INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

SITE: **Olin Chemical** Project #: 61071000016.12 SDG #: OCRI-01/01A

LAB # : TAL 360-24173-1/2

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

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Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☑ ☐ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☐ ☐ ☑ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	Post-digestion spikes %R limits = 75% - 125%

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TIER I / (II) / (III) (circle one)

Laboratory Control Samples (LCS) ☑ ☐ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate. ☐ ☐ ☑ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☑ ☐ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	
Field Duplicate ☐ ☐ ☑ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☐ ☐ ☑ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution ☐ ☐ ☑ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☐ ☑ Are results of the diluted samples > the original sample results	See below.

Validator's Signature: _____

Date: 3/30/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

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QL Standard:
The percent recoveries of tin (58, 63, 63, 57) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J).

Blanks:
Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Copper, lead, and zinc were reported in the equipment blank associated with OCRI-01 and 01A. Reported detections of zinc were significantly greater than equipment blank results, the data was not qualified. Based upon professional judgment, lower concentration detections of copper and lead were qualified (EB) to indicate associated detections in the equipment blank.

Cadmium (0.00973 mg/kg), calcium (14.2 mg/kg), copper (0.0775 mg/kg), iron (1.9 mg/kg), magnesium (2.4 mg/kg), nickel (0.276 mg/kg), and tin (0.444 mg/kg) were reported in the method blank (M360-47961) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations.

Analyte	Blank Conc. (mg/kg)	Action Level (mg/kg)
Cadmium	0.00973	0.04865
Calcium	14.2	71.0
Copper	0.0775	0.3875
Iron	1.90	9.50
Magnesium	2.40	12.0
Nickel	0.276	1.38
Tin	0.444	2.22

Sample results for cadmium, calcium, copper, iron, magnesium, nickel, and tin were greater than the action levels, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Calcium (7.00 mg/kg), iron (2.27 mg/kg), magnesium (1.80 mg/kg), and tin (0.511 mg/kg) were reported in the method blank (M360-49084) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations.

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Analyte	Blank Conc. (mg/kg)	Action Level (mg/kg)
Calcium	7.00	35.0
Iron	2.27	11.35
Magnesium	1.80	9.0
Tin	0.511	2.555

Sample results for calcium, iron, magnesium, and tin were greater than the action levels, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Selenium and thallium were reported in the continuing calibration blanks (CCB) associated with all samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for selenium and thallium were non detect, no further action required.

Antimony was reported in the continuing calibration blanks (CCB) associated with a subset of samples. An action level was established at five times the reported blank concentration and the raw data was reviewed. Associated sample results for antimony were non detect, no further action required.

Serial Dilution:
The lab did not perform a serial dilution analysis as per the method requirement.

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24173-1
Sdg Number: OCRI-01

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24173-1	OC-SB-405-0.0/1.0-XXX	Solid	08/18/2009 0830	08/18/2009 1900
360-24173-2	OC-SB-405-14/15-XXX	Solid	08/18/2009 0910	08/18/2009 1900
360-24173-3	OC-SB-405-8.0/9.0-XXX	Solid	08/18/2009 0845	08/18/2009 1900
360-24173-4	OC-SB-416-0.0/1.0-XXX	Solid	08/18/2009 1035	08/18/2009 1900
360-24173-5	OC-SB-416-13/14-XXX	Solid	08/18/2009 1105	08/18/2009 1900
360-24173-6	OC-SB-416-8.0/9.0-XXX	Solid	08/18/2009 1045	08/18/2009 1900
360-24173-7TB	OC-TBK-001	Solid	08/18/2009 1500	08/18/2009 1900
360-24173-8	OC-EBK-001	Water	08/18/2009 0830	08/18/2009 1900
360-24173-9	OC-SB-412-0.0/1.0-XXX	Solid	08/18/2009 1245	08/19/2009 1700
360-24173-10	OC-SB-412-12/13-XXX	Solid	08/18/2009 1310	08/19/2009 1700
360-24173-11	OC-SB-412-6.0/7.0-XXX	Solid	08/18/2009 1255	08/19/2009 1700
360-24173-12	OC-SB-420-0.0/1.0-XXX	Solid	08/18/2009 1555	08/19/2009 1700
360-24173-13	OC-SB-420-12/14-XXX	Solid	08/18/2009 1625	08/19/2009 1700
360-24173-14	OC-SB-420-6.5/8.5-XXX	Solid	08/18/2009 1610	08/19/2009 1700
360-24173-15	OC-SB-423-0.0/1.0-XXX	Solid	08/18/2009 1420	08/19/2009 1700
360-24173-16	OC-SB-423-13/14-XXX	Solid	08/18/2009 1445	08/19/2009 1700
360-24173-17	OC-SB-423-5.0/6.0-XXX	Solid	08/18/2009 1430	08/19/2009 1700

Form I's
updated
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Client: Olin Corporation

Job Number: 360-24173-1
Sdg Number: OCRI-01

Client Sample ID: **OC-SB-405-0.0/1.0-XXX**

Lab Sample ID: 360-24173-1
Client Matrix: Solid
% Moisture: 5.8

Date Sampled: 08/18/2009 0830
Date Received: 08/18/2009 1900

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48003		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.77 g
Date Analyzed:	08/20/2009 1451			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4900		0.78	3.0
Arsenic		5.1		0.11	1.2
Barium		12		0.078	0.60
Beryllium		0.20	J	0.030	0.24
Cadmium		0.16	J ~~B~~	0.0084	0.24
Calcium		590	~~B~~	3.0	24
Chromium		7.0		0.080	0.60
Cobalt		3.2		0.078	0.60
Copper		5.9	~~E~~B	0.078	1.2
Iron		7200	~~B~~	0.96	6.0
Lead		4.6		0.069	0.60
Magnesium		1100	~~B~~	0.60	12
Manganese		76		0.080	1.2
Nickel		7.0	~~B~~	0.078	1.2
Potassium		600		38	240
Selenium		ND		0.28	0.60
Silver		0.064	J	0.060	0.60
Sodium		ND		16	120
Thallium		ND		0.087	1.2
Vanadium		8.4		0.078	1.2
Zinc		14		0.71	3.0
Tin		2.7	J ~~B~~	0.38	6.0

Method:	6010B	Analysis Batch: 360-48034		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.77 g
Date Analyzed:	08/21/2009 1138			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		ND		0.22	0.60

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48038		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48021		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	08/21/2009 1427			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 1047				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.031	0.17

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Client: Olin Corporation

Job Number: 360-24173-1
Sdg Number: OCRI-01

Client Sample ID: **OC-SB-405-8.0/9.0-XXX**

Lab Sample ID: 360-24173-3
Client Matrix: Solid
% Moisture: 7.3

Date Sampled: 08/18/2009 0845
Date Received: 08/18/2009 1900

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48003		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.85 g
Date Analyzed:	08/20/2009 1454			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		11000		0.76	2.9
Arsenic		4.3		0.11	1.2
Barium		47		0.076	0.58
Beryllium		0.29		0.029	0.23
Cadmium		0.31	B	0.0082	0.23
Calcium		3300	B	2.9	23
Chromium		21		0.078	0.58
Cobalt		14		0.076	0.58
Copper		33	B	0.076	1.2
Iron		19000	B	0.93	5.8
Lead		3.0		0.067	0.58
Magnesium		6700	B	0.58	12
Manganese		250		0.078	1.2
Nickel		16	B	0.076	1.2
Potassium		2400		36	230
Selenium		ND		0.27	0.58
Silver		0.071	J	0.059	0.58
Sodium		180		15	120
Thallium		ND		0.084	1.2
Vanadium		38		0.076	1.2
Zinc		26		0.69	2.9
Tin		7.6	J B	0.37	5.8

Method:	6010B	Analysis Batch: 360-48034		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	5.0			Initial Weight/Volume:	1.85 g
Date Analyzed:	08/21/2009 1213			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		ND		1.1	2.9

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48038		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48021		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.29 g
Date Analyzed:	08/21/2009 1433			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 1047				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.025	0.14

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Client: Olin Corporation

Job Number: 360-24173-1
Sdg Number: OCRI-01

Client Sample ID: **OC-SB-416-0.0/1.0-XXX**

Lab Sample ID: 360-24173-4
Client Matrix: Solid
% Moisture: 3.2

Date Sampled: 08/18/2009 1035
Date Received: 08/18/2009 1900

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48003		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.89 g
Date Analyzed:	08/20/2009 1503			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4200		0.71	2.7
Arsenic		4.8		0.10	1.1
Barium		7.9		0.071	0.55
Beryllium		0.17	J	0.027	0.22
Cadmium		0.077	J B	0.0077	0.22
Calcium		510	B	2.7	22
Chromium		7.5		0.073	0.55
Cobalt		2.1		0.071	0.55
Copper		2.7	EB	0.071	1.1
Iron		5200	B	0.87	5.5
Lead		1.4	EB	0.062	0.55
Magnesium		1200	B	0.55	11
Manganese		46		0.073	1.1
Nickel		5.4	B	0.071	1.1
Potassium		750		34	220
Selenium		ND		0.26	0.55
Silver		ND		0.055	0.55
Sodium		120		14	110
Thallium		ND		0.079	1.1
Vanadium		7.3		0.071	1.1
Zinc		9.0		0.64	2.7
Tin		2.8	J B	0.35	5.5

Method:	6010B	Analysis Batch: 360-48034		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.89 g
Date Analyzed:	08/21/2009 1143			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		ND		0.20	0.55

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48038		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48021		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	08/21/2009 1435			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 1047				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.031	0.17

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Client: Olin Corporation

Job Number: 360-24173-1
Sdg Number: OCRI-01

Client Sample ID: **OC-SB-416-8.0/9.0-XXX**

Lab Sample ID: 360-24173-6
Client Matrix: Solid
% Moisture: 6.4

Date Sampled: 08/18/2009 1045
Date Received: 08/18/2009 1900

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48003		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.78 g
Date Analyzed:	08/20/2009 1506			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8500		0.78	3.0
Arsenic		3.0		0.11	1.2
Barium		26		0.078	0.60
Beryllium		0.30		0.030	0.24
Cadmium		0.23	J ~~B~~	0.0084	0.24
Calcium		2300	~~B~~	3.0	24
Chromium		16		0.080	0.60
Cobalt		8.7		0.078	0.60
Copper		26	~~B~~	0.078	1.2
Iron		14000	~~B~~	0.96	6.0
Lead		2.3 eb		0.069	0.60
Magnesium		4700	~~B~~	0.60	12
Manganese		150		0.080	1.2
Nickel		13	~~B~~	0.078	1.2
Potassium		1600		38	240
Selenium		ND		0.28	0.60
Silver		ND		0.060	0.60
Sodium		82	J	16	120
Thallium		ND		0.087	1.2
Vanadium		26		0.078	1.2
Zinc		26		0.71	3.0
Tin		5.6	J ~~B~~	0.38	6.0

Method:	6010B	Analysis Batch: 360-48034		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.78 g
Date Analyzed:	08/21/2009 1146			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		ND		0.22	0.60

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48038		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48021		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	08/21/2009 1437			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 1047				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.035	0.19

3/30/10

Client: Olin Corporation

Job Number: 360-24173-1
Sdg Number: OCRI-01

Client Sample ID: **OC-EBK-001**

Lab Sample ID: 360-24173-8
Client Matrix: Water

Date Sampled: 08/18/2009 0830
Date Received: 08/18/2009 1900

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48048		Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-48006		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/21/2009 1548			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 0709				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	ND		39	100
Antimony	ND		2.9	6.0
Barium	3.3	J	2.0	10
Arsenic	ND		2.3	10
Beryllium	ND		0.20	1.0
Cadmium	ND		0.20	1.0
Calcium	94	J	59	400
Chromium	ND		1.3	5.0
Cobalt	ND		2.0	10
Copper	55		1.7	10
Iron	ND		34	100
Lead	12		1.3	5.0
Magnesium	ND		50	400
Manganese	1.5	J	1.3	10
Nickel	1.7	J	1.5	10
Potassium	ND		500	4000
Selenium	ND		2.7	10
Silver	ND		1.8	5.0
Sodium	ND		250	2000
Tin	ND		7.0	50
Vanadium	ND		1.5	10
Thallium	ND		1.4	10
Zinc	22	J	10	50

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 360-48028		Instrument ID:	Hg Analyzer
Preparation:	7470A	Prep Batch: 360-48012		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	08/21/2009 1204			Final Weight/Volume:	10 mL
Date Prepared:	08/21/2009 0833				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	ND		0.065	0.20

Client: Olin Corporation

Job Number: 360-24173-1
Sdg Number: OCRI-01

Client Sample ID: **OC-SB-412-0.0/1.0-XXX**

Lab Sample ID: 360-24173-9
Client Matrix: Solid
% Moisture: 3.3

Date Sampled: 08/18/2009 1245
Date Received: 08/19/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48003		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.81 g
Date Analyzed:	08/20/2009 1509			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3500		0.74	2.9
Arsenic		3.3		0.10	1.1
Barium		5.5		0.074	0.57
Beryllium		0.15	J	0.029	0.23
Cadmium		0.066	J ~~B~~	0.0080	0.23
Calcium		540	~~B~~	2.9	23
Chromium		22		0.076	0.57
Cobalt		1.9		0.074	0.57
Copper		2.7	~~E~~ B	0.074	1.1
Iron		4200	~~B~~	0.91	5.7
Lead		1.4	~~E~~ B	0.065	0.57
Magnesium		850	~~B~~	0.57	11
Manganese		42		0.076	1.1
Nickel		4.3	B	0.074	1.1
Potassium		530		36	230
Selenium		ND		0.27	0.57
Silver		0.22	J	0.057	0.57
Sodium		86	J	15	110
Thallium		ND		0.083	1.1
Vanadium		5.2		0.074	1.1
Zinc		6.9		0.67	2.9
Tin		8.8	J ~~B~~	0.37	5.7

Method:	6010B	Analysis Batch: 360-48034		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.81 g
Date Analyzed:	08/21/2009 1149			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		ND		0.21	0.57

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48038		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48021		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.29 g
Date Analyzed:	08/21/2009 1438			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 1047				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.024	0.13

3/30/10

Client: Olin Corporation

Job Number: 360-24173-1
Sdg Number: OCRI-01

Client Sample ID: **OC-SB-412-6.0/7.0-XXX**

Lab Sample ID: 360-24173-11
Client Matrix: Solid
% Moisture: 13.5

Date Sampled: 08/18/2009 1255
Date Received: 08/19/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48003		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.84 g
Date Analyzed:	08/20/2009 1511			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3800		0.82	3.1
Arsenic		3.0		0.11	1.3
Barium		8.2		0.082	0.63
Beryllium		0.095	J	0.031	0.25
Cadmium		0.081	J ~~B~~	0.0088	0.25
Calcium		630	~~B~~	3.1	25
Chromium		21		0.084	0.63
Cobalt		1.8		0.082	0.63
Copper		4.9	6 B	0.082	1.3
Iron		5000	~~B~~	1.0	6.3
Lead		18		0.072	0.63
Magnesium		1100	~~B~~	0.63	13
Manganese		40		0.084	1.3
Nickel		4.7	~~B~~	0.082	1.3
Potassium		550		39	250
Selenium		ND		0.29	0.63
Silver		0.28	J	0.063	0.63
Sodium		ND		16	130
Thallium		ND		0.091	1.3
Vanadium		6.8		0.082	1.3
Zinc		8.2		0.74	3.1
Tin		8.7	5 ~~B~~	0.40	6.3

Method:	6010B	Analysis Batch: 360-48034		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.84 g
Date Analyzed:	08/21/2009 1152			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		ND		0.23	0.63

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48038		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48021		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.24 g
Date Analyzed:	08/21/2009 1444			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 1047				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.033	0.18

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Client: Olin Corporation

Job Number: 360-24173-1
Sdg Number: OCRI-01

Client Sample ID: **OC-SB-420-0.0/1.0-XXX**

Lab Sample ID: 360-24173-12
Client Matrix: Solid
% Moisture: 3.7

Date Sampled: 08/18/2009 1555
Date Received: 08/19/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48003		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.82 g
Date Analyzed:	08/20/2009 1514			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5700		0.74	2.9
Arsenic		5.0		0.10	1.1
Barium		77		0.074	0.57
Beryllium		0.23		0.029	0.23
Cadmium		0.27	B	0.0080	0.23
Chromium		15		0.076	0.57
Cobalt		2.9		0.074	0.57
Copper		7.1	B	0.074	1.1
Iron		9500	B	0.91	5.7
Lead		12		0.065	0.57
Magnesium		2000	B	0.57	11
Manganese		110		0.076	1.1
Nickel		7.9	B	0.074	1.1
Potassium		1100		36	230
Selenium		ND		0.27	0.57
Silver		ND		0.057	0.57
Sodium		280		15	110
Thallium		ND		0.083	1.1
Vanadium		9.3		0.074	1.1
Zinc		34		0.67	2.9
Tin		5.8	B	0.37	5.7

Method:	6010B	Analysis Batch: 360-48034		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.82 g
Date Analyzed:	08/21/2009 1155			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		ND		0.21	0.57

Method:	6010B	Analysis Batch: 360-48083		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	5.0			Initial Weight/Volume:	1.82 g
Date Analyzed:	08/24/2009 1151			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Calcium		28000	B	14	110

7471A Mercury (CVAA)

3/30/10

Client: Olin Corporation

Job Number: 360-24173-1
Sdg Number: OCRI-01

Client Sample ID: **OC-SB-420-0.0/1.0-XXX**

Lab Sample ID: 360-24173-12
Client Matrix: Solid
% Moisture: 3.7

Date Sampled: 08/18/2009 1555
Date Received: 08/19/2009 1700

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48038		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48021		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.29 g
Date Analyzed:	08/21/2009 1446			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 1047				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.061	J	0.024	0.13

Client: Olin Corporation

Job Number: 360-24173-1
Sdg Number: OCRI-01

Client Sample ID: **OC-SB-420-6.5/8.5-XXX**

Lab Sample ID: 360-24173-14
Client Matrix: Solid
% Moisture: 7.7

Date Sampled: 08/18/2009 1610
Date Received: 08/19/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48003		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.63 g
Date Analyzed:	08/20/2009 1517			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10000		0.86	3.3
Arsenic		2.9		0.12	1.3
Barium		47		0.086	0.66
Beryllium		0.35		0.033	0.27
Cadmium		0.27	B	0.0093	0.27
Calcium		2600	B	3.3	27
Chromium		18		0.088	0.66
Cobalt		10		0.086	0.66
Copper		25	B	0.086	1.3
Iron		16000	B	1.1	6.6
Lead		2.1	EB	0.076	0.66
Magnesium		5200	B	0.66	13
Manganese		150		0.089	1.3
Nickel		17	B	0.086	1.3
Potassium		2200		42	270
Selenium		ND		0.31	0.66
Silver		ND		0.067	0.66
Sodium		120	J	17	130
Thallium		0.15	J	0.096	1.3
Vanadium		28		0.086	1.3
Zinc		25		0.78	3.3
Tin		6.0	J B	0.43	6.6

Method:	6010B	Analysis Batch: 360-48034		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.63 g
Date Analyzed:	08/21/2009 1204			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		0.35	J	0.24	0.66

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48038		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48021		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.26 g
Date Analyzed:	08/21/2009 1447			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 1047				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.028	0.15

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Client: Olin Corporation

Job Number: 360-24173-1
Sdg Number: OCRI-01

Client Sample ID: **OC-SB-423-0.0/1.0-XXX**

Lab Sample ID: 360-24173-15
Client Matrix: Solid
% Moisture: 4.9

Date Sampled: 08/18/2009 1420
Date Received: 08/19/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48003		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.99 g
Date Analyzed:	08/20/2009 1520			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4100		0.69	2.6
Arsenic		4.3		0.096	1.1
Barium		8.3		0.069	0.53
Beryllium		0.17	J	0.026	0.21
Cadmium		0.091	J ~~B~~	0.0074	0.21
Calcium		730	~~B~~	2.6	21
Chromium		15		0.070	0.53
Cobalt		2.2		0.069	0.53
Copper		4.3	~~B~~	0.069	1.1
Iron		5300	~~B~~	0.84	5.3
Lead		2.8		0.060	0.53
Magnesium		1100	~~B~~	0.53	11
Manganese		68		0.071	1.1
Nickel		4.9	~~B~~	0.069	1.1
Potassium		580		33	210
Selenium		ND		0.25	0.53
Silver		0.087	J	0.053	0.53
Sodium		20	J	14	110
Thallium		0.11	J	0.076	1.1
Vanadium		7.4		0.069	1.1
Zinc		9.9		0.62	2.6
Tin		5.8	~~B~~ J	0.34	5.3

Method:	6010B	Analysis Batch: 360-48034		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.99 g
Date Analyzed:	08/21/2009 1206			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		ND		0.19	0.53

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48038		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48021		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	08/21/2009 1449			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 1047				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.033	0.18

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Client: Olin Corporation

Job Number: 360-24173-1
Sdg Number: OCRI-01

Client Sample ID: **OC-SB-423-5.0/6.0-XXX**

Lab Sample ID: 360-24173-17
Client Matrix: Solid
% Moisture: 6.6

Date Sampled: 08/18/2009 1430
Date Received: 08/19/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48003		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.94 g
Date Analyzed:	08/20/2009 1523			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6500		0.72	2.8
Arsenic		2.4		0.10	1.1
Barium		15		0.072	0.55
Beryllium		0.13	J	0.028	0.22
Cadmium		0.19	J ~~B~~	0.0077	0.22
Calcium		3800	~~B~~	2.8	22
Chromium		33		0.073	0.55
Cobalt		8.4		0.072	0.55
Copper		36	~~B~~	0.072	1.1
Iron		12000	~~B~~	0.88	5.5
Lead		1.7		0.063	0.55
Magnesium		2700	~~B~~	0.55	11
Manganese		88		0.074	1.1
Nickel		12	~~B~~	0.072	1.1
Potassium		930		34	220
Selenium		ND		0.26	0.55
Silver		0.26	J	0.056	0.55
Sodium		380		14	110
Thallium		ND		0.080	1.1
Vanadium		28		0.072	1.1
Zinc		13		0.65	2.8
Tin		13	J ~~B~~	0.35	5.5

Method:	6010B	Analysis Batch: 360-48034		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-47961		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.94 g
Date Analyzed:	08/21/2009 1209			Final Weight/Volume:	100 mL
Date Prepared:	08/20/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		0.26	J	0.20	0.55

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48038		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48021		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	08/21/2009 1451			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 1047				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.027	0.15

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SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24173-2
Sdg Number: OCRI-01A

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24173-2	OC-SB-405-14/15-XXX	Solid	08/18/2009 0910	08/18/2009 1900
360-24173-5	OC-SB-416-13/14-XXX	Solid	08/18/2009 1105	08/18/2009 1900
360-24173-10	OC-SB-412-12/13-XXX	Solid	08/18/2009 1310	08/19/2009 1700
360-24173-13	OC-SB-420-12/14-XXX	Solid	08/18/2009 1625	08/19/2009 1700
360-24173-16	OC-SB-423-13/14-XXX	Solid	08/18/2009 1445	08/19/2009 1700

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Client: Olin Corporation

Job Number: 360-24173-2
Sdg Number: OCRI-01A

Client Sample ID: **OC-SB-405-14/15-XXX**

Lab Sample ID: 360-24173-2
Client Matrix: Solid
% Moisture: 8.7

Date Sampled: 08/18/2009 0910
Date Received: 08/18/2009 1900

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	2.0			Initial Weight/Volume:	1.61 g
Date Analyzed:	09/18/2009 1138			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		15000		1.8	6.8
Antimony		ND		0.49	1.4
Arsenic		2.6	J	0.25	2.7
Barium		94		0.18	1.4
Beryllium		0.27	J	0.068	0.54
Cadmium		0.34	J	0.019	0.54
Calcium		3500	~~B~~	6.8	27
Chromium		37		0.18	1.4
Cobalt		15		0.18	1.4
Copper		33		0.18	2.7
Iron		25000	~~B~~	2.2	14
Lead		0.94	J ~~B~~	0.16	1.4
Magnesium		10000	~~B~~	1.4	27
Manganese		170		0.18	2.7
Nickel		27		0.18	2.7
Potassium		5200		85	540
Selenium		ND		0.64	1.4
Silver		ND		0.14	1.4
Sodium		230	J	35	270
Thallium		ND		0.20	2.7
Vanadium		36		0.18	2.7
Zinc		23		1.6	6.8
Tin		12	J ~~B~~	0.87	14

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Client: Olin Corporation

Job Number: 360-24173-2
Sdg Number: OCRI-01A

Client Sample ID: **OC-SB-416-13/14-XXX**

Lab Sample ID: 360-24173-5
Client Matrix: Solid
% Moisture: 6.9

Date Sampled: 08/18/2009 1105
Date Received: 08/18/2009 1900

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	5.0			Initial Weight/Volume:	1.71 g
Date Analyzed:	09/18/2009 1141			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		19000		4.1	16
Antimony		ND		1.1	3.1
Arsenic		2.2	J	0.57	6.3
Barium		34		0.41	3.1
Beryllium		0.47	J	0.16	1.3
Cadmium		0.51	J	0.044	1.3
Calcium		5600	~~B~~	16	63
Chromium		39		0.42	3.1
Cobalt		22		0.41	3.1
Copper		39		0.41	6.3
Iron		37000	~~B~~	5.0	31
Lead		0.57	J EB	0.36	3.1
Magnesium		15000	~~B~~	3.1	63
Manganese		460		0.42	6.3
Nickel		38		0.41	6.3
Potassium		770	J	200	1300
Selenium		ND		1.5	3.1
Silver		ND		0.32	3.1
Sodium		230	J	82	630
Thallium		ND		0.45	6.3
Vanadium		71		0.41	6.3
Zinc		39		3.7	16
Tin		12	J ~~B~~	2.0	31

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Client: Olin Corporation

Job Number: 360-24173-2
Sdg Number: OCRI-01A

Client Sample ID: **OC-SB-412-12/13-XXX**

Lab Sample ID: 360-24173-10
Client Matrix: Solid
% Moisture: 10.0

Date Sampled: 08/18/2009 1310
Date Received: 08/19/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49137		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.52 g
Date Analyzed:	09/17/2009 1608			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6800		0.95	3.7
Antimony		ND		0.26	0.73
Arsenic		2.1		0.13	1.5
Barium		46		0.095	0.73
Beryllium		0.14	J	0.037	0.29
Cadmium		0.19	J	0.010	0.29
Calcium		6300	~~B~~	3.7	15
Chromium		27		0.097	0.73
Cobalt		12		0.095	0.73
Copper		66		0.095	1.5
Iron		15000	~~B~~	1.2	7.3
Lead		3.6		0.084	0.73
Magnesium		2400	~~B~~	0.73	15
Manganese		95		0.098	1.5
Nickel		11		0.095	1.5
Potassium		680		46	290
Selenium		ND		0.34	0.73
Silver		0.076	J	0.074	0.73
Sodium		820		19	150
Thallium		ND		0.11	1.5
Vanadium		45		0.095	1.5
Zinc		17		0.86	3.7
Tin		9.1	J ~~B~~	0.47	7.3

3/30/10

Client: Olin Corporation

Job Number: 360-24173-2
Sdg Number: OCRI-01A

Client Sample ID: **OC-SB-420-12/14-XXX**

Lab Sample ID: 360-24173-13
Client Matrix: Solid
% Moisture: 6.8

Date Sampled: 08/18/2009 1625
Date Received: 08/19/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49137		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.69 g
Date Analyzed:	09/17/2009 1611			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10000		0.83	3.2
Antimony		ND		0.23	0.63
Arsenic		1.6		0.12	1.3
Barium		130		0.083	0.63
Beryllium		0.17	J	0.032	0.25
Cadmium		0.40		0.0089	0.25
Calcium		13000	B	3.2	13
Chromium		12		0.084	0.63
Cobalt		17		0.083	0.63
Copper		28		0.083	1.3
Iron		27000	B	1.0	6.3
Lead		ND		0.073	0.63
Magnesium		4400	B	0.63	13
Manganese		140		0.085	1.3
Nickel		13		0.083	1.3
Potassium		4600		40	250
Selenium		ND		0.30	0.63
Silver		1.6		0.064	0.63
Sodium		320		17	130
Thallium		ND		0.092	1.3
Vanadium		60		0.083	1.3
Zinc		56		0.75	3.2
Tin		2.6	J B ^	0.41	6.3

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Client: Olin Corporation

Job Number: 360-24173-2
Sdg Number: OCRI-01A

Client Sample ID: **OC-SB-423-13/14-XXX**

Lab Sample ID: 360-24173-16
Client Matrix: Solid
% Moisture: 6.4

Date Sampled: 08/18/2009 1445
Date Received: 08/19/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49137		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.65 g
Date Analyzed:	09/17/2009 1619			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		11000		0.84	3.2
Antimony		ND		0.23	0.65
Arsenic		1.8		0.12	1.3
Barium		54		0.084	0.65
Beryllium		0.27		0.032	0.26
Cadmium		0.41		0.0091	0.26
Calcium		7500	~~B~~	3.2	13
Chromium		17		0.086	0.65
Cobalt		21		0.084	0.65
Copper		21		0.084	1.3
Iron		23000	~~B~~	1.0	6.5
Lead		1.6 EB		0.074	0.65
Magnesium		5100	~~B~~	0.65	13
Manganese		150		0.086	1.3
Nickel		16		0.084	1.3
Potassium		2200		40	260
Selenium		ND		0.30	0.65
Silver		1.4		0.065	0.65
Sodium		250		17	130
Thallium		ND		0.094	1.3
Vanadium		47		0.084	1.3
Zinc		55		0.76	3.2
Tin		4.9	J ~~B~~ ^	0.41	6.5

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1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-405-0.0/1.0-XXX

Lab Sample ID: 360-24173-1

Lab Name: TestAmerica Westfield

Job No.: 360-24173-1

SDG ID.: OCRI-01

Matrix: Solid

Date Sampled: 08/18/2009 08:30

Reporting Basis: DRY

Date Received: 08/18/2009 19:00

% Solids: 94.2

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	4900	3.0	0.78	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.60	0.22	mg/Kg			1	6010B
7440-38-2	Arsenic	5.1	1.2	0.11	mg/Kg			1	6010B
7440-39-3	Barium	12	0.60	0.078	mg/Kg			1	6010B
7440-41-7	Beryllium	0.20	0.24	0.030	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.16	0.24	0.0084	mg/Kg	J	B	1	6010B
7440-70-2	Calcium	590	24	3.0	mg/Kg		B	1	6010B
7440-47-3	Chromium	7.0	0.60	0.080	mg/Kg			1	6010B
7440-48-4	Cobalt	3.2	0.60	0.078	mg/Kg			1	6010B
7440-50-8	Copper	5.9	1.2	0.078	mg/Kg		B	1	6010B
7439-89-6	Iron	7200	6.0	0.96	mg/Kg		B	1	6010B
7439-92-1	Lead	4.6	0.60	0.069	mg/Kg			1	6010B
7439-95-4	Magnesium	1100	12	0.60	mg/Kg		B	1	6010B
7439-96-5	Manganese	76	1.2	0.080	mg/Kg			1	6010B
7440-02-0	Nickel	7.0	1.2	0.078	mg/Kg		B	1	6010B
7440-09-7	Potassium	600	240	38	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.60	0.28	mg/Kg			1	6010B
7440-22-4	Silver	0.064	0.60	0.060	mg/Kg	J		1	6010B
7440-23-5	Sodium	ND	120	16	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.2	0.087	mg/Kg			1	6010B
7440-62-2	Vanadium	8.4	1.2	0.078	mg/Kg			1	6010B
7440-66-6	Zinc	14	3.0	0.71	mg/Kg			1	6010B
7440-31-5	Tin	2.7	6.0	0.38	mg/Kg	J	B	1	6010B
7439-97-6	Mercury	ND	0.17	0.031	mg/Kg			1	7471A

Calculations checked (cc'd)

[signature] (USC)

3/30/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-405-8.0/9.0-XXX
Lab Sample ID: 360-24173-3
Lab Name: TestAmerica Westfield
Job No.: 360-24173-1
SDG ID.: OCRI-01
Matrix: Solid
Date Sampled: 08/18/2009 08:45
Reporting Basis: DRY
Date Received: 08/18/2009 19:00
% Solids: 92.7

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	11000	2.9	0.76	mg/Kg			1	6010B
7440-36-0	Antimony	ND	2.9	1.1	mg/Kg			5	6010B
7440-38-2	Arsenic	4.3	1.2	0.11	mg/Kg			1	6010B
7440-39-3	Barium	47	0.58	0.076	mg/Kg			1	6010B
7440-41-7	Beryllium	0.29	0.23	0.029	mg/Kg			1	6010B
7440-43-9	Cadmium	0.31	0.23	0.0082	mg/Kg		B	1	6010B
7440-70-2	Calcium	3300	23	2.9	mg/Kg		B	1	6010B
7440-47-3	Chromium	21	0.58	0.078	mg/Kg			1	6010B
7440-48-4	Cobalt	14	0.58	0.076	mg/Kg			1	6010B
7440-50-8	Copper	33	1.2	0.076	mg/Kg		B	1	6010B
7439-89-6	Iron	19000	5.8	0.93	mg/Kg		B	1	6010B
7439-92-1	Lead	3.0	0.58	0.067	mg/Kg			1	6010B
7439-95-4	Magnesium	6700	12	0.58	mg/Kg		B	1	6010B
7439-96-5	Manganese	250	1.2	0.078	mg/Kg			1	6010B
7440-02-0	Nickel	16	1.2	0.076	mg/Kg		B	1	6010B
7440-09-7	Potassium	2400	230	36	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.58	0.27	mg/Kg			1	6010B
7440-22-4	Silver	0.071	0.58	0.059	mg/Kg	J		1	6010B
7440-23-5	Sodium	180	120	15	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.2	0.084	mg/Kg			1	6010B
7440-62-2	Vanadium	38	1.2	0.076	mg/Kg			1	6010B
7440-66-6	Zinc	26	2.9	0.69	mg/Kg			1	6010B
7440-31-5	Tin	7.6	5.8	0.37	mg/Kg		B	1	6010B
7439-97-6	Mercury	ND	0.14	0.025	mg/Kg			1	7471A

CCJ
3/3/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-416-0.0/1.0-XXX
Lab Sample ID: 360-24173-4
Lab Name: TestAmerica Westfield
Job No.: 360-24173-1
SDG ID.: OCRI-01
Matrix: Solid
Date Sampled: 08/18/2009 10:35
Reporting Basis: DRY
Date Received: 08/18/2009 19:00
% Solids: 96.8

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	4200	2.7	0.71	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.55	0.20	mg/Kg			1	6010B
7440-38-2	Arsenic	4.8	1.1	0.10	mg/Kg			1	6010B
7440-39-3	Barium	7.9	0.55	0.071	mg/Kg			1	6010B
7440-41-7	Beryllium	0.17	0.22	0.027	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.077	0.22	0.0077	mg/Kg	J	B	1	6010B
7440-70-2	Calcium	510	22	2.7	mg/Kg		B	1	6010B
7440-47-3	Chromium	7.5	0.55	0.073	mg/Kg			1	6010B
7440-48-4	Cobalt	2.1	0.55	0.071	mg/Kg			1	6010B
7440-50-8	Copper	2.7	1.1	0.071	mg/Kg		B	1	6010B
7439-89-6	Iron	5200	5.5	0.87	mg/Kg		B	1	6010B
7439-92-1	Lead	1.4	0.55	0.062	mg/Kg			1	6010B
7439-95-4	Magnesium	1200	11	0.55	mg/Kg		B	1	6010B
7439-96-5	Manganese	46	1.1	0.073	mg/Kg			1	6010B
7440-02-0	Nickel	5.4	1.1	0.071	mg/Kg		B	1	6010B
7440-09-7	Potassium	750	220	34	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.55	0.26	mg/Kg			1	6010B
7440-22-4	Silver	ND	0.55	0.055	mg/Kg			1	6010B
7440-23-5	Sodium	120	110	14	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.1	0.079	mg/Kg			1	6010B
7440-62-2	Vanadium	7.3	1.1	0.071	mg/Kg			1	6010B
7440-66-6	Zinc	9.0	2.7	0.64	mg/Kg			1	6010B
7440-31-5	Tin	2.8	5.5	0.35	mg/Kg	J	B	1	6010B
7439-97-6	Mercury	ND	0.17	0.031	mg/Kg			1	7471A

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3/30/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-416-8.0/9.0-XXX
Lab Sample ID: 360-24173-6
Lab Name: TestAmerica Westfield
Job No.: 360-24173-1
SDG ID.: OCRI-01
Matrix: Solid
Date Sampled: 08/18/2009 10:45
Reporting Basis: DRY
Date Received: 08/18/2009 19:00
% Solids: 93.6

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	8500	3.0	0.78	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.60	0.22	mg/Kg			1	6010B
7440-38-2	Arsenic	3.0	1.2	0.11	mg/Kg			1	6010B
7440-39-3	Barium	26	0.60	0.078	mg/Kg			1	6010B
7440-41-7	Beryllium	0.30	0.24	0.030	mg/Kg			1	6010B
7440-43-9	Cadmium	0.23	0.24	0.0084	mg/Kg	J	B	1	6010B
7440-70-2	Calcium	2300	24	3.0	mg/Kg		B	1	6010B
7440-47-3	Chromium	16	0.60	0.080	mg/Kg			1	6010B
7440-48-4	Cobalt	8.7	0.60	0.078	mg/Kg			1	6010B
7440-50-8	Copper	26	1.2	0.078	mg/Kg		B	1	6010B
7439-89-6	Iron	14000	6.0	0.96	mg/Kg		B	1	6010B
7439-92-1	Lead	2.3	0.60	0.069	mg/Kg			1	6010B
7439-95-4	Magnesium	4700	12	0.60	mg/Kg		B	1	6010B
7439-96-5	Manganese	150	1.2	0.080	mg/Kg			1	6010B
7440-02-0	Nickel	13	1.2	0.078	mg/Kg		B	1	6010B
7440-09-7	Potassium	1600	240	38	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.60	0.28	mg/Kg			1	6010B
7440-22-4	Silver	ND	0.60	0.060	mg/Kg			1	6010B
7440-23-5	Sodium	82	120	16	mg/Kg	J		1	6010B
7440-28-0	Thallium	ND	1.2	0.087	mg/Kg			1	6010B
7440-62-2	Vanadium	26	1.2	0.078	mg/Kg			1	6010B
7440-66-6	Zinc	26	3.0	0.71	mg/Kg			1	6010B
7440-31-5	Tin	5.6	6.0	0.38	mg/Kg	J	B	1	6010B
7439-97-6	Mercury	ND	0.19	0.035	mg/Kg			1	7471A

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1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-EBK-001
Lab Sample ID: 360-24173-8
Lab Name: TestAmerica Westfield
Job No.: 360-24173-1
SDG ID.: OCRI-01
Matrix: Water
Date Sampled: 08/18/2009 08:30
Reporting Basis: WET
Date Received: 08/18/2009 19:00

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	ND	100	39	ug/L			1	6010B
7440-36-0	Antimony	ND	6.0	2.9	ug/L			1	6010B
7440-39-3	Barium	3.3	10	2.0	ug/L	J		1	6010B
7440-38-2	Arsenic	ND	10	2.3	ug/L			1	6010B
7440-41-7	Beryllium	ND	1.0	0.20	ug/L			1	6010B
7440-43-9	Cadmium	ND	1.0	0.20	ug/L			1	6010B
7440-70-2	Calcium	94	400	59	ug/L	J		1	6010B
7440-47-3	Chromium	ND	5.0	1.3	ug/L			1	6010B
7440-48-4	Cobalt	ND	10	2.0	ug/L			1	6010B
7440-50-8	Copper	55	10	1.7	ug/L			1	6010B
7439-89-6	Iron	ND	100	34	ug/L			1	6010B
7439-92-1	Lead	12	5.0	1.3	ug/L			1	6010B
7439-95-4	Magnesium	ND	400	50	ug/L			1	6010B
7439-96-5	Manganese	1.5	10	1.3	ug/L	J		1	6010B
7440-02-0	Nickel	1.7	10	1.5	ug/L	J		1	6010B
7440-09-7	Potassium	ND	4000	500	ug/L			1	6010B
7782-49-2	Selenium	ND	10	2.7	ug/L			1	6010B
7440-22-4	Silver	ND	5.0	1.8	ug/L			1	6010B
7440-23-5	Sodium	ND	2000	250	ug/L			1	6010B
7440-31-5	Tin	ND	50	7.0	ug/L			1	6010B
7440-62-2	Vanadium	ND	10	1.5	ug/L			1	6010B
7440-28-0	Thallium	ND	10	1.4	ug/L			1	6010B
7440-66-6	Zinc	22	50	10	ug/L	J		1	6010B
7439-97-6	Mercury	ND	0.20	0.065	ug/L			1	7470A

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(w)
3/30/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-412-0.0/1.0-XXX
Lab Sample ID: 360-24173-9
Lab Name: TestAmerica Westfield
Job No.: 360-24173-1
SDG ID.: OCRI-01
Matrix: Solid
Date Sampled: 08/18/2009 12:45
Reporting Basis: DRY
Date Received: 08/19/2009 17:00
% Solids: 96.7

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	3500	2.9	0.74	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.57	0.21	mg/Kg			1	6010B
7440-38-2	Arsenic	3.3	1.1	0.10	mg/Kg			1	6010B
7440-39-3	Barium	5.5	0.57	0.074	mg/Kg			1	6010B
7440-41-7	Beryllium	0.15	0.23	0.029	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.066	0.23	0.0080	mg/Kg	J	B	1	6010B
7440-70-2	Calcium	540	23	2.9	mg/Kg		B	1	6010B
7440-47-3	Chromium	22	0.57	0.076	mg/Kg			1	6010B
7440-48-4	Cobalt	1.9	0.57	0.074	mg/Kg			1	6010B
7440-50-8	Copper	2.7	1.1	0.074	mg/Kg		B	1	6010B
7439-89-6	Iron	4200	5.7	0.91	mg/Kg		B	1	6010B
7439-92-1	Lead	1.4	0.57	0.065	mg/Kg			1	6010B
7439-95-4	Magnesium	850	11	0.57	mg/Kg		B	1	6010B
7439-96-5	Manganese	42	1.1	0.076	mg/Kg			1	6010B
7440-02-0	Nickel	4.3	1.1	0.074	mg/Kg		B	1	6010B
7440-09-7	Potassium	530	230	36	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.57	0.27	mg/Kg			1	6010B
7440-22-4	Silver	0.22	0.57	0.057	mg/Kg	J		1	6010B
7440-23-5	Sodium	86	110	15	mg/Kg	J		1	6010B
7440-28-0	Thallium	ND	1.1	0.083	mg/Kg			1	6010B
7440-62-2	Vanadium	5.2	1.1	0.074	mg/Kg			1	6010B
7440-66-6	Zinc	6.9	2.9	0.67	mg/Kg			1	6010B
7440-31-5	Tin	8.8	5.7	0.37	mg/Kg		B	1	6010B
7439-97-6	Mercury	ND	0.13	0.024	mg/Kg			1	7471A

ccld
3/30/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-412-6.0/7.0-XXX
Lab Sample ID: 360-24173-11
Lab Name: TestAmerica Westfield
Job No.: 360-24173-1
SDG ID.: OCRI-01
Matrix: Solid
Date Sampled: 08/18/2009 12:55
Reporting Basis: DRY
Date Received: 08/19/2009 17:00
% Solids: 86.5

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	3800	3.1	0.82	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.63	0.23	mg/Kg			1	6010B
7440-38-2	Arsenic	3.0	1.3	0.11	mg/Kg			1	6010B
7440-39-3	Barium	8.2	0.63	0.082	mg/Kg			1	6010B
7440-41-7	Beryllium	0.095	0.25	0.031	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.081	0.25	0.0088	mg/Kg	J	B	1	6010B
7440-70-2	Calcium	630	25	3.1	mg/Kg		B	1	6010B
7440-47-3	Chromium	21	0.63	0.084	mg/Kg			1	6010B
7440-48-4	Cobalt	1.8	0.63	0.082	mg/Kg			1	6010B
7440-50-8	Copper	4.9	1.3	0.082	mg/Kg		B	1	6010B
7439-89-6	Iron	5000	6.3	1.0	mg/Kg		B	1	6010B
7439-92-1	Lead	18	0.63	0.072	mg/Kg			1	6010B
7439-95-4	Magnesium	1100	13	0.63	mg/Kg		B	1	6010B
7439-96-5	Manganese	40	1.3	0.084	mg/Kg			1	6010B
7440-02-0	Nickel	4.7	1.3	0.082	mg/Kg		B	1	6010B
7440-09-7	Potassium	550	250	39	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.63	0.29	mg/Kg			1	6010B
7440-22-4	Silver	0.28	0.63	0.063	mg/Kg	J		1	6010B
7440-23-5	Sodium	ND	130	16	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.3	0.091	mg/Kg			1	6010B
7440-62-2	Vanadium	6.8	1.3	0.082	mg/Kg			1	6010B
7440-66-6	Zinc	8.2	3.1	0.74	mg/Kg			1	6010B
7440-31-5	Tin	8.7	6.3	0.40	mg/Kg		B	1	6010B
7439-97-6	Mercury	ND	0.18	0.033	mg/Kg			1	7471A

ccld
3/30/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-420-0.0/1.0-XXX
Lab Sample ID: 360-24173-12
Lab Name: TestAmerica Westfield
Job No.: 360-24173-1
SDG ID.: OCRI-01
Matrix: Solid
Date Sampled: 08/18/2009 15:55
Reporting Basis: DRY
Date Received: 08/19/2009 17:00
% Solids: 96.3

