01E-03	1.29E-01
		103.18		22.20	3.43E-01		-1.38E-01	1.68E-01
	EU-154	123.07		40.50	1.49E-01	1.49E-01	2.87E-02	7.29E-02
		723.30		19.70	6.74E-01		-5.45E-02	3.20E-01
		873.19		11.50	9.56E-01		1.54E-01	4.43E-01
		996.32		10.30	1.26E+00		1.39E-01	5.86E-01
		1004.76		17.90	8.01E-01		5.20E-01	3.75E-01
		1274.45		35.50	3.77E-01		-2.87E-01	1.72E-01
	EU-155	86.50		30.90	2.61E-01	2.61E-01	3.02E-01	1.28E-01
		105.30		20.70	2.92E-01		3.12E-02	1.43E-01
	EU-156	811.77		10.40	1.11E+02	1.11E+02	5.15E+01	5.21E+01
		1153.47		7.20	2.18E+02		4.28E+01	1.02E+02
		1230.71		8.90	2.09E+02		1.37E+01	9.85E+01
	HO-166M	184.41		72.60	1.06E-01	1.06E-01	1.50E-01	5.19E-02
		280.45		29.60	2.42E-01		-2.04E-01	1.17E-01
		410.94		11.10	7.04E-01		-3.51E-02	3.35E-01
		711.69		54.10	2.20E-01		2.45E-02	1.04E-01
	TM-171	66.72		0.14	6.08E+01	6.08E+01	1.27E+00	2.99E+01
	HF-172	67.35		5.31	1.60E+00	5.85E-01	3.35E-02	7.86E-01
		125.81		11.30	5.85E-01		-2.95E-02	2.86E-01
	LU-172	181.53		20.60	1.05E+04	6.97E+03	1.46E+03	5.14E+03
		900.72		29.81	1.40E+04		1.97E+03	6.56E+03
		1093.66		62.50	6.97E+03		1.33E+03	3.23E+03
	LU-173	100.72		5.24	1.24E+00	4.32E-01	-3.07E-01	6.08E-01
		272.11		21.20	4.32E-01		1.19E-01	2.10E-01
	HF-175	343.40		84.00	2.45E-01	2.45E-01	1.68E-03	1.17E-01
	LU-176	88.34		13.30	5.86E-01	7.53E-02	1.54E-01	2.88E-01
		201.83		86.00	7.93E-02		8.06E-03	3.86E-02
		306.78		94.00	7.53E-02		1.11E-02	3.62E-02
	HF-181	133.02		41.70	7.37E-01	5.05E-01	-5.78E-01	3.60E-01
		345.85		17.20	2.26E+00		1.58E-02	1.08E+00
		482.03		82.80	5.05E-01		-3.37E-02	2.39E-01
	TA-182	67.75		41.20	3.40E-01	3.40E-01	7.15E-03	1.67E-01
		1121.30		34.90	1.14E+00		1.76E+00	5.46E-01
		1189.05		16.23	1.87E+00		-3.60E-01	8.74E-01
		1221.41		26.98	1.28E+00		-3.17E-01	6.03E-01
		1231.02		11.44	2.92E+00		-1.13E+00	1.38E+00
	IR-192	308.46		29.68	6.16E-01	4.53E-01	2.27E-01	2.96E-01
		468.07		48.10	4.53E-01		-7.66E-02	2.15E-01
	HG-203	279.19		77.30	4.31E-01	4.31E-01	8.76E-02	2.08E-01
	TL-204	374.74		94.11	8.28E-02	8.28E-02	4.40E-02	3.95E-02
		899.15		99.16	1.37E-01		-2.37E-02	6.40E-02
		911.74		91.10	2.00E-01		1.21E-01	9.53E-02
	BI-207	569.67		97.72	9.67E-02	9.67E-02	3.98E-02	4.56E-02
		1063.62		74.90	1.89E-01		4.58E-02	8.82E-02
+	TL-208	583.14	*	30.22	4.99E-01	6.47E-02	8.98E-01	2.40E-01
		860.37	*	4.48	2.75E+00		3.16E+00	1.29E+00
		2614.66	*	35.85	6.47E-02		1.29E+00	0.00E+00
	BI-210M	262.00		45.00	1.49E-01	1.49E-01	-8.36E-02	7.17E-02
		300.00		23.00	3.57E-01		-9.20E-01	1.73E-01
+	PB-210	46.50	*	4.25	2.19E+00	2.19E+00	1.38E+00	1.07E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PB-211	404.84		2.90	2.70E+00	2.70E+00	-1.46E+00	1.29E+00
		831.96		2.90	4.19E+00		5.50E-01	1.96E+00
+	BI-212	727.17	*	11.80	1.18E+00	1.18E+00	7.25E-01	5.63E-01
		1620.62		2.75	3.46E+00		-1.01E+00	1.48E+00
+	PB-212	238.63	*	44.60	3.01E-01	3.01E-01	1.11E+00	1.48E-01
		300.09		3.41	2.41E+00		-6.21E+00	1.17E+00
+	BI-214	609.31	*	46.30	3.88E-01	3.88E-01	1.41E+00	1.88E-01
		1120.29	*	15.10	1.51E+00		2.57E+00	7.21E-01
		1764.49	*	15.80	4.97E-01		1.96E+00	2.02E-01
		2204.22		4.98	2.80E+00		7.76E-01	1.21E+00
+	PB-214	295.21	*	19.19	7.25E-01	3.30E-01	1.74E+00	3.55E-01
		351.92	*	37.19	3.30E-01		1.54E+00	1.61E-01
	RN-219	401.80		6.50	1.36E+00	1.36E+00	1.05E+00	6.50E-01
	RA-223	323.87		3.88	1.95E+00	1.95E+00	-1.06E+00	9.35E-01
+	RA-224	240.98	*	3.95	3.39E+00	3.39E+00	3.69E+00	1.67E+00
	RA-225	40.00		31.00	3.35E+01	3.35E+01	2.26E+00	1.64E+01
+	RA-226	186.21	*	3.28	3.25E+00	3.25E+00	4.59E+00	1.60E+00
	TH-227	50.10		8.40	9.20E-01	9.20E-01	-1.95E-01	4.50E-01
		236.00		11.50	9.45E-01		1.52E+00	4.63E-01
		256.20		6.30	1.17E+00		1.04E+00	5.65E-01
+	AC-228	338.32	*	11.40	9.46E-01	6.29E-01	1.81E+00	4.59E-01
		911.07	*	27.70	6.29E-01		8.61E-01	3.00E-01
		969.11	*	16.60	1.69E+00		1.48E+00	8.17E-01
	TH-230	48.44		16.90	4.79E-01	4.79E-01	-1.21E-01	2.34E-01
		62.85		4.60	1.75E+00		1.97E+00	8.60E-01
		67.67		0.37	2.06E+01		4.34E-01	1.01E+01
	PA-231	283.67		1.60	4.63E+00	3.27E+00	2.92E+00	2.23E+00
		302.67		2.30	3.27E+00		-8.04E-02	1.58E+00
	TH-231	25.64		14.70	1.55E+00	1.14E+00	2.70E-01	7.58E-01
		84.21		6.40	1.14E+00		-9.74E-01	5.61E-01
	PA-233	311.98		38.60	2.36E+00	2.36E+00	-9.69E-01	1.13E+00
+	PA-234	131.20	*	20.40	3.50E-01	3.50E-01	3.12E-01	1.72E-01
		733.99		8.80	1.23E+00		4.04E-01	5.76E-01
		946.00		12.00	9.96E-01		-1.96E-02	4.62E-01
	PA-234M	1001.03		0.92	1.47E+01	1.47E+01	4.09E+00	6.87E+00
+	TH-234	63.29	*	3.80	2.80E+00	2.80E+00	1.56E+00	1.38E+00
	U-235	143.76		10.50	5.91E-01	5.91E-01	2.01E-01	2.88E-01
		163.35		4.70	1.31E+00		-4.81E-01	6.40E-01
		205.31		4.70	1.47E+00		-8.35E-01	7.15E-01
	NP-237	86.50		12.60	6.15E-01	6.15E-01	7.12E-01	3.02E-01
	NP-239	106.10		22.70	1.78E+12	1.78E+12	2.73E+11	8.72E+11
		228.18		10.70	4.57E+12		1.13E+11	2.21E+12
		277.60		14.10	3.71E+12		1.84E+12	1.79E+12
	AM-241	59.54		35.90	2.18E-01	2.18E-01	-2.28E-04	1.07E-01
	AM-243	74.67		66.00	1.55E-01	1.55E-01	7.16E-01	7.67E-02
	CM-243	209.75		3.29	2.15E+00	5.43E-01	4.87E-01	1.05E+00
		228.14		10.60	6.69E-01		1.65E-02	3.25E-01
		277.60		14.00	5.43E-01		2.69E-01	2.62E-01