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	5700	2.9	0.74	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.57	0.21	mg/Kg			1	6010B
7440-38-2	Arsenic	5.0	1.1	0.10	mg/Kg			1	6010B
7440-39-3	Barium	77	0.57	0.074	mg/Kg			1	6010B
7440-41-7	Beryllium	0.23	0.23	0.029	mg/Kg			1	6010B
7440-43-9	Cadmium	0.27	0.23	0.0080	mg/Kg		B	1	6010B
7440-70-2	Calcium	28000	110	14	mg/Kg		B	5	6010B
7440-47-3	Chromium	15	0.57	0.076	mg/Kg			1	6010B
7440-48-4	Cobalt	2.9	0.57	0.074	mg/Kg			1	6010B
7440-50-8	Copper	7.1	1.1	0.074	mg/Kg		B	1	6010B
7439-89-6	Iron	9500	5.7	0.91	mg/Kg		B	1	6010B
7439-92-1	Lead	12	0.57	0.065	mg/Kg			1	6010B
7439-95-4	Magnesium	2000	11	0.57	mg/Kg		B	1	6010B
7439-96-5	Manganese	110	1.1	0.076	mg/Kg			1	6010B
7440-02-0	Nickel	7.9	1.1	0.074	mg/Kg		B	1	6010B
7440-09-7	Potassium	1100	230	36	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.57	0.27	mg/Kg			1	6010B
7440-22-4	Silver	ND	0.57	0.057	mg/Kg			1	6010B
7440-23-5	Sodium	280	110	15	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.1	0.083	mg/Kg			1	6010B
7440-62-2	Vanadium	9.3	1.1	0.074	mg/Kg			1	6010B
7440-66-6	Zinc	34	2.9	0.67	mg/Kg			1	6010B
7440-31-5	Tin	5.8	5.7	0.37	mg/Kg		B	1	6010B
7439-97-6	Mercury	0.061	0.13	0.024	mg/Kg	J		1	7471A

CC'd
(w)
3/30/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-420-6.5/8.5-XXX
Lab Sample ID: 360-24173-14
Lab Name: TestAmerica Westfield
Job No.: 360-24173-1
SDG ID.: OCRI-01
Matrix: Solid
Date Sampled: 08/18/2009 16:10
Reporting Basis: DRY
Date Received: 08/19/2009 17:00
% Solids: 92.3

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	10000	3.3	0.86	mg/Kg			1	6010B
7440-36-0	Antimony	0.35	0.66	0.24	mg/Kg	J		1	6010B
7440-38-2	Arsenic	2.9	1.3	0.12	mg/Kg			1	6010B
7440-39-3	Barium	47	0.66	0.086	mg/Kg			1	6010B
7440-41-7	Beryllium	0.35	0.27	0.033	mg/Kg			1	6010B
7440-43-9	Cadmium	0.27	0.27	0.0093	mg/Kg		B	1	6010B
7440-70-2	Calcium	2600	27	3.3	mg/Kg		B	1	6010B
7440-47-3	Chromium	18	0.66	0.088	mg/Kg			1	6010B
7440-48-4	Cobalt	10	0.66	0.086	mg/Kg			1	6010B
7440-50-8	Copper	25	1.3	0.086	mg/Kg		B	1	6010B
7439-89-6	Iron	16000	6.6	1.1	mg/Kg		B	1	6010B
7439-92-1	Lead	2.1	0.66	0.076	mg/Kg			1	6010B
7439-95-4	Magnesium	5200	13	0.66	mg/Kg		B	1	6010B
7439-96-5	Manganese	150	1.3	0.089	mg/Kg			1	6010B
7440-02-0	Nickel	17	1.3	0.086	mg/Kg		B	1	6010B
7440-09-7	Potassium	2200	270	42	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.66	0.31	mg/Kg			1	6010B
7440-22-4	Silver	ND	0.66	0.067	mg/Kg			1	6010B
7440-23-5	Sodium	120	130	17	mg/Kg	J		1	6010B
7440-28-0	Thallium	0.15	1.3	0.096	mg/Kg	J		1	6010B
7440-62-2	Vanadium	28	1.3	0.086	mg/Kg			1	6010B
7440-66-6	Zinc	25	3.3	0.78	mg/Kg			1	6010B
7440-31-5	Tin	6.0	6.6	0.43	mg/Kg	J	B	1	6010B
7439-97-6	Mercury	ND	0.15	0.028	mg/Kg			1	7471A

cc'd
(W)
3/30/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-423-0.0/1.0-XXX

Lab Sample ID: 360-24173-15

Lab Name: TestAmerica Westfield

Job No.: 360-24173-1

SDG ID.: OCRI-01

Matrix: Solid

Date Sampled: 08/18/2009 14:20

Reporting Basis: DRY

Date Received: 08/19/2009 17:00

% Solids: 95.1

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	4100	2.6	0.69	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.53	0.19	mg/Kg			1	6010B
7440-38-2	Arsenic	4.3	1.1	0.096	mg/Kg			1	6010B
7440-39-3	Barium	8.3	0.53	0.069	mg/Kg			1	6010B
7440-41-7	Beryllium	0.17	0.21	0.026	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.091	0.21	0.0074	mg/Kg	J	B	1	6010B
7440-70-2	Calcium	730	21	2.6	mg/Kg		B	1	6010B
7440-47-3	Chromium	15	0.53	0.070	mg/Kg			1	6010B
7440-48-4	Cobalt	2.2	0.53	0.069	mg/Kg			1	6010B
7440-50-8	Copper	4.3	1.1	0.069	mg/Kg		B	1	6010B
7439-89-6	Iron	5300	5.3	0.84	mg/Kg		B	1	6010B
7439-92-1	Lead	2.8	0.53	0.060	mg/Kg			1	6010B
7439-95-4	Magnesium	1100	11	0.53	mg/Kg		B	1	6010B
7439-96-5	Manganese	68	1.1	0.071	mg/Kg			1	6010B
7440-02-0	Nickel	4.9	1.1	0.069	mg/Kg		B	1	6010B
7440-09-7	Potassium	580	210	33	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.53	0.25	mg/Kg			1	6010B
7440-22-4	Silver	0.087	0.53	0.053	mg/Kg	J		1	6010B
7440-23-5	Sodium	20	110	14	mg/Kg	J		1	6010B
7440-28-0	Thallium	0.11	1.1	0.076	mg/Kg	J		1	6010B
7440-62-2	Vanadium	7.4	1.1	0.069	mg/Kg			1	6010B
7440-66-6	Zinc	9.9	2.6	0.62	mg/Kg			1	6010B
7440-31-5	Tin	5.8	5.3	0.34	mg/Kg		B	1	6010B
7439-97-6	Mercury	ND	0.18	0.033	mg/Kg			1	7471A

cc'd
W
3/30/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-423-5.0/6.0-XXX
Lab Sample ID: 360-24173-17
Lab Name: TestAmerica Westfield
Job No.: 360-24173-1
SDG ID.: OCRI-01
Matrix: Solid
Date Sampled: 08/18/2009 14:30
Reporting Basis: DRY
Date Received: 08/19/2009 17:00
% Solids: 93.4

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	6500	2.8	0.72	mg/Kg			1	6010B
7440-36-0	Antimony	0.26	0.55	0.20	mg/Kg	J		1	6010B
7440-38-2	Arsenic	2.4	1.1	0.10	mg/Kg			1	6010B
7440-39-3	Barium	15	0.55	0.072	mg/Kg			1	6010B
7440-41-7	Beryllium	0.13	0.22	0.028	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.19	0.22	0.0077	mg/Kg	J	B	1	6010B
7440-70-2	Calcium	3800	22	2.8	mg/Kg		B	1	6010B
7440-47-3	Chromium	33	0.55	0.073	mg/Kg			1	6010B
7440-48-4	Cobalt	8.4	0.55	0.072	mg/Kg			1	6010B
7440-50-8	Copper	36	1.1	0.072	mg/Kg		B	1	6010B
7439-89-6	Iron	12000	5.5	0.88	mg/Kg		B	1	6010B
7439-92-1	Lead	1.7	0.55	0.063	mg/Kg			1	6010B
7439-95-4	Magnesium	2700	11	0.55	mg/Kg		B	1	6010B
7439-96-5	Manganese	88	1.1	0.074	mg/Kg			1	6010B
7440-02-0	Nickel	12	1.1	0.072	mg/Kg		B	1	6010B
7440-09-7	Potassium	930	220	34	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.55	0.26	mg/Kg			1	6010B
7440-22-4	Silver	0.26	0.55	0.056	mg/Kg	J		1	6010B
7440-23-5	Sodium	380	110	14	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.1	0.080	mg/Kg			1	6010B
7440-62-2	Vanadium	28	1.1	0.072	mg/Kg			1	6010B
7440-66-6	Zinc	13	2.8	0.65	mg/Kg			1	6010B
7440-31-5	Tin	13	5.5	0.35	mg/Kg		B	1	6010B
7439-97-6	Mercury	ND	0.15	0.027	mg/Kg			1	7471A

cc'd
(w)
3/30/10

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

ICV Source: ICV1 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	ICV 360-48003/6 08/20/2009 09:36				CCV 360-48003/13 08/20/2009 09:57				CCV 360-48003/19 08/20/2009 13:46			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Ag	1020		1000	102	993		1000	99	947		1000	95
Al	988		1000	99	4970		5000	99	4700		5000	94
As	976		1000	98	999		1000	100	937		1000	94
Ba	984		1000	98	991		1000	99	944		1000	94
Be	987		1000	99	995		1000	100	950		1000	95
Cd	990		1000	99	995		1000	100	952		1000	95
Co	992		1000	99	994		1000	99	949		1000	95
Cr	978		1000	98	995		1000	99	951		1000	95
Cu	969		1000	97	984		1000	98	936		1000	94
Fe	979		1000	98	4970		5000	99	4820		5000	96
Mn	990		1000	99	994		1000	99	948		1000	95
Ni	989		1000	99	995		1000	100	954		1000	95
Pb	993		1000	99	995		1000	99	950		1000	95
Se	994		1000	99	998		1000	100	931		1000	93
Tl	988		1000	99	996		1000	100	953		1000	95
V	988		1000	99	994		1000	99	946		1000	95
Zn	997		1000	100	996		1000	100	955		1000	96
Sb	942		1000	94	992		1000	99	935		1000	94

cdd
3/30/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

ICV Source: ICV1 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	ICV 360-48034/6 08/21/2009 09:23				CCV 360-48034/13 08/21/2009 10:49				CCV 360-48034/25 08/21/2009 11:23			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Sb	952		1000	95	996		1000	100	999		1000	100
Ag	1030		1000	103	995		1000	99	1000		1000	100
Al	994		1000	99	4950		5000	99	4990		5000	100
As	984		1000	98	998		1000	100	1000		1000	100
Ba	992		1000	99	990		1000	99	998		1000	100
Be	995		1000	100	995		1000	99	1000		1000	100
Cd	995		1000	99	992		1000	99	1000		1000	100
Co	997		1000	100	992		1000	99	1000		1000	100
Cr	985		1000	98	993		1000	99	1000		1000	100
Cu	990		1000	99	993		1000	99	996		1000	100
Fe	982		1000	98	4970		5000	99	5060		5000	101
K	9320		10000	93	19200		20000	96	19300		20000	96
Mn	996		1000	100	992		1000	99	999		1000	100
Ni	998		1000	100	986		1000	99	1000		1000	100
Pb	997		1000	100	992		1000	99	1000		1000	100
Se	1000		1000	100	995		1000	100	995		1000	100
Tl	987		1000	99	992		1000	99	1000		1000	100
V	995		1000	100	992		1000	99	1000		1000	100
Zn	1000		1000	100	992		1000	99	1000		1000	100

cc'd
3/30/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

ICV Source: ICV2 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	ICV 360-48034/6 08/21/2009 09:23				CCV 360-48034/13 08/21/2009 10:49				CCV 360-48034/25 08/21/2009 11:23			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Ca	9960		10000	100	19800		20000	99	20000		20000	100
Mg	9850		10000	98	19900		20000	99	20000		20000	100
Na	9210		10000	92	19800		20000	99	20000		20000	100
Sn	987		1000	99	992		1000	99	1000		1000	100

CCB
3/30/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

ICV Source: ICV2 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	ICV 360-48048/6 08/21/2009 09:23				CCV 360-48048/13 08/21/2009 10:49				CCV 360-48048/20 08/21/2009 14:54			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Ca	9960		10000	100	19800		20000	99	19000		20000	95
Mg	9850		10000	98	19900		20000	99	18900		20000	95
Na	9210		10000	92	19800		20000	99	19000		20000	95
Sn	987		1000	99	992		1000	99	949		1000	95

CCld
3/30/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

ICV Source: METHG1mg/L_00509 Concentration Units: ug/L

CCV Source: METHG1mg/L_00509

Analyte	ICV 360-48028/19 08/21/2009 11:33				CCV 360-48028/30 08/21/2009 11:55				CCV 360-48028/42 08/21/2009 12:19			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Hg	5.02		5.00	100	4.95		5.00	99	5.07		5.00	101

rc'd
3/30/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

ICV Source: METHG1mg/L_00509 Concentration Units: ug/L

CCV Source: METHG1mg/L_00509

Analyte	ICV 360-48038/15 08/21/2009 14:12				CCV 360-48038/28 08/21/2009 14:40				CCV 360-48038/40 08/21/2009 15:02			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Hg	5.11		5.00	102	5.43		5.00	109	5.36		5.00	107

cc'd
3/30/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Analysis Method: 6010B Instrument ID: Varian ICP

Lab Sample ID: CRI 360-48003/8 Concentration Units: ug/L

CRQL Check Standard Source: CRI-RL ICP_00004

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	100	104		104	70-130
Antimony	10.0	11.1		111	70-130
Arsenic	10.0	10.4		104	70-130
Barium	10.0	11.0		110	70-130
Beryllium	1.00	1.01		101	70-130
Cadmium	1.00	0.995	J	100	70-130
Calcium	400	414		103	70-130
Chromium	5.00	5.25		105	70-130
Cobalt	10.0	10.8		108	70-130
Copper	10.0	11.5		115	70-130
Iron	100	106		106	70-130
Lead	5.00	4.37	J	87	70-130
Magnesium	400	417		104	70-130
Manganese	10.0	10.6		106	70-130
Nickel	10.0	10.8		108	70-130
Potassium	4000	3360	J	84	70-130
Selenium	10.0	11.8		118	70-130
Silver	5.00	4.61	J	92	70-130
Sodium	2000	2010		101	70-130
Vanadium	10.0	10.2		102	70-130
Thallium	10.0	10.6		106	70-130
Tin	50.0	29.1	J	58	70-130
Zinc	50.0	52.3		105	70-130

Lab Sample ID: CRI 360-48003/9 Concentration Units: ug/L

CRQL Check Standard Source: CRI-MCPICP_00006

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Antimony	6.00	6.89	J	115	70-130
Arsenic	50.0	49.8		100	70-130
Barium	2000	2110		105	70-130
Beryllium	4.00	4.09		102	70-130
Cadmium	5.00	5.09		102	70-130
Chromium	100	105		105	70-130
Lead	15.0	15.7		105	70-130

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

FORM IIB-IN

ccd 3/30/10

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Analysis Method: 6010B Instrument ID: Varian ICP

Lab Sample ID: CRI 360-48003/9 Concentration Units: ug/L

CRQL Check Standard Source: CRI-MCPICP_00006

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Nickel	100	108		108	70-130
Selenium	50.0	50.7		101	70-130
Silver	7.00	7.09		101	70-130
Vanadium	50.0	51.1		102	70-130
Thallium	2.00	1.62	J	81	70-130
Zinc	900	933		104	70-130

Lab Sample ID: CRI 360-48034/8 Concentration Units: ug/L

CRQL Check Standard Source: CRI-RL ICP_00004

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	100	105		105	70-130
Antimony	10.0	11.9		119	70-130
Arsenic	10.0	10.2		102	70-130
Barium	10.0	11.1		111	70-130
Beryllium	1.00	1.01		101	70-130
Cadmium	1.00	1.02		102	70-130
Calcium	400	416		104	70-130
Chromium	5.00	5.15		103	70-130
Cobalt	10.0	10.6		106	70-130
Copper	10.0	11.7		117	70-130
Iron	100	106		106	70-130
Lead	5.00	5.08		102	70-130
Magnesium	400	418		104	70-130
Manganese	10.0	10.7		107	70-130
Nickel	10.0	10.6		106	70-130
Potassium	4000	3130	J	78	70-130
Selenium	10.0	10.8		108	70-130
Silver	5.00	3.77	J	75	70-130
Sodium	2000	2030		101	70-130
Vanadium	10.0	10.3		103	70-130
Thallium	10.0	8.15	J	82	70-130
Tin	50.0	31.7	J	63	70-130
Zinc	50.0	52.5		105	70-130

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

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Analysis Method: 6010B Instrument ID: Varian ICP

Lab Sample ID: CRI 360-48048/8 Concentration Units: ug/L

CRQL Check Standard Source: CRI-RL ICP_00004

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	100	105		105	70-130
Antimony	10.0	11.9		119	70-130
Arsenic	10.0	10.2		102	70-130
Barium	10.0	11.1		111	70-130
Beryllium	1.00	1.01		101	70-130
Cadmium	1.00	1.02		102	70-130
Calcium	400	416		104	70-130
Chromium	5.00	5.15		103	70-130
Cobalt	10.0	10.6		106	70-130
Copper	10.0	11.7		117	70-130
Iron	100	106		106	70-130
Lead	5.00	5.08		102	70-130
Magnesium	400	418		104	70-130
Manganese	10.0	10.7		107	70-130
Nickel	10.0	10.6		106	70-130
Potassium	4000	3130	J	78	70-130
Selenium	10.0	10.8		108	70-130
Silver	5.00	3.77	J	75	70-130
Sodium	2000	2030		101	70-130
Vanadium	10.0	10.3		103	70-130
Thallium	10.0	8.15	J	82	70-130
Tin	50.0	31.7	J	63	70-130
Zinc	50.0	52.5		105	70-130

Lab Sample ID: CRI 360-48034/9 Concentration Units: ug/L

CRQL Check Standard Source: CRI-MCPICP_00006

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Arsenic	50.0	50.2		100	70-130
Barium	2000	2120		106	70-130
Beryllium	4.00	4.11		103	70-130
Cadmium	5.00	5.16		103	70-130
Chromium	100	106		106	70-130
Lead	15.0	16.5		110	70-130
Nickel	100	108		108	70-130

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

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Analysis Method: 6010B Instrument ID: Varian ICP

Lab Sample ID: CRI 360-48048/19 Concentration Units: ug/L

CRQL Check Standard Source: CRI-MCPICP_00006

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Antimony	6.00	6.90		115	70-130

Lab Sample ID: CRI 360-48083/8 Concentration Units: ug/L

CRQL Check Standard Source: CRI-RL ICP_00004

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	100	103		103	70-130
Antimony	10.0	11.3		113	70-130
Arsenic	10.0	11.0		110	70-130
Barium	10.0	11.0		110	70-130
Beryllium	1.00	0.996	J	100	70-130
Cadmium	1.00	1.00		100	70-130
Calcium	400	410		103	70-130
Chromium	5.00	5.27		105	70-130
Cobalt	10.0	10.4		104	70-130
Copper	10.0	11.7		117	70-130
Iron	100	106		106	70-130
Lead	5.00	5.75		115	70-130
Magnesium	400	416		104	70-130
Manganese	10.0	10.6		106	70-130
Nickel	10.0	11.1		111	70-130
Potassium	4000	3330	J	83	70-130
Selenium	10.0	11.6		116	70-130
Sodium	2000	1940	J	97	70-130
Vanadium	10.0	10.1		101	70-130
Thallium	10.0	11.3		113	70-130
Tin	50.0	28.6	J	57	70-130
Zinc	50.0	52.2		104	70-130

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

FORM IIB-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Lab Sample ID: ICSA 360-48003/10 Instrument ID: Varian ICP

Lab File ID: ICS Source: ICSA wk_00004

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Ag		0.946	
Al	100000	110367	110
As		0.456	
Ba		0.448	
Be		0.0107	
Ca	100000	106411	106
Cd		0.478	
Co		1.83	
Cr		0.529	
Cu		0.933	
Fe	40000	42289	106
K		2232	
Mg	100000	107531	108
Mn		3.33	
Na		147	
Ni		5.33	
Pb		-1.78	
Se		-1.89	
Sn		0.597	
Tl		-0.522	
V		1.47	
Zn		1.39	
B		*6.02*	
Li		*1.34*	
Mo		*1.14*	
Sb		*-0.622*	
Si		*-1.80*	
Si		*0.288*	
SiO2		*-3.85*	
Sr		*0.607*	
Ti		*1.67*	
Zr		*0.561*	

ccld
3/30/10

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Lab Sample ID: ICSAB 360-48003/11 Instrument ID: Varian ICP

Lab File ID: ICS Source: ICSAB_00008

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Ag	600	629	105
Al	100000	108796	109
As	2000	1959	98
Ba	600	582	97
Be	200	191	95
Ca	100000	104358	104
Cd	600	568	95
Co	600	570	95
Cr	600	564	94
Cu	600	592	99
Fe	40000	41651	104
K	40000	41291	103
Mg	100000	104770	105
Mn	400	381	95
Na		24.8	
Ni	600	575	96
Pb	2000	1860	93
Se	1000	966	97
Sn		261	
Tl	2000	1853	93
V	600	583	97
Zn	600	550	92
B		*5.12*	
Li		*1.41*	
Mo		*0.575*	
Sb		*921*	
Si		*-1.51*	
Si		*0.284*	
SiO2		*-3.24*	
Sr		*0.636*	
Ti		*1.61*	
Zr		*1.62*	

cc
3/30/10

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

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-SB-405-0.0/1.0-XXX MS

Lab ID: 360-24173-1 MS

Lab Name: TestAmerica Westfield

Job No.: 360-24173-1

SDG No.: OCRI-01

Matrix: Solid

Concentration Units: mg/Kg

% Solids: 94.2

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Mercury	1.24		ND		1.11	112	75-125		7471A

SSR = Spiked Sample Result

ccd
3/30/10

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-EBK-001 MS
Lab ID: 360-24173-8 MS
Lab Name: TestAmerica Westfield
Job No.: 360-24173-1
SDG No.: OCRI-01
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Mercury	5.71		ND		5.00	114	75-125		7470A

SSR = Spiked Sample Result

CCJ
3/30/10

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

FORM VA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 360-47961/2-A

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

Sample Matrix: Solid LCS Source: stlma-3_00038

Analyte	Solid(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	250	223		89	80	120		6010B
Arsenic	50.0	44.5		89	80	120		6010B
Barium	50.0	45.5		91	80	120		6010B
Beryllium	50.0	45.0		90	80	120		6010B
Cadmium	50.0	45.1		90	80	120		6010B
Calcium	1000	921		92	80	120		6010B
Chromium	50.0	45.9		92	80	120		6010B
Cobalt	50.0	45.4		91	80	120		6010B
Copper	50.0	45.3		91	80	120		6010B
Iron	250	234		93	80	120		6010B
Lead	50.0	45.1		90	80	120		6010B
Magnesium	1000	894		89	80	120		6010B
Manganese	50.0	45.6		91	80	120		6010B
Nickel	50.0	45.7		91	80	120		6010B
Potassium	1000	863		86	80	120		6010B
Selenium	50.0	43.8		88	80	120		6010B
Silver	50.0	46.4		93	80	120		6010B
Sodium	1000	888		89	80	120		6010B
Vanadium	50.0	45.6		91	80	120		6010B
Thallium	50.0	44.7		89	80	120		6010B
Tin	50.0	44.2		88	80	120		6010B
Zinc	50.0	45.4		91	80	120		6010B

ccd
3/30/10

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

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 360-47961/2-A

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

Sample Matrix: Solid LCS Source: stlma2_00034

Analyte	Solid(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Antimony	50.0	44.5		89	80	120		6010B

coll.
W
7/30/10

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

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 360-48012/2-A

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

Sample Matrix: Water LCS Source: METHG1mg/L_00509

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Mercury	5.00	5.63		113	80	120		7470A

ccl
(W)
3/30/10

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

FORM VIIA - IN

7D-IN
LAB CONTROL SAMPLE DUPLICATE
METALS

Lab ID: LCSD 360-48012/3-A

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

Sample Matrix: Water LCS Source: METHG1mg/L_00509

Analyte	(SDR)	C	Spike Added	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Mercury	5.59		5.00	112	80-120	1	20		7470A

ccld
(W)
3/30/10

SDR = Spike Duplicate Results
Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIID - IN

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Preparation Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 360-47961/1-A	08/20/2009 09:12	47961	2.0		100
LCS 360-47961/2-A	08/20/2009 09:12	47961	2.0		100
LCSD 360-47961/3-A	08/20/2009 09:12	47961	2.0		100
360-24173-1	08/20/2009 09:12	47961	1.77		100
360-24173-3	08/20/2009 09:12	47961	1.85		100
360-24173-4	08/20/2009 09:12	47961	1.89		100
360-24173-6	08/20/2009 09:12	47961	1.78		100
360-24173-9	08/20/2009 09:12	47961	1.81		100
360-24173-11	08/20/2009 09:12	47961	1.84		100
360-24173-12	08/20/2009 09:12	47961	1.82		100
360-24173-14	08/20/2009 09:12	47961	1.63		100
360-24173-15	08/20/2009 09:12	47961	1.99		100
360-24173-17	08/20/2009 09:12	47961	1.94		100

	(mg/kg)	AL
Cd	0.00973	0.04865
Ca	14.2	71
Cu	0.0775	0.3875
Fe	1.90	9.5
Mg	2.40	12
Ni	0.276	1.38
Sn	0.444	2.22

FORM XII-IN

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Concentration Units: mg/Kg Lab Sample ID: MB 360-47961/1-A

Instrument Code: Varian ICP Batch No.: 48003

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	ND			6010B
7440-38-2	Arsenic	ND			6010B
7440-39-3	Barium	ND			6010B
7440-41-7	Beryllium	ND			6010B
7440-43-9	Cadmium	0.00973	J		6010B
7440-70-2	Calcium	14.2	J		6010B
7440-47-3	Chromium	ND			6010B
7440-48-4	Cobalt	ND			6010B
7440-50-8	Copper	0.0775	J		6010B
7439-89-6	Iron	1.90	J		6010B
7439-92-1	Lead	ND			6010B
7439-95-4	Magnesium	2.40	J		6010B
7439-96-5	Manganese	ND			6010B
7440-02-0	Nickel	0.276	J		6010B
7440-09-7	Potassium	ND			6010B
7782-49-2	Selenium	ND			6010B
7440-22-4	Silver	ND			6010B
7440-23-5	Sodium	ND			6010B
7440-62-2	Vanadium	ND			6010B
7440-28-0	Thallium	ND			6010B
7440-31-5	Tin	0.444	J		6010B
7440-66-6	Zinc	ND			6010B

FORM III-IN

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Concentration Units: mg/Kg Lab Sample ID: MB 360-47961/1-A

Instrument Code: Varian ICP Batch No.: 48034

CAS No.	Analyte	Concentration	C	Q	Method
7440-36-0	Antimony	ND			6010B

FORM III-IN

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Preparation Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 360-48006/1-A	08/21/2009 07:09	48006		50	50
LCS 360-48006/2-A	08/21/2009 07:09	48006		50	50
LCSD 360-48006/3-A	08/21/2009 07:09	48006		50	50
360-24173-8 EB	08/21/2009 07:09	48006		50	50

MB	ug/L
Arsenic	2.6
Se	3.24

FORM XII-IN

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Concentration Units: ug/L Lab Sample ID: MB 360-48006/1-A

Instrument Code: Varian ICP Batch No.: 48048

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	ND			6010B
7440-36-0	Antimony	~~ND~~			6010B
7440-38-2	Arsenic	2.60	J		6010B
7440-39-3	Barium	ND			6010B
7440-41-7	Beryllium	ND			6010B
7440-43-9	Cadmium	ND			6010B
7440-70-2	Calcium	ND			6010B
7440-47-3	Chromium	ND			6010B
7440-48-4	Cobalt	ND			6010B
7440-50-8	Copper	ND			6010B
7439-89-6	Iron	ND			6010B
7439-92-1	Lead	ND			6010B
7439-95-4	Magnesium	ND			6010B
7439-96-5	Manganese	ND			6010B
7440-02-0	Nickel	ND			6010B
7440-09-7	Potassium	~~ND~~		^	6010B
7782-49-2	Selenium	3.24	J		6010B
7440-22-4	Silver	ND			6010B
7440-23-5	Sodium	ND			6010B
7440-62-2	Vanadium	ND			6010B
7440-28-0	Thallium	ND			6010B
7440-31-5	Tin	ND			6010B
7440-66-6	Zinc	ND			6010B

FORM III-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Instrument ID: Varian ICP Method: 6010B

Start Date: 08/20/2009 09:22 End Date: 08/20/2009 15:35

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Se	Sn	Tl
ZZZZZZ			09:22																				
ZZZZZZ			09:25																				
ZZZZZZ			09:28																				
ZZZZZZ			09:31																				
ZZZZZZ			09:33																				
ICV 360-48003/6	1		09:36	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
ICB 360-48003/7	1		09:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-48003/8	1		09:42	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-48003/9	1		09:45	X		X	X	X		X		X							X	X	X		X
ICSA 360-48003/10	1		09:48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-48003/11	1		09:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			09:54																				
CCV 360-48003/13	1		09:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48003/14	1		09:59	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-48003/15			10:02																				
ICV 360-48003/16			10:05																				
ICV 360-48003/17			10:08																				
CRI 360-48003/18			10:24																				
CCV 360-48003/19	1		13:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48003/20	1		13:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MB 360-47961/1-A	1	T	14:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 360-47961/2-A	1	T	14:17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCSD 360-47961/3-A	1	T	14:20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-48003/24	1		14:23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48003/25	1		14:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			14:28																				
ZZZZZZ			14:31																	4.11 ug/L			2.11 ug/L
ZZZZZZ			14:34																				
ZZZZZZ			14:37																				
ZZZZZZ			14:40																				
ZZZZZZ			14:43																				
ZZZZZZ			14:46																				
ZZZZZZ			14:48																				
360-24173-1	1	T	14:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24173-3	1	T	14:54	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-48003/36	1		14:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48003/37	1		15:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24173-4	1	T	15:03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X 4.88 ug/L
360-24173-6	1	T	15:06	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24173-9	1	T	15:09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24173-11	1	T	15:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24173-12	1	T	15:14	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Instrument ID: Varian ICP Method: 6010B

Start Date: 08/20/2009 09:22 End Date: 08/20/2009 15:35

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Se	Sn	Tl
360-24173-14	1	T	15:17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24173-15	1	T	15:20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24173-17	1	T	15:23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-48003/46	1		15:26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48003/47	1		15:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 360-48003/48	1		15:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-48003/49	1		15:35	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

4.88 ug/L
5.16

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Concentration Units: ug/L

Analyte	RL	ICB 360-48003/7 08/20/2009 09:39		CCB 360-48003/14 08/20/2009 09:59		CCB 360-48003/20 08/20/2009 13:49		CCB 360-48003/25 08/20/2009 14:25	
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND		ND		ND	
Al	100	ND		ND		ND		ND	
As	10	2.73	J	ND		ND		ND	
Ba	10	ND		ND		ND		ND	
Be	1.0	ND		ND		ND		ND	
Ca	400	ND		ND		ND		ND	
Cd	1.0	ND		ND		ND		ND	
Co	10	ND		ND		ND		ND	
Cr	5.0	ND		ND		ND		ND	
Cu	10	ND		ND		ND		ND	
Fe	100	ND		ND		ND		ND	
K	4000	ND		ND		509	J	ND	
Mg	400	ND		ND		ND		ND	
Mn	10	ND		ND		ND		ND	
Na	2000	ND		ND		ND		ND	
Ni	10	ND		ND		ND		ND	
Pb	5.0	ND		ND		ND		ND	
Se	10	ND		4.75	J	2.72	J	4.11	J
Sn	50	ND		ND		ND		ND	
Tl	10	ND		1.47	J	2.52	J	2.11	J
V	10	ND		ND		ND		ND	
Zn	50	ND		ND		ND		ND	
Sb	10	3.88	J	ND		ND		4.47	J

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Concentration Units: ug/L

Analyte	RL	CCB 360-48003/37 08/20/2009 15:00		CCB 360-48003/47 08/20/2009 15:29					
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND					
Al	100	ND		ND					
As	10	ND		ND					
Ba	10	ND		ND					
Be	1.0	ND		ND					
Ca	400	ND		ND					
Cd	1.0	ND		ND					
Co	10	ND		ND					
Cr	5.0	ND		ND					
Cu	10	ND		ND					
Fe	100	ND		ND					
K	4000	ND		ND					
Mg	400	ND		ND					
Mn	10	ND		ND					
Na	2000	ND		ND					
Ni	10	ND		ND					
Pb	5.0	ND		ND					
Se	10	4.88	J	5.16	J				
Sn	50	ND		ND					
Tl	10	ND		ND					
V	10	ND		ND					
Zn	50	ND		ND					
Sb	10	ND		ND					

Italicized analytes were not requested for this sequence.

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Instrument ID: Varian ICP Method: 6010B

Start Date: 08/21/2009 09:08 End Date: 08/21/2009 15:02

Lab Sample ID	D/F	Type	Time	Analytes																			
				Sb																			
ZZZZZZ			09:08																				
ZZZZZZ			09:11																				
ZZZZZZ			09:14																				
ZZZZZZ			09:17																				
ZZZZZZ			09:20																				
ICV 360-48034/6	1		09:23	X																			
ICB 360-48034/7	1		09:26	X																			
CRI 360-48034/8	1		09:29	X																			
CRI 360-48034/9	1		09:32																				
ICSA 360-48034/10	1		09:34	X																			
ICSAB 360-48034/11	1		10:43	X																			
ZZZZZZ			10:46																				
CCV 360-48034/13	1		10:49	X																			
CCB 360-48034/14	1		10:52	X																			
ICB 360-48034/15			10:55																				
ICV 360-48034/16			10:58																				
ICV 360-48034/17			11:00																				
CRI 360-48034/18			11:03																				
CRI 360-48034/19	1		11:06	X																			
MB 360-47961/1-A	1	T	11:09	X																			
LCS 360-47961/2-A	1	T	11:12	X																			
LCSD 360-47961/3-A	1	T	11:15	X																			
ZZZZZZ			11:18																				
ZZZZZZ			11:21																				
CCV 360-48034/25	1		11:23	X																			
CCB 360-48034/26	1		11:26	X																			
ZZZZZZ			11:29																				
ZZZZZZ			11:32																				
ZZZZZZ			11:35																				
360-24173-1	1	T	11:38	X																			
ZZZZZZ			11:41																				
360-24173-4	1	T	11:43	X																			
360-24173-6	1	T	11:46	X																			
360-24173-9	1	T	11:49	X																			
360-24173-11	1	T	11:52	X																			
360-24173-12	1	T	11:55	X																			
CCV 360-48034/37	1		11:58	X																			
CCB 360-48034/38	1		12:01	X																			
360-24173-14	1	T	12:04	X																			
360-24173-15	1	T	12:06	X																			
360-24173-17	1	T	12:09	X																			
360-24173-3	5	T	12:13	X																			

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-1

SDG No.: OCRI-01

Instrument ID: Varian ICP Method: 6010B

Start Date: 08/21/2009 09:08 End Date: 08/21/2009 15:02

Lab Sample ID	D/F	Type	Time	Analytes																			
				Sb																			
CCV 360-48034/43	1		12:34	X																			
CCB 360-48034/44	1		12:36	X																			
ICSA 360-48034/45	1		15:00	X																			
ICSAB 360-48034/46	1		15:02	X																			

2.96 ug/L

Prep Types
T = Total/NA

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-405-14/15-XXX

Lab Sample ID: 360-24173-2

Lab Name: TestAmerica Westfield

Job No.: 360-24173-2

SDG ID.: OCRI-01A

Matrix: Solid

Date Sampled: 08/18/2009 09:10

Reporting Basis: DRY

Date Received: 08/18/2009 19:00

% Solids: 91.3

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	15000	6.8	1.8	mg/Kg			2	6010B
7440-36-0	Antimony	ND	1.4	0.49	mg/Kg			2	6010B
7440-38-2	Arsenic	2.6	2.7	0.25	mg/Kg	J		2	6010B
7440-39-3	Barium	94	1.4	0.18	mg/Kg			2	6010B
7440-41-7	Beryllium	0.27	0.54	0.068	mg/Kg	J		2	6010B
7440-43-9	Cadmium	0.34	0.54	0.019	mg/Kg	J		2	6010B
7440-70-2	Calcium	3500	27	6.8	mg/Kg		B	2	6010B
7440-47-3	Chromium	37	1.4	0.18	mg/Kg			2	6010B
7440-48-4	Cobalt	15	1.4	0.18	mg/Kg			2	6010B
7440-50-8	Copper	33	2.7	0.18	mg/Kg			2	6010B
7439-89-6	Iron	25000	14	2.2	mg/Kg		B	2	6010B
7439-92-1	Lead	0.94	1.4	0.16	mg/Kg	J		2	6010B
7439-95-4	Magnesium	10000	27	1.4	mg/Kg		B	2	6010B
7439-96-5	Manganese	170	2.7	0.18	mg/Kg			2	6010B
7440-02-0	Nickel	27	2.7	0.18	mg/Kg			2	6010B
7440-09-7	Potassium	5200	540	85	mg/Kg			2	6010B
7782-49-2	Selenium	ND	1.4	0.64	mg/Kg			2	6010B
7440-22-4	Silver	ND	1.4	0.14	mg/Kg			2	6010B
7440-23-5	Sodium	230	270	35	mg/Kg	J		2	6010B
7440-28-0	Thallium	ND	2.7	0.20	mg/Kg			2	6010B
7440-62-2	Vanadium	36	2.7	0.18	mg/Kg			2	6010B
7440-66-6	Zinc	23	6.8	1.6	mg/Kg			2	6010B
7440-31-5	Tin	12	14	0.87	mg/Kg	J	B ^	2	6010B

CC'd
3/30/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-416-13/14-XXX
Lab Sample ID: 360-24173-5
Lab Name: TestAmerica Westfield
Job No.: 360-24173-2
SDG ID.: OCRI-01A
Matrix: Solid
Date Sampled: 08/18/2009 11:05
Reporting Basis: DRY
Date Received: 08/18/2009 19:00
% Solids: 93.1

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	19000	16	4.1	mg/Kg			5	6010B
7440-36-0	Antimony	ND	3.1	1.1	mg/Kg			5	6010B
7440-38-2	Arsenic	2.2	6.3	0.57	mg/Kg	J		5	6010B
7440-39-3	Barium	34	3.1	0.41	mg/Kg			5	6010B
7440-41-7	Beryllium	0.47	1.3	0.16	mg/Kg	J		5	6010B
7440-43-9	Cadmium	0.51	1.3	0.044	mg/Kg	J		5	6010B
7440-70-2	Calcium	5600	63	16	mg/Kg		B	5	6010B
7440-47-3	Chromium	39	3.1	0.42	mg/Kg			5	6010B
7440-48-4	Cobalt	22	3.1	0.41	mg/Kg			5	6010B
7440-50-8	Copper	39	6.3	0.41	mg/Kg			5	6010B
7439-89-6	Iron	37000	31	5.0	mg/Kg		B	5	6010B
7439-92-1	Lead	0.57	3.1	0.36	mg/Kg	J		5	6010B
7439-95-4	Magnesium	15000	63	3.1	mg/Kg		B	5	6010B
7439-96-5	Manganese	460	6.3	0.42	mg/Kg			5	6010B
7440-02-0	Nickel	38	6.3	0.41	mg/Kg			5	6010B
7440-09-7	Potassium	770	1300	200	mg/Kg	J		5	6010B
7782-49-2	Selenium	ND	3.1	1.5	mg/Kg			5	6010B
7440-22-4	Silver	ND	3.1	0.32	mg/Kg			5	6010B
7440-23-5	Sodium	230	630	82	mg/Kg	J		5	6010B
7440-28-0	Thallium	ND	6.3	0.45	mg/Kg			5	6010B
7440-62-2	Vanadium	71	6.3	0.41	mg/Kg			5	6010B
7440-66-6	Zinc	39	16	3.7	mg/Kg			5	6010B
7440-31-5	Tin	12	31	2.0	mg/Kg	J	B ^	5	6010B

cc'd
3/30/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-412-12/13-XXX

Lab Sample ID: 360-24173-10

Lab Name: TestAmerica Westfield

Job No.: 360-24173-2

SDG ID.: OCRI-01A

Matrix: Solid

Date Sampled: 08/18/2009 13:10

Reporting Basis: DRY

Date Received: 08/19/2009 17:00

% Solids: 90.0

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	6800	3.7	0.95	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.73	0.26	mg/Kg			1	6010B
7440-38-2	Arsenic	2.1	1.5	0.13	mg/Kg			1	6010B
7440-39-3	Barium	46	0.73	0.095	mg/Kg			1	6010B
7440-41-7	Beryllium	0.14	0.29	0.037	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.19	0.29	0.010	mg/Kg	J		1	6010B
7440-70-2	Calcium	6300	15	3.7	mg/Kg		B	1	6010B
7440-47-3	Chromium	27	0.73	0.097	mg/Kg			1	6010B
7440-48-4	Cobalt	12	0.73	0.095	mg/Kg			1	6010B
7440-50-8	Copper	66	1.5	0.095	mg/Kg			1	6010B
7439-89-6	Iron	15000	7.3	1.2	mg/Kg		B	1	6010B
7439-92-1	Lead	3.6	0.73	0.084	mg/Kg			1	6010B
7439-95-4	Magnesium	2400	15	0.73	mg/Kg		B	1	6010B
7439-96-5	Manganese	95	1.5	0.098	mg/Kg			1	6010B
7440-02-0	Nickel	11	1.5	0.095	mg/Kg			1	6010B
7440-09-7	Potassium	680	290	46	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.73	0.34	mg/Kg			1	6010B
7440-22-4	Silver	0.076	0.73	0.074	mg/Kg	J		1	6010B
7440-23-5	Sodium	820	150	19	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.5	0.11	mg/Kg			1	6010B
7440-62-2	Vanadium	45	1.5	0.095	mg/Kg			1	6010B
7440-66-6	Zinc	17	3.7	0.86	mg/Kg			1	6010B
7440-31-5	Tin	9.1	7.3	0.47	mg/Kg		B ^	1	6010B

cc'd
3/30/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-420-12/14-XXX

Lab Sample ID: 360-24173-13

Lab Name: TestAmerica Westfield

Job No.: 360-24173-2

SDG ID.: OCRI-01A

Matrix: Solid

Date Sampled: 08/18/2009 16:25

Reporting Basis: DRY

Date Received: 08/19/2009 17:00

% Solids: 93.2

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	10000	3.2	0.83	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.63	0.23	mg/Kg			1	6010B
7440-38-2	Arsenic	1.6	1.3	0.12	mg/Kg			1	6010B
7440-39-3	Barium	130	0.63	0.083	mg/Kg			1	6010B
7440-41-7	Beryllium	0.17	0.25	0.032	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.40	0.25	0.0089	mg/Kg			1	6010B
7440-70-2	Calcium	13000	13	3.2	mg/Kg		B	1	6010B
7440-47-3	Chromium	12	0.63	0.084	mg/Kg			1	6010B
7440-48-4	Cobalt	17	0.63	0.083	mg/Kg			1	6010B
7440-50-8	Copper	28	1.3	0.083	mg/Kg			1	6010B
7439-89-6	Iron	27000	6.3	1.0	mg/Kg		B	1	6010B
7439-92-1	Lead	ND	0.63	0.073	mg/Kg			1	6010B
7439-95-4	Magnesium	4400	13	0.63	mg/Kg		B	1	6010B
7439-96-5	Manganese	140	1.3	0.085	mg/Kg			1	6010B
7440-02-0	Nickel	13	1.3	0.083	mg/Kg			1	6010B
7440-09-7	Potassium	4600	250	40	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.63	0.30	mg/Kg			1	6010B
7440-22-4	Silver	1.6	0.63	0.064	mg/Kg			1	6010B
7440-23-5	Sodium	320	130	17	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.3	0.092	mg/Kg			1	6010B
7440-62-2	Vanadium	60	1.3	0.083	mg/Kg			1	6010B
7440-66-6	Zinc	56	3.2	0.75	mg/Kg			1	6010B
7440-31-5	Tin	2.6	6.3	0.41	mg/Kg	J	B ^	1	6010B

CC'd
(W)
3/30/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-423-13/14-XXX
Lab Sample ID: 360-24173-16
Lab Name: TestAmerica Westfield
Job No.: 360-24173-2
SDG ID.: OCRI-01A
Matrix: Solid
Date Sampled: 08/18/2009 14:45
Reporting Basis: DRY
Date Received: 08/19/2009 17:00
% Solids: 93.6

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	11000	3.2	0.84	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.65	0.23	mg/Kg			1	6010B
7440-38-2	Arsenic	1.8	1.3	0.12	mg/Kg			1	6010B
7440-39-3	Barium	54	0.65	0.084	mg/Kg			1	6010B
7440-41-7	Beryllium	0.27	0.26	0.032	mg/Kg			1	6010B
7440-43-9	Cadmium	0.41	0.26	0.0091	mg/Kg			1	6010B
7440-70-2	Calcium	7500	13	3.2	mg/Kg		B	1	6010B
7440-47-3	Chromium	17	0.65	0.086	mg/Kg			1	6010B
7440-48-4	Cobalt	21	0.65	0.084	mg/Kg			1	6010B
7440-50-8	Copper	21	1.3	0.084	mg/Kg			1	6010B
7439-89-6	Iron	23000	6.5	1.0	mg/Kg		B	1	6010B
7439-92-1	Lead	1.6	0.65	0.074	mg/Kg			1	6010B
7439-95-4	Magnesium	5100	13	0.65	mg/Kg		B	1	6010B
7439-96-5	Manganese	150	1.3	0.086	mg/Kg			1	6010B
7440-02-0	Nickel	16	1.3	0.084	mg/Kg			1	6010B
7440-09-7	Potassium	2200	260	40	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.65	0.30	mg/Kg			1	6010B
7440-22-4	Silver	1.4	0.65	0.065	mg/Kg			1	6010B
7440-23-5	Sodium	250	130	17	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.3	0.094	mg/Kg			1	6010B
7440-62-2	Vanadium	47	1.3	0.084	mg/Kg			1	6010B
7440-66-6	Zinc	55	3.2	0.76	mg/Kg			1	6010B
7440-31-5	Tin	4.9	6.5	0.41	mg/Kg	J	B ^	1	6010B

cc'd
(W)
3/30/10

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-2

SDG No.: OCRI-01A

Preparation Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 360-49084/1-A	09/17/2009 09:26	49084	2.0		100
LCS 360-49084/2-A	09/17/2009 09:26	49084	2.0		100
LCSD 360-49084/3-A	09/17/2009 09:26	49084	2.0		100
360-24173-2	09/17/2009 09:26	49084	1.61		100
360-24173-5	09/17/2009 09:26	49084	1.71		100
360-24173-10	09/17/2009 09:26	49084	1.52		100
360-24173-13	09/17/2009 09:26	49084	1.69		100
360-24173-16	09/17/2009 09:26	49084	1.65		100