Analysis Report for 1707092-20

HTC-A09-S001-3036-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: HTC-A09-S001-3036-01

Elapsed Live time: 3600
Elapsed Real Time: 3602

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	20	110
17:	112	102	97	92	88	80	89	102
25:	84	75	71	79	71	75	68	73
33:	83	74	78	79	94	74	80	89
41:	86	83	91	101	140	110	101	80
49:	89	94	122	105	114	129	120	123
57:	116	112	124	156	162	178	172	157
65:	159	143	153	156	141	166	148	186
73:	235	363	336	451	385	176	151	154
81:	139	127	139	156	163	229	200	179
89:	185	154	178	233	178	122	95	101
97:	99	90	98	93	95	81	92	108
105:	84	105	103	100	84	102	87	87
113:	83	93	82	74	91	86	79	104
121:	91	87	104	78	79	72	95	108
129:	86	98	91	86	65	74	83	94
137:	91	94	109	89	75	78	115	73
145:	76	76	72	72	69	85	85	81
153:	97	62	76	67	81	84	73	61
161:	58	64	89	75	66	67	71	75
169:	61	53	56	73	63	63	62	69
177:	61	57	69	71	56	61	84	84
185:	148	122	79	69	57	71	49	54
193:	60	65	56	62	56	65	61	51
201:	68	53	67	58	69	49	58	74
209:	80	57	52	50	54	50	44	55
217:	55	51	45	57	55	31	46	45
225:	69	55	51	39	51	51	53	50
233:	44	55	60	78	215	321	180	111
241:	119	76	47	36	34	37	39	42
249:	35	37	34	62	37	37	45	47
257:	46	40	33	33	32	30	45	34
265:	41	34	39	56	49	66	41	38
273:	43	36	48	48	46	39	27	38
281:	27	34	36	38	46	40	27	28
289:	44	36	27	45	62	151	143	61
297:	43	34	47	45	27	29	26	26
305:	34	38	22	32	22	29	24	19
313:	30	27	29	31	25	26	23	30
321:	31	28	33	23	22	37	53	31
329:	35	26	29	32	29	22	21	47
337:	69	78	52	26	37	29	17	21
345:	29	24	27	29	47	115	234	141
353:	46	28	20	17	21	27	26	24
361:	22	22	19	17	15	20	15	31