MB

Calcium 7.00 mg/kg

Fe 2.27 mg/kg

Mg 1.80 mg/kg

Sn 0.511 mg/kg

FORM XII-IN

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-2

SDG No.: OCRI-01A

Concentration Units: mg/Kg Lab Sample ID: MB 360-49084/1-A

Instrument Code: Varian ICP Batch No.: 49137

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	ND			6010B
7440-36-0	Antimony	ND			6010B
7440-38-2	Arsenic	ND			6010B
7440-39-3	Barium	ND			6010B
7440-41-7	Beryllium	ND			6010B
7440-43-9	Cadmium	ND			6010B
7440-70-2	Calcium	7.00	J		6010B
7440-47-3	Chromium	ND			6010B
7440-48-4	Cobalt	ND			6010B
7440-50-8	Copper	ND			6010B
7439-89-6	Iron	2.27	J		6010B
7439-92-1	Lead	ND			6010B
7439-95-4	Magnesium	1.80	J		6010B
7439-96-5	Manganese	ND			6010B
7440-02-0	Nickel	ND			6010B
7440-09-7	Potassium	ND			6010B
7782-49-2	Selenium	ND			6010B
7440-22-4	Silver	ND			6010B
7440-23-5	Sodium	ND			6010B
7440-28-0	Thallium	ND			6010B
7440-62-2	Vanadium	ND			6010B
7440-66-6	Zinc	ND			6010B
7440-31-5	Tin	0.511	J		6010B

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-2

SDG No.: OCRI-01A

Concentration Units: ug/L

Analyte	RL	ICB 360-49137/7 09/17/2009 11:29		CCB 360-49137/14 09/17/2009 11:49		CCB 360-49137/20 09/17/2009 12:43		CCB 360-49137/22 09/17/2009 15:05	
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND		ND		ND	
Al	100	ND		ND		ND		ND	
As	10	ND		ND		ND		ND	
Ba	10	ND		ND		ND		ND	
Be	1.0	ND		ND		ND		ND	
Ca	400	ND		ND		ND		ND	
Cd	1.0	ND		ND		ND		ND	
Co	10	ND		ND		ND		ND	
Cr	5.0	ND		ND		ND		ND	
Cu	10	ND		ND		ND		ND	
Fe	100	ND		ND		ND		ND	
K	4000	ND		ND		ND		ND	
Mg	400	ND		ND		ND		ND	
Mn	10	ND		ND		ND		ND	
Na	2000	ND		ND		ND		ND	
Ni	10	ND		ND		ND		ND	
Pb	5.0	ND		ND		ND		ND	
Sb	10	3.22	J	ND		ND		ND	
Se	10	3.52	J	5.00	J	4.21	J	6.70	J
Sn	50	ND		ND		ND		ND	
Tl	10	ND		1.53	J	1.75	J	ND	
V	10	ND		ND		ND		ND	
Zn	50	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-2

SDG No.: OCRI-01A

Concentration Units: ug/L

Analyte	RL	CCB 360-49137/32 09/17/2009 15:42		CCB 360-49137/44 09/17/2009 16:17		CCB 360-49137/54 09/17/2009 16:46			
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND		ND			
Al	100	ND		ND		ND			
As	10	ND		ND		ND			
Ba	10	ND		ND		ND			
Be	1.0	ND		ND		ND			
Ca	400	ND		ND		ND			
Cd	1.0	ND		ND		ND			
Co	10	ND		ND		ND			
Cr	5.0	ND		ND		ND			
Cu	10	ND		ND		ND			
Fe	100	ND		ND		ND			
K	4000	ND		ND		ND			
Mg	400	ND		ND		ND			
Mn	10	ND		ND		ND			
Na	2000	ND		ND		ND			
Ni	10	ND		ND		ND			
Pb	5.0	ND		ND		ND			
Sb	10	ND		ND		ND			
Se	10	6.00	J	3.60	J	ND			
Sn	50	ND		ND		ND			
Tl	10	3.03	J	1.54	J	2.10	J		
V	10	ND		ND		ND			
Zn	50	ND		ND		ND			

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-2

SDG No.: OCRI-01A

Concentration Units: ug/L

Analyte	RL	ICB 360-49209/7 09/18/2009 10:26		CCB 360-49209/14 09/18/2009 10:46		CCB 360-49209/26 09/18/2009 11:52		CCB 360-49209/61 09/18/2009 15:56	
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND		ND		ND	
Al	100	ND		ND		ND		ND	
As	10	ND		ND		ND		ND	
Ba	10	ND		ND		ND		ND	
Be	1.0	ND		ND		ND		ND	
Ca	400	ND		ND		ND		ND	
Cd	1.0	ND		ND		ND		ND	
Co	10	ND		ND		ND		ND	
Cr	5.0	ND		ND		ND		ND	
Cu	10	ND		ND		ND		ND	
Fe	100	ND		ND		ND		ND	
K	4000	ND		ND		ND		ND	
Mg	400	ND		ND		ND		ND	
Mn	10	ND		ND		ND		ND	
Na	2000	ND		ND		ND		ND	
Ni	10	ND		ND		ND		ND	
Pb	5.0	ND		ND		ND		ND	
Sb	10	4.59	J	ND		ND		ND	
Se	10	5.54	J	4.29	J	4.00	J	4.34	J
Sn	50	ND		ND		ND		ND	
Tl	10	ND		ND		ND		ND	
V	10	ND		ND		ND		ND	
Zn	50	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-2

SDG No.: OCRI-01A

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/17/2009 11:12 End Date: 09/17/2009 16:54

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
ZZZZZZ			11:12																				
ZZZZZZ			11:15																				
ZZZZZZ			11:17																				
ZZZZZZ			11:20																				
ZZZZZZ			11:23																				
ICV 360-49137/6	1		11:26	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
ICB 360-49137/7	1		11:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-49137/8	1		11:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-49137/9	1		11:35	X		X	X	X		X		X							X	X	X	X	
ICSA 360-49137/10	1		11:38	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-49137/11	1		11:41	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			11:44																				
CCV 360-49137/13	1		11:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49137/14	1		11:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-49137/15			11:52																				
ICV 360-49137/16	1		11:55												X								
ICV 360-49137/17			11:58																				
CRI 360-49137/18			12:10																				
CCV 360-49137/19	1		12:40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49137/20	1		12:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-49137/21	1		15:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49137/22	1		15:05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MB 360-49084/1-A	1	T	15:16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 360-49084/2-A	1	T	15:19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCSD 360-49084/3-A	1	T	15:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			15:25																				
ZZZZZZ			15:27																				
ZZZZZZ			15:30																				
ZZZZZZ			15:33																				
ZZZZZZ			15:36																				
CCV 360-49137/31	1		15:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49137/32	1		15:42	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			15:45																				
ZZZZZZ			15:48																				
ZZZZZZ			15:51																				
ZZZZZZ			15:53																				
ZZZZZZ			15:56																				
ZZZZZZ			15:59																				
ZZZZZZ			16:02																				
ZZZZZZ			16:05																				
360-24173-10	1	T	16:08	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24173-13	1	T	16:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-2

SDG No.: OCRI-01A

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/17/2009 11:12 End Date: 09/17/2009 16:54

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
CCV 360-49137/43	1		16:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49137/44	1		16:17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24173-16	1	T	16:19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:22																				
ZZZZZZ			16:25																				
ZZZZZZ			16:28																				
ZZZZZZ			16:31																				
ZZZZZZ			16:34																				
ZZZZZZ			16:37																				
ZZZZZZ			16:40																				
CCV 360-49137/53	1		16:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49137/54	1		16:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 360-49137/55	1		16:48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-49137/56	1		16:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:54																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-2

SDG No.: OCRI-01A

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/17/2009 11:12 End Date: 09/17/2009 16:54

Lab Sample ID	D/F	Type	Time	Analytes																			
				Tl	V	Zn																	
ZZZZZZ			11:12																				
ZZZZZZ			11:15																				
ZZZZZZ			11:17																				
ZZZZZZ			11:20																				
ZZZZZZ			11:23																				
ICV 360-49137/6	1		11:26	X	X	X																	
ICB 360-49137/7	1		11:29	X	X	X																	
CRI 360-49137/8	1		11:32	X	X	X																	
CRI 360-49137/9	1		11:35	X	X	X																	
ICSA 360-49137/10	1		11:38	X	X	X																	
ICSAB 360-49137/11	1		11:41	X	X	X																	
ZZZZZZ			11:44																				
CCV 360-49137/13	1		11:46	X	X	X																	
CCB 360-49137/14	1		11:49	X	X	X																	
ICB 360-49137/15			11:52																				
ICV 360-49137/16	1		11:55																				
ICV 360-49137/17			11:58																				
CRI 360-49137/18			12:10																				
CCV 360-49137/19	1		12:40	X	X	X																	
CCB 360-49137/20	1		12:43	X	X	X																	
CCV 360-49137/21	1		15:02	X	X	X																	
CCB 360-49137/22	1		15:05	X	X	X																	
MB 360-49084/1-A	1	T	15:16	X	X	X																	
LCS 360-49084/2-A	1	T	15:19	X	X	X																	
LCSD 360-49084/3-A	1	T	15:22	X	X	X																	
ZZZZZZ			15:25																				
ZZZZZZ			15:27																				
ZZZZZZ			15:30																				
ZZZZZZ			15:33																				
ZZZZZZ			15:36																				
CCV 360-49137/31	1		15:39	X	X	X																	
CCB 360-49137/32	1		15:42	X	X	X																	
ZZZZZZ			15:45																				
ZZZZZZ			15:48																				
ZZZZZZ			15:51																				
ZZZZZZ			15:53																				
ZZZZZZ			15:56																				
ZZZZZZ			15:59																				
ZZZZZZ			16:02																				
ZZZZZZ			16:05																				
360-24173-10	1	T	16:08	X	X	X																	
360-24173-13	1	T	16:11	X	X	X																	

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24173-2

SDG No.: OCRI-01A

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/17/2009 11:12 End Date: 09/17/2009 16:54

Lab Sample ID	D/F	Type	Time	Analytes																			
				Tl	V	Zn																	
CCV 360-49137/43	1		16:14	X	X	X																	
CCB 360-49137/44	1		16:17	X	X	X																	
360-24173-16	1	T	16:19	X	X	X																	
ZZZZZZ			16:22																				
ZZZZZZ			16:25																				
ZZZZZZ			16:28																				
ZZZZZZ			16:31																				
ZZZZZZ			16:34																				
ZZZZZZ			16:37																				
ZZZZZZ			16:40																				
CCV 360-49137/53	1		16:43	X	X	X																	
CCB 360-49137/54	1		16:46	X	X	X																	
ICSA 360-49137/55	1		16:48	X	X	X																	
ICSAB 360-49137/56	1		16:51	X	X	X																	
ZZZZZZ			16:54																				

Prep Types
T = Total/NA

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / (III) (circle one)

SITE: **Olin Chemical** Project #: 6/07/00016.12 SDG #: OCRI-02/02A

LAB # : TAL 360-24194-1/2

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☑ ☐ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☐ ☐ ☑ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	Post-digestion spikes %R limits = 75% - 125%

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Laboratory Control Samples (LCS) ☑ ☐ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate ☐ ☐ ☑ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☑ ☐ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	
Field Duplicate ☐ ☐ ☑ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☐ ☐ ☑ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution ☐ ☐ ☑ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☐ ☑ Are results of the diluted samples > the original sample results	See below.

Validator's Signature: [signature]

Date: 3/30/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

QL Standard:

The percent recoveries of tin (58, 63, 63, 57) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J).

Blanks:

Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Barium, magnesium, and nickel were reported in the equipment blank associated with OCRI-02 and 02A. Reported detections of barium, magnesium, and nickel were significantly greater than equipment blank results, the data was not qualified.

Calcium (10.2 mg/kg), iron (1.51 mg/kg), magnesium (2.64 mg/kg), nickel (0.685 mg/kg), and tin (2.165 mg/kg) were reported in the method blank (M360-48015) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Sample results for calcium, iron, magnesium, nickel, and tin were greater than the action levels, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Calcium (7.00 mg/kg), iron (2.27 mg/kg), magnesium (1.80 mg/kg), and tin (0.511 mg/kg) were reported in the method blank (M360-49084) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Sample results for calcium, iron, magnesium, and tin were greater than the action levels, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Selenium and thallium were reported in the continuing calibration blanks (CCB) associated with all samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for selenium and thallium were non detect, no further action required.

Serial Dilution:

The lab did not perform a serial dilution analysis as per the method requirement.

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24194-1
Sdg Number: OCRI-02

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24194-1	OC-SB-421-0.0/1.0-XXX	Solid	08/19/2009 0740	08/19/2009 1730
360-24194-2	OC-SB-421-10.5/12.5-XXX	Solid	08/19/2009 0805	08/19/2009 1730
360-24194-3	OC-SB-421-8.0/10.0-XXX	Solid	08/19/2009 0745	08/19/2009 1730
360-24194-4	OC-SB-424-0.0/1.0-XXX	Solid	08/19/2009 1135	08/19/2009 1730
360-24194-5	OC-SB-424-17/19-XXX	Solid	08/19/2009 1235	08/19/2009 1730
360-24194-6	OC-SB-424-7.0/9.0-XXX	Solid	08/19/2009 1215	08/19/2009 1730
360-24194-7	OC-SB-425-0.0/1.0-XXX	Solid	08/19/2009 0955	08/19/2009 1730
360-24194-8	OC-SB-425-18/20-XXX	Solid	08/19/2009 1025	08/19/2009 1730
360-24194-9	OC-SB-425-6.0/8.0-XXX	Solid	08/19/2009 1005	08/19/2009 1730
360-24194-10	OC-TBK-002	Solid	08/19/2009 1400	08/19/2009 1730
360-24194-11	OC-TBK-003	Solid	08/19/2009 1450	08/19/2009 1730
360-24194-12	OC-EBK-002	Water	08/19/2009 0930	08/19/2009 1730

ICV/ICV OK
CRQL CHECK
Tin Low
LCS OK
ICS OK

Hg MB OK
Hg CCB 0.0670 ug/L
analyte -12 (EBK) No data

Form I's updated
3/30/10

achieved.

General method information:
At the request of the client, only the carbon ranges are reported for this job.

No difficulties were encountered during the VPH analysis.

All quality control parameters were within the acceptance limits.

TOTAL METALS (soils)

Samples 360-24194-1, 360-24194-3, 360-24194-4, 360-24194-6, 360-24194-7 and 360-24194-9 were analyzed for total metals in accordance with EPA SW846 Method 6010B. The samples were prepared on 08/21/2009 and analyzed on 08/21/2009 and 08/24/2009.

All QC performance standards and recommendations, which may affect Data Usability for this specific method, were achieved with the exception of:

Potassium failed the LCSD recovery criteria low for LCSD 360-48015/3-A, the LCS was within control limits as was the rpd between the two standards.

General method information:
Sample 360-24194-6(2X) required dilution prior to analysis due to the presence of high concentration of the interfering element Aluminum. The reporting limits have been adjusted accordingly.

Calcium, Iron, Magnesium, Nickel and Tin were detected in method blank MB 360-48015/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

No other difficulties were encountered during the total metals analyses.

All other quality control parameters were within the acceptance limits.

TOTAL METALS (water)

Sample 360-24194-12 was analyzed for total metals in accordance with EPA SW846 Method 6010B. The samples were prepared and analyzed on 08/21/2009.

All QC performance standards and recommendations, which may affect Data Usability for this specific method, were achieved with the exception of:

The continuing calibration verification (CCV) for analytical batch 48048 exceeded control criteria (low) for Potassium (89%R). This check standard bracketed the MB and LCS/LCSD only. The bracketing CCVs for the sample data passed QA/QC criteria.

General method information:
Arsenic and Selenium were detected in method blank MB 360-48006/1-A at a level exceeding the method reporting limit but below the reporting limit. The value should be considered an estimate, and has been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

No other difficulties were encountered during the total metals analysis.

All other quality control parameters were within the acceptance limits.

TOTAL MERCURY (soils)

Samples 360-24194-1, 360-24194-3, 360-24194-4, 360-24194-6, 360-24194-7 and 360-24194-9 were analyzed for total mercury in accordance with EPA SW846 Method 7471A. The samples were prepared and analyzed on 08/21/2009.

All QC performance standards and recommendations, which may affect Data Usability for this specific method, were achieved.

No difficulties were encountered during the total mercury analyses.

All quality control parameters were within the acceptance limits.

TOTAL MERCURY (water)

Sample 360-24194-12 was analyzed for total mercury in accordance with EPA SW846 Method 7470A. The samples were prepared and analyzed on 08/21/2009.

All QC performance standards and recommendations, which may affect Data Usability for this specific method, were achieved.

No difficulties were encountered during the total mercury analysis.

All quality control parameters were within the acceptance limits.

ANIONS (soils)

Samples 360-24194-1 through 360-24194-9 were analyzed for anions in accordance with EPA Method 300.0. The samples were leached on 08/25/2009 and analyzed on 08/26/2009.

All QC performance standards and recommendations, which may affect Data Usability for this specific method, were achieved.

No difficulties were encountered during the anions analyses.

All quality control parameters were within the acceptance limits.

ANIONS (water)

Sample 360-24194-12 was analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 08/27/2009.

All QC performance standards and recommendations, which may affect Data Usability for this specific method, were achieved.

No difficulties were encountered during the anions analysis.

All quality control parameters were within the acceptance limits.

CARBONYL COMPOUNDS BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC) (soils)

Samples 360-24194-1 through 360-24194-9 were analyzed for Carbonyl Compounds by High Performance Liquid Chromatography (HPLC) in accordance with EPA SW846 8315A. The samples were prepared on 08/23/2009 and analyzed on 08/24/2009.

All QC performance standards and recommendations, which may affect Data Usability for this specific method, were achieved.

General method information:
Insufficient sample volume was provided to perform matrix spike/matrix spike duplicate (MS/MSD) for batch 59958 (samples were equipment blanks).

No difficulties were encountered during the HPLC analyses.

All quality control parameters were within the acceptance limits.

CARBONYL COMPOUNDS (HPLC) (water)

Sample 360-24194-12 was analyzed for Carbonyl Compounds (HPLC) in accordance with EPA method SW846 8315A. The

Client: Olin Corporation

Job Number: 360-24194-1
Sdg Number: OCRI-02

Client Sample ID: **OC-SB-421-0.0/1.0-XXX**

Lab Sample ID: 360-24194-1
Client Matrix: Solid
% Moisture: 4.7

Date Sampled: 08/19/2009 0740
Date Received: 08/19/2009 1730

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48036		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48015		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.85 g
Date Analyzed:	08/21/2009 1403			Final Weight/Volume:	100 mL
Date Prepared:	08/21/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6500		0.74	2.8
Antimony		ND		0.21	0.57
Arsenic		4.1		0.10	1.1
Barium		14		0.074	0.57
Beryllium		0.17	J	0.028	0.23
Cadmium		0.25		0.0079	0.23
Calcium		1100	~~B~~	2.8	23
Chromium		34		0.075	0.57
Cobalt		2.5		0.074	0.57
Copper		6.5		0.074	1.1
Iron		6500	B	0.90	5.7
Lead		10		0.065	0.57
Magnesium		1600	~~B~~	0.57	11
Manganese		70		0.076	1.1
Nickel		10	~~B~~	0.074	1.1
Potassium		720		35	230
Selenium		ND		0.27	0.57
Silver		0.42	J	0.057	0.57
Sodium		ND		15	110
Thallium		ND		0.082	1.1
Vanadium		12		0.074	1.1
Zinc		100		0.67	2.8
Tin		14	J ~~B~~	0.36	5.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48038		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48021		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.26 g
Date Analyzed:	08/21/2009 1453			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 1047				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.050	J	0.027	0.15

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Client: Olin Corporation

Job Number: 360-24194-1
Sdg Number: OCRI-02

Client Sample ID: **OC-SB-421-8.0/10.0-XXX**

Lab Sample ID: 360-24194-3
Client Matrix: Solid
% Moisture: 7.4

Date Sampled: 08/19/2009 0745
Date Received: 08/19/2009 1730

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48036		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48015		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.74 g
Date Analyzed:	08/21/2009 1406			Final Weight/Volume:	100 mL
Date Prepared:	08/21/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5900		0.81	3.1
Antimony		ND		0.22	0.62
Arsenic		3.1		0.11	1.2
Barium		15		0.081	0.62
Beryllium		0.14	J	0.031	0.25
Cadmium		0.28		0.0087	0.25
Calcium		2400	B	3.1	25
Chromium		12		0.083	0.62
Cobalt		5.1		0.081	0.62
Copper		13		0.081	1.2
Iron		10000	B	0.99	6.2
Lead		1.3		0.071	0.62
Magnesium		2700	B	0.62	12
Manganese		92		0.083	1.2
Nickel		8.3	B	0.081	1.2
Potassium		850		39	250
Selenium		ND		0.29	0.62
Silver		ND		0.062	0.62
Sodium		160		16	120
Thallium		ND		0.090	1.2
Vanadium		19		0.081	1.2
Zinc		29		0.73	3.1
Tin		4.0	J,B	0.40	6.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48038		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48021		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.30 g
Date Analyzed:	08/21/2009 1455			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 1047				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.024	0.13

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Client: Olin Corporation

Job Number: 360-24194-1
Sdg Number: OCRI-02

Client Sample ID: **OC-SB-424-0.0/1.0-XXX**

Lab Sample ID: 360-24194-4
Client Matrix: Solid
% Moisture: 3.1

Date Sampled: 08/19/2009 1135
Date Received: 08/19/2009 1730

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48036		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48015		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.94 g
Date Analyzed:	08/21/2009 1409			Final Weight/Volume:	100 mL
Date Prepared:	08/21/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10000		0.69	2.7
Antimony		ND		0.19	0.53
Arsenic		15		0.097	1.1
Barium		39		0.069	0.53
Beryllium		0.39		0.027	0.21
Cadmium		0.22		0.0074	0.21
Calcium		1800	~~B~~	2.7	21
Chromium		24		0.071	0.53
Cobalt		7.4		0.069	0.53
Copper		14		0.069	1.1
Iron		15000	~~B~~	0.85	5.3
Lead		5.5		0.061	0.53
Magnesium		4100	~~B~~	0.53	11
Manganese		210		0.071	1.1
Nickel		20	~~B~~	0.069	1.1
Potassium		2800	~~*~~	33	210
Selenium		ND		0.25	0.53
Silver		ND		0.054	0.53
Sodium		32	J	14	110
Thallium		ND		0.077	1.1
Vanadium		21		0.069	1.1
Zinc		28		0.63	2.7
Tin		8.9	J ~~B~~	0.34	5.3

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48038		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48021		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	08/21/2009 1457			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 1047				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.033	0.18

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Client: Olin Corporation

Job Number: 360-24194-1
Sdg Number: OCRI-02

Client Sample ID: **OC-SB-424-7.0/9.0-XXX**

Lab Sample ID: 360-24194-6
Client Matrix: Solid
% Moisture: 6.0

Date Sampled: 08/19/2009 1215
Date Received: 08/19/2009 1730

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48036		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48015		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.75 g
Date Analyzed:	08/21/2009 1417			Final Weight/Volume:	100 mL
Date Prepared:	08/21/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		12000		0.79	3.0
Antimony		ND		0.22	0.61
Arsenic		3.4		0.11	1.2
Barium		31		0.079	0.61
Beryllium		0.35		0.030	0.24
Cadmium		0.48		0.0085	0.24
Calcium		3100	B	3.0	24
Chromium		23		0.081	0.61
Cobalt		11		0.079	0.61
Copper		45		0.079	1.2
Iron		18000	B	0.97	6.1
Lead		2.6		0.069	0.61
Magnesium		5900	B	0.61	12
Manganese		160		0.081	1.2
Nickel		20	B	0.079	1.2
Selenium		ND		0.28	0.61
Silver		ND		0.061	0.61
Sodium		180		16	120
Thallium		ND		0.088	1.2
Vanadium		34		0.079	1.2
Zinc		43		0.71	3.0
Tin		8.2	J B	0.39	6.1

Method:	6010B	Analysis Batch: 360-48083		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48015		Lab File ID:	N/A
Dilution:	2.0			Initial Weight/Volume:	1.75 g
Date Analyzed:	08/24/2009 1511			Final Weight/Volume:	100 mL
Date Prepared:	08/21/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Potassium		1200		76	490

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48038		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48021		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	08/21/2009 1458			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 1047				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.033	0.18

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Client: Olin Corporation

Job Number: 360-24194-1
Sdg Number: OCRI-02

Client Sample ID: **OC-SB-425-0.0/1.0-XXX**

Lab Sample ID: 360-24194-7
Client Matrix: Solid
% Moisture: 2.9

Date Sampled: 08/19/2009 0955
Date Received: 08/19/2009 1730

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48036		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48015		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.82 g
Date Analyzed:	08/21/2009 1420			Final Weight/Volume:	100 mL
Date Prepared:	08/21/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7000		0.74	2.8
Antimony		ND		0.20	0.57
Arsenic		4.2		0.10	1.1
Barium		13		0.074	0.57
Beryllium		0.18	J	0.028	0.23
Cadmium		0.20	J	0.0079	0.23
Calcium		1000	~~B~~	2.8	23
Chromium		19		0.075	0.57
Cobalt		3.5		0.074	0.57
Copper		10		0.074	1.1
Iron		9700	~~B~~	0.90	5.7
Lead		13		0.065	0.57
Magnesium		2000	~~B~~	0.57	11
Manganese		79		0.076	1.1
Nickel		10	~~B~~	0.074	1.1
Selenium		ND		0.26	0.57
Silver		0.068	J	0.057	0.57
Sodium		15	J	15	110
Thallium		ND		0.082	1.1
Vanadium		19		0.074	1.1
Zinc		36		0.67	2.8
Tin		7.4	~~JB~~	0.36	5.7

Method:	6010B	Analysis Batch: 360-48083		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48015		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.82 g
Date Analyzed:	08/24/2009 1500			Final Weight/Volume:	100 mL
Date Prepared:	08/21/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Potassium		710	~~*~~	35	230

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48038		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48021		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.24 g
Date Analyzed:	08/21/2009 1501			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 1047				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.029	0.16

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Client: Olin Corporation

Job Number: 360-24194-1
Sdg Number: OCRI-02

Client Sample ID: **OC-SB-425-6.0/8.0-XXX**

Lab Sample ID: 360-24194-9
Client Matrix: Solid
% Moisture: 8.4

Date Sampled: 08/19/2009 1005
Date Received: 08/19/2009 1730

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48036		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48015		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.59 g
Date Analyzed:	08/21/2009 1423			Final Weight/Volume:	100 mL
Date Prepared:	08/21/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3500		0.89	3.4
Antimony		ND		0.25	0.69
Arsenic		6.9		0.13	1.4
Barium		6.5		0.089	0.69
Beryllium		0.15	J	0.034	0.27
Cadmium		0.088	J	0.0096	0.27
Calcium		480	B	3.4	27
Chromium		9.6		0.091	0.69
Cobalt		1.9		0.089	0.69
Copper		4.1		0.089	1.4
Iron		6000	B	1.1	6.9
Lead		1.3		0.078	0.69
Magnesium		970	B	0.69	14
Manganese		41		0.092	1.4
Nickel		5.9	B	0.089	1.4
Selenium		ND		0.32	0.69
Silver		ND		0.069	0.69
Sodium		ND		18	140
Thallium		ND		0.099	1.4
Vanadium		6.7		0.089	1.4
Zinc		13		0.81	3.4
Tin		3.6	J B	0.44	6.9

Method:	6010B	Analysis Batch: 360-48083		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48015		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.59 g
Date Analyzed:	08/24/2009 1505			Final Weight/Volume:	100 mL
Date Prepared:	08/21/2009 0912				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Potassium		550		43	270

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48038		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48021		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.30 g
Date Analyzed:	08/21/2009 1507			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 1047				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.025	0.13

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Client: Olin Corporation

Job Number: 360-24194-1
Sdg Number: OCRI-02

Client Sample ID: **OC-EBK-002**

Lab Sample ID: 360-24194-12
Client Matrix: Water

Date Sampled: 08/19/2009 0930
Date Received: 08/19/2009 1730

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48048		Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-48006		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/21/2009 1550			Final Weight/Volume:	50 mL
Date Prepared:	08/21/2009 0709				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	ND		39	100
Antimony	ND		2.9	6.0
Barium	3.7	J	2.0	10
Arsenic	ND		2.3	10
Beryllium	ND		0.20	1.0
Cadmium	ND		0.20	1.0
Calcium	450		59	400
Chromium	ND		1.3	5.0
Cobalt	ND		2.0	10
Copper	7.4	J	1.7	10
Iron	53	J	34	100
Lead	1.5	J	1.3	5.0
Magnesium	120	J	50	400
Manganese	1.7	J	1.3	10
Nickel	2.0	J	1.5	10
Potassium	ND		500	4000
Selenium	ND		2.7	10
Silver	ND		1.8	5.0
Sodium	ND		250	2000
Tin	ND		7.0	50
Vanadium	ND		1.5	10
Thallium	ND		1.4	10
Zinc	ND		10	50

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 360-48028		Instrument ID:	Hg Analyzer
Preparation:	7470A	Prep Batch: 360-48012		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	08/21/2009 1211			Final Weight/Volume:	10 mL
Date Prepared:	08/21/2009 0833				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	ND		0.065	0.20

METALS

COVER PAGE
METALS

Lab Name: TestAmerica Westfield Job Number: 360-24194-1

SDG No.: OCRI-02

Project: Olin Chemical Superfund Site

Client Sample ID	Lab Sample ID
OC-SB-421-0.0/1.0-XXX	360-24194-1
OC-SB-421-8.0/10.0-XXX	360-24194-3
OC-SB-424-0.0/1.0-XXX	360-24194-4
OC-SB-424-7.0/9.0-XXX	360-24194-6
OC-SB-425-0.0/1.0-XXX	360-24194-7
OC-SB-425-6.0/8.0-XXX	360-24194-9
OC-EBK-002	360-24194-12

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-421-0.0/1.0-XXX
Lab Sample ID: 360-24194-1
Lab Name: TestAmerica Westfield
Job No.: 360-24194-1
SDG ID.: OCRI-02
Matrix: Solid
Date Sampled: 08/19/2009 07:40
Reporting Basis: DRY
Date Received: 08/19/2009 17:30
% Solids: 95.3

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	6500	2.8	0.74	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.57	0.21	mg/Kg			1	6010B
7440-38-2	Arsenic	4.1	1.1	0.10	mg/Kg			1	6010B
7440-39-3	Barium	14	0.57	0.074	mg/Kg			1	6010B
7440-41-7	Beryllium	0.17	0.23	0.028	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.25	0.23	0.0079	mg/Kg			1	6010B
7440-70-2	Calcium	1100	23	2.8	mg/Kg		B	1	6010B
7440-47-3	Chromium	34	0.57	0.075	mg/Kg			1	6010B
7440-48-4	Cobalt	2.5	0.57	0.074	mg/Kg			1	6010B
7440-50-8	Copper	6.5	1.1	0.074	mg/Kg			1	6010B
7439-89-6	Iron	6500	5.7	0.90	mg/Kg		B	1	6010B
7439-92-1	Lead	10	0.57	0.065	mg/Kg			1	6010B
7439-95-4	Magnesium	1600	11	0.57	mg/Kg		B	1	6010B
7439-96-5	Manganese	70	1.1	0.076	mg/Kg			1	6010B
7440-02-0	Nickel	10	1.1	0.074	mg/Kg		B	1	6010B
7440-09-7	Potassium	720	230	35	mg/Kg		*	1	6010B
7782-49-2	Selenium	ND	0.57	0.27	mg/Kg			1	6010B
7440-22-4	Silver	0.42	0.57	0.057	mg/Kg	J		1	6010B
7440-23-5	Sodium	ND	110	15	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.1	0.082	mg/Kg			1	6010B
7440-62-2	Vanadium	12	1.1	0.074	mg/Kg			1	6010B
7440-66-6	Zinc	100	2.8	0.67	mg/Kg			1	6010B
7440-31-5	Tin	14	5.7	0.36	mg/Kg		B	1	6010B
7439-97-6	Mercury	0.050	0.15	0.027	mg/Kg	J		1	7471A

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3/30/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-421-8.0/10.0-XXX
Lab Sample ID: 360-24194-3
Lab Name: TestAmerica Westfield
Job No.: 360-24194-1
SDG ID.: OCRI-02
Matrix: Solid
Date Sampled: 08/19/2009 07:45
Reporting Basis: DRY
Date Received: 08/19/2009 17:30
% Solids: 92.6

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	5900	3.1	0.81	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.62	0.22	mg/Kg			1	6010B
7440-38-2	Arsenic	3.1	1.2	0.11	mg/Kg			1	6010B
7440-39-3	Barium	15	0.62	0.081	mg/Kg			1	6010B
7440-41-7	Beryllium	0.14	0.25	0.031	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.28	0.25	0.0087	mg/Kg			1	6010B
7440-70-2	Calcium	2400	25	3.1	mg/Kg		B	1	6010B
7440-47-3	Chromium	12	0.62	0.083	mg/Kg			1	6010B
7440-48-4	Cobalt	5.1	0.62	0.081	mg/Kg			1	6010B
7440-50-8	Copper	13	1.2	0.081	mg/Kg			1	6010B
7439-89-6	Iron	10000	6.2	0.99	mg/Kg		B	1	6010B
7439-92-1	Lead	1.3	0.62	0.071	mg/Kg			1	6010B
7439-95-4	Magnesium	2700	12	0.62	mg/Kg		B	1	6010B
7439-96-5	Manganese	92	1.2	0.083	mg/Kg			1	6010B
7440-02-0	Nickel	8.3	1.2	0.081	mg/Kg		B	1	6010B
7440-09-7	Potassium	850	250	39	mg/Kg		*	1	6010B
7782-49-2	Selenium	ND	0.62	0.29	mg/Kg			1	6010B
7440-22-4	Silver	ND	0.62	0.062	mg/Kg			1	6010B
7440-23-5	Sodium	160	120	16	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.2	0.090	mg/Kg			1	6010B
7440-62-2	Vanadium	19	1.2	0.081	mg/Kg			1	6010B
7440-66-6	Zinc	29	3.1	0.73	mg/Kg			1	6010B
7440-31-5	Tin	4.0	6.2	0.40	mg/Kg	J	B	1	6010B
7439-97-6	Mercury	ND	0.13	0.024	mg/Kg			1	7471A

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1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-424-0.0/1.0-XXX
Lab Sample ID: 360-24194-4
Lab Name: TestAmerica Westfield
Job No.: 360-24194-1
SDG ID.: OCRI-02
Matrix: Solid
Date Sampled: 08/19/2009 11:35
Reporting Basis: DRY
Date Received: 08/19/2009 17:30
% Solids: 96.9

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	10000	2.7	0.69	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.53	0.19	mg/Kg			1	6010B
7440-38-2	Arsenic	15	1.1	0.097	mg/Kg			1	6010B
7440-39-3	Barium	39	0.53	0.069	mg/Kg			1	6010B
7440-41-7	Beryllium	0.39	0.21	0.027	mg/Kg			1	6010B
7440-43-9	Cadmium	0.22	0.21	0.0074	mg/Kg			1	6010B
7440-70-2	Calcium	1800	21	2.7	mg/Kg		B	1	6010B
7440-47-3	Chromium	24	0.53	0.071	mg/Kg			1	6010B
7440-48-4	Cobalt	7.4	0.53	0.069	mg/Kg			1	6010B
7440-50-8	Copper	14	1.1	0.069	mg/Kg			1	6010B
7439-89-6	Iron	15000	5.3	0.85	mg/Kg		B	1	6010B
7439-92-1	Lead	5.5	0.53	0.061	mg/Kg			1	6010B
7439-95-4	Magnesium	4100	11	0.53	mg/Kg		B	1	6010B
7439-96-5	Manganese	210	1.1	0.071	mg/Kg			1	6010B
7440-02-0	Nickel	20	1.1	0.069	mg/Kg		B	1	6010B
7440-09-7	Potassium	2800	210	33	mg/Kg		*	1	6010B
7782-49-2	Selenium	ND	0.53	0.25	mg/Kg			1	6010B
7440-22-4	Silver	ND	0.53	0.054	mg/Kg			1	6010B
7440-23-5	Sodium	32	110	14	mg/Kg	J		1	6010B
7440-28-0	Thallium	ND	1.1	0.077	mg/Kg			1	6010B
7440-62-2	Vanadium	21	1.1	0.069	mg/Kg			1	6010B
7440-66-6	Zinc	28	2.7	0.63	mg/Kg			1	6010B
7440-31-5	Tin	8.9	5.3	0.34	mg/Kg		B	1	6010B
7439-97-6	Mercury	ND	0.18	0.033	mg/Kg			1	7471A

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3/30/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-424-7.0/9.0-XXX
Lab Sample ID: 360-24194-6
Lab Name: TestAmerica Westfield
Job No.: 360-24194-1
SDG ID.: OCRI-02
Matrix: Solid
Date Sampled: 08/19/2009 12:15
Reporting Basis: DRY
Date Received: 08/19/2009 17:30
% Solids: 94.0

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	12000	3.0	0.79	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.61	0.22	mg/Kg			1	6010B
7440-38-2	Arsenic	3.4	1.2	0.11	mg/Kg			1	6010B
7440-39-3	Barium	31	0.61	0.079	mg/Kg			1	6010B
7440-41-7	Beryllium	0.35	0.24	0.030	mg/Kg			1	6010B
7440-43-9	Cadmium	0.48	0.24	0.0085	mg/Kg			1	6010B
7440-70-2	Calcium	3100	24	3.0	mg/Kg		B	1	6010B
7440-47-3	Chromium	23	0.61	0.081	mg/Kg			1	6010B
7440-48-4	Cobalt	11	0.61	0.079	mg/Kg			1	6010B
7440-50-8	Copper	45	1.2	0.079	mg/Kg			1	6010B
7439-89-6	Iron	18000	6.1	0.97	mg/Kg		B	1	6010B
7439-92-1	Lead	2.6	0.61	0.069	mg/Kg			1	6010B
7439-95-4	Magnesium	5900	12	0.61	mg/Kg		B	1	6010B
7439-96-5	Manganese	160	1.2	0.081	mg/Kg			1	6010B
7440-02-0	Nickel	20	1.2	0.079	mg/Kg		B	1	6010B
7440-09-7	Potassium	1200	490	76	mg/Kg		*	2	6010B
7782-49-2	Selenium	ND	0.61	0.28	mg/Kg			1	6010B
7440-22-4	Silver	ND	0.61	0.061	mg/Kg			1	6010B
7440-23-5	Sodium	180	120	16	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.2	0.088	mg/Kg			1	6010B
7440-62-2	Vanadium	34	1.2	0.079	mg/Kg			1	6010B
7440-66-6	Zinc	43	3.0	0.71	mg/Kg			1	6010B
7440-31-5	Tin	8.2	6.1	0.39	mg/Kg		B	1	6010B
7439-97-6	Mercury	ND	0.18	0.033	mg/Kg			1	7471A

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1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-425-0.0/1.0-XXX
Lab Sample ID: 360-24194-7
Lab Name: TestAmerica Westfield
Job No.: 360-24194-1
SDG ID.: OCRI-02
Matrix: Solid
Date Sampled: 08/19/2009 09:55
Reporting Basis: DRY
Date Received: 08/19/2009 17:30
% Solids: 97.1

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	7000	2.8	0.74	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.57	0.20	mg/Kg			1	6010B
7440-38-2	Arsenic	4.2	1.1	0.10	mg/Kg			1	6010B
7440-39-3	Barium	13	0.57	0.074	mg/Kg			1	6010B
7440-41-7	Beryllium	0.18	0.23	0.028	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.20	0.23	0.0079	mg/Kg	J		1	6010B
7440-70-2	Calcium	1000	23	2.8	mg/Kg		B	1	6010B
7440-47-3	Chromium	19	0.57	0.075	mg/Kg			1	6010B
7440-48-4	Cobalt	3.5	0.57	0.074	mg/Kg			1	6010B
7440-50-8	Copper	10	1.1	0.074	mg/Kg			1	6010B
7439-89-6	Iron	9700	5.7	0.90	mg/Kg		B	1	6010B
7439-92-1	Lead	13	0.57	0.065	mg/Kg			1	6010B
7439-95-4	Magnesium	2000	11	0.57	mg/Kg		B	1	6010B
7439-96-5	Manganese	79	1.1	0.076	mg/Kg			1	6010B
7440-02-0	Nickel	10	1.1	0.074	mg/Kg		B	1	6010B
7440-09-7	Potassium	710	230	35	mg/Kg		*	1	6010B
7782-49-2	Selenium	ND	0.57	0.26	mg/Kg			1	6010B
7440-22-4	Silver	0.068	0.57	0.057	mg/Kg	J		1	6010B
7440-23-5	Sodium	15	110	15	mg/Kg	J		1	6010B
7440-28-0	Thallium	ND	1.1	0.082	mg/Kg			1	6010B
7440-62-2	Vanadium	19	1.1	0.074	mg/Kg			1	6010B
7440-66-6	Zinc	36	2.8	0.67	mg/Kg			1	6010B
7440-31-5	Tin	7.4	5.7	0.36	mg/Kg		B	1	6010B
7439-97-6	Mercury	ND	0.16	0.029	mg/Kg			1	7471A

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1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-425-6.0/8.0-XXX
Lab Sample ID: 360-24194-9
Lab Name: TestAmerica Westfield
Job No.: 360-24194-1
SDG ID.: OCRI-02
Matrix: Solid
Date Sampled: 08/19/2009 10:05
Reporting Basis: DRY
Date Received: 08/19/2009 17:30
% Solids: 91.6

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	3500	3.4	0.89	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.69	0.25	mg/Kg			1	6010B
7440-38-2	Arsenic	6.9	1.4	0.13	mg/Kg			1	6010B
7440-39-3	Barium	6.5	0.69	0.089	mg/Kg			1	6010B
7440-41-7	Beryllium	0.15	0.27	0.034	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.088	0.27	0.0096	mg/Kg	J		1	6010B
7440-70-2	Calcium	480	27	3.4	mg/Kg		B	1	6010B
7440-47-3	Chromium	9.6	0.69	0.091	mg/Kg			1	6010B
7440-48-4	Cobalt	1.9	0.69	0.089	mg/Kg			1	6010B
7440-50-8	Copper	4.1	1.4	0.089	mg/Kg			1	6010B
7439-89-6	Iron	6000	6.9	1.1	mg/Kg		B	1	6010B
7439-92-1	Lead	1.3	0.69	0.078	mg/Kg			1	6010B
7439-95-4	Magnesium	970	14	0.69	mg/Kg		B	1	6010B
7439-96-5	Manganese	41	1.4	0.092	mg/Kg			1	6010B
7440-02-0	Nickel	5.9	1.4	0.089	mg/Kg		B	1	6010B
7440-09-7	Potassium	550	270	43	mg/Kg		*	1	6010B
7782-49-2	Selenium	ND	0.69	0.32	mg/Kg			1	6010B
7440-22-4	Silver	ND	0.69	0.069	mg/Kg			1	6010B
7440-23-5	Sodium	ND	140	18	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.4	0.099	mg/Kg			1	6010B
7440-62-2	Vanadium	6.7	1.4	0.089	mg/Kg			1	6010B
7440-66-6	Zinc	13	3.4	0.81	mg/Kg			1	6010B
7440-31-5	Tin	3.6	6.9	0.44	mg/Kg	J	B	1	6010B
7439-97-6	Mercury	ND	0.13	0.025	mg/Kg			1	7471A

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1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-EBK-002
Lab Sample ID: 360-24194-12
Lab Name: TestAmerica Westfield
Job No.: 360-24194-1
SDG ID.: OCRI-02
Matrix: Water
Date Sampled: 08/19/2009 09:30
Reporting Basis: WET
Date Received: 08/19/2009 17:30

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	ND	100	39	ug/L			1	6010B
7440-36-0	Antimony	ND	6.0	2.9	ug/L			1	6010B
7440-39-3	Barium	3.7	10	2.0	ug/L	J		1	6010B
7440-38-2	Arsenic	ND	10	2.3	ug/L			1	6010B
7440-41-7	Beryllium	ND	1.0	0.20	ug/L			1	6010B
7440-43-9	Cadmium	ND	1.0	0.20	ug/L			1	6010B
7440-70-2	Calcium	450	400	59	ug/L			1	6010B
7440-47-3	Chromium	ND	5.0	1.3	ug/L			1	6010B
7440-48-4	Cobalt	ND	10	2.0	ug/L			1	6010B
7440-50-8	Copper	7.4	10	1.7	ug/L	J		1	6010B
7439-89-6	Iron	53	100	34	ug/L	J		1	6010B
7439-92-1	Lead	1.5	5.0	1.3	ug/L	J		1	6010B
7439-95-4	Magnesium	120	400	50	ug/L	J		1	6010B
7439-96-5	Manganese	1.7	10	1.3	ug/L	J		1	6010B
7440-02-0	Nickel	2.0	10	1.5	ug/L	J		1	6010B
7440-09-7	Potassium	ND	4000	500	ug/L			1	6010B
7782-49-2	Selenium	ND	10	2.7	ug/L			1	6010B
7440-22-4	Silver	ND	5.0	1.8	ug/L			1	6010B
7440-23-5	Sodium	ND	2000	250	ug/L			1	6010B
7440-31-5	Tin	ND	50	7.0	ug/L			1	6010B
7440-62-2	Vanadium	ND	10	1.5	ug/L			1	6010B
7440-28-0	Thallium	ND	10	1.4	ug/L			1	6010B
7440-66-6	Zinc	ND	50	10	ug/L			1	6010B
7439-97-6	Mercury	ND	0.20	0.065	ug/L			1	7470A

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3/30/10

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24194-2
Sdg Number: OCRI-02A

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24194-2	OC-SB-421-10.5/12.5-XXX	Solid	08/19/2009 0805	08/19/2009 1730
360-24194-5	OC-SB-424-17/19-XXX	Solid	08/19/2009 1235	08/19/2009 1730
360-24194-8	OC-SB-425-18/20-XXX	Solid	08/19/2009 1025	08/19/2009 1730

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For samples 360-24194-5, 5DL, 8, 3,3'-Dichlorobenzidine, Aniline, Benzoic acid and Bis(2-chloroethyl)ether failed the recovery criteria low for LCS 360-48119/2-A. 1,3-Dichlorobenzene, 3,3'-Dichlorobenzidine and Aniline failed the recovery criteria low for LCSD 360-48119/3-A.