369:	11	17	15	24	22	21	24	19

Sample Title: HTC-A09-S001-3036-01

Channel								
377:	18	20	15	22	26	26	20	28
385:	16	16	31	29	22	27	20	19
393:	20	27	17	27	20	34	22	25
401:	24	23	27	22	6	23	11	33
409:	15	13	23	19	17	21	28	26
417:	25	24	16	15	14	14	17	21
425:	15	20	23	27	16	20	17	19
433:	18	14	18	22	19	13	22	11
441:	18	19	22	20	15	27	12	15
449:	17	13	15	21	18	17	13	13
457:	18	10	14	15	23	23	21	20
465:	18	16	13	20	19	12	13	18
473:	23	16	15	12	22	11	14	16
481:	14	20	11	14	11	15	17	13
489:	12	19	10	14	14	14	16	14
497:	13	14	14	14	12	9	20	13
505:	12	16	17	29	39	59	42	21
513:	18	14	16	11	8	15	12	13
521:	13	14	21	17	12	12	10	21
529:	16	11	8	15	9	15	14	8
537:	15	13	15	12	12	13	16	16
545:	13	16	11	18	11	12	12	17
553:	12	8	10	18	13	9	10	9
561:	15	13	10	16	8	16	12	13
569:	11	12	16	16	10	10	16	13
577:	17	20	18	15	27	70	60	27
585:	16	11	8	12	8	13	11	8
593:	19	11	8	18	9	14	9	13
601:	14	14	14	13	7	14	40	130
609:	118	71	14	10	14	12	7	12
617:	15	14	6	5	16	9	11	11
625:	16	8	9	13	12	11	12	16
633:	9	17	8	8	8	14	12	9
641:	10	10	18	9	10	6	8	10
649:	9	11	9	11	12	11	10	15
657:	10	20	10	16	23	14	18	13
665:	10	16	14	15	9	12	16	13
673:	15	7	16	5	12	9	10	10
681:	8	10	5	10	10	9	11	16
689:	7	6	12	18	10	13	13	7
697:	11	7	5	12	16	10	10	6
705:	13	8	17	10	13	6	14	15
713:	10	11	4	7	14	12	9	12
721:	11	14	10	10	12	21	18	14
729:	6	8	12	9	8	9	11	6
737:	8	5	5	9	9	5	15	16
745:	7	7	9	8	10	7	12	13
753:	10	13	10	12	7	6	13	9
761:	12	13	11	10	11	20	21	15
769:	13	9	13	7	9	11	13	12
777:	12	8	8	12	14	14	19	9
785:	15	10	6	9	8	4	7	12
793:	13	14	10	12	5	10	7	8

801:	8	7	13	11	8	7	8	6

Sample Title: HTC-A09-S001-3036-01

Channel								
809:	6	9	5	13	9	11	9	5
817:	5	8	10	6	13	11	9	6
825:	10	8	7	5	10	11	14	3
833:	9	8	10	4	10	12	8	10
841:	6	2	5	14	11	8	5	10
849:	7	12	8	10	12	3	5	9
857:	9	10	14	13	11	9	8	4
865:	5	8	5	13	4	6	15	9
873:	4	7	3	2	4	3	10	16
881:	5	5	9	6	5	4	6	9
889:	5	6	4	11	10	11	5	8
897:	12	5	9	8	12	9	7	4
905:	12	13	5	10	13	27	38	24
913:	4	3	13	9	12	9	8	6
921:	7	8	7	9	4	5	10	12
929:	8	7	9	14	11	12	11	8
937:	8	3	9	7	4	7	1	3
945:	3	5	13	13	9	18	9	7
953:	9	6	5	9	5	8	6	6
961:	9	6	16	11	12	11	15	32
969:	33	13	3	4	4	7	9	5
977:	7	10	3	5	10	8	8	7
985:	10	10	10	5	3	4	4	5
993:	10	5	6	5	7	10	5	7
1001:	9	7	10	8	7	7	7	11
1009:	3	3	5	2	6	6	5	14
1017:	9	7	2	6	9	8	7	6
1025:	7	5	5	6	6	10	6	5
1033:	5	10	3	8	8	9	6	10
1041:	4	2	10	6	7	8	4	6
1049:	10	7	8	1	5	8	4	9
1057:	3	5	5	4	5	9	9	7
1065:	9	12	6	7	10	10	9	9
1073:	11	3	4	9	1	1	4	6
1081:	6	4	7	6	3	7	6	6
1089:	12	2	6	7	4	5	8	6
1097:	6	4	6	5	8	9	9	6
1105:	8	5	8	6	9	8	5	4
1113:	5	6	6	10	13	12	32	33
1121:	21	20	4	7	8	4	8	6
1129:	7	3	7	3	6	8	9	8
1137:	6	6	7	9	7	8	7	9
1145:	13	11	3	13	4	8	9	12
1153:	7	7	12	11	5	4	8	6
1161:	7	6	5	5	8	10	6	1
1169:	11	9	14	4	9	7	6	10
1177:	6	13	5	6	12	8	11	4
1185:	7	9	16	7	8	6	10	7
1193:	5	7	12	12	9	9	12	7
1201:	12	3	8	10	12	12	10	9
1209:	7	8	17	10	8	11	9	13
1217:	13	11	12	11	6	7	14	8
1225:	12	12	13	12	4	14	8	9