Several analytes failed the recovery criteria low for the MS/MSD of sample 360-24194-3 in batch 360-48213.
While for the MSD, 2,4-Dinitrophenol, Benzo[a]pyrene and Pentachlorophenol failed the recovery criteria high. Also, 4-Nitrophenol, Aniline, Bis(2-chloroethyl)ether and Caprolactam exceeded the rpd limit. The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

For sample 360-24194-2, batch 48213. CCV - Benzoic acid exceeded the max %D.
For sample 360-24194-2DL,DL2,DL3, batch 48389. CCV - several compounds exceeded the max %D however only reporting 1,1'-Biphenyl, Phenyl ether and Bis(2-ethylhexyl) phthalate, which were within control.

General method information:

For samples 360-24194-2,2DL,DL2,DL3, Diethyl phthalate and Di-n-butyl phthalate were detected in method blank MB 360-47986/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

For samples 360-24194-5, 5DL, 8, several analytes were detected in method blank MB 360-48119/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

For samples 360-24194-(5,5DL,8), batch 48751. ICAL: Quadratic regression used for: 1,2-Dichlorobenzene, 4,6-Dinitro-2-methylphenol, Benzoic acid and 2,4-Dinitrophenol. Initial Calibration criteria for regression is set as 0.99 (r2) for the coefficient of determination in the laboratory's software. MethodSW846 8270C requires a minimum factor of 0.99 (r) based on the correlation coefficient. The Coefficient of determination for 2,4-Dinitrophenol for this ICAL is 0.983 (r2). The correlation coeffiecient for 2,4-Dinitrophenol is 0.992 (r).

For samples 360-24194-(2, 2DL, DL2, DL3), batch 48213. ICAL: A Quadratic equation calibration curve was used for Benzoic acid, Bis(2-chloroethyl)ether, and 3,3'-Dichlorobenzidine.

Samples 360-24194-2 (1X, 20X, 100X, 1000X - high targets, surrogates diluted out above 20X), and 360-24194-5(1X, 2X - high targets) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the semivolatiles analyses.

All other quality control parameters were within the acceptance limits.

TOTAL METALS

Samples 360-24194-2, 360-24194-5 and 360-24194-8 were analyzed for total metals in accordance with EPA SW-846 Method 6010B. The samples were prepared and analyzed on 09/17/2009.

All QC performance standards and recommendations, which may affect Data Usability for this specific method, were achieved with the exception of:

Tin exceeded the CRI method criteria with 63% recovery on the low reporting limit standard. The recommend MCP control criteria is 70-130%. The data has been flagged appropriately.

General method information:
At the request of the client, a modified MCP analyte list (TAL metals) was reported for this job.

Several analytes were detected in method blank MB 360-49084/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

No other difficulties were encountered during the metals analyses.

All other quality control parameters were within the acceptance limits.

II. For the Secondary Unit Substation 6A in the new penthouse

See attached Specification 16362_SECONDARY UNIT SUBSTATIONS.pdf and E3_One line Diagram_ Substation Layout .pdf for equipment and testing information.

Perform all NETA testing as required per the specification **16362_SECONDARY UNIT SUBSTATIONS SECTION 3.3** Field Quality Control.

The secondary unit substation is to be tested as follows:

A. Does not apply.

B. Inspect and test in accordance with NETA ATS, except Section 4.

C. Primary Switch: Perform inspections and tests listed in NETA ATS, Section 7.5.1.2.

D. Transformer: Perform inspections and tests listed in NEMA ATS, Section 7.2. Include the following optional tests:
   1. Power factor or dissipation-factor tests.
   2. Winding-resistance tests for each winding at final tap setting.
   ~~3. Individual excitation-current tests on each phase.~~

E. Secondary Equipment: Perform inspections and tests listed in NETA ATS, Section 7.1.

The following list is based on and taken from the NETA ATS. The NETA ATS 2009 document shall be the standard for all required tests. Parts of the NETA ATS that are not applicable are marked as such and some optional tests are struck through as not required. Any discrepancy should reference the entire NETA ATS for clarification and resolution.

Any portion indicated to inspect or verify should also read as to record findings for records and turned over in report.

From NETA Acceptance and Testing Specifications

All of the following section and table references are from NETA ATS.

Client: Olin Corporation

Job Number: 360-24194-2
Sdg Number: OCRI-02A

Client Sample ID: **OC-SB-421-10.5/12.5-XXX**

Lab Sample ID: 360-24194-2
Client Matrix: Solid
% Moisture: 9.1

Date Sampled: 08/19/2009 0805
Date Received: 08/19/2009 1730

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49137		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.73 g
Date Analyzed:	09/17/2009 1622			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		12000		0.83	3.2
Antimony		ND		0.23	0.64
Arsenic		2.3		0.12	1.3
Barium		61		0.083	0.64
Beryllium		0.20	J	0.032	0.25
Cadmium		0.32		0.0089	0.25
Calcium		7600	~~B~~	3.2	13
Chromium		38		0.085	0.64
Cobalt		16		0.083	0.64
Copper		46		0.083	1.3
Iron		22000	~~B~~	1.0	6.4
Lead		1.1		0.073	0.64
Magnesium		5800	~~B~~	0.64	13
Manganese		170		0.085	1.3
Nickel		28		0.083	1.3
Potassium		2900		40	250
Selenium		ND		0.30	0.64
Silver		2.1		0.064	0.64
Sodium		900		17	130
Thallium		ND		0.092	1.3
Vanadium		53		0.083	1.3
Zinc		30		0.75	3.2
Tin		13	~~B~~ ^	0.41	6.4

3/30/10

Client: Olin Corporation

Job Number: 360-24194-2
Sdg Number: OCRI-02A

Client Sample ID: **OC-SB-424-17/19-XXX**

Lab Sample ID: 360-24194-5
Client Matrix: Solid
% Moisture: 11.2

Date Sampled: 08/19/2009 1235
Date Received: 08/19/2009 1730

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49137		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.56 g
Date Analyzed:	09/17/2009 1625			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9300		0.94	3.6
Antimony		ND		0.26	0.72
Arsenic		2.3		0.13	1.4
Barium		100		0.094	0.72
Beryllium		0.17	J	0.036	0.29
Cadmium		0.21	J	0.010	0.29
Calcium		4300	~~B~~	3.6	14
Chromium		88		0.096	0.72
Cobalt		10		0.094	0.72
Copper		16		0.094	1.4
Iron		18000	~~B~~	1.2	7.2
Lead		2.1		0.082	0.72
Magnesium		7200	~~B~~	0.72	14
Manganese		160		0.096	1.4
Nickel		41		0.094	1.4
Potassium		4200		45	290
Selenium		ND		0.34	0.72
Silver		3.6		0.073	0.72
Sodium		340		19	140
Thallium		ND		0.10	1.4
Vanadium		35		0.094	1.4
Zinc		17		0.85	3.6
Tin		33	J ~~B~~ ^	0.46	7.2

3/30/10

Analytical Data

Client: Olin Corporation

Job Number: 360-24194-2
Sdg Number: OCRI-02A

Client Sample ID: **OC-SB-425-18/20-XXX**

Lab Sample ID: 360-24194-8
Client Matrix: Solid
% Moisture: 7.4

Date Sampled: 08/19/2009 1025
Date Received: 08/19/2009 1730

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49137		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.63 g
Date Analyzed:	09/17/2009 1628			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8600		0.86	3.3
Antimony		ND		0.24	0.66
Arsenic		3.3		0.12	1.3
Barium		29		0.086	0.66
Beryllium		0.16	J	0.033	0.27
Cadmium		0.21	J	0.0093	0.27
Calcium		3400	~~B~~	3.3	13
Chromium		46		0.088	0.66
Cobalt		8.2		0.086	0.66
Copper		39		0.086	1.3
Iron		16000	~~B~~	1.1	6.6
Lead		2.1		0.076	0.66
Magnesium		6100	~~B~~	0.66	13
Manganese		150		0.089	1.3
Nickel		20		0.086	1.3
Potassium		1600		41	270
Selenium		ND		0.31	0.66
Silver		0.27	J	0.067	0.66
Sodium		190		17	130
Thallium		ND		0.096	1.3
Vanadium		29		0.086	1.3
Zinc		21		0.78	3.3
Tin		16	J ~~B^~~	0.42	6.6

3/30/10

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

ICV Source: ICV1 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	ICV 360-48048/6 08/21/2009 09:23				CCV 360-48048/13 08/21/2009 10:49				CCV 360-48048/20 08/21/2009 14:54			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Ag	1030		1000	103	995		1000	99	959		1000	96
Al	994		1000	99	4950		5000	99	4820		5000	96
As	984		1000	98	998		1000	100	951		1000	95
Ba	992		1000	99	990		1000	99	975		1000	98
Be	995		1000	100	995		1000	99	951		1000	95
Cd	995		1000	99	992		1000	99	950		1000	95
Co	997		1000	100	992		1000	99	950		1000	95
Cr	985		1000	98	993		1000	99	952		1000	95
Cu	990		1000	99	993		1000	99	964		1000	96
Fe	982		1000	98	4970		5000	99	4870		5000	97
K	9320		10000	93	19200		20000	96	17800		20000	89
Mn	996		1000	100	992		1000	99	951		1000	95
Ni	998		1000	100	986		1000	99	947		1000	95
Pb	997		1000	100	992		1000	99	946		1000	95
Sb	952		1000	95	996		1000	100	967		1000	97
Se	1000		1000	100	995		1000	100	961		1000	96
Tl	987		1000	99	992		1000	99	958		1000	96
V	995		1000	100	992		1000	99	954		1000	95
Zn	1000		1000	100	992		1000	99	939		1000	94

✓ ✓ ✓

cc'd
3/30/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

ICV Source: ICV2 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	ICV 360-48048/6 08/21/2009 09:23				CCV 360-48048/13 08/21/2009 10:49				CCV 360-48048/20 08/21/2009 14:54			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Ca	9960		10000	100	19800		20000	99	19000		20000	95
Mg	9850		10000	98	19900		20000	99	18900		20000	95
Na	9210		10000	92	19800		20000	99	19000		20000	95
Sn	987		1000	99	992		1000	99	949		1000	95

cc'd
3/30/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

ICV Source: ME ICV KNa_00003 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	CCV 360-48083/13 08/24/2009 10:59				ICV 360-48083/16 08/24/2009 11:08				CCV 360-48083/25 08/24/2009 12:11			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
K	19600		20000	98	75800		75000	101	19400		20000	97

cc'd
(w)
3/30/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

ICV Source: ME ICV KNa_00003 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	CCV 360-48083/29 08/24/2009 12:52				CCV 360-48083/31 08/24/2009 14:01				CCV 360-48083/35 08/24/2009 14:40			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
K	19200		20000	96	18700		20000	93	18900		20000	95

ccld
3/30/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

ICV Source: METHGlmg/L_00509 Concentration Units: ug/L

CCV Source: METHGlmg/L_00509

Analyte	ICV 360-48028/19 08/21/2009 11:33				CCV 360-48028/30 08/21/2009 11:55				CCV 360-48028/42 08/21/2009 12:19			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Hg	5.02		5.00	100	4.95		5.00	99	5.07		5.00	101

CC's
3/30/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

ICV Source: METHG1mg/L_00509 Concentration Units: ug/L

CCV Source: METHG1mg/L_00509

Analyte	ICV 360-48038/15 08/21/2009 14:12				CCV 360-48038/28 08/21/2009 14:40				CCV 360-48038/40 08/21/2009 15:02			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Hg	5.11		5.00	102	5.43		5.00	109	5.36		5.00	107

ccld
3/30/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

Analysis Method: 6010B Instrument ID: Varian ICP

Lab Sample ID: CRI 360-48036/8 Concentration Units: ug/L

CRQL Check Standard Source: CRI-RL ICP_00004

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	100	105		105	70-130
Antimony	10.0	11.9		119	70-130
Arsenic	10.0	10.2		102	70-130
Barium	10.0	11.1		111	70-130
Beryllium	1.00	1.01		101	70-130
Cadmium	1.00	1.02		102	70-130
Calcium	400	416		104	70-130
Chromium	5.00	5.15		103	70-130
Cobalt	10.0	10.6		106	70-130
Copper	10.0	11.7		117	70-130
Iron	100	106		106	70-130
Lead	5.00	5.08		102	70-130
Magnesium	400	418		104	70-130
Manganese	10.0	10.7		107	70-130
Nickel	10.0	10.6		106	70-130
Potassium	4000	3130	J	78	70-130
Selenium	10.0	10.8		108	70-130
Silver	5.00	3.77	J	75	70-130
Sodium	2000	2030		101	70-130
Vanadium	10.0	10.3		103	70-130
Thallium	10.0	8.15	J	82	70-130
Tin	50.0	31.7	J	63	70-130
Zinc	50.0	52.5		105	70-130

Lab Sample ID: CRI 360-48048/8 Concentration Units: ug/L

CRQL Check Standard Source: CRI-RL ICP_00004

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	100	105		105	70-130
Antimony	10.0	11.9		119	70-130
Arsenic	10.0	10.2		102	70-130
Barium	10.0	11.1		111	70-130
Beryllium	1.00	1.01		101	70-130
Cadmium	1.00	1.02		102	70-130
Calcium	400	416		104	70-130

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

FORM IIB-IN

3/30/10

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

Analysis Method: 6010B Instrument ID: Varian ICP

Lab Sample ID: CRI 360-48048/8 Concentration Units: ug/L

CRQL Check Standard Source: CRI-RL ICP_00004

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Chromium	5.00	5.15		103	70-130
Cobalt	10.0	10.6		106	70-130
Copper	10.0	11.7		117	70-130
Iron	100	106		106	70-130
Lead	5.00	5.08		102	70-130
Magnesium	400	418		104	70-130
Manganese	10.0	10.7		107	70-130
Nickel	10.0	10.6		106	70-130
Potassium	4000	3130	J	78	70-130
Selenium	10.0	10.8		108	70-130
Silver	5.00	3.77	J	75	70-130
Sodium	2000	2030		101	70-130
Vanadium	10.0	10.3		103	70-130
Thallium	10.0	8.15	J	82	70-130
Tin	50.0	31.7	J	63	70-130
Zinc	50.0	52.5		105	70-130

Lab Sample ID: CRI 360-48036/9 Concentration Units: ug/L

CRQL Check Standard Source: CRI-MCPICP_00006

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Arsenic	50.0	50.2		100	70-130
Barium	2000	2120		106	70-130
Beryllium	4.00	4.11		103	70-130
Cadmium	5.00	5.16		103	70-130
Chromium	100	106		106	70-130
Lead	15.0	16.5		110	70-130
Nickel	100	108		108	70-130
Selenium	50.0	50.7		101	70-130
Silver	7.00	7.38		105	70-130
Vanadium	50.0	51.0		102	70-130
Thallium	2.00	1.45	J	73	70-130
Zinc	900	932		104	70-130

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

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

Analysis Method: 6010B Instrument ID: Varian ICP

Lab Sample ID: CRI 360-48083/8 Concentration Units: ug/L

CRQL Check Standard Source: CRI-RL ICP_00004

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Copper	10.0	11.7		117	70-130
Iron	100	106		106	70-130
Lead	5.00	5.75		115	70-130
Magnesium	400	416		104	70-130
Manganese	10.0	10.6		106	70-130
Nickel	10.0	11.1		111	70-130
Potassium	4000	3330	J	83	70-130
Selenium	10.0	11.6		116	70-130
Sodium	2000	1940	J	97	70-130
Vanadium	10.0	10.1		101	70-130
Thallium	10.0	11.3		113	70-130
Tin	50.0	28.6	J	57	70-130
Zinc	50.0	52.2		104	70-130

Lab Sample ID: CRI 360-48083/9 Concentration Units: ug/L

CRQL Check Standard Source: CRI-MCPICP_00006

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Antimony	6.00	6.05	J	101	70-130
Arsenic	50.0	50.0		100	70-130
Barium	2000	2120		106	70-130
Beryllium	4.00	4.11		103	70-130
Cadmium	5.00	5.09		102	70-130
Chromium	100	106		106	70-130
Lead	15.0	16.5		110	70-130
Nickel	100	109		109	70-130
Selenium	50.0	50.2		100	70-130
Silver	7.00	7.54		108	70-130
Vanadium	50.0	51.2		102	70-130
Thallium	2.00	2.03	J	101	70-130
Zinc	900	939		104	70-130

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

FORM IIB-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

Instrument ID: Varian ICP Method: 6010B

Start Date: 08/21/2009 09:08 End Date: 08/21/2009 16:46

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
ZZZZZZ			09:08																				
ZZZZZZ			09:11																				
ZZZZZZ			09:14																				
ZZZZZZ			09:17																				
ZZZZZZ			09:20																				
ICV 360-48048/6	1		09:23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-48048/7	1		09:26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-48048/8	1		09:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-48048/9	1		09:32	X		X	X	X		X		X							X	X		X	
ICSA 360-48048/10	1		09:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-48048/11	1		10:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			10:46																				
CCV 360-48048/13	1		10:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48048/14	1		10:52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-48048/15			10:55																				
ICV 360-48048/16			10:58																				
ICV 360-48048/17			11:00																				
CRI 360-48048/18			11:03																				
CRI 360-48048/19	1		11:06																		X		
CCV 360-48048/20	1		14:54	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48048/21	1		14:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MB 360-48006/1-A	1	T	15:05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 360-48006/2-A	1	T	15:08	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCSD 360-48006/3-A	1	T	15:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			15:14																				
ZZZZZZ			15:17																				
ZZZZZZ			15:20																				
ZZZZZZ			15:23																				
ZZZZZZ			15:26																				
CCV 360-48048/30	1		15:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48048/31	1		15:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			15:35																				
ZZZZZZ			15:38																				
ZZZZZZ			15:41																				
ZZZZZZ			15:44																				
ZZZZZZ			15:48																				
360-24194-12	1	T	15:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			15:53																				
ZZZZZZ			15:57																				
ZZZZZZ			16:00																				
ZZZZZZ			16:03																				
CCV 360-48048/42	1		16:06	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

Instrument ID: Varian ICP Method: 6010B

Start Date: 08/21/2009 09:08 End Date: 08/21/2009 16:46

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
CCB 360-48048/43	1		16:08	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:11																				
ZZZZZZ			16:14																				
ZZZZZZ			16:17																				
ZZZZZZ			16:20																				
ZZZZZZ			16:23																				
ZZZZZZ			16:26																				
ZZZZZZ			16:29																				
ZZZZZZ			16:31																				
CCV 360-48048/52	1		16:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48048/53	1		16:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 360-48048/54	1		16:40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-48048/55	1		16:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:46																				

3.24 ug/L

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

Concentration Units: ug/L

Analyte	RL	ICB 360-48048/7 08/21/2009 09:26		CCB 360-48048/14 08/21/2009 10:52		CCB 360-48048/21 08/21/2009 14:57		CCB 360-48048/31 08/21/2009 15:32	
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND		ND		ND	
Al	100	ND		ND		ND		ND	
As	10	ND		ND		ND		ND	
Ba	10	ND		ND		ND		ND	
Be	1.0	ND		ND		ND		ND	
Ca	400	ND		ND		ND		ND	
Cd	1.0	ND		ND		ND		ND	
Co	10	ND		ND		ND		ND	
Cr	5.0	ND		ND		ND		ND	
Cu	10	ND		ND		ND		ND	
Fe	100	ND		ND		ND		ND	
K	4000	ND		ND		ND		ND	
Mg	400	ND		ND		ND		ND	
Mn	10	ND		ND		ND		ND	
Na	2000	ND		ND		ND		ND	
Ni	10	ND		ND		ND		ND	
Pb	5.0	ND		ND		ND		ND	
Sb	6.0	3.63	J	ND		ND		ND	
Se	10	4.26	J	ND		3.18	J	ND	
Sn	50	ND		ND		ND		ND	
Tl	10	ND		ND		ND		ND	
V	10	ND		ND		ND		ND	
Zn	50	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

Concentration Units: ug/L

Analyte	RL	CCB 360-48048/43 08/21/2009 16:08		CCB 360-48048/53 08/21/2009 16:37					
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND					
Al	100	ND		ND					
As	10	ND		ND					
Ba	10	ND		ND					
Be	1.0	ND		0.212	J				
Ca	400	ND		ND					
Cd	1.0	ND		ND					
Co	10	ND		ND					
Cr	5.0	ND		ND					
Cu	10	ND		ND					
Fe	100	ND		ND					
K	4000	ND		597	J				
Mg	400	ND		ND					
Mn	10	ND		ND					
Na	2000	ND		ND					
Ni	10	ND		ND					
Pb	5.0	ND		ND					
Sb	6.0	ND		ND					
Se	10	3.24	J	ND					
Sn	50	ND		ND					
Tl	10	ND		ND					
V	10	ND		ND					
Zn	50	ND		ND					

Italicized analytes were not requested for this sequence.

7D-IN
LAB CONTROL SAMPLE DUPLICATE
METALS

Lab ID: LCSD 360-48015/3-A

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

Sample Matrix: Solid LCS Source: stlma-3_00038

Analyte	(SDR)	C	Spike Added	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Aluminum	218		250	87	80-120	2	30		6010B
Antimony	40.2		50.0	80	80-120	1	30		6010B
Arsenic	43.2		50.0	86	80-120	2	30		6010B
Barium	45.1		50.0	90	80-120	2	30		6010B
Beryllium	43.2		50.0	86	80-120	2	30		6010B
Cadmium	43.2		50.0	86	80-120	2	30		6010B
Calcium	884		1000	88	80-120	2	30		6010B
Chromium	44.2		50.0	88	80-120	2	30		6010B
Cobalt	43.7		50.0	87	80-120	2	30		6010B
Copper	44.8		50.0	90	80-120	3	30		6010B
Iron	224		250	90	80-120	2	30		6010B
Lead	43.0		50.0	86	80-120	3	30		6010B
Magnesium	852		1000	85	80-120	3	30		6010B
Manganese	44.1		50.0	88	80-120	2	30		6010B
Nickel	43.3		50.0	87	80-120	3	30		6010B
Potassium	774		1000	77	80-120	3	30	*	6010B
Selenium	43.3		50.0	87	80-120	2	30		6010B
Silver	45.1		50.0	90	80-120	2	30		6010B
Sodium	839		1000	84	80-120	3	30		6010B
Vanadium	44.3		50.0	89	80-120	2	30		6010B
Thallium	43.1		50.0	86	80-120	2	30		6010B
Tin	43.6		50.0	87	80-120	2	30		6010B
Zinc	42.8		50.0	86	80-120	3	30		6010B

CCIS
3/30/10

SDR = Spike Duplicate Results
Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIID - IN

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

Concentration Units: mg/Kg Lab Sample ID: MB 360-48015/1-A

Instrument Code: Varian ICP Batch No.: 48036

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	ND			6010B
7440-36-0	Antimony	ND			6010B
7440-38-2	Arsenic	ND			6010B
7440-39-3	Barium	ND			6010B
7440-41-7	Beryllium	ND			6010B
7440-43-9	Cadmium	ND			6010B
7440-70-2	Calcium	10.2	J		6010B
7440-47-3	Chromium	ND			6010B
7440-48-4	Cobalt	ND			6010B
7440-50-8	Copper	ND			6010B
7439-89-6	Iron	1.51	J		6010B
7439-92-1	Lead	ND			6010B
7439-95-4	Magnesium	2.64	J		6010B
7439-96-5	Manganese	ND			6010B
7440-02-0	Nickel	0.137	J		6010B
7440-09-7	Potassium	ND			6010B
7782-49-2	Selenium	ND			6010B
7440-22-4	Silver	ND			6010B
7440-23-5	Sodium	ND			6010B
7440-62-2	Vanadium	ND			6010B
7440-28-0	Thallium	ND			6010B
7440-31-5	Tin	0.433	J		6010B
7440-66-6	Zinc	ND			6010B

D-1
D-3
D-4
D-6
D-7
D-9

	AL/51	all >
Ca		
Fe	7.55	
Mg	13.2	
Ni	0.685	
Sn	2.165	

FORM III-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

Instrument ID: Varian ICP Method: 6010B

Start Date: 08/21/2009 09:08 End Date: 08/21/2009 15:02

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
ZZZZZZ			09:08																				
ZZZZZZ			09:11																				
ZZZZZZ			09:14																				
ZZZZZZ			09:17																				
ZZZZZZ			09:20																				
ICV 360-48036/6			09:23																				
ICB 360-48036/7			09:26																				
CRI 360-48036/8	1		09:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-48036/9	1		09:32	X		X	X	X		X		X							X	X		X	
ICSA 360-48036/10	1		09:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-48036/11	1		10:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			10:46																				
CCV 360-48036/13	1		10:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48036/14	1		10:52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-48036/15			10:55																				
ICV 360-48036/16			10:58																				
ICV 360-48036/17			11:00																				
CRI 360-48036/18			11:03																				
CRI 360-48036/19			11:06																				
CCV 360-48036/20	1		11:23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48036/21	1		11:26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MB 360-48015/1-A	1	T	13:31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 360-48015/2-A	1	T	13:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-48036/24	1		13:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48036/25	1		13:40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCSD 360-48015/3-A	1	T	13:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			13:46																				
ZZZZZZ			13:49																				
ZZZZZZ			13:52																				
ZZZZZZ			13:54																				
ZZZZZZ			13:57																				
ZZZZZZ			14:00																				
360-24194-1	1	T	14:03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24194-3	1	T	14:06	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24194-4	1	T	14:09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-48036/36	1		14:12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48036/37	1		14:15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24194-6	1	T	14:17	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
360-24194-7	1	T	14:20	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
360-24194-9	1	T	14:23	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
ZZZZZZ			14:26																				
ZZZZZZ			14:36																				

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

Concentration Units: ug/L

Analyte	RL	ICB 360-48028/18 08/21/2009 11:31		CCB 360-48028/31 08/21/2009 11:57		CCB 360-48028/43 08/21/2009 12:21			
		Found	C	Found	C	Found	C	Found	C
Hg	0.20	ND		ND		0.0670	J		

Italicized analytes were not requested for this sequence.

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-1

SDG No.: OCRI-02

Instrument ID: Hg Analyzer Method: 7470A

Start Date: 08/21/2009 10:56 End Date: 08/21/2009 12:21

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			12:06																				
ZZZZZZ			12:08																				
360-24194-12	1	T	12:11	X																			
ZZZZZZ			12:13																				
ZZZZZZ			12:15																				
ZZZZZZ			12:17																				
CCV 360-48028/42	1		12:19	X																			
CCB 360-48028/43	1		12:21	X																			

0.0070 ug/L

Prep Types
T = Total/NA

EQUIP BLANK

Ba $\frac{3.7\,\mu g/L \times \overset{0.1\,L}{\cancel{0.14}}\ \cancel{0.002\,kg}}{\cancel{0.001\,L}\ \cancel{0.1\,L}\ 0.002\,kg} = 0.185\ mg/kg$

Ni $\frac{2\,\mu g/L \times 0.1\,L}{0.002\,kg} = 0.1\ mg/kg$

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-421-10.5/12.5-XXX
Lab Sample ID: 360-24194-2
Lab Name: TestAmerica Westfield
Job No.: 360-24194-2
SDG ID.: OCRI-02A
Matrix: Solid
Date Sampled: 08/19/2009 08:05
Reporting Basis: DRY
Date Received: 08/19/2009 17:30
% Solids: 90.9

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	12000	3.2	0.83	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.64	0.23	mg/Kg			1	6010B
7440-38-2	Arsenic	2.3	1.3	0.12	mg/Kg			1	6010B
7440-39-3	Barium	61	0.64	0.083	mg/Kg			1	6010B
7440-41-7	Beryllium	0.20	0.25	0.032	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.32	0.25	0.0089	mg/Kg			1	6010B
7440-70-2	Calcium	7600	13	3.2	mg/Kg		B	1	6010B
7440-47-3	Chromium	38	0.64	0.085	mg/Kg			1	6010B
7440-48-4	Cobalt	16	0.64	0.083	mg/Kg			1	6010B
7440-50-8	Copper	46	1.3	0.083	mg/Kg			1	6010B
7439-89-6	Iron	22000	6.4	1.0	mg/Kg		B	1	6010B
7439-92-1	Lead	1.1	0.64	0.073	mg/Kg			1	6010B
7439-95-4	Magnesium	5800	13	0.64	mg/Kg		B	1	6010B
7439-96-5	Manganese	170	1.3	0.085	mg/Kg			1	6010B
7440-02-0	Nickel	28	1.3	0.083	mg/Kg			1	6010B
7440-09-7	Potassium	2900	250	40	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.64	0.30	mg/Kg			1	6010B
7440-22-4	Silver	2.1	0.64	0.064	mg/Kg			1	6010B
7440-23-5	Sodium	900	130	17	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.3	0.092	mg/Kg			1	6010B
7440-62-2	Vanadium	53	1.3	0.083	mg/Kg			1	6010B
7440-66-6	Zinc	30	3.2	0.75	mg/Kg			1	6010B
7440-31-5	Tin	13	6.4	0.41	mg/Kg		B ^	1	6010B

ccl'd
(W)
3/30/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-424-17/19-XXX
Lab Sample ID: 360-24194-5
Lab Name: TestAmerica Westfield
Job No.: 360-24194-2
SDG ID.: OCRI-02A
Matrix: Solid
Date Sampled: 08/19/2009 12:35
Reporting Basis: DRY
Date Received: 08/19/2009 17:30
% Solids: 88.8

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	9300	3.6	0.94	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.72	0.26	mg/Kg			1	6010B
7440-38-2	Arsenic	2.3	1.4	0.13	mg/Kg			1	6010B
7440-39-3	Barium	100	0.72	0.094	mg/Kg			1	6010B
7440-41-7	Beryllium	0.17	0.29	0.036	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.21	0.29	0.010	mg/Kg	J		1	6010B
7440-70-2	Calcium	4300	14	3.6	mg/Kg		B	1	6010B
7440-47-3	Chromium	88	0.72	0.096	mg/Kg			1	6010B
7440-48-4	Cobalt	10	0.72	0.094	mg/Kg			1	6010B
7440-50-8	Copper	16	1.4	0.094	mg/Kg			1	6010B
7439-89-6	Iron	18000	7.2	1.2	mg/Kg		B	1	6010B
7439-92-1	Lead	2.1	0.72	0.082	mg/Kg			1	6010B
7439-95-4	Magnesium	7200	14	0.72	mg/Kg		B	1	6010B
7439-96-5	Manganese	160	1.4	0.096	mg/Kg			1	6010B
7440-02-0	Nickel	41	1.4	0.094	mg/Kg			1	6010B
7440-09-7	Potassium	4200	290	45	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.72	0.34	mg/Kg			1	6010B
7440-22-4	Silver	3.6	0.72	0.073	mg/Kg			1	6010B
7440-23-5	Sodium	340	140	19	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.4	0.10	mg/Kg			1	6010B
7440-62-2	Vanadium	35	1.4	0.094	mg/Kg			1	6010B
7440-66-6	Zinc	17	3.6	0.85	mg/Kg			1	6010B
7440-31-5	Tin	33	7.2	0.46	mg/Kg		B ^	1	6010B

cc'd
(w)
3/30/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-425-18/20-XXX
Lab Sample ID: 360-24194-8
Lab Name: TestAmerica Westfield
Job No.: 360-24194-2
SDG ID.: OCRI-02A
Matrix: Solid
Date Sampled: 08/19/2009 10:25
Reporting Basis: DRY
Date Received: 08/19/2009 17:30
% Solids: 92.6

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	8600	3.3	0.86	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.66	0.24	mg/Kg			1	6010B
7440-38-2	Arsenic	3.3	1.3	0.12	mg/Kg			1	6010B
7440-39-3	Barium	29	0.66	0.086	mg/Kg			1	6010B
7440-41-7	Beryllium	0.16	0.27	0.033	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.21	0.27	0.0093	mg/Kg	J		1	6010B
7440-70-2	Calcium	3400	13	3.3	mg/Kg		B	1	6010B
7440-47-3	Chromium	46	0.66	0.088	mg/Kg			1	6010B
7440-48-4	Cobalt	8.2	0.66	0.086	mg/Kg			1	6010B
7440-50-8	Copper	39	1.3	0.086	mg/Kg			1	6010B
7439-89-6	Iron	16000	6.6	1.1	mg/Kg		B	1	6010B
7439-92-1	Lead	2.1	0.66	0.076	mg/Kg			1	6010B
7439-95-4	Magnesium	6100	13	0.66	mg/Kg		B	1	6010B
7439-96-5	Manganese	150	1.3	0.089	mg/Kg			1	6010B
7440-02-0	Nickel	20	1.3	0.086	mg/Kg			1	6010B
7440-09-7	Potassium	1600	270	41	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.66	0.31	mg/Kg			1	6010B
7440-22-4	Silver	0.27	0.66	0.067	mg/Kg	J		1	6010B
7440-23-5	Sodium	190	130	17	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.3	0.096	mg/Kg			1	6010B
7440-62-2	Vanadium	29	1.3	0.086	mg/Kg			1	6010B
7440-66-6	Zinc	21	3.3	0.78	mg/Kg			1	6010B
7440-31-5	Tin	16	6.6	0.42	mg/Kg		B ^	1	6010B

ccld
(W)
3/30/10

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-2

SDG No.: OCRI-02A

ICV Source: ICV1 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	ICV 360-49137/6 09/17/2009 11:26				CCV 360-49137/13 09/17/2009 11:46				CCV 360-49137/19 09/17/2009 12:40			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Ag	971		1000	97	993		1000	99	997		1000	100
Al	974		1000	97	4980		5000	100	5010		5000	100
As	965		1000	96	991		1000	99	1000		1000	100
Ba	978		1000	98	997		1000	100	1000		1000	100
Be	978		1000	98	995		1000	99	1000		1000	100
Cd	978		1000	98	991		1000	99	997		1000	100
Co	982		1000	98	993		1000	99	999		1000	100
Cr	968		1000	97	993		1000	99	999		1000	100
Cu	969		1000	97	995		1000	100	1000		1000	100
Fe	961		1000	96	4970		5000	99	5000		5000	100
Mn	978		1000	98	993		1000	99	999		1000	100
Ni	978		1000	98	994		1000	99	996		1000	100
Pb	982		1000	98	995		1000	99	997		1000	100
Sb	935		1000	93	991		1000	99	998		1000	100
Se	987		1000	99	1000		1000	100	1000		1000	100
Tl	982		1000	98	998		1000	100	1010		1000	101
V	979		1000	98	994		1000	99	1000		1000	100
Zn	984		1000	98	991		1000	99	995		1000	100

cc'd
3/30/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-2

SDG No.: OCRI-02A

ICV Source: ICV2 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	ICV 360-49137/6 09/17/2009 11:26				CCV 360-49137/13 09/17/2009 11:46				CCV 360-49137/19 09/17/2009 12:40			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Ca	9810		10000	98	19800		20000	99	20000		20000	100
Mg	9700		10000	97	19800		20000	99	19900		20000	100
Na	9020		10000	90	19900		20000	100	20000		20000	100
Sn	973		1000	97	995		1000	100	999		1000	100

ccl
3/30/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-2

SDG No.: OCRI-02A

ICV Source: ME ICV KNa_00003 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	CCV 360-49137/13 09/17/2009 11:46				ICV 360-49137/16 09/17/2009 11:55				CCV 360-49137/19 09/17/2009 12:40			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
K	20100		20000	100	75900		75000	101	20400		20000	102

ccl
3/30/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-2

SDG No.: OCRI-02A

Analysis Method: 6010B Instrument ID: Varian ICP

Lab Sample ID: CRI 360-49137/8 Concentration Units: ug/L

CRQL Check Standard Source: CRI-RL ICP_00004

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	100	103		103	70-130
Antimony	10.0	10.2		102	70-130
Arsenic	10.0	10.1		101	70-130
Barium	10.0	11.1		111	70-130
Beryllium	1.00	1.00		100	70-130
Cadmium	1.00	1.00		100	70-130
Calcium	400	408		102	70-130
Chromium	5.00	5.07		101	70-130
Cobalt	10.0	10.8		108	70-130
Copper	10.0	10.9		109	70-130
Iron	100	105		105	70-130
Lead	5.00	5.43		109	70-130
Magnesium	400	418		104	70-130
Manganese	10.0	10.6		106	70-130
Nickel	10.0	10.5		105	70-130
Potassium	4000	3590	J	90	70-130
Selenium	10.0	12.4		124	70-130
Silver	5.00	5.20		104	70-130
Sodium	2000	1990	J	99	70-130
Thallium	10.0	12.3		123	70-130
Vanadium	10.0	10.4		104	70-130
Zinc	50.0	51.6		103	70-130
Tin	50.0	31.3	J	~~63~~	70-130

Lab Sample ID: CRI 360-49137/9 Concentration Units: ug/L

CRQL Check Standard Source: CRI-MCPICP_00006

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Antimony	6.00	7.09	J	118	70-130
Arsenic	50.0	48.6		97	70-130
Barium	2000	2180		109	70-130
Beryllium	4.00	4.14		103	70-130
Cadmium	5.00	5.17		103	70-130
Chromium	100	107		107	70-130
Lead	15.0	16.7		111	70-130

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

FORM IIB-IN

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-2

SDG No.: OCRI-02A

Preparation Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 360-49084/1-A	09/17/2009 09:26	49084	2.0		100
LCS 360-49084/2-A	09/17/2009 09:26	49084	2.0		100
LCSD 360-49084/3-A	09/17/2009 09:26	49084	2.0		100
360-24194-2	09/17/2009 09:26	49084	1.73		100
360-24194-5	09/17/2009 09:26	49084	1.56		100
360-24194-8	09/17/2009 09:26	49084	1.63		100

	Amt (mg/kg)	Al
Ca	7.00	35
Fe	2.27	11.35
Sn	0.511	2.555
Mg	1.80	9.00

all 7

FORM XII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-2

SDG No.: OCRI-02A

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/17/2009 11:12 End Date: 09/17/2009 16:54

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
CCV 360-49137/43	1		16:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49137/44	1		16:17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:19																				
360-24194-2	1	T	16:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24194-5	1	T	16:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24194-8	1	T	16:28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:31																				
ZZZZZZ			16:34																				
ZZZZZZ			16:37																				
ZZZZZZ			16:40																				
CCV 360-49137/53	1		16:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49137/54	1		16:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 360-49137/55	1		16:48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-49137/56	1		16:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:54																				

Se 3.60 ug/L

Tl 2.10 ug/L

all ND

No action

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24194-2

SDG No.: OCRI-02A

Concentration Units: mg/Kg Lab Sample ID: MB 360-49084/1-A

Instrument Code: Varian ICP Batch No.: 49137

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	ND			6010B
7440-36-0	Antimony	ND			6010B
7440-38-2	Arsenic	ND			6010B
7440-39-3	Barium	ND			6010B
7440-41-7	Beryllium	ND			6010B
7440-43-9	Cadmium	ND			6010B
7440-70-2	Calcium	7.00	J		6010B
7440-47-3	Chromium	ND			6010B
7440-48-4	Cobalt	ND			6010B
7440-50-8	Copper	ND			6010B
7439-89-6	Iron	2.27	J		6010B
7439-92-1	Lead	ND			6010B
7439-95-4	Magnesium	1.80	J		6010B
7439-96-5	Manganese	ND			6010B
7440-02-0	Nickel	ND			6010B
7440-09-7	Potassium	ND			6010B
7782-49-2	Selenium	ND			6010B
7440-22-4	Silver	ND			6010B
7440-23-5	Sodium	ND			6010B
7440-28-0	Thallium	ND			6010B
7440-62-2	Vanadium	ND			6010B
7440-66-6	Zinc	ND			6010B
7440-31-5	Tin	0.511	J		6010B

FORM III-IN

7D-IN
LAB CONTROL SAMPLE DUPLICATE
METALS

Lab ID: LCSD 360-49084/3-A

Lab Name: TestAmerica Westfield Job No.: 360-24194-2

Sample Matrix: Solid LCS Source: stlma-3_00039

Analyte	(SDR)	C	Spike Added	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Aluminum	218		250	87	80-120	1	30		6010B
Antimony	42.9		50.0	86	80-120	4	30		6010B
Arsenic	43.5		50.0	87	80-120	1	30		6010B
Barium	45.3		50.0	91	80-120	1	30		6010B
Beryllium	44.4		50.0	89	80-120	1	30		6010B
Cadmium	43.9		50.0	88	80-120	1	30		6010B
Calcium	904		1000	90	80-120	1	30		6010B
Chromium	45.0		50.0	90	80-120	1	30		6010B
Cobalt	44.4		50.0	89	80-120	1	30		6010B
Copper	45.0		50.0	90	80-120	1	30		6010B
Iron	226		250	91	80-120	1	30		6010B
Lead	43.7		50.0	87	80-120	1	30		6010B
Magnesium	864		1000	86	80-120	1	30		6010B
Manganese	44.8		50.0	90	80-120	1	30		6010B
Nickel	44.1		50.0	88	80-120	1	30		6010B
Potassium	836		1000	84	80-120	5	30		6010B
Selenium	43.4		50.0	87	80-120	1	30		6010B
Silver	43.7		50.0	87	80-120	1	30		6010B
Sodium	852		1000	85	80-120	1	30		6010B
Thallium	43.8		50.0	88	80-120	1	30		6010B
Vanadium	45.1		50.0	90	80-120	1	30		6010B
Zinc	43.7		50.0	87	80-120	1	30		6010B
Tin	45.0		50.0	90	80-120	0	30		6010B

cc'd
(2)
3/30/10

SDR = Spike Duplicate Results
Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIID - IN

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

SITE: **Olin Chemical** Project #: 6107/00076.12 SDG #: OCRI-03/03A

LAB # : TAL 360-24223-1/2

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☐ ☒ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☑ ☐ ☐ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	See below. Post-digestion spikes %R limits = 75% - 125%

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Laboratory Control Samples (LCS) ☑ ☐ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate ☑ ☐ ☐ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☑ ☐ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	
Field Duplicate ☑ ☐ ☐ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☑ ☐ ☐ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution ☐ ☐ ☑ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☐ ☑ Are results of the diluted samples > the original sample results	

Validator's Signature: [signature]

Date: 4/1/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / (III) (circle one)

QL Standard:
The percent recoveries of tin (58, 61, 57) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J).

Blanks:
Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Aluminum, selenium, and zinc were reported in the equipment blank associated with OCRI-03 and 03A. Associated sample results for selenium were non detect, no further action required. Reported detections of aluminum and zinc were significantly greater than equipment blank results, the data was not qualified.

Aluminum (0.915 mg/kg), barium (0.0990 mg/kg), cadmium (0.00714 mg/kg), calcium (18.3 mg/kg),chromium (0.0864 mg/kg), iron (2.62 mg/kg), lead (0.192mg/kg), magnesium (2.72 mg/kg), manganese (0.212 mg/kg), nickel (0.143 mg/kg), thallium (0.0792 mg/kg), tin (0.443 mg/kg), and zinc (0.738 mg/kg) were reported in the method blank (M360-48052) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Sample results for aluminum, barium, cadmium, calcium, chromium, iron, lead, magnesium, manganese, nickel, and zinc were greater than the action levels, no further action required. Sample results for thallium and tin that were less than the action levels were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Calcium (7.00 mg/kg), iron (2.27 mg/kg), magnesium (1.80 mg/kg), and tin (0.511 mg/kg) were reported in the method blank (M360-49084) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Sample results for calcium, iron, and magnesium were greater than the action levels, no further action required. Sample results for tin that were less than the action level were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Selenium and thallium were reported in the continuing calibration blanks (CCB) associated with all samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for selenium and thallium were non detect, no further action required.

Matrix Spikes:
Sample OC-SB-426-5.0/7.0-XXX was submitted for MS analysis. The MS percent recovery of

aluminum (170) and antimony (61) were outside of the QC limits. The unspiked sample result for aluminum was greater than four times the spiking concentration, no further action required. Post digestion spike recovery for antimony was within QC limits, indicating a matrix effect for antimony. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

SDG	Lab Sample ID	Field Sample ID	Antimony MS Recovery (%)
OCRI-03	360-24223-9	OC-SB-426-5.0/7.0-XXX	61
OCRI-04	360-24244-1	OC-SB-432-0.0/1.0-XXX	27
OCRI-04A	360-24244-5	OC-SB-443-18/20-XXX	32
OCRI-05	360-24251-19	OC-SB-446-5.0/7.0-XXX	80
OCRI-05	360-24251-4	OC-SB-433-5.0/7.0-XXX	70
OCRI-06	360-24309-23	OC-SB-430-8.0/10-XXX	44
OCRI-07	360-24327-12	OC-SB-410-6.0/8.0-XXX	65
OCRI-08	360-24343-10	OC-SB-451-2.5/4.5-XXX	62
OCRI-08	360-24343-17	OC-SB-455-6.0/8.0-XXX	46
OCRI-09	360-24365-4	OC-SB-442-8.0/10-XXX	50
OCRI-10	360-24417-10	OC-SB-465-8.0/10-XXX	63
OCRI-10A	360-24417-2	OC-SB-463-28/30-XXX	38
OCRI-11	360-24444-2	OC-SB-459-6.0/8.0-XXX	64
OCRI-11	360-24444-9	OC-SB-467-6.0/8.0-XXX	68
OCRI-12	360-24454-3	OC-SB-461-5.0/7.0-XXX	65
OCRI-13A	360-24499-3	OC-SB-469-28/30-XXX	61
OCRI-14	360-24563-14	OC-SB-456-7.0/9.0-XXX	60
OCRI-14	360-24563-5	OC-SB-427-8.0/10-XXX	67
OCRI-15	360-24582-22	OC-SS-416-0.0/1.0-XXX	56
OCRI-16	360-24634-1	OC-SS-417-0.0/1.0-XXX	61
OCRI-17	360-24665-1	OC-SS-434-0.0/1.0-XXX	29
OCRI-18	360-24686-1	OC-SB-400-17/19-XXX	67

Serial Dilution:
The lab did not perform a serial dilution analysis as per the method requirement.