1233:	10	13	4	8	16	13	15	10

Sample Title: HTC-A09-S001-3036-01

Channel								
1241:	10	4	7	8	6	9	7	6
1249:	6	8	3	3	7	9	5	12
1257:	3	9	4	8	4	6	4	2
1265:	4	8	9	6	6	3	4	3
1273:	4	4	7	5	5	5	6	9
1281:	7	9	7	6	5	6	4	7
1289:	4	7	6	8	6	9	2	6
1297:	5	3	3	7	5	4	5	7
1305:	10	4	9	4	3	6	6	7
1313:	2	9	4	5	7	3	4	3
1321:	4	5	4	3	5	4	3	5
1329:	9	6	3	7	4	3	9	4
1337:	4	4	5	5	3	4	4	3
1345:	5	3	3	6	4	4	1	3
1353:	2	3	3	3	5	7	3	1
1361:	3	3	8	3	5	5	2	5
1369:	5	1	3	0	3	6	4	6
1377:	10	7	0	0	3	2	0	4
1385:	2	3	4	3	3	2	2	2
1393:	1	3	0	3	2	2	6	2
1401:	1	5	5	3	1	4	7	4
1409:	3	2	3	5	1	3	4	2
1417:	1	2	3	5	2	3	4	6
1425:	4	4	1	3	1	4	3	1
1433:	1	2	3	0	2	3	2	1
1441:	1	1	1	4	2	2	5	2
1449:	5	4	2	3	8	3	2	3
1457:	7	18	87	153	164	74	13	5
1465:	2	2	1	1	1	2	2	3
1473:	2	2	2	1	1	2	0	1
1481:	3	5	3	1	4	1	1	1
1489:	0	6	2	2	2	0	0	2
1497:	1	2	1	2	1	2	3	1
1505:	1	6	4	5	5	4	2	1
1513:	2	4	3	0	2	5	3	1
1521:	4	1	2	1	3	2	1	3
1529:	1	0	3	3	0	1	1	2
1537:	3	0	3	2	1	3	0	1
1545:	2	1	1	1	1	0	1	4
1553:	1	1	2	2	3	4	2	1
1561:	1	1	3	0	1	1	1	1
1569:	3	2	1	1	3	1	0	1
1577:	3	1	3	0	2	1	3	3
1585:	0	2	3	1	1	2	3	1
1593:	4	4	4	1	1	1	4	4
1601:	2	4	1	4	0	0	0	1
1609:	0	1	1	2	1	1	2	1
1617:	1	2	3	1	1	2	1	0
1625:	3	3	1	1	2	0	2	1
1633:	1	0	1	0	0	2	2	1
1641:	2	1	2	0	3	0	1	2
1649:	1	0	0	1	4	0	0	0
1657:	0	1	1	1	2	2	0	1

1665:	2	0	1	1	2	1	1	1

Sample Title: HTC-A09-S001-3036-01

Channel								
1673:	1	1	2	2	1	2	3	2
1681:	2	2	1	2	1	1	0	0
1689:	2	0	1	3	2	0	0	3
1697:	1	1	2	2	0	2	0	1
1705:	2	1	0	0	0	1	2	0
1713:	4	0	2	1	2	1	0	0
1721:	1	2	2	3	0	0	1	3
1729:	6	4	3	0	0	0	0	4
1737:	0	0	0	1	0	0	2	1
1745:	0	0	4	1	2	0	0	2
1753:	0	0	1	2	2	0	0	1
1761:	4	5	11	18	11	6	1	1
1769:	2	0	1	1	2	0	0	1
1777:	1	2	2	0	1	0	2	0
1785:	0	3	1	0	1	1	0	0
1793:	1	2	0	1	0	2	2	1
1801:	1	2	1	0	0	2	2	0
1809:	0	0	2	0	0	3	1	1
1817:	2	0	0	1	1	1	2	0
1825:	1	2	2	1	1	2	1	0
1833:	0	2	0	0	0	1	2	1
1841:	1	0	2	0	2	0	4	1
1849:	1	3	0	0	1	3	2	2
1857:	3	0	0	0	0	0	0	0
1865:	0	0	0	0	1	0	1	0
1873:	1	1	1	1	1	3	2	0
1881:	1	1	0	0	3	1	0	1
1889:	1	0	0	0	1	1	1	1
1897:	1	0	2	2	1	1	0	3
1905:	2	0	0	1	2	2	1	2
1913:	0	0	0	0	0	0	0	1
1921:	0	0	0	0	1	0	0	0
1929:	1	1	3	0	5	1	0	2
1937:	1	1	1	0	1	0	0	1
1945:	0	1	1	1	1	0	0	2
1953:	2	1	1	1	2	2	0	3
1961:	0	2	0	2	1	2	1	2
1969:	1	0	0	0	0	0	1	1
1977:	0	0	2	0	1	1	0	0
1985:	0	0	2	0	0	0	0	0
1993:	0	0	2	1	1	2	1	0
2001:	0	1	1	0	1	0	1	0
2009:	0	0	3	1	0	0	2	1
2017:	0	0	0	0	1	0	0	1
2025:	1	3	0	0	3	0	1	0
2033:	0	0	0	0	0	1	0	2
2041:	2	1	1	1	2	3	1	1
2049:	0	2	0	1	0	2	2	0
2057:	1	2	0	0	0	1	0	2
2065:	0	1	0	1	0	0	0	1
2073:	2	0	1	1	0	0	0	1
2081:	1	1	0	0	1	0	2	1
2089:	1	2	1	0	0	1	0	0

2097:	0	2	2	5	2	5	2	2

Sample Title: HTC-A09-S001-3036-01

Channel								
2105:	0	2	0	3	0	2	2	0
2113:	0	0	0	0	0	0	2	0
2121:	2	1	1	0	1	0	0	3
2129:	0	0	1	0	1	0	1	0
2137:	2	0	0	1	0	2	0	1
2145:	3	2	0	1	0	0	0	1
2153:	1	1	0	1	4	0	0	2
2161:	0	3	0	0	0	1	0	0
2169:	1	0	0	1	1	0	1	2
2177:	1	0	1	1	1	0	1	1
2185:	0	3	2	0	0	0	0	1
2193:	2	1	1	1	0	3	2	1
2201:	1	2	2	1	4	0	2	1
2209:	0	0	1	0	1	1	1	0
2217:	0	1	0	1	2	2	2	1
2225:	1	0	0	0	0	0	1	1
2233:	0	2	0	0	1	0	0	1
2241:	0	0	0	0	1	1	1	0
2249:	1	1	1	0	0	0	1	0
2257:	1	0	1	1	0	0	2	0
2265:	0	2	0	1	0	0	0	2
2273:	1	1	1	0	0	0	1	0
2281:	0	1	1	1	2	1	0	0
2289:	1	0	0	0	2	1	0	2
2297:	2	1	0	2	1	1	1	0
2305:	0	1	0	0	1	0	2	1
2313:	1	0	0	0	2	0	3	0
2321:	0	2	0	0	1	0	2	1
2329:	2	0	1	1	0	0	1	1
2337:	0	1	0	1	1	0	0	1
2345:	0	0	0	1	2	1	0	0
2353:	1	1	0	0	1	0	0	0
2361:	3	2	3	0	1	1	1	1
2369:	0	2	4	3	2	0	1	1
2377:	0	1	2	3	0	1	2	1
2385:	0	0	2	2	1	0	0	0
2393:	0	0	1	0	0	1	1	1
2401:	0	0	1	1	0	1	3	1
2409:	1	1	1	1	2	2	0	0
2417:	1	1	3	2	1	0	1	0
2425:	1	1	0	0	0	0	1	2
2433:	0	0	0	2	0	1	0	0
2441:	0	0	0	0	0	1	1	2
2449:	2	1	0	1	0	0	0	2
2457:	0	1	0	0	0	0	2	0
2465:	0	0	1	1	0	0	0	0
2473:	0	0	3	0	0	1	1	0
2481:	1	0	0	2	1	0	0	0
2489:	3	0	0	1	0	0	0	1
2497:	0	0	0	0	0	1	1	0
2505:	0	0	0	0	0	0	0	0
2513:	0	0	0	1	0	0	1	1
2521:	0	1	1	0	0	0	2	0

2529:	0	0	0	1	0	0	0	0

Sample Title: HTC-A09-S001-3036-01

Channel								
2537:	0	0	0	0	0	0	0	1
2545:	0	0	0	0	1	0	0	1
2553:	1	1	0	0	0	0	1	0
2561:	1	0	1	0	0	0	1	0
2569:	0	1	1	0	0	0	1	1
2577:	1	0	0	0	0	0	0	0
2585:	1	0	0	0	0	0	0	0
2593:	0	0	0	0	0	0	2	0
2601:	0	0	1	0	0	0	0	0
2609:	0	1	1	2	6	14	13	11
2617:	4	2	0	0	1	0	0	0
2625:	0	0	0	1	0	0	0	0
2633:	0	0	0	0	0	0	0	0
2641:	0	0	0	0	0	0	0	0
2649:	1	0	0	1	1	0	0	0
2657:	0	0	1	0	0	1	0	0
2665:	1	0	0	0	0	0	0	1
2673:	0	0	1	1	0	0	0	0
2681:	0	0	0	1	0	1	0	0
2689:	1	0	1	0	0	0	0	1
2697:	0	0	0	0	0	0	0	0
2705:	1	0	0	0	0	0	0	0
2713:	1	0	0	0	0	1	0	0
2721:	0	1	0	2	0	0	0	0
2729:	0	0	0	0	0	0	0	1
2737:	0	0	0	1	0	0	0	0
2745:	0	0	0	0	1	0	0	0
2753:	0	1	0	0	0	0	0	0
2761:	0	0	0	2	0	0	0	0
2769:	0	0	0	1	0	0	0	0
2777:	0	0	0	1	0	0	0	0
2785:	1	0	0	0	0	0	0	0
2793:	0	0	0	0	1	0	2	0
2801:	0	0	0	0	0	0	1	0
2809:	0	1	0	0	0	0	0	0
2817:	0	0	0	2	0	0	0	0
2825:	0	0	0	1	1	0	0	0
2833:	0	1	0	0	0	0	0	0
2841:	1	0	0	0	1	0	0	0
2849:	0	1	0	0	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	0	0	0	1	1	0	0	1
2873:	0	0	1	1	0	0	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	1	0	1	0	0	1
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	0	0	0	0	0
2913:	0	1	1	1	0	1	0	2
2921:	0	0	0	0	0	1	0	0
2929:	0	0	0	0	0	0	1	0
2937:	1	0	0	0	0	0	0	1
2945:	0	0	0	0	0	1	1	0
2953:	0	0	0	1	0	0	1	0