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24223-1
Sdg Number: OCRI-03

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24223-1	OC-SB-415-0.0/1.0-XXX	Solid	08/20/2009 0845	08/20/2009 1800
360-24223-2	OC-SB-415-16/18-XXX	Solid	08/20/2009 0910	08/20/2009 1800
360-24223-3	OC-SB-415-5.0/7.0-XXX	Solid	08/20/2009 0850	08/20/2009 1800
360-24223-4	OC-SB-419-0.0/1.0-XXX	Solid	08/19/2009 1555	08/20/2009 1800
360-24223-5	OC-SB-419-17/19-XXX	Solid	08/19/2009 1640	08/20/2009 1800
360-24223-6	OC-SB-419-3.0/5.0-XXX	Solid	08/19/2009 1605	08/20/2009 1800
360-24223-7	OC-SB-426-0.0/1.0-XXX	Solid	08/19/2009 1415	08/20/2009 1800
360-24223-8	OC-SB-426-13/15-XXX	Solid	08/19/2009 1435	08/20/2009 1800
360-24223-9	OC-SB-426-5.0/7.0-XXX	Solid	08/19/2009 1425	08/20/2009 1800
360-24223-9MS	OC-SB-426-5.0/7.0-XMS	Solid	08/19/2009 1425	08/20/2009 1800
360-24223-9MSD	OC-SB-426-5.0/7.0-MSD	Solid	08/19/2009 1425	08/20/2009 1800
360-24223-10	OC-SB-426-5.0/7.0-DUP	Solid	08/19/2009 1425	08/20/2009 1800
360-24223-11	OC-SB-431-0.0/1.0-XXX	Solid	08/20/2009 1015	08/20/2009 1800
360-24223-12	OC-SB-431-7.0/9.0-XXX	Solid	08/20/2009 1025	08/20/2009 1800
360-24223-13	OC-SB-436-0.0/1.0-XXX	Solid	08/20/2009 1305	08/20/2009 1800
360-24223-14	OC-SB-436-13/15-XXX	Solid	08/20/2009 1325	08/20/2009 1800
360-24223-15	OC-SB-436-6.0/8.0-XXX	Solid	08/20/2009 1310	08/20/2009 1800
360-24223-16	OC-TBK-004	Solid	08/20/2009 1430	08/20/2009 1800

Form I's updated
4/1/10

Analytical Data

Client: Olin Corporation

Job Number: 360-24223-1
Sdg Number: OCRI-03

Client Sample ID: **OC-SB-415-0.0/1.0-XXX**

Lab Sample ID: 360-24223-1
Client Matrix: Solid
% Moisture: 4.9

Date Sampled: 08/20/2009 0845
Date Received: 08/20/2009 1800

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 08/24/2009 1623
Date Prepared: 08/24/2009 0848

Analysis Batch: 360-48174
Prep Batch: 360-48052

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.83 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5400	~~B~~	0.75	2.9
Antimony		ND	U	0.21	0.57
Arsenic		9.5		0.10	1.1
Barium		8.6	~~B~~	0.075	0.57
Beryllium		0.19	J	0.029	0.23
Cadmium		0.12	J ~~B~~	0.0080	0.23
Calcium		2900	~~B~~	2.9	23
Chromium		9.0	~~B~~	0.076	0.57
Cobalt		1.9		0.075	0.57
Copper		4.5	~~B~~	0.075	1.1
Iron		6300	~~B~~	0.92	5.7
Lead		3.2	~~B~~	0.066	0.57
Magnesium		1200	~~B~~	0.57	11
Manganese		47	~~B~~	0.077	1.1
Nickel		6.2	~~B~~	0.075	1.1
Potassium		510		36	230
Selenium		ND		0.27	0.57
Silver		ND		0.058	0.57
Sodium		46	J	15	110
Thallium		0.12	U ~~J B~~	0.083	1.1
Vanadium		7.1		0.075	1.1
Zinc		12	~~B~~	0.68	2.9
Tin		3.4	J ~~B~~	0.37	5.7

7471A Mercury (CVAA)

Method: 7471A
Preparation: 7471A
Dilution: 1.0
Date Analyzed: 08/24/2009 1156
Date Prepared: 08/24/2009 0917

Analysis Batch: 360-48073
Prep Batch: 360-48055

Instrument ID: Hg Analyzer
Lab File ID: N/A
Initial Weight/Volume: 0.21 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.034	0.19

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Analytical Data

Client: Olin Corporation

Job Number: 360-24223-1
Sdg Number: OCRI-03

Client Sample ID: **OC-SB-415-5.0/7.0-XXX**

Lab Sample ID: 360-24223-3
Client Matrix: Solid
% Moisture: 10.3

Date Sampled: 08/20/2009 0850
Date Received: 08/20/2009 1800

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 08/24/2009 1632
Date Prepared: 08/24/2009 0848

Analysis Batch: 360-48174
Prep Batch: 360-48052

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.51 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4700	B	0.96	3.7
Antimony		ND		0.27	0.74
Arsenic		4.6		0.13	1.5
Barium		6.1	B	0.096	0.74
Beryllium		0.16	J	0.037	0.30
Cadmium		0.075	J B	0.010	0.30
Calcium		560	B	3.7	30
Chromium		6.6	B	0.098	0.74
Cobalt		1.7		0.096	0.74
Copper		3.2	B	0.096	1.5
Iron		4900	B	1.2	7.4
Lead		2.5	B	0.084	0.74
Magnesium		870	B	0.74	15
Manganese		35	B	0.099	1.5
Nickel		4.5	B	0.096	1.5
Potassium		430		46	300
Selenium		ND		0.35	0.74
Silver		ND		0.074	0.74
Sodium		ND		19	150
Thallium		ND		0.11	1.5
Vanadium		6.3		0.096	1.5
Zinc		9.7	B	0.87	3.7
Tin		2.3	J B	0.47	7.4

7471A Mercury (CVAA)

Method: 7471A
Preparation: 7471A
Dilution: 1.0
Date Analyzed: 08/24/2009 1158
Date Prepared: 08/24/2009 0917

Analysis Batch: 360-48073
Prep Batch: 360-48055

Instrument ID: Hg Analyzer
Lab File ID: N/A
Initial Weight/Volume: 0.24 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.032	0.17

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Analytical Data

Client: Olin Corporation

Job Number: 360-24223-1
Sdg Number: OCRI-03

Client Sample ID: **OC-SB-419-0.0/1.0-XXX**

Lab Sample ID: 360-24223-4
Client Matrix: Solid

% Moisture: 2.6

Date Sampled: 08/19/2009 1555
Date Received: 08/20/2009 1800

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 08/24/2009 1634
Date Prepared: 08/24/2009 0848

Analysis Batch: 360-48174
Prep Batch: 360-48052

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.89 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3500	~~B~~	0.71	2.7
Antimony		ND	J	0.20	0.54
Arsenic		3.3		0.099	1.1
Barium		8.9	~~B~~	0.071	0.54
Beryllium		0.14	J	0.027	0.22
Cadmium		0.081	J ~~B~~	0.0076	0.22
Calcium		3400	~~B~~	2.7	22
Chromium		6.0	~~B~~	0.072	0.54
Cobalt		2.0		0.071	0.54
Copper		3.4	~~B~~	0.071	1.1
Iron		4900	~~B~~	0.87	5.4
Lead		1.4	~~B~~	0.062	0.54
Magnesium		1100	~~B~~	0.54	11
Manganese		59	~~B~~	0.073	1.1
Nickel		4.9	~~B~~	0.071	1.1
Potassium		620		34	220
Selenium		ND		0.25	0.54
Silver		ND		0.055	0.54
Sodium		58	J	14	110
Thallium		ND		0.079	1.1
Vanadium		6.2		0.071	1.1
Zinc		8.3	~~B~~	0.64	2.7
Tin		2.2	U ~~JB~~	0.35	5.4

7471A Mercury (CVAA)

Method: 7471A
Preparation: 7471A
Dilution: 1.0
Date Analyzed: 08/24/2009 1200
Date Prepared: 08/24/2009 0917

Analysis Batch: 360-48073
Prep Batch: 360-48055

Instrument ID: Hg Analyzer
Lab File ID: N/A
Initial Weight/Volume: 0.30 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.12	J	0.023	0.13

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Analytical Data

Client: Olin Corporation

Job Number: 360-24223-1
Sdg Number: OCRI-03

Client Sample ID: **OC-SB-419-3.0/5.0-XXX**

Lab Sample ID: 360-24223-6
Client Matrix: Solid
% Moisture: 7.9

Date Sampled: 08/19/2009 1605
Date Received: 08/20/2009 1800

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 08/24/2009 1637
Date Prepared: 08/24/2009 0848

Analysis Batch: 360-48174
Prep Batch: 360-48052

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.83 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3400	~~B~~	0.77	3.0
Antimony		ND	J	0.21	0.59
Arsenic		3.3		0.11	1.2
Barium		6.5	~~B~~	0.077	0.59
Beryllium		0.14	J	0.030	0.24
Cadmium		0.076	J ~~B~~	0.0083	0.24
Calcium		550	~~B~~	3.0	24
Chromium		5.4	~~B~~	0.079	0.59
Cobalt		1.7		0.077	0.59
Copper		2.7	~~B~~	0.077	1.2
Iron		4800	~~B~~	0.95	5.9
Lead		1.5	~~B~~	0.068	0.59
Magnesium		930	~~B~~	0.59	12
Manganese		45	~~B~~	0.079	1.2
Nickel		4.4	~~B~~	0.077	1.2
Potassium		530		37	240
Selenium		ND		0.28	0.59
Silver		ND		0.060	0.59
Sodium		ND		15	120
Thallium		0.098	U ~~J B~~	0.086	1.2
Vanadium		5.6		0.077	1.2
Zinc		8.3	~~B~~	0.70	3.0
Tin		1.9	U ~~J B~~	0.38	5.9

7471A Mercury (CVAA)

Method: 7471A
Preparation: 7471A
Dilution: 1.0
Date Analyzed: 08/24/2009 1202
Date Prepared: 08/24/2009 0917

Analysis Batch: 360-48073
Prep Batch: 360-48055

Instrument ID: Hg Analyzer
Lab File ID: N/A
Initial Weight/Volume: 0.30 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.025	0.13

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Client: Olin Corporation

Job Number: 360-24223-1
Sdg Number: OCRI-03

Client Sample ID: **OC-SB-426-0.0/1.0-XXX**

Lab Sample ID: 360-24223-7
Client Matrix: Solid
% Moisture: 3.8

Date Sampled: 08/19/2009 1415
Date Received: 08/20/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48174		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48052		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.77 g
Date Analyzed:	08/24/2009 1640			Final Weight/Volume:	100 mL
Date Prepared:	08/24/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6100	~~B~~	0.76	2.9
Antimony		ND	~~B~~	0.21	0.59
Arsenic		10		0.11	1.2
Barium		16	~~B~~	0.076	0.59
Beryllium		0.24		0.029	0.23
Cadmium		0.29	~~B~~	0.0082	0.23
Calcium		3400	~~B~~	2.9	23
Chromium		180	~~B~~	0.078	0.59
Cobalt		4.0		0.076	0.59
Copper		11	~~B~~	0.076	1.2
Iron		12000	~~B~~	0.94	5.9
Lead		6.1	~~B~~	0.067	0.59
Magnesium		2000	~~B~~	0.59	12
Manganese		89	~~B~~	0.078	1.2
Nickel		11	~~B~~	0.076	1.2
Potassium		760		37	230
Selenium		ND		0.27	0.59
Silver		2.6		0.059	0.59
Sodium		ND		15	120
Thallium		ND		0.085	1.2
Vanadium		13		0.076	1.2
Zinc		38	~~B~~	0.69	2.9
Tin		80	J ~~B~~	0.38	5.9

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48073		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48055		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.26 g
Date Analyzed:	08/24/2009 1207			Final Weight/Volume:	50 mL
Date Prepared:	08/24/2009 0917				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.027	0.15

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Client: Olin Corporation

Job Number: 360-24223-1
Sdg Number: OCRI-03

Client Sample ID: **OC-SB-426-5.0/7.0-XXX**

Lab Sample ID: 360-24223-9
Client Matrix: Solid
% Moisture: 14.2

Date Sampled: 08/19/2009 1425
Date Received: 08/20/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48174		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48052		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.82 g
Date Analyzed:	08/24/2009 1608			Final Weight/Volume:	100 mL
Date Prepared:	08/24/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4300	~~B~~	0.83	3.2
Antimony		0.29	J	0.23	0.64
Arsenic		4.4		0.12	1.3
Barium		7.0	~~B~~	0.083	0.64
Beryllium		0.18	J	0.032	0.26
Cadmium		0.083	J B	0.0090	0.26
Calcium		660	~~B~~	3.2	26
Chromium		100	~~B~~	0.085	0.64
Cobalt		1.8		0.083	0.64
Copper		3.9	~~B~~	0.083	1.3
Iron		4900	~~B~~	1.0	6.4
Lead		1.4	~~B~~	0.073	0.64
Magnesium		930	~~B~~	0.64	13
Manganese		40	~~B~~	0.086	1.3
Nickel		5.4	~~B~~	0.083	1.3
Potassium		610		40	260
Selenium		ND		0.30	0.64
Silver		1.5		0.064	0.64
Sodium		ND		17	130
Thallium		0.15	u ~~J B~~	0.093	1.3
Vanadium		6.0		0.083	1.3
Zinc		14	~~B~~	0.75	3.2
Tin		46	J ~~B~~	0.41	6.4

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48073		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48055		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	08/24/2009 1150			Final Weight/Volume:	50 mL
Date Prepared:	08/24/2009 0917				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.029	0.16

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Client: Olin Corporation

Job Number: 360-24223-1
Sdg Number: OCRI-03

Client Sample ID: **OC-SB-426-5.0/7.0-DUP**

Lab Sample ID: 360-24223-10
Client Matrix: Solid
% Moisture: 14.4

Date Sampled: 08/19/2009 1425
Date Received: 08/20/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48174		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48052		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.99 g
Date Analyzed:	08/24/2009 1643			Final Weight/Volume:	100 mL
Date Prepared:	08/24/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4300	~~B~~	0.76	2.9
Antimony		ND	J	0.21	0.59
Arsenic		4.2		0.11	1.2
Barium		6.4	~~B~~	0.076	0.59
Beryllium		0.17	J	0.029	0.23
Cadmium		0.089	J B	0.0082	0.23
Calcium		640	~~B~~	2.9	23
Chromium		110	~~B~~	0.078	0.59
Cobalt		1.7		0.076	0.59
Copper		3.7	~~B~~	0.076	1.2
Iron		4800	~~B~~	0.94	5.9
Lead		1.5	~~B~~	0.067	0.59
Magnesium		930	~~B~~	0.59	12
Manganese		37	~~B~~	0.078	1.2
Nickel		5.0	~~B~~	0.076	1.2
Potassium		570		37	230
Selenium		ND		0.27	0.59
Silver		1.7		0.059	0.59
Sodium		ND		15	120
Thallium		ND		0.085	1.2
Vanadium		5.6		0.076	1.2
Zinc		13	~~B~~	0.69	2.9
Tin		50	J ~~B~~	0.38	5.9

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48073		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48055		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	08/24/2009 1210			Final Weight/Volume:	50 mL
Date Prepared:	08/24/2009 0917				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.035	0.19

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Client: Olin Corporation

Job Number: 360-24223-1
Sdg Number: OCRI-03

Client Sample ID: **OC-SB-431-0.0/1.0-XXX**

Lab Sample ID: 360-24223-11
Client Matrix: Solid
% Moisture: 6.9

Date Sampled: 08/20/2009 1015
Date Received: 08/20/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48174		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48052		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.74 g
Date Analyzed:	08/24/2009 1645			Final Weight/Volume:	100 mL
Date Prepared:	08/24/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		12000	~~B~~	0.80	3.1
Antimony		ND J		0.22	0.62
Arsenic		6.3		0.11	1.2
Barium		29	~~B~~	0.080	0.62
Beryllium		0.39		0.031	0.25
Cadmium		0.36	~~B~~	0.0086	0.25
Calcium		1800	~~B~~	3.1	25
Chromium		13	~~B~~	0.082	0.62
Cobalt		10		0.080	0.62
Copper		17	~~B~~	0.080	1.2
Iron		23000	~~B~~	0.98	6.2
Lead		1.1	~~B~~	0.070	0.62
Magnesium		6000	~~B~~	0.62	12
Manganese		170	~~B~~	0.082	1.2
Nickel		16	~~B~~	0.080	1.2
Potassium		1400		39	250
Selenium		ND		0.29	0.62
Silver		ND		0.062	0.62
Sodium		60	J	16	120
Thallium		0.091	U ~~J B~~	0.089	1.2
Vanadium		27		0.080	1.2
Zinc		14	~~B~~	0.73	3.1
Tin		3.9	J ~~B~~	0.39	6.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48073		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48055		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	08/24/2009 1211			Final Weight/Volume:	50 mL
Date Prepared:	08/24/2009 0917				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.035	0.19

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Client: Olin Corporation

Job Number: 360-24223-1
Sdg Number: OCRI-03

Client Sample ID: **OC-SB-431-7.0/9.0-XXX**

Lab Sample ID: 360-24223-12
Client Matrix: Solid
% Moisture: 9.5

Date Sampled: 08/20/2009 1025
Date Received: 08/20/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48137		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48052		Lab File ID:	N/A
Dilution:	2.0			Initial Weight/Volume:	1.91 g
Date Analyzed:	08/25/2009 1053			Final Weight/Volume:	100 mL
Date Prepared:	08/24/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		14000	~~B~~	1.5	5.8
Antimony		ND	J	0.42	1.2
Arsenic		3.8		0.21	2.3
Barium		39	~~B~~	0.15	1.2
Beryllium		0.47		0.058	0.46
Cadmium		0.40	J ~~B~~	0.016	0.46
Calcium		2700	~~B~~	5.8	23
Chromium		51	~~B~~	0.15	1.2
Cobalt		14		0.15	1.2
Copper		22	~~B~~	0.15	2.3
Iron		26000	~~B~~	1.8	12
Lead		0.78	J ~~B~~	0.13	1.2
Magnesium		6700	~~B~~	1.2	23
Manganese		300	~~B~~	0.15	2.3
Nickel		20	~~B~~	0.15	2.3
Potassium		1500		72	460
Selenium		ND		0.54	1.2
Silver		0.29	J	0.12	1.2
Sodium		55	J	30	230
Thallium		ND		0.17	2.3
Vanadium		31		0.15	2.3
Zinc		17	~~B~~	1.4	5.8
Tin		19	J ~~B~~	0.74	12

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48073		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48055		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	08/24/2009 1213			Final Weight/Volume:	50 mL
Date Prepared:	08/24/2009 0917				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.033	0.18

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Client: Olin Corporation

Job Number: 360-24223-1
Sdg Number: OCRI-03

Client Sample ID: **OC-SB-436-0.0/1.0-XXX**

Lab Sample ID: 360-24223-13
Client Matrix: Solid
% Moisture: 5.4

Date Sampled: 08/20/2009 1305
Date Received: 08/20/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48174		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48052		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.90 g
Date Analyzed:	08/24/2009 1651			Final Weight/Volume:	100 mL
Date Prepared:	08/24/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		1900	~~B~~	0.72	2.8
Antimony		ND	J	0.20	0.56
Arsenic		3.7		0.10	1.1
Barium		28	~~B~~	0.072	0.56
Beryllium		0.029	J	0.028	0.22
Cadmium		0.14	J ~~B~~	0.0078	0.22
Calcium		1100	~~B~~	2.8	22
Chromium		110	~~B~~	0.074	0.56
Cobalt		1.7		0.072	0.56
Copper		7.1	~~B~~	0.072	1.1
Iron		4300	~~B~~	0.89	5.6
Lead		6.6	~~B~~	0.064	0.56
Magnesium		430	~~B~~	0.56	11
Manganese		37	~~B~~	0.074	1.1
Nickel		3.9	~~B~~	0.072	1.1
Potassium		700		35	220
Selenium		ND		0.26	0.56
Silver		1.9		0.056	0.56
Sodium		40	J	14	110
Thallium		ND		0.080	1.1
Vanadium		3.6		0.072	1.1
Zinc		9.6	~~B~~	0.65	2.8
Tin		48	J ~~B~~	0.36	5.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48073		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48055		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	08/24/2009 1215			Final Weight/Volume:	50 mL
Date Prepared:	08/24/2009 0917				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.031	0.17

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Client: Olin Corporation

Job Number: 360-24223-1
Sdg Number: OCRI-03

Client Sample ID: **OC-SB-436-6.0/8.0-XXX**

Lab Sample ID: 360-24223-15
Client Matrix: Solid
% Moisture: 7.9

Date Sampled: 08/20/2009 1310
Date Received: 08/20/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48174		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48052		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.91 g
Date Analyzed:	08/24/2009 1654			Final Weight/Volume:	100 mL
Date Prepared:	08/24/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		1200	~~B~~	0.74	2.8
Antimony		ND	J	0.21	0.57
Arsenic		1.5		0.10	1.1
Barium		5.2	~~B~~	0.074	0.57
Beryllium		0.046	J	0.028	0.23
Cadmium		0.055	J ~~B~~	0.0080	0.23
Calcium		350	~~B~~	2.8	23
Chromium		21	~~B~~	0.076	0.57
Cobalt		0.94		0.074	0.57
Copper		3.8	~~B~~	0.074	1.1
Iron		2800	~~B~~	0.91	5.7
Lead		2.3	~~B~~	0.065	0.57
Magnesium		500	~~B~~	0.57	11
Manganese		22	~~B~~	0.076	1.1
Nickel		2.8	~~B~~	0.074	1.1
Potassium		410		36	230
Selenium		ND		0.27	0.57
Silver		0.21	J	0.057	0.57
Sodium		20	J	15	110
Thallium		ND		0.082	1.1
Vanadium		3.1		0.074	1.1
Zinc		7.6	~~B~~	0.67	2.8
Tin		8.8	J ~~B~~	0.36	5.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48073		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48055		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	08/24/2009 1217			Final Weight/Volume:	50 mL
Date Prepared:	08/24/2009 0917				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.047	J	0.027	0.15

4/1/10

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24223-2
Sdg Number: OCRI-03A

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24223-2	OC-SB-415-16/18-XXX	Solid	08/20/2009 0910	08/20/2009 1800
360-24223-5	OC-SB-419-17/19-XXX	Solid	08/19/2009 1640	08/20/2009 1800
360-24223-8	OC-SB-426-13/15-XXX	Solid	08/19/2009 1435	08/20/2009 1800
360-24223-14	OC-SB-436-13/15-XXX	Solid	08/20/2009 1325	08/20/2009 1800

Form I's updated.
4/1/10

Analytical Data

Client: Olin Corporation

Job Number: 360-24223-2
Sdg Number: OCRI-03A

Client Sample ID: **OC-SB-415-16/18-XXX**

Lab Sample ID: 360-24223-2
Client Matrix: Solid
% Moisture: 4.4

Date Sampled: 08/20/2009 0910
Date Received: 08/20/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	2.0			Initial Weight/Volume:	1.65 g
Date Analyzed:	09/18/2009 1144			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		18000		1.6	6.3
Antimony		0.46	J	0.46	1.3
Arsenic		2.2	J	0.23	2.5
Barium		200		0.16	1.3
Beryllium		0.29	J	0.063	0.51
Cadmium		0.48	J	0.018	0.51
Calcium		4600	~~B~~	6.3	25
Chromium		11		0.17	1.3
Cobalt		26		0.16	1.3
Copper		26		0.16	2.5
Iron		33000	~~B~~	2.0	13
Lead		ND		0.14	1.3
Magnesium		13000	~~B~~	1.3	25
Manganese		310		0.17	2.5
Nickel		23		0.16	2.5
Potassium		9700		79	510
Selenium		ND		0.59	1.3
Silver		0.13	J	0.13	1.3
Sodium		470		33	250
Thallium		0.20	J	0.18	2.5
Vanadium		65		0.16	2.5
Zinc		21		1.5	6.3
Tin		1.7	UJ ~~B~~	0.81	13

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Client: Olin Corporation

Job Number: 360-24223-2
Sdg Number: OCRI-03A

Client Sample ID: **OC-SB-419-17/19-XXX**

Lab Sample ID: 360-24223-5
Client Matrix: Solid
% Moisture: 7.8

Date Sampled: 08/19/2009 1640
Date Received: 08/20/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49137		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.58 g
Date Analyzed:	09/17/2009 1634			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10000		0.89	3.4
Antimony		ND	J	0.25	0.69
Arsenic		2.1		0.13	1.4
Barium		41		0.089	0.69
Beryllium		0.25	J	0.034	0.27
Cadmium		0.26	J	0.0096	0.27
Calcium		3000	~~B~~	3.4	14
Chromium		150		0.091	0.69
Cobalt		12		0.089	0.69
Copper		16		0.089	1.4
Iron		22000	~~B~~	1.1	6.9
Lead		2.0		0.078	0.69
Magnesium		8100	~~B~~	0.69	14
Manganese		180		0.092	1.4
Nickel		19		0.089	1.4
Potassium		2100		43	270
Selenium		ND		0.32	0.69
Silver		2.0		0.069	0.69
Sodium		970		18	140
Thallium		ND		0.099	1.4
Vanadium		32		0.089	1.4
Zinc		18		0.81	3.4
Tin		57	J ~~B~~	0.44	6.9

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Client: Olin Corporation

Job Number: 360-24223-2
Sdg Number: OCRI-03A

Client Sample ID: **OC-SB-426-13/15-XXX**

Lab Sample ID: 360-24223-8
Client Matrix: Solid
% Moisture: 13.8

Date Sampled: 08/19/2009 1435
Date Received: 08/20/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49137		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.57 g
Date Analyzed:	09/17/2009 1637			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9500		0.96	3.7
Antimony		ND	J	0.27	0.74
Arsenic		3.0		0.13	1.5
Barium		50		0.096	0.74
Beryllium		0.24	J	0.037	0.30
Cadmium		0.21	J	0.010	0.30
Calcium		2500	~~B~~	3.7	15
Chromium		100		0.098	0.74
Cobalt		8.5		0.096	0.74
Copper		42		0.096	1.5
Iron		16000	~~B~~	1.2	7.4
Lead		1.8		0.084	0.74
Magnesium		5200	~~B~~	0.74	15
Manganese		130		0.099	1.5
Nickel		15		0.096	1.5
Potassium		1700		46	300
Selenium		ND		0.35	0.74
Silver		1.4		0.074	0.74
Sodium		180		19	150
Thallium		ND		0.11	1.5
Vanadium		27		0.096	1.5
Zinc		21		0.87	3.7
Tin		39	J ~~B~~	0.47	7.4

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Client: Olin Corporation

Job Number: 360-24223-2
Sdg Number: OCRI-03A

Client Sample ID: **OC-SB-436-13/15-XXX**

Lab Sample ID: 360-24223-14
Client Matrix: Solid
% Moisture: 4.6

Date Sampled: 08/20/2009 1325
Date Received: 08/20/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	2.0			Initial Weight/Volume:	1.64 g
Date Analyzed:	09/18/2009 1147			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		14000		1.7	6.4
Antimony		ND	3	0.46	1.3
Arsenic		2.8		0.23	2.6
Barium		96		0.17	1.3
Beryllium		0.23	J	0.064	0.51
Cadmium		0.37	J	0.018	0.51
Calcium		4300	~~B~~	6.4	26
Chromium		200		0.17	1.3
Cobalt		15		0.17	1.3
Copper		39		0.17	2.6
Iron		25000	~~B~~	2.0	13
Lead		2.7		0.15	1.3
Magnesium		9400	~~B~~	1.3	26
Manganese		190		0.17	2.6
Nickel		24		0.17	2.6
Potassium		3900		80	510
Selenium		ND		0.60	1.3
Silver		2.8		0.13	1.3
Sodium		250	J	33	260
Thallium		ND		0.18	2.6
Vanadium		46		0.17	2.6
Zinc		26		1.5	6.4
Tin		79	~~3 U B~~	0.82	13

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COVER PAGE
METALS

Lab Name: TestAmerica Westfield Job Number: 360-24223-1

SDG No.: OCRI-03

Project: Olin Chemical Superfund Site

Client Sample ID	Lab Sample ID
OC-SB-415-0.0/1.0-XXX	360-24223-1
OC-SB-415-5.0/7.0-XXX	360-24223-3
OC-SB-419-0.0/1.0-XXX	360-24223-4
OC-SB-419-3.0/5.0-XXX	360-24223-6
OC-SB-426-0.0/1.0-XXX	360-24223-7
OC-SB-426-5.0/7.0-XXX	360-24223-9
OC-SB-426-5.0/7.0-DUP	360-24223-10
OC-SB-431-0.0/1.0-XXX	360-24223-11
OC-SB-431-7.0/9.0-XXX	360-24223-12
OC-SB-436-0.0/1.0-XXX	360-24223-13
OC-SB-436-6.0/8.0-XXX	360-24223-15

ICV/CCV OK
MS OUT
LCS OK
LAB DUP OK

Comments:

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-SB-426-5.0/7.0-XXX MS
Lab ID: 360-24223-9 MS
Lab Name: TestAmerica Westfield
Job No.: 360-24223-1
SDG No.: OCRI-03
Matrix: Solid
Concentration Units: mg/Kg
% Solids: 85.8

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	4780		4300		313	170	75-125	4	6010B
Antimony	38.2		0.29	J	62.7	61	75-125	F	6010B
Arsenic	61.7		4.4		62.7	91	75-125		6010B
Barium	63.8		7.0		62.7	91	75-125		6010B
Beryllium	57.5		0.18	J	62.7	92	75-125		6010B
Cadmium	56.2		0.083	J	62.7	90	75-125		6010B
Calcium	1880		660		1250	98	75-125		6010B
Chromium	176		100		62.7	116	75-125		6010B
Cobalt	58.6		1.8		62.7	91	75-125		6010B
Copper	63.6		3.9		62.7	95	75-125		6010B
Iron	5160		4900		313	77	75-125	4	6010B
Lead	57.2		1.4		62.7	89	75-125		6010B
Magnesium	2050		930		1250	90	75-125		6010B
Manganese	95.1		40		62.7	88	75-125		6010B
Nickel	61.7		5.4		62.7	90	75-125		6010B
Potassium	1640		610		1250	82	75-125		6010B
Selenium	56.5		ND		62.7	90	75-125		6010B
Silver	61.2		1.5		62.7	95	75-125		6010B
Sodium	1140		ND		1250	91	75-125		6010B
Thallium	54.7		0.15	J	62.7	87	75-125		6010B
Vanadium	63.9		6.0		62.7	92	75-125		6010B
Zinc	69.2		14		62.7	89	75-125		6010B
Tin	109		46		62.7	100	75-125		6010B
Mercury	1.23		ND		1.12	110	75-125		7471A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-SB-426-5.0/7.0-XXX PDS
Lab ID: 360-24223-9 PDS
Lab Name: TestAmerica Westfield
Job No.: 360-24223-1
SDG No.: OCRI-03
Matrix: Solid
Concentration Units: mg/Kg

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	4400		4300		320	NC	75-125		6010B
Antimony	58.4		0.29	J	64.0	91	75-125		6010B
Arsenic	65.2		4.4		64.0	95	75-125		6010B
Barium	67.3		7.0		64.0	94	75-125		6010B
Beryllium	60.3		0.18	J	64.0	94	75-125		6010B
Cadmium	59.6		0.083	J	64.0	93	75-125		6010B
Calcium	1860		660		1280	94	75-125		6010B
Chromium	158		100		64.0	85	75-125		6010B
Cobalt	62.0		1.8		64.0	94	75-125		6010B
Copper	65.7		3.9		64.0	97	75-125		6010B
Iron	4980		4900		320	NC	75-125		6010B
Lead	60.6		1.4		64.0	92	75-125		6010B
Magnesium	2080		930		1280	90	75-125		6010B
Manganese	97.5		40		64.0	90	75-125		6010B
Nickel	65.0		5.4		64.0	93	75-125		6010B
Potassium	1740		610		1280	88	75-125		6010B
Selenium	59.8		ND		64.0	93	75-125		6010B
Silver	62.3		1.5		64.0	95	75-125		6010B
Sodium	1200		ND		1280	94	75-125		6010B
Thallium	58.4		0.15	J	64.0	91	75-125		6010B
Vanadium	67.2		6.0		64.0	96	75-125		6010B
Zinc	72.4		14		64.0	92	75-125		6010B
Tin	103		46		64.0	88	75-125		6010B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VB - IN

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24223-1

SDG No.: OCRI-03

Preparation Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 360-48052/1-A	08/24/2009 08:48	48052	2.0		100
LCS 360-48052/2-A	08/24/2009 08:48	48052	2.0		100
LCSD 360-48052/3-A	08/24/2009 08:48	48052	2.0		100
360-24223-9	08/24/2009 08:48	48052	1.82		100
360-24223-9 DU	08/24/2009 08:48	48052	1.82		100
360-24223-9 MS	08/24/2009 08:48	48052	1.86		100
360-24223-1	08/24/2009 08:48	48052	1.83		100
360-24223-3	08/24/2009 08:48	48052	1.51		100
360-24223-4	08/24/2009 08:48	48052	1.89		100
360-24223-6	08/24/2009 08:48	48052	1.83		100
360-24223-7	08/24/2009 08:48	48052	1.77		100
360-24223-10	08/24/2009 08:48	48052	1.99		100
360-24223-11	08/24/2009 08:48	48052	1.74		100
360-24223-12	08/24/2009 08:48	48052	1.91		100
360-24223-13	08/24/2009 08:48	48052	1.90		100
360-24223-15	08/24/2009 08:48	48052	1.91		100

~~MB~~	Conc	AL
Al	0.915	4.575
Ba	0.0990	0.495
Cd	0.00714	0.0357
Ca	18.3	91.5
Cr	0.0864	0.432
Cu	0.465	2.325
Fe	2.62	13.1
Pb	0.192	0.96
Mg	2.72	13.6
Mn	0.212	1.06
Ni	0.143	0.715
Tl	0.0792	0.396
Zn	0.738	3.69
Sn	0.443	2.215

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24223-1

SDG No.: OCRI-03

Preparation Method: 7471A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 360-48055/1-A	08/24/2009 09:17	48055	0.2		50
LCS 360-48055/2-A	08/24/2009 09:17	48055	0.2		50
LCSD 360-48055/3-A	08/24/2009 09:17	48055	0.2		50
360-24223-9	08/24/2009 09:17	48055	0.27		50
360-24223-9 DU	08/24/2009 09:17	48055	0.26		50
360-24223-9 MS	08/24/2009 09:17	48055	0.26		50
360-24223-1	08/24/2009 09:17	48055	0.21		50
360-24223-3	08/24/2009 09:17	48055	0.24		50
360-24223-4	08/24/2009 09:17	48055	0.30		50
360-24223-6	08/24/2009 09:17	48055	0.30		50
360-24223-7	08/24/2009 09:17	48055	0.26		50
360-24223-10	08/24/2009 09:17	48055	0.23		50
360-24223-11	08/24/2009 09:17	48055	0.21		50
360-24223-12	08/24/2009 09:17	48055	0.23		50
360-24223-13	08/24/2009 09:17	48055	0.23		50
360-24223-15	08/24/2009 09:17	48055	0.27		50

Hg
MB=ND.

FORM XII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24223-1

SDG No.: OCRI-03

Instrument ID: Varian ICP Method: 6010B

Start Date: 08/24/2009 10:25 End Date: 08/24/2009 18:15

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
ZZZZZZ			10:25																				
ZZZZZZ			10:27																				
ZZZZZZ			10:30																				
ZZZZZZ			10:33																				
ZZZZZZ			10:36																				
ICV 360-48174/6	1		10:39	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
ICB 360-48174/7	1		10:42	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-48174/8	1		10:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-48174/9	1		10:48	X		X	X	X		X		X							X	X	X	X	
ICSA 360-48174/10	1		10:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-48174/11	1		10:54	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			10:56																				
CCV 360-48174/13	1		10:59	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48174/14	1		11:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-48174/15			11:05																				
ICV 360-48174/16	1		11:08												X								
ICV 360-48174/17			11:11																				
CRI 360-48174/18	1		11:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-48174/19	1		12:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48174/20	1		12:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-48174/21	1		15:16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48174/22	1		15:19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MB 360-48052/1-A	1	T	15:59	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 360-48052/2-A	1	T	16:03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCSD 360-48052/3-A	1	T	16:05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24223-9	1	T	16:08	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24223-9 DU	1	T	16:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24223-9 MS	1	T	16:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24223-9 SD	5	T	16:17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24223-9 PDS	1	T	16:20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24223-1	1	T	16:23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-48174/32	1		16:26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48174/33	1		16:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24223-3	1	T	16:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24223-4	1	T	16:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24223-6	1	T	16:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24223-7	1	T	16:40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24223-10	1	T	16:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24223-11	1	T	16:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:48																				
360-24223-13	1	T	16:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24223-15	1	T	16:54	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24223-1

SDG No.: OCRI-03

Instrument ID: Varian ICP Method: 6010B

Start Date: 08/24/2009 10:25 End Date: 08/24/2009 18:15

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
ZZZZZZ			16:56																				
CCV 360-48174/44	1		16:59	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48174/45	1		17:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			17:05																				
ZZZZZZ			17:08																				
ZZZZZZ			17:11																				
ZZZZZZ			17:14																				
ZZZZZZ			17:17																				
CCV 360-48174/51	1		17:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48174/52	1		17:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 360-48174/53	1		18:12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-48174/54	1		18:15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24223-1

SDG No.: OCRI-03

Instrument ID: Varian ICP Method: 6010B

Start Date: 08/24/2009 10:25 End Date: 08/24/2009 18:15

Lab Sample ID	D/F	Type	Time	Analytes																			
				Tl	V	Zn																	
ZZZZZZ			10:25																				
ZZZZZZ			10:27																				
ZZZZZZ			10:30																				
ZZZZZZ			10:33																				
ZZZZZZ			10:36																				
ICV 360-48174/6	1		10:39	X	X	X																	
ICB 360-48174/7	1		10:42	X	X	X																	
CRI 360-48174/8	1		10:45	X	X	X																	
CRI 360-48174/9	1		10:48	X	X	X																	
ICSA 360-48174/10	1		10:51	X	X	X																	
ICSAB 360-48174/11	1		10:54	X	X	X																	
ZZZZZZ			10:56																				
CCV 360-48174/13	1		10:59	X	X	X																	
CCB 360-48174/14	1		11:02	X	X	X																	
ICB 360-48174/15			11:05																				
ICV 360-48174/16	1		11:08																				
ICV 360-48174/17			11:11																				
CRI 360-48174/18	1		11:46	X	X	X																	
CCV 360-48174/19	1		12:11	X	X	X																	
CCB 360-48174/20	1		12:14	X	X	X																	
CCV 360-48174/21	1		15:16	X	X	X																	
CCB 360-48174/22	1		15:19	X	X	X																	
MB 360-48052/1-A	1	T	15:59	X	X	X																	
LCS 360-48052/2-A	1	T	16:03	X	X	X																	
LCSD 360-48052/3-A	1	T	16:05	X	X	X																	
360-24223-9	1	T	16:08	X	X	X																	
360-24223-9 DU	1	T	16:11	X	X	X																	
360-24223-9 MS	1	T	16:14	X	X	X																	
360-24223-9 SD	5	T	16:17	X	X	X																	
360-24223-9 PDS	1	T	16:20	X	X	X																	
360-24223-1	1	T	16:23	X	X	X																	
CCV 360-48174/32	1		16:26	X	X	X																	
CCB 360-48174/33	1		16:29	X	X	X																	
360-24223-3	1	T	16:32	X	X	X																	
360-24223-4	1	T	16:34	X	X	X																	
360-24223-6	1	T	16:37	X	X	X																	
360-24223-7	1	T	16:40	X	X	X																	
360-24223-10	1	T	16:43	X	X	X																	
360-24223-11	1	T	16:45	X	X	X																	
ZZZZZZ			16:48																				
360-24223-13	1	T	16:51	X	X	X																	
360-24223-15	1	T	16:54	X	X	X																	

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24223-1

SDG No.: OCRI-03

Instrument ID: Varian ICP Method: 6010B

Start Date: 08/24/2009 10:25 End Date: 08/24/2009 18:15

Lab Sample ID	D/F	Type	Time	Analytes																			
				Tl	V	Zn																	
ZZZZZZ			16:56																				
CCV 360-48174/44	1		16:59	X	X	X																	
CCB 360-48174/45	1		17:02	X	X	X																	
ZZZZZZ			17:05																				
ZZZZZZ			17:08																				
ZZZZZZ			17:11																				
ZZZZZZ			17:14																				
ZZZZZZ			17:17																				
CCV 360-48174/51	1		17:34	X	X	X																	
CCB 360-48174/52	1		17:37	X	X	X																	
ICSA 360-48174/53	1		18:12	X	X	X																	
ICSAB 360-48174/54	1		18:15	X	X	X																	

Prep Types
T = Total/NA

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-415-16/18-XXX

Lab Sample ID: 360-24223-2

Lab Name: TestAmerica Westfield

Job No.: 360-24223-2

SDG ID.: OCRI-03A

Matrix: Solid

Date Sampled: 08/20/2009 09:10

Reporting Basis: DRY

Date Received: 08/20/2009 18:00

% Solids: 95.6

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	18000	6.3	1.6	mg/Kg			2	6010B
7440-36-0	Antimony	0.46	1.3	0.46	mg/Kg	J		2	6010B
7440-38-2	Arsenic	2.2	2.5	0.23	mg/Kg	J		2	6010B
7440-39-3	Barium	200	1.3	0.16	mg/Kg			2	6010B
7440-41-7	Beryllium	0.29	0.51	0.063	mg/Kg	J		2	6010B
7440-43-9	Cadmium	0.48	0.51	0.018	mg/Kg	J		2	6010B
7440-70-2	Calcium	4600	25	6.3	mg/Kg		B	2	6010B
7440-47-3	Chromium	11	1.3	0.17	mg/Kg			2	6010B
7440-48-4	Cobalt	26	1.3	0.16	mg/Kg			2	6010B
7440-50-8	Copper	26	2.5	0.16	mg/Kg			2	6010B
7439-89-6	Iron	33000	13	2.0	mg/Kg		B	2	6010B
7439-92-1	Lead	ND	1.3	0.14	mg/Kg			2	6010B
7439-95-4	Magnesium	13000	25	1.3	mg/Kg		B	2	6010B
7439-96-5	Manganese	310	2.5	0.17	mg/Kg			2	6010B
7440-02-0	Nickel	23	2.5	0.16	mg/Kg			2	6010B
7440-09-7	Potassium	9700	510	79	mg/Kg			2	6010B
7782-49-2	Selenium	ND	1.3	0.59	mg/Kg			2	6010B
7440-22-4	Silver	0.13	1.3	0.13	mg/Kg	J		2	6010B
7440-23-5	Sodium	470	250	33	mg/Kg			2	6010B
7440-28-0	Thallium	0.20	2.5	0.18	mg/Kg	J		2	6010B
7440-62-2	Vanadium	65	2.5	0.16	mg/Kg			2	6010B
7440-66-6	Zinc	21	6.3	1.5	mg/Kg			2	6010B
7440-31-5	Tin	1.7	13	0.81	mg/Kg	J	B ^	2	6010B

cc'd
W
4/1/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-419-17/19-XXX
Lab Sample ID: 360-24223-5
Lab Name: TestAmerica Westfield
Job No.: 360-24223-2
SDG ID.: OCRI-03A
Matrix: Solid
Date Sampled: 08/19/2009 16:40
Reporting Basis: DRY
Date Received: 08/20/2009 18:00
% Solids: 92.2

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	10000	3.4	0.89	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.69	0.25	mg/Kg			1	6010B
7440-38-2	Arsenic	2.1	1.4	0.13	mg/Kg			1	6010B
7440-39-3	Barium	41	0.69	0.089	mg/Kg			1	6010B
7440-41-7	Beryllium	0.25	0.27	0.034	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.26	0.27	0.0096	mg/Kg	J		1	6010B
7440-70-2	Calcium	3000	14	3.4	mg/Kg		B	1	6010B
7440-47-3	Chromium	150	0.69	0.091	mg/Kg			1	6010B
7440-48-4	Cobalt	12	0.69	0.089	mg/Kg			1	6010B
7440-50-8	Copper	16	1.4	0.089	mg/Kg			1	6010B
7439-89-6	Iron	22000	6.9	1.1	mg/Kg		B	1	6010B
7439-92-1	Lead	2.0	0.69	0.078	mg/Kg			1	6010B
7439-95-4	Magnesium	8100	14	0.69	mg/Kg		B	1	6010B
7439-96-5	Manganese	180	1.4	0.092	mg/Kg			1	6010B
7440-02-0	Nickel	19	1.4	0.089	mg/Kg			1	6010B
7440-09-7	Potassium	2100	270	43	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.69	0.32	mg/Kg			1	6010B
7440-22-4	Silver	2.0	0.69	0.069	mg/Kg			1	6010B
7440-23-5	Sodium	970	140	18	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.4	0.099	mg/Kg			1	6010B
7440-62-2	Vanadium	32	1.4	0.089	mg/Kg			1	6010B
7440-66-6	Zinc	18	3.4	0.81	mg/Kg			1	6010B
7440-31-5	Tin	57	6.9	0.44	mg/Kg		B ^	1	6010B

ccld
4/1/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-426-13/15-XXX
Lab Sample ID: 360-24223-8
Lab Name: TestAmerica Westfield
Job No.: 360-24223-2
SDG ID.: OCRI-03A
Matrix: Solid
Date Sampled: 08/19/2009 14:35
Reporting Basis: DRY
Date Received: 08/20/2009 18:00
% Solids: 86.1