2961:	0	0	0	0	0	0	0	0

Sample Title: HTC-A09-S001-3036-01

Channel								
2969:	0	0	1	0	0	0	0	0
2977:	0	0	1	0	0	0	0	0
2985:	0	0	1	0	0	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	0	0	0	0	0	0	0	0
3009:	0	0	0	0	0	0	1	1
3017:	0	0	0	0	0	0	0	0
3025:	1	0	0	0	0	0	0	0
3033:	0	0	1	0	1	0	0	0
3041:	0	0	0	0	0	0	1	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	1	1	0
3065:	1	0	0	0	0	1	0	0
3073:	0	0	1	1	0	0	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	0	0	0	0	1
3097:	1	0	0	0	1	0	0	0
3105:	0	0	0	0	0	0	0	0
3113:	0	0	1	0	0	0	1	0
3121:	0	0	1	1	0	0	1	0
3129:	0	0	0	0	0	0	2	0
3137:	0	0	0	0	0	0	0	0
3145:	1	1	0	0	0	0	0	0
3153:	1	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	0	0
3169:	0	0	1	0	0	0	0	0
3177:	0	1	0	0	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	0	0	0	1	0
3201:	0	1	0	0	0	0	1	0
3209:	1	1	1	1	0	0	1	0
3217:	0	0	1	0	0	0	0	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	1	0	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	1	1	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	1	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	1	0	0	1	0	0	1	1
3313:	0	0	0	0	0	0	0	0
3321:	0	0	0	0	0	0	0	1
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	1	0	0	1	0	1	0
3353:	0	0	0	0	0	0	0	0
3361:	0	1	0	1	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	0	0

3393:	1	0	0	0	1	0	0	0

Sample Title: HTC-A09-S001-3036-01

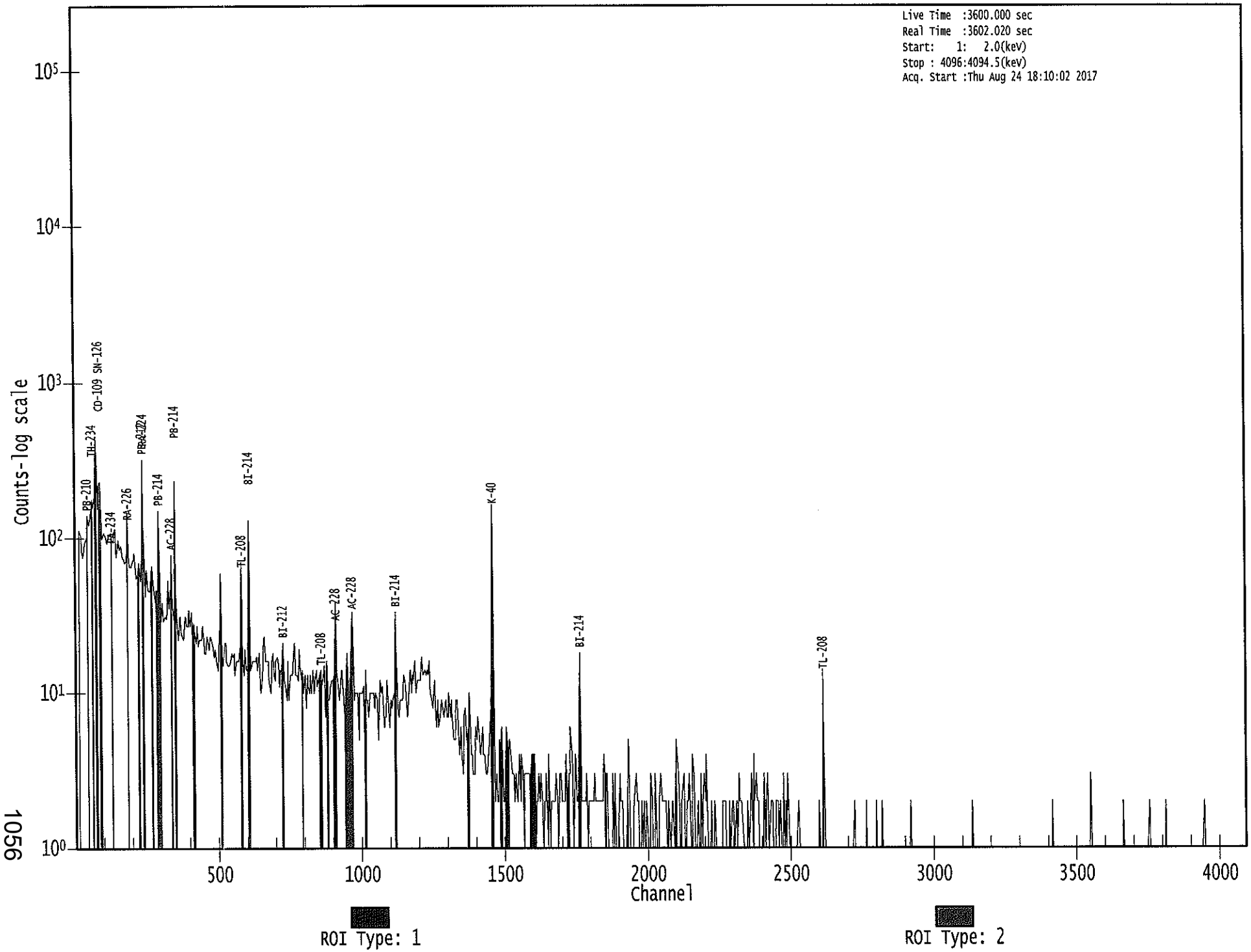
Channel								
3401:	0	1	0	0	1	1	0	0
3409:	0	0	0	0	0	0	2	0
3417:	0	1	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	1
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	1	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	1	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	1	0	0	0
3497:	0	0	0	0	0	0	0	1
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	1	0	0	0	0	0
3529:	0	1	0	0	0	0	0	0
3537:	0	0	0	0	1	0	0	0
3545:	0	1	0	0	0	3	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	1	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	1	0	0	0	0
3585:	0	1	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	1	0	1	1	0	0	0	0
3617:	0	0	1	0	0	0	0	0
3625:	0	1	0	0	0	1	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	1
3657:	0	0	0	0	1	2	0	0
3665:	0	0	1	0	0	0	1	1
3673:	0	0	0	0	0	0	1	0
3681:	0	0	0	0	1	0	1	0
3689:	0	0	1	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	1	0	1	0	0	0
3713:	1	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	1	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	1	0	0	0
3753:	0	0	2	1	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	1
3785:	1	0	0	0	0	0	1	0
3793:	1	0	0	0	1	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	2	0	0	0	0
3817:	0	0	0	0	1	0	0	0

3825:	0	1	0	0	0	0	0	0

Sample Title: HTC-A09-S001-3036-01

Channel								
3833:	0	1	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	1
3849:	0	0	1	0	0	0	0	0
3857:	1	0	0	0	0	0	1	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	1	1	0	0	0	0
3881:	0	0	0	0	0	0	0	1
3889:	0	0	0	1	0	0	1	0
3897:	0	1	1	0	1	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	1	0	0	0	0	0	0
3929:	0	0	0	1	0	0	0	0
3937:	0	0	0	0	1	0	0	0
3945:	0	0	2	1	0	1	0	0
3953:	0	0	0	1	0	0	1	1
3961:	0	1	0	0	0	0	0	0
3969:	0	0	0	1	0	1	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	1	0	0	0	0
3993:	0	1	0	1	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	1	0	0
4017:	0	0	0	0	0	1	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	1	0	0	0	0	0
4065:	0	1	0	0	0	0	1	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	1	0	0	0	1	1	0	0

0000055931.CNF



****
***** G E N I E Q U A L I T Y A S S U R A N C E *****
****

8/24

Last Results Report
8/24/17 5:32:27 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000001GAF-16C.QCK

Detector: GE1
Geometry: <None>
Certificate: GAF-16
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/16 12:00:00 PM
Measurement Date: 8/24/17 5:16:44 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 928.7 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 kev	6.0005E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 661.65 kev	6.6182E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1332.49 ke	1.3324E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : : >
Peak centroid 1836.01 ke	1.8357E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Am-241	1.4475E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Cs-137	1.8509E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Co-60	2.2410E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	2.3320E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Decay corrected activity	1.5194E+004	
Boundary Limits: [1.254E-002, 1.881E-002]		< : : : >
Decay corrected activity	6.7569E+003	

Boundary Limits: [5.134E-003, 7.700E-003] < : : : >

Decay corrected activity 1.0915E+004
Boundary Limits: [8.130E-003, 1.220E-002] < : : : >

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Decay corrected activity Boundary Limits: [1.690E-002, 2.534E-002]	1.8438E+004	< : : : >

Flags Key:
LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

****
***** G E N I E Q U A L I T Y A S S U R A N C E *****
****

8/24

Last Results Report
8/24/17 5:32:38 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000002GAS-1601C.QC

Detector: GE2
Geometry: <None>
Certificate: GAS-1601
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/16 12:00:00 PM
Measurement Date: 8/24/17 5:16:51 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 923.9 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 kev	6.0000E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Peak centroid 661.65 kev	6.6144E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1332.49 ke	1.3319E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : : >
Peak centroid 1836.01 ke	1.8351E+003	
Boundary Limits: [1.833E+003, 1.838E+003]		< : : : >
Peak FWHM Am-241	1.2387E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Cs-137	2.1185E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Co-60	2.2850E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Y-88	2.9322E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Decay corrected activity	1.4297E+005	
Boundary Limits: [1.190E-001, 1.785E-001]		< : : : >