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	9500	3.7	0.96	mg/Kg			1	6010B
7440-36-0	Antimony	ND	0.74	0.27	mg/Kg			1	6010B
7440-38-2	Arsenic	3.0	1.5	0.13	mg/Kg			1	6010B
7440-39-3	Barium	50	0.74	0.096	mg/Kg			1	6010B
7440-41-7	Beryllium	0.24	0.30	0.037	mg/Kg	J		1	6010B
7440-43-9	Cadmium	0.21	0.30	0.010	mg/Kg	J		1	6010B
7440-70-2	Calcium	2500	15	3.7	mg/Kg		B	1	6010B
7440-47-3	Chromium	100	0.74	0.098	mg/Kg			1	6010B
7440-48-4	Cobalt	8.5	0.74	0.096	mg/Kg			1	6010B
7440-50-8	Copper	42	1.5	0.096	mg/Kg			1	6010B
7439-89-6	Iron	16000	7.4	1.2	mg/Kg		B	1	6010B
7439-92-1	Lead	1.8	0.74	0.084	mg/Kg			1	6010B
7439-95-4	Magnesium	5200	15	0.74	mg/Kg		B	1	6010B
7439-96-5	Manganese	130	1.5	0.099	mg/Kg			1	6010B
7440-02-0	Nickel	15	1.5	0.096	mg/Kg			1	6010B
7440-09-7	Potassium	1700	300	46	mg/Kg			1	6010B
7782-49-2	Selenium	ND	0.74	0.35	mg/Kg			1	6010B
7440-22-4	Silver	1.4	0.74	0.074	mg/Kg			1	6010B
7440-23-5	Sodium	180	150	19	mg/Kg			1	6010B
7440-28-0	Thallium	ND	1.5	0.11	mg/Kg			1	6010B
7440-62-2	Vanadium	27	1.5	0.096	mg/Kg			1	6010B
7440-66-6	Zinc	21	3.7	0.87	mg/Kg			1	6010B
7440-31-5	Tin	39	7.4	0.47	mg/Kg		B ^	1	6010B

cc'd
4/1/10

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-SB-436-13/15-XXX
Lab Sample ID: 360-24223-14
Lab Name: TestAmerica Westfield
Job No.: 360-24223-2
SDG ID.: OCRI-03A
Matrix: Solid
Date Sampled: 08/20/2009 13:25
Reporting Basis: DRY
Date Received: 08/20/2009 18:00
% Solids: 95.4

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	14000	6.4	1.7	mg/Kg			2	6010B
7440-36-0	Antimony	ND	1.3	0.46	mg/Kg			2	6010B
7440-38-2	Arsenic	2.8	2.6	0.23	mg/Kg			2	6010B
7440-39-3	Barium	96	1.3	0.17	mg/Kg			2	6010B
7440-41-7	Beryllium	0.23	0.51	0.064	mg/Kg	J		2	6010B
7440-43-9	Cadmium	0.37	0.51	0.018	mg/Kg	J		2	6010B
7440-70-2	Calcium	4300	26	6.4	mg/Kg		B	2	6010B
7440-47-3	Chromium	200	1.3	0.17	mg/Kg			2	6010B
7440-48-4	Cobalt	15	1.3	0.17	mg/Kg			2	6010B
7440-50-8	Copper	39	2.6	0.17	mg/Kg			2	6010B
7439-89-6	Iron	25000	13	2.0	mg/Kg		B	2	6010B
7439-92-1	Lead	2.7	1.3	0.15	mg/Kg			2	6010B
7439-95-4	Magnesium	9400	26	1.3	mg/Kg		B	2	6010B
7439-96-5	Manganese	190	2.6	0.17	mg/Kg			2	6010B
7440-02-0	Nickel	24	2.6	0.17	mg/Kg			2	6010B
7440-09-7	Potassium	3900	510	80	mg/Kg			2	6010B
7782-49-2	Selenium	ND	1.3	0.60	mg/Kg			2	6010B
7440-22-4	Silver	2.8	1.3	0.13	mg/Kg			2	6010B
7440-23-5	Sodium	250	260	33	mg/Kg	J		2	6010B
7440-28-0	Thallium	ND	2.6	0.18	mg/Kg			2	6010B
7440-62-2	Vanadium	46	2.6	0.17	mg/Kg			2	6010B
7440-66-6	Zinc	26	6.4	1.5	mg/Kg			2	6010B
7440-31-5	Tin	79	13	0.82	mg/Kg		B ^	2	6010B

CC'd
(W)
4/1/10

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24223-2

SDG No.: OCRI-03A

ICV Source: ICV1 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	ICV 360-49137/6 09/17/2009 11:26				CCV 360-49137/13 09/17/2009 11:46				CCV 360-49137/19 09/17/2009 12:40			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Ag	971		1000	97	993		1000	99	997		1000	100
Al	974		1000	97	4980		5000	100	5010		5000	100
As	965		1000	96	991		1000	99	1000		1000	100
Ba	978		1000	98	997		1000	100	1000		1000	100
Be	978		1000	98	995		1000	99	1000		1000	100
Cd	978		1000	98	991		1000	99	997		1000	100
Co	982		1000	98	993		1000	99	999		1000	100
Cr	968		1000	97	993		1000	99	999		1000	100
Cu	969		1000	97	995		1000	100	1000		1000	100
Fe	961		1000	96	4970		5000	99	5000		5000	100
Mn	978		1000	98	993		1000	99	999		1000	100
Ni	978		1000	98	994		1000	99	996		1000	100
Pb	982		1000	98	995		1000	99	997		1000	100
Sb	935		1000	93	991		1000	99	998		1000	100
Se	987		1000	99	1000		1000	100	1000		1000	100
Tl	982		1000	98	998		1000	100	1010		1000	101
V	979		1000	98	994		1000	99	1000		1000	100
Zn	984		1000	98	991		1000	99	995		1000	100

CCV
4/1/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24223-2

SDG No.: OCRI-03A

ICV Source: ICV2 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	ICV 360-49137/6 09/17/2009 11:26				CCV 360-49137/13 09/17/2009 11:46				CCV 360-49137/19 09/17/2009 12:40			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Ca	9810		10000	98	19800		20000	99	20000		20000	100
Mg	9700		10000	97	19800		20000	99	19900		20000	100
Na	9020		10000	90	19900		20000	100	20000		20000	100
Sn	973		1000	97	995		1000	100	999		1000	100

ccd
4/1/10

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24223-2

SDG No.: OCRI-03A

Preparation Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 360-49084/1-A	09/17/2009 09:26	49084	2.0		100
LCS 360-49084/2-A	09/17/2009 09:26	49084	2.0		100
LCSD 360-49084/3-A	09/17/2009 09:26	49084	2.0		100
360-24223-2	09/17/2009 09:26	49084	1.65		100
360-24223-5	09/17/2009 09:26	49084	1.58		100
360-24223-8	09/17/2009 09:26	49084	1.57		100
360-24223-14	09/17/2009 09:26	49084	1.64		100

Ca 7.0 35 all >

Fe 2.27 11.35

Mg 1.80 9.0

Tin 0.511 2.555. one <

FORM XII-IN

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

SITE: **Olin Chemical** Project #: 61071000161.12 SDG #: OCRI-04/04A

LAB # : TAL 360-24244-1/2

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☐ ☒ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☑ ☐ ☐ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	See below. Post-digestion spikes %R limits = 75% - 125%

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

Laboratory Control Samples (LCS) ☑ ☐ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate ☐ ☒ ☐ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☑ ☐ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	See below.
Field Duplicate ☐ ☐ ☑ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☐ ☐ ☑ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution ☑ ☐ ☐ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☑ ☐ Are results of the diluted samples > the original sample results	.

Validator's Signature: _____

Date: 4/6/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

QL Standard:

The percent recoveries of tin (61, 61, and 64) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J).

Blanks:

Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Copper, selenium, and zinc were reported in the equipment blank associated with OCRI-04 and 04A. Associated sample results for selenium were non detect, no further action required. Reported detections of zinc were significantly greater than equipment blank results, the data was not qualified. Reported detections of copper less than the equipment blank action level were qualified (EB) to indicate potential blank contamination.

Barium (0.0727 mg/kg), calcium (8.73 mg/kg), iron (2.14 mg/kg), magnesium (2.45 mg/kg), nickel (0.107 mg/kg), and tin (0.451 mg/kg) were reported in the method blank (M360-48107) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Sample results for barium, calcium, iron, magnesium, and nickel were greater than the action levels, no further action required. Sample results for tin that were less than the action level were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Calcium (7.00 mg/kg), iron (2.27 mg/kg), magnesium (1.80 mg/kg), and tin (0.511 mg/kg) were reported in the method blank (M360-49084) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Sample results for calcium, iron, and magnesium were greater than the action levels, no further action required. Sample results for tin that were less than the action level were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Barium (0.0673 mg/kg), calcium (9.28 mg/kg), chromium (0.0679 mg/kg), iron (1.06 mg/kg), magnesium (2.44 mg/kg), and tin (0.587 mg/kg) were reported in the method blank (M360-49006) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Sample results were greater than the action levels, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Selenium and thallium were reported in the continuing calibration blanks (CCB) associated with all samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for selenium and thallium were non detect, no further action required.

Matrix Spikes:

Sample OC-SB-432-0.0/1.0-XXX was submitted for MS analysis. The MS percent recovery of aluminum (387), antimony (27), barium (61), calcium (64), iron (1760), magnesium (129), potassium (150), thallium (70), and zinc (137) were outside of the QC limits. The unspiked sample result for aluminum, calcium, iron, and zinc were greater than four times the spiking concentration, no further action required. Post digestion spike recovery for antimony was within QC limits, indicating a matrix effect for antimony. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

SDG	Lab Sample ID	Field Sample ID	Antimony MS Recovery (%)
OCRI-03	360-24223-9	OC-SB-426-5.0/7.0-XXX	61
OCRI-04	360-24244-1	OC-SB-432-0.0/1.0-XXX	27
OCRI-04A	360-24244-5	OC-SB-443-18/20-XXX	32
OCRI-05	360-24251-19	OC-SB-446-5.0/7.0-XXX	80
OCRI-05	360-24251-4	OC-SB-433-5.0/7.0-XXX	70
OCRI-06	360-24309-23	OC-SB-430-8.0/10-XXX	44
OCRI-07	360-24327-12	OC-SB-410-6.0/8.0-XXX	65
OCRI-08	360-24343-10	OC-SB-451-2.5/4.5-XXX	62
OCRI-08	360-24343-17	OC-SB-455-6.0/8.0-XXX	46
OCRI-09	360-24365-4	OC-SB-442-8.0/10-XXX	50
OCRI-10	360-24417-10	OC-SB-465-8.0/10-XXX	63
OCRI-10A	360-24417-2	OC-SB-463-28/30-XXX	38
OCRI-11	360-24444-2	OC-SB-459-6.0/8.0-XXX	64
OCRI-11	360-24444-9	OC-SB-467-6.0/8.0-XXX	68
OCRI-12	360-24454-3	OC-SB-461-5.0/7.0-XXX	65
OCRI-13A	360-24499-3	OC-SB-469-28/30-XXX	61
OCRI-14	360-24563-14	OC-SB-456-7.0/9.0-XXX	60
OCRI-14	360-24563-5	OC-SB-427-8.0/10-XXX	67
OCRI-15	360-24582-22	OC-SS-416-0.0/1.0-XXX	56
OCRI-16	360-24634-1	OC-SS-417-0.0/1.0-XXX	61
OCRI-17	360-24665-1	OC-SS-434-0.0/1.0-XXX	29
OCRI-18	360-24686-1	OC-SB-400-17/19-XXX	67

Associated sample results for barium and thallium were qualified estimated (J/UJ). Associated sample detections for magnesium and potassium were qualified estimated (J).

Sample OC-SB-443-18/20-XXX was submitted for MS analysis. The MS percent recovery of aluminum (550), antimony (32), calcium (211), iron (222), and magnesium (157) was outside of the QC limits. The unspiked sample concentrations of aluminum and iron was greater than four times the spiking concentration, no further action required. Antimony was qualified as stated previously. Associated sample detections for calcium and magnesium were qualified estimated (J).

Laboratory Duplicate:

The laboratory performed a duplicate analysis of sample OC-SB-432-0.0/1.0-XXX (OCRI-04). The RPD lead (61) and nickel (42) exceeded the QC limit of 35. Associated SDG sample results for lead and nickel were qualified estimated (J).

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24244-1
Sdg Number: OCRI-04

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24244-1	OC-SB-432-0.0/1.0-XXX	Solid	08/20/2009 1435	08/21/2009 1725
360-24244-2	OC-SB-432-14/16-XXX	Solid	08/20/2009 1515	08/21/2009 1725
360-24244-3	OC-SB-432-5.0/7.0-XXX	Solid	08/20/2009 1441	08/21/2009 1725
360-24244-4	OC-SB-443-0.0/1.0-XXX	Solid	08/20/2009 1635	08/21/2009 1725
360-24244-5	OC-SB-443-18/20-XXX	Solid	08/20/2009 1720	08/21/2009 1725
360-24244-6	OC-SB-443-6.0/8.0-XXX	Solid	08/20/2009 1640	08/21/2009 1725
360-24244-7	OC-SB-445-0.0/1.0-XXX	Solid	08/21/2009 0900	08/21/2009 1725
360-24244-8	OC-SB-445-25/27-XXX	Solid	08/21/2009 1015	08/21/2009 1725
360-24244-9	OC-SB-445-8.0/10-XXX	Solid	08/21/2009 0910	08/21/2009 1725
360-24244-10	OC-SB-437-0.0/1.0-XXX	Solid	08/21/2009 1230	08/21/2009 1725
360-24244-11	OC-SB-437-21/23-XXX	Solid	08/21/2009 1310	08/21/2009 1725
360-24244-12	OC-SB-437-5.0/7.0-XXX	Solid	08/21/2009 1240	08/21/2009 1725
360-24244-13TB	OC-TBK-005	Solid	08/21/2009 1435	08/21/2009 1725
360-24244-14EB	OC-EBK-003	Water	08/21/2009 0715	08/21/2009 1725

✓ ICV/CCV OK

✓ CRQL STD
TIN (61,61)

✓ CCB/
Se, Tl.

✓ ICS A/B OK

✓ MS OUT, see attached

✓ DUP OUT see attached

✓ LCS OK

✓ serial dilution OK ✓ only Ca evaluated.

EQB
~~Al 43~~
~~Ca 170~~
~~Cu 31~~ 31
~~Fe 81~~
~~Mn 2.2~~
Se 2.7
Zn 13

2g /100mL

Ca $\frac{31\ \mu g/L \times 0.1\ L}{0.002\ kg} = 1550\ \mu g/kg$
$= 1.55\ mg/kg$

Se $\frac{2.7\ \mu g/L \times 0.1\ L}{0.002\ kg} = 0.135\ mg/kg$

Zn $\frac{13\ \mu g/L \times 0.1\ L}{0.002\ kg} = 0.65\ mg/kg$

Form Fb [illegible]
4/6/10
[illegible]

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-SB-432-0.0/1.0-XXX MS

Lab ID: 360-24244-1 MS

Lab Name: TestAmerica Westfield

Job No.: 360-24244-1

SDG No.: OCRI-04

Matrix: Solid

Concentration Units: mg/Kg

% Solids: 93.4

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	9700		8500		308	387	75-125	4	6010B
Antimony	17.3		0.73		61.6	27	75-125	F	6010B
Arsenic	60.8		8.8		61.6	84	75-125		6010B
Barium	122		85		61.6	61	75-125	F	6010B PD out
Beryllium	49.1		0.24	J	61.6	79	75-125		6010B
Cadmium	47.5		0.64		61.6	76	75-125		6010B
Calcium	28200		27000		1230	64	75-125	4	6010B
Chromium	118		44		61.6	121	75-125		6010B
Cobalt	52.4		4.5		61.6	78	75-125		6010B
Copper	126		71		61.6	88	75-125		6010B
Iron	23500		18000		308	1760	75-125	4	6010B
Lead	81.7		17		61.6	105	75-125		6010B
Magnesium	4870		3300		1230	129	75-125	F	6010B
Manganese	203		140		61.6	106	75-125		6010B
Nickel	69.5		20		61.6	81	75-125		6010B
Potassium	3660		1800		1230	150	75-125	F	6010B
Selenium	48.9		ND		61.6	79	75-125		6010B
Silver	53.6		0.32	J	61.6	87	75-125		6010B
Sodium	955		ND		1230	78	75-125		6010B
Vanadium	70.4		18		61.6	85	75-125		6010B
Thallium	43.3		0.13	J	61.6	70	75-125	F	6010B
Tin	75.3		17		61.6	94	75-125		6010B
Zinc	335		250		61.6	137	75-125	4	6010B
Mercury	1.26		ND		1.12	113	75-125		7471A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-SB-432-0.0/1.0-XXX PDS
Lab ID: 360-24244-1 PDS
Lab Name: TestAmerica Westfield
Job No.: 360-24244-1
SDG No.: OCRI-04
Matrix: Solid
Concentration Units: mg/Kg

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	8580		8500		310	NC	75-125		6010B
Antimony	55.6		0.73		61.9	89	75-125		6010B
Arsenic	64.2		8.8		61.9	90	75-125		6010B
Barium	129		85		61.9	71	75-125	W	6010B
Beryllium	53.5		0.24	J	61.9	86	75-125		6010B
Cadmium	50.8		0.64		61.9	81	75-125		6010B
Calcium	31600		27000		6190	67	75-125	W	6010B
Chromium	94.6		44		61.9	82	75-125		6010B
Cobalt	55.6		4.5		61.9	83	75-125		6010B
Copper	127		71		61.9	89	75-125		6010B
Iron	17700		18000		310	NC	75-125		6010B
Lead	65.5		17		61.9	79	75-125		6010B
Magnesium	4320		3300		1240	84	75-125		6010B
Manganese	183		140		61.9	74	75-125	W	6010B
Nickel	69.5		20		61.9	81	75-125		6010B
Potassium	2940		1800		1240	90	75-125		6010B
Selenium	53.8		ND		61.9	87	75-125		6010B
Silver	55.8		0.32	J	61.9	90	75-125		6010B
Sodium	1100		ND		1240	89	75-125		6010B
Vanadium	71.4		18		61.9	87	75-125		6010B
Thallium	47.5		0.13	J	61.9	77	75-125		6010B
Tin	69.4		17		61.9	84	75-125		6010B
Zinc	289		250		61.9	62	75-125	W	6010B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VB - IN

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24244-1

SDG No.: OCRI-04

Preparation Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 360-48107/1-A	08/25/2009 08:38	48107	2.0		100
LCS 360-48107/2-A	08/25/2009 08:38	48107	2.0		100
LCSD 360-48107/3-A	08/25/2009 08:38	48107	2.0		100
360-24244-1	08/25/2009 08:38	48107	1.73		100
360-24244-1 DU	08/25/2009 08:38	48107	1.72		100
360-24244-1 MS	08/25/2009 08:38	48107	1.74		100
360-24244-2	08/25/2009 08:38	48107	1.90		100
360-24244-3	08/25/2009 08:38	48107	1.51		100
360-24244-4	08/25/2009 08:38	48107	1.53		100
360-24244-6	08/25/2009 08:38	48107	1.71		100
360-24244-7	08/25/2009 08:38	48107	1.81		100
360-24244-9	08/25/2009 08:38	48107	1.59		100
360-24244-10	08/25/2009 08:38	48107	1.68		100
360-24244-12	08/25/2009 08:38	48107	1.72		100

MB	Conc	AL	
Ba	0.0727	0.3635	>
Ca	8.73	43.65	>
Fe	2.14	10.7	>
Mg	2.45	12.25	>
Ni	0.107	0.535	>
Sn	0.451	2.255	<

FORM XII-IN

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24244-1

SDG No.: OCRI-04

Concentration Units: mg/Kg Lab Sample ID: MB 360-48107/1-A

Instrument Code: Varian ICP Batch No.: 48163

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	ND			6010B
7440-36-0	Antimony	ND			6010B
7440-38-2	Arsenic	ND			6010B
7440-39-3	Barium	0.0727	J		6010B
7440-41-7	Beryllium	ND			6010B
7440-43-9	Cadmium	ND			6010B
7440-70-2	Calcium	8.73	J		6010B
7440-47-3	Chromium	ND			6010B
7440-48-4	Cobalt	ND			6010B
7440-50-8	Copper	ND			6010B
7439-89-6	Iron	2.14	J		6010B
7439-92-1	Lead	ND			6010B
7439-95-4	Magnesium	2.45	J		6010B
7439-96-5	Manganese	ND			6010B
7440-02-0	Nickel	0.107	J		6010B
7440-09-7	Potassium	ND			6010B
7782-49-2	Selenium	ND			6010B
7440-22-4	Silver	ND			6010B
7440-23-5	Sodium	ND			6010B
7440-62-2	Vanadium	ND			6010B
7440-28-0	Thallium	ND			6010B
7440-31-5	Tin	0.451	J		6010B
7440-66-6	Zinc	ND			6010B

6-IN
DUPLICATES
METALS

Client ID: OC-SB-432-0.0/1.0-XXX DU

Lab ID: 360-24244-1 DU

Lab Name: TestAmerica Westfield

Job No.: 360-24244-1

SDG No.: OCRI-04

% Solids for Sample: 93.4

% Solids for Duplicate: 93.4

Matrix: Solid

Concentration Units: mg/Kg

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Aluminum	3.1	8500		8940		5		6010B
Antimony	0.62	0.73		ND		NC		6010B
Arsenic	1.2	8.8		10.8		21	x	6010B
Barium	0.62	85		81.9		3		6010B
Beryllium	0.25	0.24	J	0.264		8		6010B
Cadmium	0.25	0.64		0.837		27	OK	6010B
Calcium	62	27000		31100		13		6010B
Chromium	0.62	44		59.8		30	x	6010B
Cobalt	0.62	4.5		5.29		17		6010B
Copper	1.2	71		89.9		23	x	6010B
Iron	6.2	18000		25100		32	x	6010B
Lead	0.62	17		31.4		61	F	6010B
Magnesium	12	3300		3320		1		6010B
Manganese	1.2	140		163		17		6010B
Nickel	1.2	20		29.9		42	F	6010B
Potassium	250	1800		1940		6		6010B
Selenium	0.62	ND		ND		NC		6010B
Silver	0.62	0.32	J	0.360	J	12		6010B
Sodium	120	ND		52.5	J	NC		6010B
Vanadium	1.2	18		18.8		5		6010B
Thallium	1.2	0.13	J	ND		NC		6010B
Tin	6.2	17		24.2		33	x	6010B
Zinc	3.1	250		295		16		6010B
Mercury	0.15	ND		ND		NC		7471A

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

FORM VI-IN

Client: Olin Corporation

Job Number: 360-24244-1
Sdg Number: OCRI-04

Client Sample ID: **OC-SB-432-0.0/1.0-XXX**

Lab Sample ID: 360-24244-1
Client Matrix: Solid
% Moisture: 6.6

Date Sampled: 08/20/2009 1435
Date Received: 08/21/2009 1725

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48163		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48107		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.73 g
Date Analyzed:	08/25/2009 1416			Final Weight/Volume:	100 mL
Date Prepared:	08/25/2009 0838				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8500		0.80	3.1
Antimony		0.73 J		0.22	0.62
Arsenic		8.8		0.11	1.2
Barium		85 J	~~B~~	0.080	0.62
Beryllium		0.24	J	0.031	0.25
Cadmium		0.64		0.0087	0.25
Chromium		44		0.082	0.62
Cobalt		4.5		0.080	0.62
Copper		71		0.080	1.2
Iron		18000	~~B~~	0.99	6.2
Lead		17		0.071	0.62
Magnesium		3300 J	~~B~~	0.62	12
Manganese		140		0.083	1.2
Nickel		20	~~B~~	0.080	1.2
Potassium		1800 J		39	250
Selenium		ND		0.29	0.62
Silver		0.32	J	0.062	0.62
Sodium		ND		16	120
Thallium		0.13	J	0.090	1.2
Vanadium		18		0.080	1.2
Zinc		250		0.73	3.1
Tin		17 J	~~B~~	0.40	6.2

Method:	6010B	Analysis Batch: 360-48163		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48107		Lab File ID:	N/A
Dilution:	5.0			Initial Weight/Volume:	1.73 g
Date Analyzed:	08/25/2009 1527			Final Weight/Volume:	100 mL
Date Prepared:	08/25/2009 0838				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Calcium		27000	~~B~~	15	62

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48206		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48117		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	08/26/2009 1338			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1105				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.029	0.16

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Analytical Data

Client: Olin Corporation

Job Number: 360-24244-1
Sdg Number: OCRI-04

Client Sample ID: **OC-SB-432-14/16-XXX**

Lab Sample ID: 360-24244-2
Client Matrix: Solid
% Moisture: 8.7

Date Sampled: 08/20/2009 1515
Date Received: 08/21/2009 1725

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48163		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48107		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.90 g
Date Analyzed:	08/25/2009 1431			Final Weight/Volume:	100 mL
Date Prepared:	08/25/2009 0838				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		2700		0.75	2.9
Antimony		ND J		0.21	0.58
Arsenic		2.5		0.11	1.2
Barium		35 J	~~B~~	0.075	0.58
Beryllium		0.082	J	0.029	0.23
Cadmium		0.098	J	0.0081	0.23
Calcium		1300	~~B~~	2.9	12
Chromium		18		0.077	0.58
Cobalt		2.8		0.075	0.58
Copper		5.2		0.075	1.2
Iron		6800	~~B~~	0.92	5.8
Lead		1.9		0.066	0.58
Magnesium		1400 J	~~B~~	0.58	12
Manganese		43		0.077	1.2
Nickel		4.3	~~B~~	0.075	1.2
Potassium		1000 J		36	230
Selenium		ND		0.27	0.58
Silver		0.085	J	0.058	0.58
Sodium		120		15	120
Thallium		ND J		0.083	1.2
Vanadium		9.8		0.075	1.2
Zinc		6.3		0.68	2.9
Tin		6.8 J	~~B~~	0.37	5.8

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48206		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48117		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	08/26/2009 1344			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1105				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.034	0.18

N Allen 4/6/10

Analytical Data

Client: Olin Corporation

Job Number: 360-24244-1
Sdg Number: OCRI-04

Client Sample ID: **OC-SB-432-5.0/7.0-XXX**

Lab Sample ID: 360-24244-3
Client Matrix: Solid
% Moisture: 12.3

Date Sampled: 08/20/2009 1441
Date Received: 08/21/2009 1725

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48163		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48107		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.51 g
Date Analyzed:	08/25/2009 1440			Final Weight/Volume:	100 mL
Date Prepared:	08/25/2009 0838				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		340		0.98	3.8
Antimony		ND J		0.27	0.76
Arsenic		0.90	J	0.14	1.5
Barium		2.2 ~~J~~	~~B~~	0.098	0.76
Beryllium		ND		0.038	0.30
Cadmium		0.019	J	0.011	0.30
Calcium		410	~~B~~	3.8	15
Chromium		11 ~~J~~		0.10	0.76
Cobalt		0.29	J	0.098	0.76
Copper		2.9 ~~J~~		0.098	1.5
Iron		990 ~~X~~	~~B~~	1.2	7.6
Lead		0.73	J	0.086	0.76
Magnesium		69 J	~~B~~	0.76	15
Manganese		5.8		0.10	1.5
Nickel		0.93	J ~~B~~	0.098	1.5
Potassium		270	J	47	300
Selenium		ND		0.35	0.76
Silver		ND		0.076	0.76
Sodium		26	J	20	150
Thallium		ND J		0.11	1.5
Vanadium		0.89	J	0.098	1.5
Zinc		3.7	J	0.89	3.8
Tin		4.9	J ~~B~~	0.48	7.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48206		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48117		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	08/26/2009 1346			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1105				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.034	0.18

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Client: Olin Corporation

Job Number: 360-24244-1
Sdg Number: OCRI-04

Client Sample ID: **OC-SB-443-0.0/1.0-XXX**

Lab Sample ID: 360-24244-4
Client Matrix: Solid
% Moisture: 3.4

Date Sampled: 08/20/2009 1635
Date Received: 08/21/2009 1725

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48163		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48107		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.53 g
Date Analyzed:	08/25/2009 1443			Final Weight/Volume:	100 mL
Date Prepared:	08/25/2009 0838				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4200		0.88	3.4
Antimony		ND J		0.24	0.68
Arsenic		4.5 J		0.12	1.4
Barium		12 J	~~B~~	0.088	0.68
Beryllium		0.15	J	0.034	0.27
Cadmium		0.24	J	0.0095	0.27
Calcium		3500	~~B~~	3.4	14
Chromium		57 J		0.090	0.68
Cobalt		2.6		0.088	0.68
Copper		19 J		0.088	1.4
Iron		11000 J	~~B~~	1.1	6.8
Lead		3.0 J		0.077	0.68
Magnesium		1200 J	~~B~~	0.68	14
Manganese		79		0.090	1.4
Nickel		10 J	~~B~~	0.088	1.4
Potassium		700 J		42	270
Selenium		ND		0.32	0.68
Silver		0.83		0.068	0.68
Sodium		75	J	18	140
Thallium		ND J		0.098	1.4
Vanadium		8.1		0.088	1.4
Zinc		16		0.80	3.4
Tin		24 J	~~B~~	0.43	6.8

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48206		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48117		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.28 g
Date Analyzed:	08/26/2009 1347			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1105				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.025	0.14

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Analytical Data

Client: Olin Corporation

Job Number: 360-24244-1
Sdg Number: OCRI-04

Client Sample ID: **OC-SB-443-6.0/8.0-XXX**

Lab Sample ID: 360-24244-6
Client Matrix: Solid
% Moisture: 13.6

Date Sampled: 08/20/2009 1640
Date Received: 08/21/2009 1725

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48163		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48107		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.71 g
Date Analyzed:	08/25/2009 1447			Final Weight/Volume:	100 mL
Date Prepared:	08/25/2009 0838				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		670		0.88	3.4
Antimony		ND J		0.24	0.68
Arsenic		1.7 ~~J~~		0.12	1.4
Barium		3.7 J	~~B~~	0.088	0.68
Beryllium		0.037	J	0.034	0.27
Cadmium		0.036	J	0.0095	0.27
Calcium		580	~~B~~	3.4	14
Chromium		2.5 J		0.090	0.68
Cobalt		0.54	J	0.088	0.68
Copper		1.4 ~~J~~ EB		0.088	1.4
Iron		2000 ~~J~~	~~B~~	1.1	6.8
Lead		0.81 ~~J~~		0.077	0.68
Magnesium		290 J	~~B~~	0.68	14
Manganese		12		0.090	1.4
Nickel		1.5 ~~J~~	~~B~~	0.088	1.4
Potassium		410 J		42	270
Selenium		ND		0.32	0.68
Silver		ND		0.068	0.68
Sodium		29	J	18	140
Thallium		ND J		0.098	1.4
Vanadium		2.2		0.088	1.4
Zinc		2.9	J	0.80	3.4
Tin		0.85 U	~~J B~~	0.43	6.8

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48206		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48117		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	08/26/2009 1349			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1105				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.039	0.21

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Analytical Data

Client: Olin Corporation

Job Number: 360-24244-1
Sdg Number: OCRI-04

Client Sample ID: **OC-SB-445-0.0/1.0-XXX**

Lab Sample ID: 360-24244-7
Client Matrix: Solid
% Moisture: 2.0

Date Sampled: 08/21/2009 0900
Date Received: 08/21/2009 1725

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48163		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48107		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.81 g
Date Analyzed:	08/25/2009 1450			Final Weight/Volume:	100 mL
Date Prepared:	08/25/2009 0838				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6300		0.73	2.8
Antimony		ND J		0.20	0.56
Arsenic		3.3 ~~J~~		0.10	1.1
Barium		26 J	~~B~~	0.073	0.56
Beryllium		0.25		0.028	0.23
Cadmium		0.24		0.0079	0.23
Calcium		2500	~~B~~	2.8	11
Chromium		11		0.075	0.56
Cobalt		5.3		0.073	0.56
Copper		14 J		0.073	1.1
Iron		11000 J	~~B~~	0.90	5.6
Lead		5.0 ~~J~~		0.064	0.56
Magnesium		2900 J	~~B~~	0.56	11
Manganese		160		0.075	1.1
Nickel		9.9 J	~~B~~	0.073	1.1
Potassium		1100 J		35	230
Selenium		ND		0.26	0.56
Silver		ND		0.057	0.56
Sodium		76	J	15	110
Thallium		ND J		0.081	1.1
Vanadium		16		0.073	1.1
Zinc		34		0.66	2.8
Tin		3.7	J ~~B~~	0.36	5.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48206		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48117		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.24 g
Date Analyzed:	08/26/2009 1354			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1105				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.45		0.029	0.16

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Client: Olin Corporation

Job Number: 360-24244-1
Sdg Number: OCRI-04

Client Sample ID: **OC-SB-445-8.0/10-XXX**

Lab Sample ID: 360-24244-9
Client Matrix: Solid
% Moisture: 15.1

Date Sampled: 08/21/2009 0910
Date Received: 08/21/2009 1725

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48163		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48107		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.59 g
Date Analyzed:	08/25/2009 1452			Final Weight/Volume:	100 mL
Date Prepared:	08/25/2009 0838				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3300		0.96	3.7
Antimony		ND J		0.27	0.74
Arsenic		5.2 J		0.14	1.5
Barium		12 J	~~B~~	0.096	0.74
Beryllium		0.090	J	0.037	0.30
Cadmium		0.11	J	0.010	0.30
Calcium		810	~~B~~	3.7	15
Chromium		15 J		0.098	0.74
Cobalt		1.7		0.096	0.74
Copper		4.7 J		0.096	1.5
Iron		7800 J	~~B~~	1.2	7.4
Lead		1.9 J		0.085	0.74
Magnesium		1100 J	~~B~~	0.74	15
Manganese		40		0.099	1.5
Nickel		5.4 J	~~B~~	0.096	1.5
Potassium		740 J		46	300
Selenium		ND		0.35	0.74
Silver		ND		0.074	0.74
Sodium		27	J	19	150
Thallium		ND J		0.11	1.5
Vanadium		9.7		0.096	1.5
Zinc		9.5		0.87	3.7
Tin		5.5	J ~~B~~	0.47	7.4

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48206		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48117		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	08/26/2009 1356			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1105				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.038	0.21

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Analytical Data

Client: Olin Corporation

Job Number: 360-24244-1
Sdg Number: OCRI-04

Client Sample ID: **OC-SB-437-0.0/1.0-XXX**

Lab Sample ID: 360-24244-10
Client Matrix: Solid
% Moisture: 6.8

Date Sampled: 08/21/2009 1230
Date Received: 08/21/2009 1725

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48163		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48107		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.68 g
Date Analyzed:	08/25/2009 1455			Final Weight/Volume:	100 mL
Date Prepared:	08/25/2009 0838				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7000		0.83	3.2
Antimony		ND J		0.23	0.64
Arsenic		5.4 ~~J~~		0.12	1.3
Barium		25 J	~~B~~	0.083	0.64
Beryllium		0.23	J	0.032	0.26
Cadmium		0.42		0.0089	0.26
Calcium		4200	~~B~~	3.2	13
Chromium		21 ~~J~~		0.085	0.64
Cobalt		2.9		0.083	0.64
Copper		14 ~~J~~		0.083	1.3
Iron		7600 ~~J~~	~~B~~	1.0	6.4
Lead		39 ~~J~~		0.073	0.64
Magnesium		1600 J	~~B~~	0.64	13
Manganese		79		0.085	1.3
Nickel		7.6 ~~J~~	~~B~~	0.083	1.3
Potassium		870 J		40	260
Selenium		ND		0.30	0.64
Silver		0.19	J	0.064	0.64
Sodium		51	J	17	130
Thallium		ND J		0.092	1.3
Vanadium		11		0.083	1.3
Zinc		44		0.75	3.2
Tin		8.4 J	~~B~~	0.41	6.4

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48206		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48117		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	08/26/2009 1358			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1105				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.035	0.19

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Analytical Data

Client: Olin Corporation

Job Number: 360-24244-1
Sdg Number: OCRI-04

Client Sample ID: **OC-SB-437-5.0/7.0-XXX**

Lab Sample ID: 360-24244-12
Client Matrix: Solid
% Moisture: 11.2

Date Sampled: 08/21/2009 1240
Date Received: 08/21/2009 1725

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48163		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48107		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.72 g
Date Analyzed:	08/25/2009 1458			Final Weight/Volume:	100 mL
Date Prepared:	08/25/2009 0838				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4200		0.85	3.3
Antimony		ND		0.24	0.65
Arsenic		4.0		0.12	1.3
Barium		6.9	B	0.085	0.65
Beryllium		0.15	J	0.033	0.26
Cadmium		0.069	J	0.0092	0.26
Calcium		340	B	3.3	13
Chromium		5.6		0.087	0.65
Cobalt		1.8		0.085	0.65
Copper		2.6		0.085	1.3
Iron		4500	B	1.0	6.5
Lead		1.4		0.075	0.65
Magnesium		830	B	0.65	13
Manganese		31		0.087	1.3
Nickel		5.0	B	0.085	1.3
Potassium		430		41	260
Selenium		ND		0.31	0.65
Silver		ND		0.066	0.65
Sodium		ND		17	130
Thallium		ND		0.095	1.3
Vanadium		6.0		0.085	1.3
Zinc		14		0.77	3.3
Tin		2.0	J B	0.42	6.5

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48206		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48117		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	08/26/2009 1359			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1105				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.028	0.15

4/6/10

Client: Olin Corporation

Job Number: 360-24244-1
Sdg Number: OCRI-04

Client Sample ID: **OC-EBK-003**

Lab Sample ID: 360-24244-14EB
Client Matrix: Water

Date Sampled: 08/21/2009 0715
Date Received: 08/21/2009 1725

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48164		Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-48100		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/25/2009 1628			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 0727				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	43	J	39	100
Antimony	ND		2.9	6.0
Barium	ND		2.0	10
Arsenic	ND		2.3	10
Beryllium	ND		0.20	1.0
Cadmium	ND		0.20	1.0
Calcium	170	J	59	400
Chromium	ND		1.3	5.0
Cobalt	ND		2.0	10
Copper	31		1.7	10
Iron	81	J	34	100
Lead	ND		1.3	5.0
Magnesium	ND		50	400
Manganese	2.2	J	1.3	10
Nickel	ND		1.5	10
Potassium	ND		500	4000
Selenium	2.7	J	2.7	10
Silver	ND		1.8	5.0
Sodium	ND		250	2000
Tin	ND		7.0	50
Vanadium	ND		1.5	10
Thallium	ND		1.4	10
Zinc	13	J	10	50

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 360-48133		Instrument ID:	Hg Analyzer
Preparation:	7470A	Prep Batch: 360-48110		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	08/25/2009 1314			Final Weight/Volume:	10 mL
Date Prepared:	08/25/2009 0906				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	ND		0.065	0.20

Analytical Data

Client: Olin Corporation

Job Number: 360-24244-2
Sdg Number: OCRI-04A

Client Sample ID: **OC-SB-443-18/20-XXX**

Lab Sample ID: 360-24244-5
Client Matrix: Solid
% Moisture: 7.9

Date Sampled: 08/20/2009 1720
Date Received: 08/21/2009 1725

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49074		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49006		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.59 g
Date Analyzed:	09/16/2009 1506			Final Weight/Volume:	100 mL
Date Prepared:	09/16/2009 0750				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6900		0.89	3.4
Antimony		ND		0.25	0.68
Arsenic		4.5		0.12	1.4
Barium		42	~~^B~~	0.089	0.68
Beryllium		0.12	J	0.034	0.27
Cadmium		0.31		0.0096	0.27
Calcium		4700	~~B~~	3.4	14
Chromium		20	~~B~~	0.091	0.68
Cobalt		6.8		0.089	0.68
Copper		15		0.089	1.4
Iron		21000	~~B~~	1.1	6.8
Lead		2.5		0.078	0.68
Magnesium		3000	~~B~~	0.68	14
Manganese		83		0.091	1.4
Nickel		9.3		0.089	1.4
Potassium		2600		43	270
Selenium		ND		0.32	0.68
Silver		2.2		0.069	0.68
Sodium		800		18	140
Thallium		ND		0.099	1.4
Vanadium		45		0.089	1.4
Zinc		11		0.80	3.4
Tin		6.1	J ~~^B~~	0.44	6.8

4/6/10

Analytical Data

Client: Olin Corporation

Job Number: 360-24244-2
Sdg Number: OCRI-04A

Client Sample ID: **OC-SB-445-25/27-XXX**

Lab Sample ID: 360-24244-8
Client Matrix: Solid
% Moisture: 8.5

Date Sampled: 08/21/2009 1015
Date Received: 08/21/2009 1725

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49074		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49006		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.57 g
Date Analyzed:	09/16/2009 1520			Final Weight/Volume:	100 mL
Date Prepared:	09/16/2009 0750				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8500		0.91	3.5
Antimony		ND		0.25	0.70
Arsenic		4.9		0.13	1.4
Barium		37	^B	0.091	0.70
Beryllium		0.22	J	0.035	0.28
Cadmium		0.26	J	0.0097	0.28
Calcium		3000	B	3.5	14
Chromium		48	B	0.093	0.70
Cobalt		7.8		0.091	0.70
Copper		20		0.091	1.4
Iron		19000	B	1.1	7.0
Lead		1.2		0.080	0.70
Magnesium		5100	B	0.70	14
Manganese		110		0.093	1.4
Nickel		17		0.091	1.4
Potassium		2300		44	280
Selenium		ND		0.33	0.70
Silver		0.28	J	0.070	0.70
Sodium		120	J	18	140
Thallium		ND		0.10	1.4
Vanadium		31		0.091	1.4
Zinc		20		0.82	3.5
Tin		17	^B	0.45	7.0

4/6/10

Analytical Data

Client: Olin Corporation

Job Number: 360-24244-2
Sdg Number: OCRI-04A

Client Sample ID: **OC-SB-437-21/23-XXX**

Lab Sample ID: 360-24244-11
Client Matrix: Solid
% Moisture: 6.8

Date Sampled: 08/21/2009 1310
Date Received: 08/21/2009 1725

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49074		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49006		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.70 g
Date Analyzed:	09/16/2009 1523			Final Weight/Volume:	100 mL
Date Prepared:	09/16/2009 0750				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9500 ~~3~~		0.82	3.2
Antimony		ND 3		0.23	0.63
Arsenic		3.7		0.12	1.3
Barium		40	~~^B~~	0.082	0.63
Beryllium		0.22	J	0.032	0.25
Cadmium		0.26		0.0088	0.25
Calcium		3200 3	~~B~~	3.2	13
Chromium		35	~~B~~	0.084	0.63
Cobalt		7.5		0.082	0.63
Copper		15		0.082	1.3
Iron		18000	~~B~~	1.0	6.3
Lead		1.3		0.072	0.63
Magnesium		6200 3	~~B~~	0.63	13
Manganese		150		0.084	1.3
Nickel		15		0.082	1.3
Potassium		2600		39	250
Selenium		ND		0.30	0.63
Silver		0.070	J	0.063	0.63
Sodium		130		16	130
Thallium		ND		0.091	1.3
Vanadium		31		0.082	1.3
Zinc		24		0.74	3.2
Tin		12 3	~~^B~~	0.40	6.3

4/6/10

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24244-1

SDG No.: OCRI-04

Analysis Method: 6010B Instrument ID: Varian ICP

Lab Sample ID: CRI 360-48164/8 Concentration Units: ug/L

CRQL Check Standard Source: CRI-RL ICP_00004

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Chromium	5.00	5.19		104	70-130
Cobalt	10.0	10.7		107	70-130
Copper	10.0	11.6		116	70-130
Iron	100	108		108	70-130
Lead	5.00	5.39		108	70-130
Magnesium	400	421		105	70-130
Manganese	10.0	10.7		107	70-130
Nickel	10.0	11.1		111	70-130
Potassium	4000	3690	J	92	70-130
Selenium	10.0	12.6		126	70-130
Silver	5.00	3.62	J	72	70-130
Sodium	2000	2010		101	70-130
Vanadium	10.0	10.1		101	70-130
Thallium	10.0	11.6		116	70-130
Tin	50.0	30.4	J	61	70-130
Zinc	50.0	52.4		105	70-130

Lab Sample ID: CRI 360-48163/9 Concentration Units: ug/L

CRQL Check Standard Source: CRI-MCPICP_00006

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Antimony	6.00	5.09	J	85	70-130
Arsenic	50.0	49.6		99	70-130
Barium	2000	2140		107	70-130
Beryllium	4.00	4.15		104	70-130
Cadmium	5.00	5.18		104	70-130
Chromium	100	107		107	70-130
Lead	15.0	16.7		111	70-130
Nickel	100	110		110	70-130
Selenium	50.0	54.2		108	70-130
Silver	7.00	7.42		106	70-130
Vanadium	50.0	51.6		103	70-130
Zinc	900	945		105	70-130

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

FORM IIB-IN

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24244-2
Sdg Number: OCRI-04A

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24244-5	OC-SB-443-18/20-XXX	Solid	08/20/2009 1720	08/21/2009 1725
360-24244-8	OC-SB-445-25/27-XXX	Solid	08/21/2009 1015	08/21/2009 1725
360-24244-11	OC-SB-437-21/23-XXX	Solid	08/21/2009 1310	08/21/2009 1725

ICV/CCV OK

CRQL
Tin (44)

CCB/ICB
Se, Tl

Serial dilution OK

LCS OK

MS OOT, See attach.