Decay corrected activity 7.1566E+004
Boundary Limits: [5.718E-002, 8.577E-002] < : : : >

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Decay corrected activity Boundary Limits: [7.706E-002, 1.156E-001]	1.0129E+005	< : : : >
Decay corrected activity Boundary Limits: [1.602E-001, 2.403E-001]	2.0513E+005	< : : : >

Flags Key:
LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

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*********************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E      *****
*********************************************************************
```

Last Results Report
8/24/17 5:32:50 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000003GAS-1602C.QC

Detector: GE3
Geometry: <None>
Certificate: GAS-1602
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/16 12:00:00 PM
Measurement Date: 8/24/17 5:16:59 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 933.6 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 kev	5.9837E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 661.65 kev	6.6176E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Peak centroid 1332.49 ke	1.3325E+003	
Boundary Limits: [1.330E+003, 1.334E+003]		< : : : >
Peak centroid 1836.01 ke	1.8359E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : : >
Peak FWHM Am-241	2.0244E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Cs-137	2.2299E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Co-60	2.6676E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	2.8579E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Decay corrected activity	1.5613E+005	
Boundary Limits: [1.189E-001, 1.784E-001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Decay corrected activity	6.1201E+004	
Boundary Limits: [4.862E-002, 7.293E-002]		< : : : >

Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity 9.1453E+004
Boundary Limits: [7.700E-002, 1.155E-001] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity 1.8851E+005
Boundary Limits: [1.600E-001, 2.400E-001] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Flags Key:	LU = Lower/Upper Bounds Test	(Ab = Above, Be = Below)
	SD = Sample Driven N-Sigma Test	(In = Investigate, Ac = Action)
	UD = User Driven N-Sigma Test	(In = Investigate, Ac = Action)
	BS = Measurement Bias Test	(In = Investigate, Ac = Action)

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*********************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E      *****
*********************************************************************
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8/24

Last Results Report
8/24/17 6:16:16 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000004GAW-16C.QCK

Detector: GE4
Geometry: <None>
Certificate: GAW-16
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/16 12:00:00 PM
Measurement Date: 8/24/17 5:59:54 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 967.5 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 kev	5.8368E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Peak centroid 661.65 kev	6.6068E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1332.49 ke	1.3318E+003	
Boundary Limits: [1.331E+003, 1.335E+003]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1836.01 ke	1.8356E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Am-241	2.0701E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Cs-137	2.5110E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Co-60	2.7392E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	2.9281E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Decay corrected activity	1.2734E+005	
Boundary Limits: [1.196E-001, 1.793E-001]		< : : : >
Decay corrected activity	6.3073E+004	

Boundary Limits: [4.890E-002, 7.335E-002] < : : : >

Decay corrected activity 9.1337E+004
Boundary Limits: [7.743E-002, 1.161E-001] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity 1.9431E+005
Boundary Limits: [1.609E-001, 2.414E-001] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Flags Key:
LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

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*************************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E          *****
*************************************************************************
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Last Results Report
8/24/17 5:53:39 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000001B.QCK

Detector: GE1
Geometry: <None>
Certificate: <None>
Sample ID: QA Background Ch
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 8/24/17 5:38:25 AM
Measurement Date: 8/24/17 5:38:27 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 900.1 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE1 [SD: 2.2764E+000+/- 1.244]	2.2622E+000	-1.1432E-002 < : : : >

Flags Key:
LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

8/24

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*************************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E          *****
*************************************************************************
```

Last Results Report
8/24/17 5:53:49 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000002B.QCK

Detector: GE2
Geometry: <None>
Certificate: <None>
Sample ID: QA Background Ch
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 8/24/17 5:38:32 AM
Measurement Date: 8/24/17 5:38:33 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 900.1 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE2 [SD:-1.7065E+035+/-******]	2.2244E+000	3.1670E-002 < : : : >

Trend Test: The last 9 samples exhibit a bias trend.

Flags Key:
LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

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*************************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E          *****
*************************************************************************
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Last Results Report
8/24/17 5:53:58 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000003B.QCK

Detector: GE3
Geometry: <None>
Certificate: <None>
Sample ID: QA Background Ch
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 8/24/17 5:38:39 AM
Measurement Date: 8/24/17 5:38:40 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 901.8 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE3 [SD: 2.1789E+003+/-1173.9]	1.6360E+003	-4.6247E-001 < : : : >

Trend Test: The last 9 samples exhibit a bias trend.

Flags Key:
LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

8/24

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***** G E N I E Q U A L I T Y A S S U R A N C E *****
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Last Results Report
8/24/17 5:54:06 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000004B.QCK

Detector: GE4
Geometry: <None>
Certificate: <None>
Sample ID: QA Background Ch
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 8/24/17 5:38:45 AM
Measurement Date: 8/24/17 5:38:47 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 900.2 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE4 [SD: 7.1253E+000+/-131.05]	1.5011E+000	-4.2914E-002 < : : : >

Trend Test: The last 9 samples exhibit a bias trend.

Flags Key:
LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)