Dups out

MB see attach

Form I's updated
[illegible]
4/6/10

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24244-2

SDG No.: OCRI-04A

Preparation Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 360-49006/1-A	09/16/2009 07:50	49006	2.0		100
LCS 360-49006/2-A	09/16/2009 07:50	49006	2.0		100
LCSD 360-49006/3-A	09/16/2009 07:50	49006	2.0		100
360-24244-5	09/16/2009 07:50	49006	1.59		100
360-24244-5 DU	09/16/2009 07:50	49006	1.59		100
360-24244-5 MS	09/16/2009 07:50	49006	1.61		100
360-24244-8	09/16/2009 07:50	49006	1.57		100
360-24244-11	09/16/2009 07:50	49006	1.70		100

MB	conc	AL	
Ba	0.0673	0.3345	>
Ca	9.28	46.4	>
Cr	0.0679	0.3395	>
Fe	1.06	5.3	>
Mg	2.44	12.2	>
Sn	0.587	2.935	>

FORM XII-IN

6-IN
DUPLICATES
METALS

Client ID: OC-SB-443-18/20-XXX DU

Lab ID: 360-24244-5 DU

Lab Name: TestAmerica Westfield

Job No.: 360-24244-2

SDG No.: OCRI-04A

% Solids for Sample: 92.1

% Solids for Duplicate: 92.1

Matrix: Solid

Concentration Units: mg/Kg

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Aluminum	3.4	6900		8860		24		6010B
Antimony	0.68	ND		ND		NC		6010B
Arsenic	1.4	4.5		4.65		4		6010B
Barium	0.68	42		36.3		15		6010B
Beryllium	0.27	0.12	J	0.134	J	14		6010B
Cadmium	0.27	0.31		0.310		0		6010B
Calcium	14	4700		6570		32		6010B
Chromium	0.68	20		22.4		13		6010B
Cobalt	0.68	6.8		7.34		8		6010B
Copper	1.4	15		16.4		12		6010B
Iron	6.8	21000		22000		6		6010B
Lead	0.68	2.5		2.80		12		6010B
Magnesium	14	3000		3680		19		6010B
Manganese	1.4	83		101		19		6010B
Nickel	1.4	9.3		10.5		13		6010B
Potassium	270	2600		2550		3		6010B
Selenium	0.68	ND		ND		NC		6010B
Silver	0.68	2.2		2.30		6		6010B
Sodium	140	800		956		18		6010B
Thallium	1.4	ND		ND		NC		6010B
Vanadium	1.4	45		50.1		11		6010B
Zinc	3.4	11		12.6		13		6010B
Tin	6.8	6.1	J	7.07		14		6010B

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

FORM VI-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-SB-443-18/20-XXX MS

Lab ID: 360-24244-5 MS

Lab Name: TestAmerica Westfield

Job No.: 360-24244-2

SDG No.: OCRI-04A

Matrix: Solid

Concentration Units: mg/Kg

% Solids: 92.1

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	8790		6900		337	550	75-125	4	6010B
Antimony	21.9		ND		67.5	32	75-125	F	6010B
Arsenic	67.8		4.5		67.5	94	75-125		6010B
Barium	108		42		67.5	98	75-125		6010B
Beryllium	61.9		0.12	J	67.5	92	75-125		6010B
Cadmium	60.2		0.31		67.5	89	75-125		6010B
Calcium	7590		4700		1350	211	75-125	F	6010B
Chromium	84.2		20		67.5	96	75-125		6010B
Cobalt	68.3		6.8		67.5	91	75-125		6010B
Copper	79.8		15		67.5	97	75-125		6010B
Iron	21400		21000		337	222	75-125	4	6010B
Lead	61.7		2.5		67.5	88	75-125		6010B
Magnesium	5160		3000		1350	157	75-125	F	6010B
Manganese	161		83		67.5	116	75-125		6010B
Nickel	70.2		9.3		67.5	90	75-125		6010B
Potassium	4050		2600		1350	106	75-125		6010B
Selenium	60.3		ND		67.5	89	75-125		6010B
Silver	63.8		2.2		67.5	91	75-125		6010B
Sodium	2090		800		1350	96	75-125		6010B
Thallium	54.6		ND		67.5	81	75-125		6010B
Vanadium	112		45		67.5	99	75-125		6010B
Zinc	71.8		11		67.5	90	75-125		6010B
Tin	60.3		6.1	J	67.5	80	75-125		6010B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

SITE: **Olin Chemical** Project #: ~~0/10~~ 6/07/100076.12 (25) 4/4/10 SDG #: OCRI-05/05A

LAB # : TAL 360-24251-1/2

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☐ ☒ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☑ ☐ ☐ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	See below. Post-digestion spikes %R limits = 75% - 125%

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Laboratory Control Samples (LCS) ☐ ☒ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	See below.
Laboratory Duplicate ☐ ☐ ☑ Was a field blank used as the lab duplicate ☐ ☐ ☑ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☐ ☐ ☑ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☐ ☐ ☑ Was a duplicate analyzed for every matrix and every 20 samples or batch	
Field Duplicate ☑ ☐ ☐ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☑ ☐ ☐ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution ☒ ☐ ☐ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☒ ☐ ☐ Are results of the diluted samples > the original sample results	See below. .

Validator's Signature: [signature]

Date: 4/6/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

QL Standard:
The percent recoveries of tin (60, 58, 59, 62, 64, and 61) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J).

Blanks:
Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Calcium (8.03 mg/kg), chromium (0.0979 mg/kg), iron (1.6 mg/kg), magnesium (2.2 mg/kg), manganese (0.0786 mg/kg), nickel (0.194 mg/kg), and tin (0.475 mg/kg) were reported in the method blank (M360-48244) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Sample results for calcium, chromium, iron, magnesium, and manganese were greater than the action levels, no further action required. Sample results for nickel and tin that were less than the action levels were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Calcium (5.65 mg/kg), iron (1.16 mg/kg), magnesium (1.71 mg/kg), and tin (0.480 mg/kg) were reported in the method blank (M360-48542) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Sample results were greater than the action levels, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Barium (0.0754 mg/kg), calcium (11.2 mg/kg), chromium (0.0872 mg/kg), iron (1.95 mg/kg), magnesium (2.63 mg/kg), manganese (0.109 mg/kg), sodium (14.9 mg/kg) and tin (0.481 mg/kg) were reported in the method blank (M360-48949) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. With the exception of sodium, sample results were greater than the action levels, no further action required. Sample results for sodium were non detect, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Selenium and thallium were reported in the continuing calibration blanks (CCB) associated with a subset of samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for selenium were non detect, no further action required. Associated sample detections for thallium were qualified (EB) to indicate potential blank contamination associated with the equipment blank.

Matrix Spikes:

Samples OC-SB-433-5.0/7.0-XXX and OC-SB-446-5.0/7.0-XXX were submitted for MS analysis. The MS percent recoveries of aluminum (156and 178), antimony (70), and iron (-2 and 153) were outside of the QC limits. The unspiked sample result for aluminum and iron in sample OC-SB-433-5.0/7.0-XXX was greater than four times the spiking concentration, no further action required. Post digestion spike recovery for antimony was within QC limits, indicating a matrix effect for antimony. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

SDG	Lab Sample ID	Field Sample ID	Antimony MS Recovery (%)
OCRI-03	360-24223-9	OC-SB-426-5.0/7.0-XXX	61
OCRI-04	360-24244-1	OC-SB-432-0.0/1.0-XXX	27
OCRI-04A	360-24244-5	OC-SB-443-18/20-XXX	32
OCRI-05	360-24251-19	OC-SB-446-5.0/7.0-XXX	80
OCRI-05	360-24251-4	OC-SB-433-5.0/7.0-XXX	70
OCRI-06	360-24309-23	OC-SB-430-8.0/10-XXX	44
OCRI-07	360-24327-12	OC-SB-410-6.0/8.0-XXX	65
OCRI-08	360-24343-10	OC-SB-451-2.5/4.5-XXX	62
OCRI-08	360-24343-17	OC-SB-455-6.0/8.0-XXX	46
OCRI-09	360-24365-4	OC-SB-442-8.0/10-XXX	50
OCRI-10	360-24417-10	OC-SB-465-8.0/10-XXX	63
OCRI-10A	360-24417-2	OC-SB-463-28/30-XXX	38
OCRI-11	360-24444-2	OC-SB-459-6.0/8.0-XXX	64
OCRI-11	360-24444-9	OC-SB-467-6.0/8.0-XXX	68
OCRI-12	360-24454-3	OC-SB-461-5.0/7.0-XXX	65
OCRI-13A	360-24499-3	OC-SB-469-28/30-XXX	61
OCRI-14	360-24563-14	OC-SB-456-7.0/9.0-XXX	60
OCRI-14	360-24563-5	OC-SB-427-8.0/10-XXX	67
OCRI-15	360-24582-22	OC-SS-416-0.0/1.0-XXX	56
OCRI-16	360-24634-1	OC-SS-417-0.0/1.0-XXX	61
OCRI-17	360-24665-1	OC-SS-434-0.0/1.0-XXX	29
OCRI-18	360-24686-1	OC-SB-400-17/19-XXX	67

Associated sample detections for aluminum and iron were qualified estimated (J).

Laboratory Control Sample:

The LCS percent recoveries of potassium (78 and 78) associated with a subset of samples was less than the lower QC limit of 80. Associated sample results for potassium were qualified estimated (J).

Serial Dilution:

The percent difference for magnesium (23) exceeds the QC limit of 15. The diluted result for magnesium is greater than the undiluted result. Associated sample results for magnesium were qualified estimated (J).

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24251-1	OC-SB-433-0.0/1.0-XXX	Solid	08/24/2009 0815	08/24/2009 1910
360-24251-2	OC-SB-433-20/22-XXX	Solid	08/24/2009 0850	08/24/2009 1910
360-24251-3	OC-SB-433-5.0/7.0-DUP	Solid	08/24/2009 0820	08/24/2009 1910
360-24251-4	OC-SB-433-5.0/7.0-XXX	Solid	08/24/2009 0820	08/24/2009 1910
360-24251-4MS	OC-SB-433-5.0/7.0-XMS	Solid	08/24/2009 0820	08/24/2009 1910
360-24251-4MSD	OC-SB-433-5.0/7.0-MSD	Solid	08/24/2009 0820	08/24/2009 1910
360-24251-5	OC-SB-439-0.0-1.0-XXX	Solid	08/24/2009 0945	08/24/2009 1910
360-24251-6	OC-SB-439-16/18-XXX	Solid	08/24/2009 1040	08/24/2009 1910
360-24251-7	OC-SB-439-8.0/10-XXX	Solid	08/24/2009 0950	08/24/2009 1910
360-24251-8	OC-SB-440-0.0/1.0-XXX	Solid	08/24/2009 1140	08/24/2009 1910
360-24251-9	OC-SB-440-23/25-XXX	Solid	08/24/2009 1230	08/24/2009 1910
360-24251-10	OC-SB-440-6.0/8.0-XXX	Solid	08/24/2009 1150	08/24/2009 1910
360-24251-11	OC-TBK-006	Solid	08/24/2009 1430	08/24/2009 1910
360-24251-12	OC-SB-438-5.0/7.0-XXX	Solid	08/24/2009 1650	08/25/2009 1800
360-24251-13	OC-SB-441-0.0/1.0-XXX	Solid	08/24/2009 1450	08/25/2009 1800
360-24251-14	OC-SB-441-17/19-XXX	Solid	08/24/2009 1535	08/25/2009 1800
360-24251-15	OC-SB-441-8.0/10-XXX	Solid	08/24/2009 1455	08/25/2009 1800
360-24251-16	OC-SB-446-0.0/1.0-XXX	Solid	08/25/2009 0805	08/25/2009 1800
360-24251-17	OC-SB-446-15/17-XXX	Solid	08/25/2009 0900	08/25/2009 1800
360-24251-18	OC-SB-446-5.0/7.0-DUP	Solid	08/25/2009 0820	08/25/2009 1800
360-24251-19	OC-SB-446-5.0/7.0-XXX	Solid	08/25/2009 0820	08/25/2009 1800
360-24251-19MS	OC-SB-446-5.0/7.0-XMS	Solid	08/25/2009 0820	08/25/2009 1800
360-24251-19MSD	OC-SB-446-5.0/7.0-MSD	Solid	08/25/2009 0820	08/25/2009 1800
360-24251-20	OC-SB-448-0.0/1.0-XXX	Solid	08/25/2009 1005	08/25/2009 1800
360-24251-21	OC-SB-448-17/19-XXX	Solid	08/25/2009 1045	08/25/2009 1800
360-24251-22	OC-SB-448-8.0/10-XXX	Solid	08/25/2009 1030	08/25/2009 1800
360-24251-23	OC-SB-438-0.0/1.0-XXX	Solid	08/24/2009 1645	08/25/2009 1800
360-24251-24	OC-SB-438-20/22-XXX	Solid	08/24/2009 1720	08/25/2009 1800
360-24251-25	OC-TBK-007	Solid	08/25/2009 1450	08/25/2009 1800
360-24251-26	OC-EBK-004	Water	08/24/2009 1820	08/25/2009 1800

√ CRQL Tin (60,58,59,62,61)

JMB

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[signature]

Refer to the QC report for details.

General method information:
At the request of the client, only the carbon ranges are reported for this job.

No other difficulties were encountered during the VPH analyses.

All other quality control parameters were within the acceptance limits.

VOLATILE PETROLEUM HYDROCARBONS (water)
Sample 360-24251-26 was analyzed for Volatile Petroleum Hydrocarbons in accordance with MADEP VPH. The samples were analyzed on 09/02/2009.

All QC performance standards and recommendations, which may affect Data Usability for this specific method, were achieved.

General method information:
At the request of the client, only the carbon ranges are reported for this job.

No difficulties were encountered during the VPH analysis.

All quality control parameters were within the acceptance limits.

TOTAL METALS (soils)
Samples 360-24251-1, 360-24251-3 through 360-24251-5, 360-24251-7, 360-24251-8, 360-24251-10, 360-24251-12, 360-24251-13, 360-24251-15, 360-24251-16 and 360-24251-18 through 360-24251-23 were analyzed for total metals in accordance with EPA SW846 Method 6010B. The samples were prepared on 08/27/2009, 09/03/2009 and 09/04/2009 and analyzed on 08/27/2009, 08/31/2009, 09/03/2009 and 09/08/2009.

All QC performance standards and recommendations, which may affect Data Usability for this specific method, were achieved with the exception of:

Calcium was detected in method blank MB 360-48542/1-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged. This MB is associated with sample 360-24251-21.

Potassium failed the LCSD recovery criteria low (78%) for LCSD 360-48244/3-A. The LCS was within control limits as was the rpd between the two standards.

Aluminum and Iron failed the MS recovery criteria high for the matrix spike of sample 360-24251-19. Antimony and Iron failed the MS recovery criteria low for the matrix spike of sample 360-24251-4. Aluminum failed the MS recovery criteria high. The associated laboratory control sample (LCS) met acceptance criteria.

Batch 48706 (re-analysis for Potassium only on sample 360-24251-21): The ICSA for batch 48706 exceeded the acceptance limits high for element: Aluminum (124%). Potassium was not detected above the reporting limit in this standard. The ICSAB recovered within limits.

Refer to the QC report for details.

General method information:
Samples 360-24251-5(5X) and 360-24251-22(5X) required dilution prior to analysis due to the abundance of the target analyte Tin. The reporting limits have been adjusted accordingly.

At the request of the client, a modified MCP analyte list (TAL metals) was reported for this job.

Several analytes were detected in method blank MB 360-48244/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

Iron, Magnesium and Tin were detected in method blank MB 360-48542/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged "J". If the associated

sample reported a result above the MDL and/or RL, the result has been "B" flagged.

No other difficulties were encountered during the total metals analyses.

All other quality control parameters were within the acceptance limits.

TOTAL METALS (water)
Sample 360-24251-26 was analyzed for total metals in accordance with EPA SW-846 Method 6010B. The samples were prepared and analyzed on 08/26/2009.

All QC performance standards and recommendations, which may affect Data Usability for this specific method, were achieved.

General method information:
At the request of the client, a modified MCP analyte list (TAL metals) was reported for this job.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

TOTAL MERCURY (soils)
Samples 360-24251-1, 360-24251-3 through 360-24251-5, 360-24251-7, 360-24251-8, 360-24251-10, 360-24251-12, 360-24251-13, 360-24251-15, 360-24251-16 and 360-24251-18 through 360-24251-23 were analyzed for total mercury in accordance with EPA SW-846 Method 7471A. The samples were prepared on 08/28/2009 and 09/03/2009 and analyzed on 08/31/2009 and 09/04/2009.

All QC performance standards and recommendations, which may affect Data Usability for this specific method, were achieved.

No difficulties were encountered during the mercury analyses.

All quality control parameters were within the acceptance limits.

TOTAL MERCURY (water)
Sample 360-24251-26 was analyzed for total mercury in accordance with EPA SW-846 Method 7470A. The samples were prepared on 08/31/2009 and analyzed on 09/01/2009.

All QC performance standards and recommendations, which may affect Data Usability for this specific method, were achieved.

No difficulties were encountered during the mercury analysis.

All quality control parameters were within the acceptance limits.

ANIONS (soils)
Samples 360-24251-1 through 360-24251-10 and 360-24251-12 through 360-24251-24 were analyzed for anions in accordance with EPA Method 300.0. The samples were leached on 09/01/2009 and analyzed on 09/03/2009.

No difficulties were encountered during the anions analyses.

All quality control parameters were within the acceptance limits.

ANIONS (water)
Sample 360-24251-26 was analyzed for anions in accordance with Anions, Ion Chromatograph. The samples were analyzed on 08/28/2009.

No difficulties were encountered during the anions analysis.

All quality control parameters were within the acceptance limits.

Analytical Data

Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-433-0.0/1.0-XXX**

Lab Sample ID: 360-24251-1
Client Matrix: Solid
% Moisture: 7.2

Date Sampled: 08/24/2009 0815
Date Received: 08/24/2009 1910

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48311		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.83 g
Date Analyzed:	08/27/2009 1637			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6500 J		0.77	2.9
Antimony		ND J		0.21	0.59
Arsenic		5.1		0.11	1.2
Barium		9.5		0.077	0.59
Beryllium		0.21	J	0.029	0.24
Cadmium		0.11	J	0.0082	0.24
Calcium		630	~~B~~	2.9	12
Chromium		11	~~B~~	0.078	0.59
Cobalt		2.0		0.077	0.59
Copper		5.8		0.077	1.2
Iron		6700 J	~~B~~	0.94	5.9
Lead		3.8		0.067	0.59
Magnesium		1000 J	~~B~~	0.59	12
Manganese		41	~~B~~	0.079	1.2
Nickel		5.8	~~B~~	0.077	1.2
Potassium		540 J		37	240
Selenium		ND		0.28	0.59
Silver		ND		0.059	0.59
Sodium		ND		15	120
Thallium		ND		0.085	1.2
Vanadium		17		0.077	1.2
Zinc		16		0.69	2.9
Tin		4.2	J ~~B~~	0.38	5.9

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48312		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	08/31/2009 0934			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0949				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.035	0.19

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Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-433-5.0/7.0-DUP**

Lab Sample ID: 360-24251-3
Client Matrix: Solid
% Moisture: 14.2

Date Sampled: 08/24/2009 0820
Date Received: 08/24/2009 1910

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48311		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.90 g
Date Analyzed:	08/27/2009 1639			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3700 J		0.80	3.1
Antimony		ND J		0.22	0.61
Arsenic		3.2		0.11	1.2
Barium		5.3		0.080	0.61
Beryllium		0.14	J	0.031	0.25
Cadmium		0.070	J	0.0086	0.25
Calcium		400	~~B~~	3.1	12
Chromium		5.8	~~B~~	0.082	0.61
Cobalt		1.8		0.080	0.61
Copper		2.8		0.080	1.2
Iron		4800 J	~~B~~	0.98	6.1
Lead		1.4		0.070	0.61
Magnesium		960 J	~~B~~	0.61	12
Manganese		34	~~B~~	0.082	1.2
Nickel		4.8	~~B~~	0.080	1.2
Potassium		530 J	✓	38	250
Selenium		ND		0.29	0.61
Silver		ND		0.062	0.61
Sodium		ND		16	120
Thallium		ND		0.089	1.2
Vanadium		6.1		0.080	1.2
Zinc		14		0.72	3.1
Tin		2.1	J ~~B~~	0.39	6.1

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48312		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.30 g
Date Analyzed:	08/31/2009 0936			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0949				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.026	0.14

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Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-433-5.0/7.0-XXX**

Lab Sample ID: 360-24251-4
Client Matrix: Solid
% Moisture: 14.0

Date Sampled: 08/24/2009 0820
Date Received: 08/24/2009 1910

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48311		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.62 g
Date Analyzed:	08/27/2009 1622			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3500 J		0.93	3.6
Antimony		ND J		0.26	0.72
Arsenic		3.5		0.13	1.4
Barium		4.6		0.093	0.72
Beryllium		0.13	J	0.036	0.29
Cadmium		0.068	J	0.010	0.29
Calcium		360	~~B~~	3.6	14
Chromium		5.1	~~B~~	0.095	0.72
Cobalt		1.7		0.093	0.72
Copper		3.2		0.093	1.4
Iron		4300 J	~~B~~	1.1	7.2
Lead		1.8		0.082	0.72
Magnesium		820 J	~~B~~	0.72	14
Manganese		30	~~B~~	0.096	1.4
Nickel		4.8	~~B~~	0.093	1.4
Potassium		430 J		45	290
Selenium		ND		0.34	0.72
Silver		ND		0.072	0.72
Sodium		ND		19	140
Thallium		ND		0.10	1.4
Vanadium		5.6		0.093	1.4
Zinc		13		0.84	3.6
Tin		1.9	J ~~B~~	0.46	7.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48312		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.24 g
Date Analyzed:	08/31/2009 0929			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0949				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.033	0.18

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Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-439-0.0-1.0-XXX**

Lab Sample ID: 360-24251-5
Client Matrix: Solid
% Moisture: 12.6

Date Sampled: 08/24/2009 0945
Date Received: 08/24/2009 1910

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48311		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.83 g
Date Analyzed:	08/27/2009 1642			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3100 J		0.81	3.1
Antimony		ND J		0.23	0.63
Arsenic		2.3		0.11	1.3
Barium		27		0.081	0.63
Beryllium		0.18	J	0.031	0.25
Cadmium		1.4		0.0088	0.25
Calcium		4000	~~B~~	3.1	13
Chromium		800	~~B~~	0.083	0.63
Cobalt		12		0.081	0.63
Copper		100		0.081	1.3
Iron		12000 J	~~B~~	1.0	6.3
Lead		18		0.071	0.63
Magnesium		1600 J	~~B~~	0.63	13
Manganese		250	~~B~~	0.084	1.3
Nickel		76	~~B~~	0.081	1.3
Potassium		400 J		39	250
Selenium		ND		0.29	0.63
Silver		15		0.063	0.63
Sodium		22	J	16	130
Thallium		0.35	J EB	0.090	1.3
Vanadium		60		0.081	1.3
Zinc		97		0.74	3.1

Method:	6010B	Analysis Batch: 360-48402		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	5.0			Initial Weight/Volume:	1.83 g
Date Analyzed:	08/31/2009 1223			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Tin		400	~~B~~ J	2.0	31

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48312		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	08/31/2009 0938			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0949				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.085	J	0.034	0.18

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Analytical Data

Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-439-8.0/10-XXX**

Lab Sample ID: 360-24251-7
Client Matrix: Solid
% Moisture: 19.8

Date Sampled: 08/24/2009 0950
Date Received: 08/24/2009 1910

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48311		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.98 g
Date Analyzed:	08/27/2009 1651			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3300 J		0.82	3.1
Antimony		ND J		0.23	0.63
Arsenic		3.0		0.11	1.3
Barium		8.5		0.082	0.63
Beryllium		0.11	J	0.031	0.25
Cadmium		0.099	J	0.0088	0.25
Calcium		830	~~B~~	3.1	13
Chromium		9.6	~~B~~	0.084	0.63
Cobalt		1.8		0.082	0.63
Copper		3.6		0.082	1.3
Iron		5300 J	~~B~~	1.0	6.3
Lead		1.8		0.072	0.63
Magnesium		980 J	~~B~~	0.63	13
Manganese		42	~~B~~	0.084	1.3
Nickel		5.2	~~B~~	0.082	1.3
Potassium		610 J	~~J~~	39	250
Selenium		ND		0.29	0.63
Silver		ND		0.063	0.63
Sodium		37	J	16	130
Thallium		ND		0.091	1.3
Vanadium		6.8		0.082	1.3
Zinc		10		0.74	3.1
Tin		3.7	J ~~B~~	0.40	6.3

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48312		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.26 g
Date Analyzed:	08/31/2009 0940			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0949				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.033	0.18

N Clm 4/6/10

Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-440-0.0/1.0-XXX**

Lab Sample ID: 360-24251-8
Client Matrix: Solid
% Moisture: 2.6

Date Sampled: 08/24/2009 1140
Date Received: 08/24/2009 1910

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48311		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.78 g
Date Analyzed:	08/27/2009 1654			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7500 J		0.75	2.9
Antimony		ND J		0.21	0.58
Arsenic		10		0.11	1.2
Barium		24		0.075	0.58
Beryllium		0.27		0.029	0.23
Cadmium		0.20	J	0.0081	0.23
Calcium		1300	~~B~~	2.9	12
Chromium		21	~~B~~	0.077	0.58
Cobalt		5.7		0.075	0.58
Copper		9.7		0.075	1.2
Iron		12000 J	~~B~~	0.92	5.8
Lead		4.4		0.066	0.58
Magnesium		3100 J	~~B~~	0.58	12
Manganese		140	~~B~~	0.077	1.2
Nickel		19	~~B~~	0.075	1.2
Potassium		1500 J		36	230
Selenium		ND		0.27	0.58
Silver		ND		0.058	0.58
Sodium		ND		15	120
Thallium		ND		0.083	1.2
Vanadium		19		0.075	1.2
Zinc		21		0.68	2.9
Tin		7.9 J	~~B~~	0.37	5.8

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48312		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.24 g
Date Analyzed:	08/31/2009 0945			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0949				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.029	0.16

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Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-440-6.0/8.0-XXX**

Lab Sample ID: 360-24251-10
Client Matrix: Solid
% Moisture: 9.6

Date Sampled: 08/24/2009 1150
Date Received: 08/24/2009 1910

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48311		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.71 g
Date Analyzed:	08/27/2009 1657			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5400 J		0.84	3.2
Antimony		ND J		0.23	0.65
Arsenic		4.6		0.12	1.3
Barium		9.5		0.084	0.65
Beryllium		0.18	J	0.032	0.26
Cadmium		0.14	J	0.0091	0.26
Calcium		750	~~B~~	3.2	13
Chromium		9.1	~~B~~	0.086	0.65
Cobalt		2.5		0.084	0.65
Copper		4.6		0.084	1.3
Iron		5900 J	~~B~~	1.0	6.5
Lead		3.4		0.074	0.65
Magnesium		1100 J	~~B~~	0.65	13
Manganese		50	~~B~~	0.086	1.3
Nickel		7.6	~~B~~	0.084	1.3
Potassium		560 J	~~J~~	40	260
Selenium		ND		0.30	0.65
Silver		ND		0.065	0.65
Sodium		ND		17	130
Thallium		ND		0.094	1.3
Vanadium		20		0.084	1.3
Zinc		11		0.76	3.2
Tin		3.5	J ~~B~~	0.41	6.5

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48312		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	08/31/2009 0947			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0949				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.034	0.19

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Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-438-5.0/7.0-XXX**

Lab Sample ID: 360-24251-12
Client Matrix: Solid
% Moisture: 12.8

Date Sampled: 08/24/2009 1650
Date Received: 08/25/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48311		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.84 g
Date Analyzed:	08/27/2009 1700			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3900 J		0.81	3.1
Antimony		ND J		0.23	0.62
Arsenic		4.2		0.11	1.2
Barium		6.6		0.081	0.62
Beryllium		0.25		0.031	0.25
Cadmium		0.076	J	0.0087	0.25
Calcium		500	~~B~~	3.1	12
Chromium		5.8	~~B~~	0.083	0.62
Cobalt		1.8		0.081	0.62
Copper		3.1		0.081	1.2
Iron		5200 J	~~B~~	0.99	6.2
Lead		1.2		0.071	0.62
Magnesium		970 J	~~B~~	0.62	12
Manganese		35	~~B~~	0.083	1.2
Nickel		5.2	~~B~~	0.081	1.2
Potassium		600 J	~~J~~	39	250
Selenium		ND		0.29	0.62
Silver		ND		0.063	0.62
Sodium		ND		16	120
Thallium		ND		0.090	1.2
Vanadium		6.0		0.081	1.2
Zinc		16		0.73	3.1
Tin		2.1	J ~~B~~	0.40	6.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48312		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	08/31/2009 0949			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0949				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.035	0.19

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Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-441-0.0/1.0-XXX**

Lab Sample ID: 360-24251-13
Client Matrix: Solid
% Moisture: 3.5

Date Sampled: 08/24/2009 1450
Date Received: 08/25/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48311		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.70 g
Date Analyzed:	08/27/2009 1703			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6400 J		0.79	3.0
Antimony		ND J		0.22	0.61
Arsenic		8.2		0.11	1.2
Barium		11		0.079	0.61
Beryllium		0.24	J	0.030	0.24
Cadmium		0.22	J	0.0085	0.24
Calcium		780	~~B~~	3.0	12
Chromium		29	~~B~~	0.081	0.61
Cobalt		3.1		0.079	0.61
Copper		41		0.079	1.2
Iron		9400 J	~~B~~	0.97	6.1
Lead		15		0.070	0.61
Magnesium		1500 J	~~B~~	0.61	12
Manganese		67	~~B~~	0.081	1.2
Nickel		20	~~B~~	0.079	1.2
Potassium		610 J	~~J~~	38	240
Selenium		ND		0.29	0.61
Silver		0.11	J	0.061	0.61
Sodium		ND		16	120
Thallium		ND		0.088	1.2
Vanadium		110		0.079	1.2
Zinc		28		0.72	3.0
Tin		12	J ~~B~~	0.39	6.1

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48312		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	08/31/2009 0951			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0949				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.034	0.18

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Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-441-8.0/10-XXX**

Lab Sample ID: 360-24251-15
Client Matrix: Solid
% Moisture: 11.0

Date Sampled: 08/24/2009 1455
Date Received: 08/25/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48311		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.69 g
Date Analyzed:	08/27/2009 1705			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		2900 J		0.86	3.3
Antimony		ND J		0.24	0.66
Arsenic		2.9		0.12	1.3
Barium		7.8		0.086	0.66
Beryllium		0.11	J	0.033	0.27
Cadmium		0.090	J	0.0093	0.27
Calcium		860	~~B~~	3.3	13
Chromium		8.6	~~B~~	0.088	0.66
Cobalt		1.5		0.086	0.66
Copper		3.2		0.086	1.3
Iron		6000 J	~~B~~	1.1	6.6
Lead		1.4		0.076	0.66
Magnesium		1000 J	~~B~~	0.66	13
Manganese		43	~~B~~	0.089	1.3
Nickel		5.1	~~B~~	0.086	1.3
Potassium		740 J		42	270
Selenium		ND		0.31	0.66
Silver		ND		0.067	0.66
Sodium		ND		17	130
Thallium		ND		0.096	1.3
Vanadium		9.8		0.086	1.3
Zinc		7.4		0.78	3.3
Tin		3.0	J ~~B~~	0.43	6.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48312		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.26 g
Date Analyzed:	08/31/2009 0953			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0949				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.029	0.16

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Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-446-0.0/1.0-XXX**

Lab Sample ID: 360-24251-16
Client Matrix: Solid
% Moisture: 5.1

Date Sampled: 08/25/2009 0805
Date Received: 08/25/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48311		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.68 g
Date Analyzed:	08/27/2009 1708			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		1000 J		0.81	3.1
Antimony		0.43	J	0.23	0.63
Arsenic		1.3		0.11	1.3
Barium		16		0.081	0.63
Beryllium		0.037	J	0.031	0.25
Cadmium		0.12	J	0.0088	0.25
Calcium		2900	~~B~~	3.1	13
Chromium		12	B	0.083	0.63
Cobalt		0.90		0.081	0.63
Copper		5.8		0.081	1.3
Iron		2900 J	~~B~~	1.0	6.3
Lead		97		0.072	0.63
Magnesium		410 J	~~B~~	0.63	13
Manganese		25	~~B~~	0.084	1.3
Nickel		7.6	~~B~~	0.081	1.3
Potassium		370 J		39	250
Selenium		ND		0.29	0.63
Silver		0.61	J	0.063	0.63
Sodium		470		16	130
Thallium		ND		0.091	1.3
Vanadium		26		0.081	1.3
Zinc		15		0.74	3.1
Tin		5.6	J ~~B~~	0.40	6.3

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48312		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.26 g
Date Analyzed:	08/31/2009 0956			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0949				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.18		0.028	0.15

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Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-446-5.0/7.0-DUP**

Lab Sample ID: 360-24251-18
Client Matrix: Solid
% Moisture: 18.3

Date Sampled: 08/25/2009 0820
Date Received: 08/25/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48311		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.83 g
Date Analyzed:	08/27/2009 1711			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		430 J		0.87	3.3
Antimony		ND J		0.24	0.67
Arsenic		0.52	J	0.12	1.3
Barium		4.1		0.087	0.67
Beryllium		ND		0.033	0.27
Cadmium		0.021	J	0.0094	0.27
Calcium		240	~~B~~	3.3	13
Chromium		1.8	~~B~~	0.089	0.67
Cobalt		0.41	J	0.087	0.67
Copper		0.60	J	0.087	1.3
Iron		590 J	~~B~~	1.1	6.7
Lead		1.6		0.076	0.67
Magnesium		71 J	~~B~~	0.67	13
Manganese		8.3	~~B~~	0.089	1.3
Nickel		0.67 J	J ~~B~~	0.087	1.3
Potassium		320 J		42	270
Selenium		ND		0.31	0.67
Silver		ND		0.067	0.67
Sodium		ND		17	130
Thallium		ND		0.097	1.3
Vanadium		1.5		0.087	1.3
Zinc		8.3		0.79	3.3
Tin		0.82	J ~~B~~	0.43	6.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48312		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	08/31/2009 0958			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0949				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.031	0.17

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Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-446-5.0/7.0-XXX**

Lab Sample ID: 360-24251-19
Client Matrix: Solid
% Moisture: 21.4

Date Sampled: 08/25/2009 0820
Date Received: 08/25/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48311		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.84 g
Date Analyzed:	08/27/2009 1714			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		410 J		0.90	3.5
Antimony		ND J		0.25	0.69
Arsenic		0.50	J	0.13	1.4
Barium		3.1		0.090	0.69
Beryllium		ND		0.035	0.28
Cadmium		0.021	J	0.0097	0.28
Calcium		190	~~B~~	3.5	14
Chromium		1.8	~~B~~	0.092	0.69
Cobalt		0.33	J	0.090	0.69
Copper		0.46	J	0.090	1.4
Iron		530 J	~~B~~	1.1	6.9
Lead		1.2		0.079	0.69
Magnesium		63 J	~~B~~	0.69	14
Manganese		6.6	~~B~~	0.092	1.4
Nickel		0.64 J	J ~~B~~	0.090	1.4
Potassium		330 J		43	280
Selenium		ND		0.32	0.69
Silver		ND		0.070	0.69
Sodium		ND		18	140
Thallium		ND		0.10	1.4
Vanadium		1.2	J	0.090	1.4
Zinc		8.1		0.81	3.5
Tin		0.81	J ~~B~~	0.44	6.9

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48312		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	08/31/2009 1000			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0949				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.032	0.17

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Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-448-0.0/1.0-XXX**

Lab Sample ID: 360-24251-20
Client Matrix: Solid
% Moisture: 5.4

Date Sampled: 08/25/2009 1005
Date Received: 08/25/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48311		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.67 g
Date Analyzed:	08/27/2009 1726			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5100 J		0.82	3.2
Antimony		ND J		0.23	0.63
Arsenic		4.6		0.12	1.3
Barium		12		0.082	0.63
Beryllium		0.18	J	0.032	0.25
Cadmium		0.14	J	0.0089	0.25
Calcium		690	~~B~~	3.2	13
Chromium		110	~~B~~	0.084	0.63
Cobalt		2.0		0.082	0.63
Copper		4.2		0.082	1.3
Iron		6500 J	~~B~~	1.0	6.3
Lead		4.8		0.072	0.63
Magnesium		1200 J	~~B~~	0.63	13
Manganese		53	~~B~~	0.085	1.3
Nickel		8.1	~~B~~	0.082	1.3
Potassium		510 J		40	250
Selenium		ND		0.30	0.63
Silver		1.8		0.064	0.63
Sodium		ND		16	130
Thallium		ND		0.092	1.3
Vanadium		8.1		0.082	1.3
Zinc		22		0.74	3.2
Tin		50 J	~~B~~	0.41	6.3

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48312		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.28 g
Date Analyzed:	08/31/2009 1003			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0949				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.30		0.026	0.14

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Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-448-17/19-XXX**

Lab Sample ID: 360-24251-21
Client Matrix: Solid
% Moisture: 8.7

Date Sampled: 08/25/2009 1045
Date Received: 08/25/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48592		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48542		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.64 g
Date Analyzed:	09/03/2009 1454			Final Weight/Volume:	100 mL
Date Prepared:	09/03/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10000 J		0.87	3.3
Antimony		0.24 J	J	0.24	0.67
Arsenic		1.5		0.12	1.3
Barium		76		0.087	0.67
Beryllium		0.22	J	0.033	0.27
Cadmium		0.23	J	0.0093	0.27
Calcium		2300	~~B~~	3.3	13
Chromium		390		0.089	0.67
Cobalt		9.1		0.087	0.67
Copper		15		0.087	1.3
Iron		18000 J	~~B~~	1.1	6.7
Lead		1.2		0.076	0.67
Magnesium		8100 J	~~B~~	0.67	13
Manganese		200		0.089	1.3
Nickel		20		0.087	1.3
Selenium		ND		0.31	0.67
Silver		6.9		0.067	0.67
Sodium		83	J	17	130
Thallium		ND		0.097	1.3
Vanadium		24		0.087	1.3
Zinc		25		0.79	3.3
Tin		160 J	~~B~~	0.43	6.7

Method:	6010B	Analysis Batch: 360-48706		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48616		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.71 g
Date Analyzed:	09/08/2009 1337			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Potassium		2700		40	260

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48546		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.29 g
Date Analyzed:	09/04/2009 0908			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.026	0.14

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Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-448-8.0/10-XXX**

Lab Sample ID: 360-24251-22
Client Matrix: Solid
% Moisture: 11.6

Date Sampled: 08/25/2009 1030
Date Received: 08/25/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48311		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.93 g
Date Analyzed:	08/27/2009 1729			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8200 J		0.76	2.9
Antimony		ND J		0.21	0.59
Arsenic		3.1		0.11	1.2
Barium		30		0.076	0.59
Beryllium		0.23	J	0.029	0.23
Cadmium		0.15	J	0.0082	0.23
Calcium		1600	~~B~~	2.9	12
Chromium		1200	~~B~~	0.078	0.59
Cobalt		4.2		0.076	0.59
Copper		8.7		0.076	1.2
Iron		9300 J	~~B~~	0.93	5.9
Lead		3.2		0.067	0.59
Magnesium		2700 J	~~B~~	0.59	12
Manganese		100	~~B~~	0.078	1.2
Nickel		10	~~B~~	0.076	1.2
Potassium		1800 J		37	230
Selenium		ND		0.27	0.59
Silver		24		0.059	0.59
Sodium		100	J	15	120
Thallium		0.33	J ~~B~~	0.085	1.2
Vanadium		16		0.076	1.2
Zinc		20		0.69	2.9

Method:	6010B	Analysis Batch: 360-48402		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	5.0			Initial Weight/Volume:	1.93 g
Date Analyzed:	08/31/2009 1225			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Tin		620	J ~~B~~	1.9	29

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48312		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.30 g
Date Analyzed:	08/31/2009 1010			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0949				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.026	0.14

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Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-SB-438-0.0/1.0-XXX**

Lab Sample ID: 360-24251-23
Client Matrix: Solid
% Moisture: 5.6

Date Sampled: 08/24/2009 1645
Date Received: 08/25/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48311		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48244		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.74 g
Date Analyzed:	08/27/2009 1732			Final Weight/Volume:	100 mL
Date Prepared:	08/27/2009 0848				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6700 J		0.79	3.0
Antimony		ND J		0.22	0.61
Arsenic		16		0.11	1.2
Barium		11		0.079	0.61
Beryllium		0.26		0.030	0.24
Cadmium		0.15	J	0.0085	0.24
Calcium		1000	~~B~~	3.0	12
Chromium		10	~~B~~	0.081	0.61
Cobalt		2.5		0.079	0.61
Copper		7.0		0.079	1.2
Iron		9300 J	~~B~~	0.97	6.1
Lead		4.4		0.070	0.61
Magnesium		1700 J	~~B~~	0.61	12
Manganese		60	~~B~~	0.081	1.2
Nickel		6.8	~~B~~	0.079	1.2
Potassium		830 J		38	240
Selenium		ND		0.28	0.61
Silver		ND		0.061	0.61
Sodium		59	J	16	120
Thallium		ND		0.088	1.2
Vanadium		10		0.079	1.2
Zinc		12		0.72	3.0
Tin		3.7	J ~~B~~	0.39	6.1

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48312		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	08/31/2009 1012			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0949				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.027	0.15

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Client: Olin Corporation

Job Number: 360-24251-1
Sdg Number: OCRI-05

Client Sample ID: **OC-EBK-004**

Lab Sample ID: 360-24251-26
Client Matrix: Water

Date Sampled: 08/24/2009 1820
Date Received: 08/25/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48205		Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-48165		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 1302			Final Weight/Volume:	50 mL
Date Prepared:	08/26/2009 0733				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	ND		39	100
Antimony	ND		2.9	6.0
Barium	ND		2.0	10
Arsenic	ND		2.3	10
Beryllium	ND		0.20	1.0
Cadmium	ND		0.20	1.0
Calcium	60	J	59	400
Chromium	ND		1.3	5.0
Cobalt	ND		2.0	10
Copper	9.1	J	1.7	10
Iron	ND		34	100
Lead	ND		1.3	5.0
Magnesium	ND		50	400
Manganese	ND		1.3	10
Nickel	ND		1.5	10
Potassium	ND		500	4000
Selenium	ND		2.7	10
Silver	ND		1.8	5.0
Sodium	ND		250	2000
Tin	ND		7.0	50
Vanadium	ND		1.5	10
Thallium	ND		1.4	10
Zinc	ND		10	50

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 360-48431		Instrument ID:	Hg Analyzer
Preparation:	7470A	Prep Batch: 360-48366		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	09/01/2009 1004			Final Weight/Volume:	10 mL
Date Prepared:	08/31/2009 0734				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	ND		0.065	0.20

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24251-2
Sdg Number: OCRI-05A

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24251-2	OC-SB-433-20/22-XXX	Solid	08/24/2009 0850	08/24/2009 1910
360-24251-6	OC-SB-439-16/18-XXX	Solid	08/24/2009 1040	08/24/2009 1910
360-24251-9	OC-SB-440-23/25-XXX	Solid	08/24/2009 1230	08/24/2009 1910
360-24251-14	OC-SB-441-17/19-XXX	Solid	08/24/2009 1535	08/25/2009 1800
360-24251-17	OC-SB-446-15/17-XXX	Solid	08/25/2009 0900	08/25/2009 1800
360-24251-24	OC-SB-438-20/22-XXX	Solid	08/24/2009 1720	08/25/2009 1800

ICV/CCV OK

CRQL STD
Tin (44)

IC B/CCB
OK

LCS OK

MB HB

Form I's updated.

[signature] 4/6/10

For 360-24251-(2,9,14,17,24), batch 49847. ICAL 10/4/2009 Inst B: Quadratic regression used for Benzoic acid, 1,2,4-trichlorobenzene, Napthalene, Hexachlorobutadiene, 1-Methylnaphthalene, 1,2,4,5-Tetrachlorobenznene, Phenyl ether, 2,4-Dinitro-2-methylphenol, Di-n-octyl phthalate.

No other difficulties were encountered during the semivolatiles analyses.

All other quality control parameters were within the acceptance limits.

TOTAL METALS

Samples 360-24251-2, 360-24251-6, 360-24251-9, 360-24251-14, 360-24251-17 and 360-24251-24 were analyzed for total metals in accordance with EPA SW-846 Method 6010B. The samples were prepared and analyzed on 09/15/2009.

All QC performance standards and recommendations, which may affect Data Usability for this specific method, were achieved with the exception of:

Tin exceeded the CRI method criteria with 64% recovery on the low reporting limit standard. The recommend MCP control criteria is 70-130%. The data has been flagged appropriately.

General method information:
At the request of the client, a modified MCP analyte list (TAL metals) was reported for this job.

Several analytes were detected in method blank MB 360-48949/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

Sample 360-24251-2(2X) required dilution prior to analysis due to the presence of high concentration of the interfering element Aluminum. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the metals analyses.

All other quality control parameters were within the acceptance limits

Client: Olin Corporation

Job Number: 360-24251-2
Sdg Number: OCRI-05A

Client Sample ID: **OC-SB-433-20/22-XXX**

Lab Sample ID: 360-24251-2
Client Matrix: Solid
% Moisture: 7.2

Date Sampled: 08/24/2009 0850
Date Received: 08/24/2009 1910

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	2.0			Initial Weight/Volume:	1.63 g
Date Analyzed:	09/15/2009 1501			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		17000 J		1.7	6.6
Antimony		ND J		0.48	1.3
Arsenic		3.3		0.24	2.6
Barium		100	~~B~~	0.17	1.3
Beryllium		0.39	J	0.066	0.53
Cadmium		0.34	J	0.019	0.53
Calcium		3300	~~B~~	6.6	53
Chromium		49	~~B~~	0.18	1.3
Cobalt		13		0.17	1.3
Copper		18		0.17	2.6
Iron		28000 J	~~B~~	2.1	13
Lead		1.1	J	0.15	1.3
Magnesium		11000	~~B~~	1.3	26
Manganese		190	~~B~~	0.18	2.6
Nickel		32		0.17	2.6
Potassium		7400		83	530
Selenium		ND		0.62	1.3
Silver		ND		0.13	1.3
Sodium		150	J ~~B~~	34	260
Thallium		ND		0.19	2.6
Vanadium		43		0.17	2.6
Zinc		26		1.6	6.6
Tin		17 J	~~B~~	0.85	13

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Client: Olin Corporation

Job Number: 360-24251-2
Sdg Number: OCRI-05A

Client Sample ID: **OC-SB-439-16/18-XXX**

Lab Sample ID: 360-24251-6
Client Matrix: Solid
% Moisture: 13.0

Date Sampled: 08/24/2009 1040
Date Received: 08/24/2009 1910

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.76 g
Date Analyzed:	09/15/2009 1446			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4800 J		0.85	3.3
Antimony		ND J		0.24	0.65
Arsenic		3.2		0.12	1.3
Barium		24	~~B~~	0.085	0.65
Beryllium		0.19	J	0.033	0.26
Cadmium		0.17	J	0.0091	0.26
Calcium		1600	~~B~~	3.3	26
Chromium		17	~~B~~	0.087	0.65
Cobalt		6.1		0.085	0.65
Copper		12		0.085	1.3
Iron		9600 J	~~B~~	1.0	6.5
Lead		1.5		0.075	0.65
Magnesium		2400	~~B~~	0.65	13
Manganese		75	~~B~~	0.087	1.3
Nickel		13		0.085	1.3
Potassium		920		41	260
Selenium		ND		0.31	0.65
Silver		ND		0.066	0.65
Sodium		88	J ~~B~~	17	130
Thallium		ND		0.094	1.3
Vanadium		15		0.085	1.3
Zinc		20		0.77	3.3
Tin		6.4	J ~~B~~	0.42	6.5

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Client: Olin Corporation

Job Number: 360-24251-2
Sdg Number: OCRI-05A

Client Sample ID: **OC-SB-440-23/25-XXX**

Lab Sample ID: 360-24251-9
Client Matrix: Solid
% Moisture: 8.7

Date Sampled: 08/24/2009 1230
Date Received: 08/24/2009 1910

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.50 g
Date Analyzed:	09/15/2009 1449			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5800 J		0.95	3.6
Antimony		ND J		0.26	0.73
Arsenic		2.2		0.13	1.5
Barium		16	~~B~~	0.095	0.73
Beryllium		0.24	J	0.036	0.29
Cadmium		0.15	J	0.010	0.29
Calcium		2900	~~B~~	3.6	29
Chromium		13	~~B~~	0.097	0.73
Cobalt		4.5		0.095	0.73
Copper		11		0.095	1.5
Iron		11000 J	~~B~~	1.2	7.3
Lead		1.6		0.083	0.73
Magnesium		3000	~~B~~	0.73	15
Manganese		91	~~B~~	0.098	1.5
Nickel		9.5		0.095	1.5
Potassium		1400		46	290
Selenium		ND		0.34	0.73
Silver		ND		0.073	0.73
Sodium		140	J ~~B~~	19	150
Thallium		ND		0.11	1.5
Vanadium		12		0.095	1.5
Zinc		18		0.86	3.6
Tin		4.1	J ~~B~~	0.47	7.3

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Client: Olin Corporation

Job Number: 360-24251-2
Sdg Number: OCRI-05A

Client Sample ID: **OC-SB-441-17/19-XXX**

Lab Sample ID: 360-24251-14
Client Matrix: Solid
% Moisture: 6.8

Date Sampled: 08/24/2009 1535
Date Received: 08/25/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.53 g
Date Analyzed:	09/15/2009 1452			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8800 J		0.91	3.5
Antimony		ND J		0.25	0.70
Arsenic		3.0		0.13	1.4
Barium		48	~~B~~	0.091	0.70
Beryllium		0.25	J	0.035	0.28
Cadmium		0.32		0.0098	0.28
Calcium		3800	~~B~~	3.5	28
Chromium		19	~~B~~	0.093	0.70
Cobalt		12		0.091	0.70
Copper		64		0.091	1.4
Iron		22000 J	~~B~~	1.1	7.0
Lead		2.3		0.080	0.70
Magnesium		4600	~~B~~	0.70	14
Manganese		130	~~B~~	0.094	1.4
Nickel		14		0.091	1.4
Potassium		2600		44	280
Selenium		ND		0.33	0.70
Silver		ND		0.071	0.70
Sodium		120	J ~~B~~	18	140
Thallium		ND		0.10	1.4
Vanadium		42		0.091	1.4
Zinc		39		0.82	3.5
Tin		5.9	J ~~B~~	0.45	7.0

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Client: Olin Corporation

Job Number: 360-24251-2
Sdg Number: OCRI-05A

Client Sample ID: **OC-SB-446-15/17-XXX**

Lab Sample ID: 360-24251-17
Client Matrix: Solid
% Moisture: 9.4

Date Sampled: 08/25/2009 0900
Date Received: 08/25/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.86 g
Date Analyzed:	09/15/2009 1455			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9800 J		0.77	3.0
Antimony		ND J		0.21	0.59
Arsenic		3.6		0.11	1.2
Barium		32	~~B~~	0.077	0.59
Beryllium		0.35		0.030	0.24
Cadmium		0.20	J	0.0083	0.24
Calcium		2700	~~B~~	3.0	24
Chromium		26	~~B~~	0.079	0.59
Cobalt		7.1		0.077	0.59
Copper		22		0.077	1.2
Iron		14000 J	~~B~~	0.95	5.9
Lead		1.7		0.068	0.59
Magnesium		4600	~~B~~	0.59	12
Manganese		96	~~B~~	0.079	1.2
Nickel		16		0.077	1.2
Potassium		2100		37	240
Selenium		ND		0.28	0.59
Silver		1.9		0.060	0.59
Sodium		200	~~B~~	15	120
Thallium		ND		0.086	1.2
Vanadium		24		0.077	1.2
Zinc		23		0.70	3.0
Tin		9.4 J	~~B~~	0.38	5.9

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Client: Olin Corporation

Job Number: 360-24251-2
Sdg Number: OCRI-05A

Client Sample ID: **OC-SB-438-20/22-XXX**

Lab Sample ID: 360-24251-24
Client Matrix: Solid
% Moisture: 8.2

Date Sampled: 08/24/2009 1720
Date Received: 08/25/2009 1800

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.85 g
Date Analyzed:	09/15/2009 1458			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6400 J		0.77	2.9
Antimony		ND J		0.21	0.59
Arsenic		2.7		0.11	1.2
Barium		23	~~B~~	0.077	0.59
Beryllium		0.16	J	0.029	0.24
Cadmium		0.15	J	0.0082	0.24
Calcium		1600	~~B~~	2.9	24
Chromium		17	~~B~~	0.078	0.59
Cobalt		5.0		0.077	0.59
Copper		18		0.077	1.2
Iron		12000 J	~~B~~	0.94	5.9
Lead		1.0		0.067	0.59
Magnesium		3800	~~B~~	0.59	12
Manganese		85	~~B~~	0.079	1.2
Nickel		11		0.077	1.2
Potassium		1600		37	240
Selenium		ND		0.28	0.59
Silver		ND		0.059	0.59
Sodium		59	J ~~B~~	15	120
Thallium		ND		0.085	1.2
Vanadium		17		0.077	1.2
Zinc		16		0.69	2.9
Tin		5.8	J ~~B~~	0.38	5.9

4/6/10

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-SB-433-5.0/7.0-XXX MS
Lab ID: 360-24251-4 MS
Lab Name: TestAmerica Westfield
Job No.: 360-24251-1
SDG No.: OCRI-05
Matrix: Solid
Concentration Units: mg/Kg
% Solids: 86.0

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	4040		3500		361	156	75-125	4	6010B
Antimony	50.5		ND		72.2	70	75-125	F	6010B
Arsenic	68.7		3.5		72.2	90	75-125		6010B
Barium	70.8		4.6		72.2	92	75-125		6010B
Beryllium	65.8		0.13	J	72.2	91	75-125		6010B
Cadmium	64.7		0.068	J	72.2	89	75-125		6010B
Calcium	1720		360		1440	94	75-125		6010B
Chromium	72.0		5.1		72.2	93	75-125		6010B
Cobalt	67.2		1.7		72.2	91	75-125		6010B
Copper	69.7		3.2		72.2	92	75-125		6010B
Iron	4330		4300		361	-2	75-125	4	6010B
Lead	66.3		1.8		72.2	89	75-125		6010B
Magnesium	2100		820		1440	89	75-125		6010B
Manganese	94.7		30		72.2	89	75-125		6010B
Nickel	69.8		4.8		72.2	90	75-125		6010B
Potassium	1650		430		1440	84	75-125		6010B
Selenium	64.1		ND		72.2	89	75-125		6010B
Silver	67.8		ND		72.2	94	75-125		6010B
Sodium	1290		ND		1440	89	75-125		6010B
Thallium	62.9		ND		72.2	87	75-125		6010B
Vanadium	72.2		5.6		72.2	92	75-125		6010B
Zinc	75.8		13		72.2	88	75-125		6010B
Tin	65.8		1.9	J	72.2	88	75-125		6010B
Mercury	1.19		ND		1.16	103	75-125		7471A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-SB-446-5.0/7.0-XXX MS
Lab ID: 360-24251-19 MS
Lab Name: TestAmerica Westfield
Job No.: 360-24251-1
SDG No.: OCRI-05
Matrix: Solid
Concentration Units: mg/Kg
% Solids: 78.6

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	1030		410		347	178	75-125	F	6010B
Antimony	55.9		ND		69.5	80	75-125		6010B
Arsenic	62.8		0.50	J	69.5	90	75-125		6010B
Barium	68.7		3.1		69.5	94	75-125		6010B
Beryllium	63.0		ND		69.5	91	75-125		6010B
Cadmium	62.2		0.021	J	69.5	89	75-125		6010B
Calcium	1560		190		1390	99	75-125		6010B
Chromium	66.0		1.8		69.5	93	75-125		6010B
Cobalt	63.7		0.33	J	69.5	91	75-125		6010B
Copper	64.8		0.46	J	69.5	93	75-125		6010B
Iron	1060		530		347	153	75-125	F	6010B
Lead	63.4		1.2		69.5	90	75-125		6010B
Magnesium	1340		63		1390	92	75-125		6010B
Manganese	73.7		6.6		69.5	97	75-125		6010B
Nickel	63.4		0.64	J	69.5	90	75-125		6010B
Potassium	1510		330		1390	85	75-125		6010B
Selenium	61.5		ND		69.5	88	75-125		6010B
Silver	64.9		ND		69.5	93	75-125		6010B
Sodium	1250		ND		1390	90	75-125		6010B
Thallium	61.3		ND		69.5	88	75-125		6010B
Vanadium	66.0		1.2	J	69.5	93	75-125		6010B
Zinc	69.7		8.1		69.5	89	75-125		6010B
Tin	63.3		0.81	J	69.5	90	75-125		6010B
Mercury	1.13		ND		1.14	100	75-125		7471A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-SB-433-5.0/7.0-XXX PDS Lab ID: 360-24251-4 PDS

Lab Name: TestAmerica Westfield Job No.: 360-24251-1

SDG No.: OCRI-05

Matrix: Solid Concentration Units: mg/Kg

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	3660		3500		359	51	75-125	W	6010B
Antimony	64.3		ND		71.8	90	75-125		6010B
Arsenic	66.7		3.5		71.8	88	75-125		6010B
Barium	69.1		4.6		71.8	90	75-125		6010B
Beryllium	63.9		0.13	J	71.8	89	75-125		6010B
Cadmium	62.9		0.068	J	71.8	88	75-125		6010B
Calcium	1640		360		1440	89	75-125		6010B
Chromium	69.6		5.1		71.8	90	75-125		6010B
Cobalt	65.5		1.7		71.8	89	75-125		6010B
Copper	67.3		3.2		71.8	89	75-125		6010B
Iron	4440		4300		359	NC	75-125		6010B
Lead	64.5		1.8		71.8	87	75-125		6010B
Magnesium	2040		820		1440	85	75-125		6010B
Manganese	92.6		30		71.8	87	75-125		6010B
Nickel	67.8		4.8		71.8	88	75-125		6010B
Potassium	1630		430		1440	83	75-125		6010B
Selenium	62.7		ND		71.8	87	75-125		6010B
Silver	63.3		ND		71.8	88	75-125		6010B
Sodium	1240		ND		1440	87	75-125		6010B
Vanadium	70.5		5.6		71.8	90	75-125		6010B
Thallium	61.9		ND		71.8	86	75-125		6010B
Tin	64.8		1.9	J	71.8	88	75-125		6010B
Zinc	74.5		13		71.8	86	75-125		6010B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VB - IN

8-IN

ICP-AES AND ICP-MS SERIAL DILUTIONS

METALS

Lab ID: 360-24251-4

SDG No: OCRI-05

Lab Name: TestAmerica Westfield Job No: 360-24251-1

Matrix: Solid Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method	
Aluminum	3500		3810		9.7		6010B	
Antimony	ND		1.53	J	NC		6010B	
Arsenic	3.5		3.95	J	NC		6010B	
Barium	4.6		5.64		NC		6010B	
Beryllium	0.13	J	ND		NC		6010B	
Cadmium	0.068	J	0.0702	J	NC		6010B	
Calcium	360		414		15	V	6010B	OK
Chromium	5.1		6.05		19	V	6010B	OK
Cobalt	1.7		2.04	J	NC		6010B	
Copper	3.2		3.78	J	NC		6010B	
Iron	4300		4620		6.4		6010B	
Lead	1.8		2.25	J	NC		6010B	
Magnesium	820		1000		23	V	6010B	
Manganese	30		36.7		21	V	6010B	OK
Nickel	4.8		5.76	J	21	V	6010B	OK
Potassium	430		457	J	NC		6010B	
Selenium	ND		ND		NC		6010B	
Silver	ND		ND		NC		6010B	
Sodium	ND		ND		NC		6010B	
Vanadium	5.6		6.51	J	17	V	6010B	OK
Thallium	ND		ND		NC		6010B	
Tin	1.9	J	ND		NC		6010B	
Zinc	13		15.4	J	NC		6010B	

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

FORM VIII-IN

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24251-1

SDG No.: OCRI-05

Preparation Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 360-48244/1-A	08/27/2009 08:48	48244	2.00		100
LCS 360-48244/2-A	08/27/2009 08:48	48244	2.00		100
LCSD 360-48244/3-A	08/27/2009 08:48	48244	2.00		100
360-24251-4	08/27/2009 08:48	48244	1.62		100
360-24251-4 DU	08/27/2009 08:48	48244	1.62		100
360-24251-4 MS	08/27/2009 08:48	48244	1.61		100
360-24251-1	08/27/2009 08:48	48244	1.83		100
360-24251-3	08/27/2009 08:48	48244	1.90		100
360-24251-5	08/27/2009 08:48	48244	1.83		100
360-24251-7	08/27/2009 08:48	48244	1.98		100
360-24251-8	08/27/2009 08:48	48244	1.78		100
360-24251-10	08/27/2009 08:48	48244	1.71		100
360-24251-12	08/27/2009 08:48	48244	1.84		100
360-24251-13	08/27/2009 08:48	48244	1.70		100
360-24251-15	08/27/2009 08:48	48244	1.69		100
360-24251-16	08/27/2009 08:48	48244	1.68		100
360-24251-18	08/27/2009 08:48	48244	1.83		100
360-24251-19	08/27/2009 08:48	48244	1.84		100
360-24251-19 MS	08/27/2009 08:48	48244	1.83		100
360-24251-20	08/27/2009 08:48	48244	1.67		100
360-24251-22	08/27/2009 08:48	48244	1.93		100
360-24251-23	08/27/2009 08:48	48244	1.74		100

Ca 8.03 40.15 >

Cr 0.0979 0.4895 >

Fe 1.6 8 >

Mg 2.20 11 >

Mn 0.0786 0.393 >

Ni 0.194 0.97 <

Tin 0.475 2.375 <

FORM XII-IN

7D-IN
LAB CONTROL SAMPLE DUPLICATE
METALS

Lab ID: LCSD 360-48244/3-A

Lab Name: TestAmerica Westfield Job No.: 360-24251-1

Sample Matrix: Solid LCS Source: stlma-3_00039

Analyte	(SDR)	C	Spike Added	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Aluminum	219		250	87	80-120	1	30		6010B
Antimony	43.0		50.0	86	80-120	2	30		6010B
Arsenic	43.7		50.0	87	80-120	1	30		6010B
Barium	45.3		50.0	91	80-120	1	30		6010B
Beryllium	44.4		50.0	89	80-120	1	30		6010B
Cadmium	43.5		50.0	87	80-120	1	30		6010B
Calcium	897		1000	90	80-120	1	30		6010B
Chromium	44.9		50.0	90	80-120	1	30		6010B
Cobalt	44.3		50.0	89	80-120	1	30		6010B
Copper	44.9		50.0	90	80-120	1	30		6010B
Iron	228		250	91	80-120	1	30		6010B
Lead	43.7		50.0	87	80-120	1	30		6010B
Magnesium	863		1000	86	80-120	1	30		6010B
Manganese	44.5		50.0	89	80-120	1	30		6010B
Nickel	44.0		50.0	88	80-120	1	30		6010B
Potassium	779		1000	78	80-120	2	30	*	6010B
Selenium	43.6		50.0	87	80-120	1	30		6010B
Silver	45.8		50.0	92	80-120	1	30		6010B
Sodium	841		1000	84	80-120	1	30		6010B
Vanadium	45.2		50.0	90	80-120	1	30		6010B
Thallium	43.2		50.0	86	80-120	1	30		6010B
Tin	44.6		50.0	89	80-120	1	30		6010B
Zinc	43.1		50.0	86	80-120	1	30		6010B

SDR = Spike Duplicate Results
Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIID - IN

7D-IN
LAB CONTROL SAMPLE DUPLICATE
METALS

Lab ID: LCSD 360-48244/3-A

Lab Name: TestAmerica Westfield Job No.: 360-24251-1

Sample Matrix: Solid LCS Source: stlma-3_00039

Analyte	(SDR)	C	Spike Added	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Aluminum	219		250	87	80-120	1	30		6010B
Antimony	43.0		50.0	86	80-120	2	30		6010B
Arsenic	43.7		50.0	87	80-120	1	30		6010B
Barium	45.3		50.0	91	80-120	1	30		6010B
Beryllium	44.4		50.0	89	80-120	1	30		6010B
Cadmium	43.5		50.0	87	80-120	1	30		6010B
Calcium	897		1000	90	80-120	1	30		6010B
Chromium	44.9		50.0	90	80-120	1	30		6010B
Cobalt	44.3		50.0	89	80-120	1	30		6010B
Copper	44.9		50.0	90	80-120	1	30		6010B
Iron	228		250	91	80-120	1	30		6010B
Lead	43.7		50.0	87	80-120	1	30		6010B
Magnesium	863		1000	86	80-120	1	30		6010B
Manganese	44.5		50.0	89	80-120	1	30		6010B
Nickel	44.0		50.0	88	80-120	1	30		6010B
Potassium	779		1000	78	80-120	2	30	*	6010B
Selenium	43.6		50.0	87	80-120	1	30		6010B
Silver	45.8		50.0	92	80-120	1	30		6010B
Sodium	841		1000	84	80-120	1	30		6010B
Vanadium	45.2		50.0	90	80-120	1	30		6010B
Thallium	43.2		50.0	86	80-120	1	30		6010B
Tin	44.6		50.0	89	80-120	1	30		6010B
Zinc	43.1		50.0	86	80-120	1	30		6010B

SDR = Spike Duplicate Results
Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIID - IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24251-1

SDG No.: OCRI-05

Instrument ID: Varian ICP Method: 6010B

Start Date: 08/27/2009 09:55 End Date: 08/27/2009 17:55

Lab Sample ID	D/F	Type	Time	Tl (µg/L)	Analytes Tl	V	Zn
ZZZZZZ			09:55				
ZZZZZZ			09:58				
ZZZZZZ			10:01				
ZZZZZZ			10:04				
ZZZZZZ			10:07				
ICV 360-48311/6	1		10:09		X	X	X
ICB 360-48311/7	1		10:12	2.36	X	X	X
CRI 360-48311/8	1		10:14		X	X	X
CRI 360-48311/9	1		10:17		X	X	X
ICSA 360-48311/10	1		10:20		X	X	X
ICSAB 360-48311/11	1		10:23		X	X	X
ZZZZZZ			10:26				
CCV 360-48311/13	1		10:29		X	X	X
CCB 360-48311/14	1		10:31	2.15	X	X	X
ICB 360-48311/15	1		10:34		X	X	X
ICV 360-48311/16	1		10:37				
ICV 360-48311/17	1		10:40		X	X	X
CRI 360-48311/18	1		10:53		X	X	X
CCV 360-48311/19	1		15:31		X	X	X
CCB 360-48311/20	1		15:34	3.30	X	X	X
MB 360-48244/1-A	1	T	16:06		X	X	X
CCV 360-48311/22	1		16:09		X	X	X
CCB 360-48311/23	1		16:13	7.64	X	X	X
LCSD 360-48244/3-A	1	T	16:16		X	X	X
LCS 360-48244/2-A	1	T	16:19		X	X	X
360-24251-4	1	T	16:22		X	X	X
360-24251-4 DU	1	T	16:25		X	X	X
360-24251-4 MS	1	T	16:28		X	X	X
360-24251-4 SD	5	T	16:31		X	X	X
360-24251-4 PDS	1	T	16:34		X	X	X
360-24251-1	1	T	16:37		X	X	X
360-24251-3	1	T	16:39		X	X	X
360-24251-5	1	T	16:42		X	X	X
CCV 360-48311/34	1		16:45		X	X	X
CCB 360-48311/35	1		16:48	2.41	X	X	X
360-24251-7	1	T	16:51		X	X	X
360-24251-8	1	T	16:54		X	X	X
360-24251-10	1	T	16:57		X	X	X
360-24251-12	1	T	17:00		X	X	X
360-24251-13	1	T	17:03		X	X	X
360-24251-15	1	T	17:05		X	X	X
360-24251-16	1	T	17:08		X	X	X

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24251-1

SDG No.: OCRI-05

Instrument ID: Varian ICP Method: 6010B

Start Date: 08/27/2009 09:55 End Date: 08/27/2009 17:55

Lab Sample ID	D/F	Type	Time	Analytes																			
				Tl	V	Zn																	
360-24251-18	1	T	17:11	X	X	X																	
360-24251-19	1	T	17:14	X	X	X																	
360-24251-19 MS	1	T	17:17	X	X	X																	
CCV 360-48311/46	1		17:20	X	X	X																	
CCB 360-48311/47	1		17:23 2.73	X	X	X																	
360-24251-20	1	T	17:26	X	X	X																	
360-24251-22	1	T	17:29	X	X	X																	
360-24251-23	1	T	17:32	X	X	X																	
ZZZZZZ			17:34																				
ZZZZZZ			17:37																				
ZZZZZZ			17:40																				
CCV 360-48311/54	1		17:43	X	X	X																	
CCB 360-48311/55	1		17:46 2.12	X	X	X																	
ICSA 360-48311/56	1		17:49	X	X	X																	
ICSAB 360-48311/57	1		17:52	X	X	X																	
ZZZZZZ			17:55																				

Prep Types
T = Total/NA

2.73 µg/L Tl

2g / 100mL

-22 1.93g 2.73 µg/L × 0.1L / 1.93g =

-5 1.83g

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24251-2

SDG No.: OCRI-05A

Analysis Method: 6010B Instrument ID: Varian ICP

Lab Sample ID: CRI 360-48984/8 Concentration Units: ug/L

CRQL Check Standard Source: CRI-RL ICP_00004

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	100	104		104	70-130
Antimony	10.0	11.5		115	70-130
Arsenic	10.0	10.4		104	70-130
Barium	10.0	11.3		113	70-130
Beryllium	1.00	1.05		105	70-130
Cadmium	1.00	0.994	J	99	70-130
Calcium	400	418		104	70-130
Chromium	5.00	5.10		102	70-130
Cobalt	10.0	10.6		106	70-130
Copper	10.0	11.0		110	70-130
Iron	100	105		105	70-130
Lead	5.00	5.33		107	70-130
Magnesium	400	424		106	70-130
Manganese	10.0	10.8		108	70-130
Nickel	10.0	10.7		107	70-130
Potassium	4000	3410	J	85	70-130
Selenium	10.0	11.4		114	70-130
Silver	5.00	4.33	J	87	70-130
Sodium	2000	1980	J	99	70-130
Thallium	10.0	10.0	J	100	70-130
Vanadium	10.0	10.3		103	70-130
Zinc	50.0	53.2		106	70-130
Tin	50.0	31.9	J	64	70-130

Lab Sample ID: CRI 360-48984/9 Concentration Units: ug/L

CRQL Check Standard Source: CRI-MCPICP_00006

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Antimony	6.00	7.45	J	124	70-130
Arsenic	50.0	50.9		102	70-130
Barium	2000	2210		110	70-130
Beryllium	4.00	4.26		107	70-130
Cadmium	5.00	5.29		106	70-130
Chromium	100	109		109	70-130
Lead	15.0	17.5		116	70-130

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

FORM IIB-IN

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

SITE: **Olin Chemical** Project #: 6107/000/6.12 SDG #: OCRI-06/06A

LAB # : TAL 360-24309-1/2

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☐ ☒ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☑ ☐ ☐ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	See below. Post-digestion spikes %R limits = 75% - 125%

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Laboratory Control Samples (LCS) ☐ ☒ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	See below.
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate ☐ ☒ ☐ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☑ ☐ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	See below.
Field Duplicate ☑ ☐ ☐ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☑ ☐ ☐ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution ☐ ☑ ☐ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☑ ☐ Are results of the diluted samples > the original sample results	

Validator's Signature: [signature]

Date: 4/7/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

QL Standard:

The percent recoveries of tin (59, 59, 61, and 58) and potassium (68 and 66) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J/UJ).

Blanks:

Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Barium (1.27 mg/kg), calcium (7.49 mg/kg), iron (1.25 mg/kg), magnesium (2.28 mg/kg), and tin (0.430 mg/kg) were reported in the method blank (M360-48302) associated with all samples. Action levels were established at five times the reported method blank concentrations. With the exception of tin, sample results were greater than the action levels, no further action required. Sample results for tin that were less than the action level were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Calcium (7.85 mg/kg), chromium (0.147 mg/kg), copper (0.071 mg/kg), iron (1.98 mg/kg), magnesium (2.04 mg/kg), sodium (13.1 mg/kg), thallium (0.154 mg/kg), and tin (0.454 mg/kg) were reported in the method blank (M360-49332) associated with all samples. Action levels were established at five times the reported method blank concentrations. With the exception of thallium, sample results were greater than the action levels, no further action required. Sample results for thallium that were less than the action level were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Selenium and thallium were reported in the continuing calibration blanks (CCB) associated with a subset of samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for selenium were non detect, no further action required. Associated sample detections for thallium were qualified (EB) to indicate potential blank contamination associated with the equipment blank.

Matrix Spikes:

Sample OC-SB-430-8.0/10-XXX was submitted for MS analysis. The MS percent recovery of aluminum (-75), antimony (44), chromium (64), iron (-279) and magnesium (58) were less than the lower QC limit of 75. The unspiked sample result for aluminum and iron was greater than four times the spiking concentration, no further action required. Post digestion spike recovery for antimony was within QC limits, indicating a matrix effect for antimony. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results

for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

SDG	Lab Sample ID	Field Sample ID	Antimony MS Recovery (%)
OCRI-03	360-24223-9	OC-SB-426-5.0/7.0-XXX	61
OCRI-04	360-24244-1	OC-SB-432-0.0/1.0-XXX	27
OCRI-04A	360-24244-5	OC-SB-443-18/20-XXX	32
OCRI-05	360-24251-19	OC-SB-446-5.0/7.0-XXX	80
OCRI-05	360-24251-4	OC-SB-433-5.0/7.0-XXX	70
OCRI-06	360-24309-23	OC-SB-430-8.0/10-XXX	44
OCRI-07	360-24327-12	OC-SB-410-6.0/8.0-XXX	65
OCRI-08	360-24343-10	OC-SB-451-2.5/4.5-XXX	62
OCRI-08	360-24343-17	OC-SB-455-6.0/8.0-XXX	46
OCRI-09	360-24365-4	OC-SB-442-8.0/10-XXX	50
OCRI-10	360-24417-10	OC-SB-465-8.0/10-XXX	63
OCRI-10A	360-24417-2	OC-SB-463-28/30-XXX	38
OCRI-11	360-24444-2	OC-SB-459-6.0/8.0-XXX	64
OCRI-11	360-24444-9	OC-SB-467-6.0/8.0-XXX	68
OCRI-12	360-24454-3	OC-SB-461-5.0/7.0-XXX	65
OCRI-13A	360-24499-3	OC-SB-469-28/30-XXX	61
OCRI-14	360-24563-14	OC-SB-456-7.0/9.0-XXX	60
OCRI-14	360-24563-5	OC-SB-427-8.0/10-XXX	67
OCRI-15	360-24582-22	OC-SS-416-0.0/1.0-XXX	56
OCRI-16	360-24634-1	OC-SS-417-0.0/1.0-XXX	61
OCRI-17	360-24665-1	OC-SS-434-0.0/1.0-XXX	29
OCRI-18	360-24686-1	OC-SB-400-17/19-XXX	67

Associated sample results for chromium and magnesium were qualified estimated (J).

Laboratory Control Sample:

The LCS percent recovery of antimony (79) was less than the lower QC limit of 80. Associated sample results for antimony were qualified estimated (J/UJ).

Laboratory Duplicate:

The laboratory performed a duplicate analysis of sample OC-SB-430-8.0/10-XXX (OCRI-06). The RPD for copper (52) exceeded the QC limit of 35. Associated SDG sample results for copper were qualified estimated (J).

Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-400-0.0/1.0-XXX**

Lab Sample ID: 360-24309-1
Client Matrix: Solid
% Moisture: 3.1

Date Sampled: 08/26/2009 1325
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.53 g
Date Analyzed:	08/28/2009 1410			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5800		0.88	3.4
Antimony		ND J		0.24	0.67
Arsenic		16		0.12	1.3
Barium		10	B	0.088	2.7
Beryllium		0.24	J	0.034	0.27
Cadmium		0.12	J	0.0094	0.27
Calcium		450	B	3.4	13
Chromium		8.5 J		0.090	0.67
Cobalt		2.2		0.088	0.67
Copper		6.7 J		0.088	1.3
Iron		8100	B	1.1	6.7
Lead		3.9		0.077	0.67
Magnesium		1400 J	B	0.67	13
Manganese		51		0.090	1.3
Nickel		6.2		0.088	1.3
Potassium		580 J		42	270
Selenium		ND		0.32	0.67
Silver		ND		0.068	0.67
Sodium		ND		18	130
Thallium		ND		0.098	1.3
Vanadium		8.3		0.088	1.3
Zinc		10		0.79	3.4
Tin		3.0	J B	0.43	6.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.30 g
Date Analyzed:	08/31/2009 1028			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.023	0.13

4/7/10

Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-400-5.0/7.0-XXX**

Lab Sample ID: 360-24309-2
Client Matrix: Solid
% Moisture: 6.7

Date Sampled: 08/26/2009 1330
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.58 g
Date Analyzed:	08/28/2009 1413			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4700		0.88	3.4
Antimony		ND J		0.25	0.68
Arsenic		3.5		0.12	1.4
Barium		8.1	~~B~~	0.088	2.7
Beryllium		0.17	J	0.034	0.27
Cadmium		0.072	J	0.0095	0.27
Calcium		390	~~B~~	3.4	14
Chromium		5.0 J		0.090	0.68
Cobalt		1.9		0.088	0.68
Copper		2.4 J		0.088	1.4
Iron		4100	~~B~~	1.1	6.8
Lead		3.5		0.077	0.68
Magnesium		740 J	~~B~~	0.68	14
Manganese		44		0.091	1.4
Nickel		3.9		0.088	1.4
Potassium		500 J		42	270
Selenium		ND		0.32	0.68
Silver		ND		0.068	0.68
Sodium		ND		18	140
Thallium		ND		0.098	1.4
Vanadium		5.3		0.088	1.4
Zinc		38		0.80	3.4
Tin		1.7	U J ~~B~~	0.43	6.8

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	08/31/2009 1034			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.029	0.16

4/7/10

Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-401-0.0/1.0-XXX**

Lab Sample ID: 360-24309-3
Client Matrix: Solid
% Moisture: 5.1

Date Sampled: 08/26/2009 1230
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.56 g
Date Analyzed:	08/28/2009 1417			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5900		0.88	3.4
Antimony		ND J		0.24	0.68
Arsenic		3.3		0.12	1.4
Barium		32	B	0.088	2.7
Beryllium		0.21	J	0.034	0.27
Cadmium		0.074	J	0.0095	0.27
Calcium		350	B	3.4	14
Chromium		5.5 J		0.090	0.68
Cobalt		2.7		0.088	0.68
Copper		2.7 J		0.088	1.4
Iron		5100	B	1.1	6.8
Lead		2.6		0.077	0.68
Magnesium		770 J	B	0.68	14
Manganese		37		0.090	1.4
Nickel		4.5		0.088	1.4
Potassium		420 J		42	270
Selenium		ND		0.32	0.68
Silver		ND		0.068	0.68
Sodium		72	J	18	140
Thallium		ND		0.098	1.4
Vanadium		6.4		0.088	1.4
Zinc		11		0.79	3.4
Tin		1.9	U J B	0.43	6.8

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	08/31/2009 1036			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.036	0.20

4/7/10

Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-401-7.5/9.5-XXX**

Lab Sample ID: 360-24309-4
Client Matrix: Solid
% Moisture: 8.5

Date Sampled: 08/26/2009 1245
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.79 g
Date Analyzed:	08/28/2009 1420			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3300		0.79	3.1
Antimony		ND J		0.22	0.61
Arsenic		3.2		0.11	1.2
Barium		7.5	B	0.079	2.4
Beryllium		0.13	J	0.031	0.24
Cadmium		0.070	J	0.0085	0.24
Calcium		650	B	3.1	12
Chromium		6.0 J		0.081	0.61
Cobalt		1.9		0.079	0.61
Copper		3.0 J		0.079	1.2
Iron		4600	B	0.97	6.1
Lead		1.3		0.070	0.61
Magnesium		990 J	B	0.61	12
Manganese		38		0.082	1.2
Nickel		4.6		0.079	1.2
Potassium		650 J		38	240
Selenium		ND		0.29	0.61
Silver		ND		0.061	0.61
Sodium		25	J	16	120
Thallium		ND		0.088	1.2
Vanadium		5.8		0.079	1.2
Zinc		7.4		0.72	3.1
Tin		2.1	U J B	0.39	6.1

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	08/31/2009 1037			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.030	0.16

4/7/10

Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-402-0.0/1.0-XXX**

Lab Sample ID: 360-24309-5
Client Matrix: Solid
% Moisture: 4.4

Date Sampled: 08/26/2009 1145
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.70 g
Date Analyzed:	08/28/2009 1423			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5100		0.80	3.1
Antimony		ND J		0.22	0.62
Arsenic		3.2		0.11	1.2
Barium		7.7	B	0.080	2.5
Beryllium		0.20	J	0.031	0.25
Cadmium		0.074	J	0.0086	0.25
Calcium		700	B	3.1	12
Chromium		5.2 J		0.082	0.62
Cobalt		6.2		0.080	0.62
Copper		3.0 J		0.080	1.2
Iron		5000	B	0.98	6.2
Lead		3.4		0.070	0.62
Magnesium		840 J	B	0.62	12
Manganese		39		0.082	1.2
Nickel		5.0		0.080	1.2
Potassium		360 J		38	250
Selenium		ND		0.29	0.62
Silver		ND		0.062	0.62
Sodium		50	J	16	120
Thallium		ND		0.089	1.2
Vanadium		5.9		0.080	1.2
Zinc		8.0		0.72	3.1
Tin		1.8	u J,B	0.39	6.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	08/31/2009 1039			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.026	0.14

4/7/10

Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-402-7.5/9.5-XXX**

Lab Sample ID: 360-24309-6
Client Matrix: Solid
% Moisture: 10.2

Date Sampled: 08/26/2009 1200
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.77 g
Date Analyzed:	08/28/2009 1426			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3900		0.82	3.1
Antimony		ND J		0.23	0.63
Arsenic		3.8		0.11	1.3
Barium		8.3	B	0.082	2.5
Beryllium		0.14	J	0.031	0.25
Cadmium		0.19	J	0.0088	0.25
Calcium		620	B	3.1	13
Chromium		12 J		0.084	0.63
Cobalt		1.8		0.082	0.63
Copper		3.4 J		0.082	1.3
Iron		4700	B	1.0	6.3
Lead		1.4		0.072	0.63
Magnesium		980 J	B	0.63	13
Manganese		35		0.084	1.3
Nickel		4.7		0.082	1.3
Potassium		480 J		39	250
Selenium		ND		0.29	0.63
Silver		ND		0.063	0.63
Sodium		ND		16	130
Thallium		ND		0.091	1.3
Vanadium		5.7		0.082	1.3
Zinc		16		0.74	3.1
Tin		4.5	J B	0.40	6.3

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.24 g
Date Analyzed:	08/31/2009 1041			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.032	0.17

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Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-407-0.0/1.0-XXX**

Lab Sample ID: 360-24309-7
Client Matrix: Solid
% Moisture: 9.4

Date Sampled: 08/26/2009 1010
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.96 g
Date Analyzed:	08/28/2009 1429			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7800		0.73	2.8
Antimony		ND J		0.20	0.56
Arsenic		4.4		0.10	1.1
Barium		12	B	0.073	2.3
Beryllium		0.24		0.028	0.23
Cadmium		0.15	J	0.0079	0.23
Calcium		420	B	2.8	11
Chromium		6.9 J		0.075	0.56
Cobalt		1.5		0.073	0.56
Copper		4.5 J		0.073	1.1
Iron		6300	B	0.90	5.6
Lead		9.1		0.064	0.56
Magnesium		530 J	B	0.56	11
Manganese		39		0.075	1.1
Nickel		4.6		0.073	1.1
Potassium		380 J		35	230
Selenium		ND		0.26	0.56
Silver		ND		0.057	0.56
Sodium		ND		15	110
Thallium		ND		0.081	1.1
Vanadium		9.4		0.073	1.1
Zinc		13		0.66	2.8
Tin		2.5	J B	0.36	5.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.30 g
Date Analyzed:	08/31/2009 1043			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.029	J	0.025	0.14

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Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-407-8.0/10.0-XXX**

Lab Sample ID: 360-24309-9
Client Matrix: Solid
% Moisture: 18.0

Date Sampled: 08/26/2009 1020
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.83 g
Date Analyzed:	08/28/2009 1432			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5900		0.87	3.3
Antimony		ND J		0.24	0.67
Arsenic		1.4		0.12	1.3
Barium		7.0	B	0.087	2.7
Beryllium		0.13	J	0.033	0.27
Cadmium		0.053	J	0.0093	0.27
Calcium		370	B	3.3	13
Chromium		6.6 J		0.089	0.67
Cobalt		1.4		0.087	0.67
Copper		2.0 J		0.087	1.3
Iron		3700	B	1.1	6.7
Lead		1.6		0.076	0.67
Magnesium		980 J	B	0.67	13
Manganese		32		0.089	1.3
Nickel		4.4		0.087	1.3
Potassium		540 J		42	270
Selenium		ND		0.31	0.67
Silver		ND		0.067	0.67
Sodium		22	J	17	130
Thallium		ND		0.096	1.3
Vanadium		6.7		0.087	1.3
Zinc		6.6		0.78	3.3
Tin		2.4	J,B	0.43	6.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.30 g
Date Analyzed:	08/31/2009 1045			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.028	0.15

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Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-408-0.0/1.0-XXX**

Lab Sample ID: 360-24309-10
Client Matrix: Solid
% Moisture: 11.5

Date Sampled: 08/26/2009 1100
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.69 g
Date Analyzed:	08/28/2009 1441			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5800		0.87	3.3
Antimony		ND J		0.24	0.67
Arsenic		3.0		0.12	1.3
Barium		13	B	0.087	2.7
Beryllium		0.20	J	0.033	0.27
Cadmium		0.14	J	0.0094	0.27
Calcium		580	B	3.3	13
Chromium		5.1 J		0.089	0.67
Cobalt		1.3		0.087	0.67
Copper		3.2 J		0.087	1.3
Iron		4800	B	1.1	6.7
Lead		7.0		0.076	0.67
Magnesium		630 J	B	0.67	13
Manganese		42		0.089	1.3
Nickel		4.0		0.087	1.3
Potassium		360 J		42	270
Selenium		ND		0.31	0.67
Silver		ND		0.067	0.67
Sodium		26	J	17	130
Thallium		ND		0.097	1.3
Vanadium		5.6		0.087	1.3
Zinc		52		0.79	3.3
Tin		1.8	UJB	0.43	6.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	08/31/2009 1047			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.037	0.20

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Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-408-7.0/9.9-XXX**

Lab Sample ID: 360-24309-11
Client Matrix: Solid
% Moisture: 13.1

Date Sampled: 08/26/2009 1120
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.93 g
Date Analyzed:	08/28/2009 1444			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4300		0.78	3.0
Antimony		ND J		0.22	0.60
Arsenic		3.7		0.11	1.2
Barium		8.2 J	B	0.078	2.4
Beryllium		0.15	J	0.030	0.24
Cadmium		0.082	J	0.0084	0.24
Calcium		550	B	3.0	12
Chromium		8.2		0.079	0.60
Cobalt		2.0		0.078	0.60
Copper		3.5 J		0.078	1.2
Iron		5500	B	0.95	6.0
Lead		1.4		0.068	0.60
Magnesium		1200 J	B	0.60	12
Manganese		43		0.080	1.2
Nickel		5.7		0.078	1.2
Potassium		660 J		37	240
Selenium		ND		0.28	0.60
Silver		ND		0.060	0.60
Sodium		ND		16	120
Thallium		ND		0.086	1.2
Vanadium		7.2		0.078	1.2
Zinc		9.8		0.70	3.0
Tin		2.9	J B	0.38	6.0

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	08/31/2009 1050			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.037	0.20

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Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-414-0.0/1.0-XXX**

Lab Sample ID: 360-24309-12
Client Matrix: Solid
% Moisture: 4.1

Date Sampled: 08/26/2009 0840
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.70 g
Date Analyzed:	08/28/2009 1447			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8900		0.80	3.1
Antimony		ND J		0.22	0.61
Arsenic		5.9		0.11	1.2
Barium		31	B	0.080	2.5
Beryllium		0.28		0.031	0.25
Cadmium		0.20	J	0.0086	0.25
Calcium		1900	B	3.1	12
Chromium		26 J		0.082	0.61
Cobalt		6.6		0.080	0.61
Copper		16 J		0.080	1.2
Iron		12000	B	0.98	6.1
Lead		3.8		0.070	0.61
Magnesium		3400 J	B	0.61	12
Manganese		160		0.082	1.2
Nickel		16		0.080	1.2
Potassium		1600 J		38	250
Selenium		ND		0.29	0.61
Silver		0.11	J	0.062	0.61
Sodium		120	J	16	120
Thallium		ND		0.089	1.2
Vanadium		17		0.080	1.2
Zinc		21		0.72	3.1
Tin		9.8 J	B	0.39	6.1

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.26 g
Date Analyzed:	08/31/2009 1052			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.027	0.15

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Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-414-6.0/8.0-XXX**

Lab Sample ID: 360-24309-14
Client Matrix: Solid
% Moisture: 10.4

Date Sampled: 08/26/2009 0845
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.85 g
Date Analyzed:	08/28/2009 1450			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6300		0.78	3.0
Antimony		ND J		0.22	0.60
Arsenic		3.6		0.11	1.2
Barium		9.7	B	0.078	2.4
Beryllium		0.20	J	0.030	0.24
Cadmium		0.11	J	0.0084	0.24
Calcium		740	B	3.0	12
Chromium		12 J		0.080	0.60
Cobalt		1.9		0.078	0.60
Copper		4.9 J		0.078	1.2
Iron		6100	B	0.96	6.0
Lead		15		0.069	0.60
Magnesium		850 J	B	0.60	12
Manganese		43		0.081	1.2
Nickel		4.9		0.078	1.2
Potassium		410 J		38	240
Selenium		ND		0.28	0.60
Silver		ND		0.061	0.60
Sodium		ND		16	120
Thallium		ND		0.087	1.2
Vanadium		7.8		0.078	1.2
Zinc		11		0.71	3.0
Tin		10 J	B	0.39	6.0

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.26 g
Date Analyzed:	08/31/2009 1058			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.029	0.16

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Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-422-0.0/1.0-XXX**

Lab Sample ID: 360-24309-15
Client Matrix: Solid
% Moisture: 4.6

Date Sampled: 08/25/2009 1635
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.66 g
Date Analyzed:	08/28/2009 1453			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9400		0.82	3.2
Antimony		ND J		0.23	0.63
Arsenic		16		0.12	1.3
Barium		25	B	0.082	2.5
Beryllium		0.46		0.032	0.25
Cadmium		0.28		0.0088	0.25
Calcium		1700	B	3.2	13
Chromium		24 J		0.084	0.63
Cobalt		5.9		0.082	0.63
Copper		12 J		0.082	1.3
Iron		15000	B	1.0	6.3
Lead		7.2		0.072	0.63
Magnesium		3300 J	B	0.63	13
Manganese		130		0.084	1.3
Nickel		15		0.082	1.3
Potassium		1500 J		39	250
Selenium		ND		0.30	0.63
Silver		ND		0.063	0.63
Sodium		230		16	130
Thallium		ND		0.091	1.3
Vanadium		19		0.082	1.3
Zinc		24		0.74	3.2
Tin		8.8 J	B	0.40	6.3

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	08/31/2009 1100			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.034	0.18

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Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-422-6.0/8.0-XXX**

Lab Sample ID: 360-24309-17
Client Matrix: Solid
% Moisture: 13.3

Date Sampled: 08/25/2009 1645
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.69 g
Date Analyzed:	08/28/2009 1456			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6000		0.89	3.4
Antimony		ND J		0.25	0.68
Arsenic		2.7		0.12	1.4
Barium		8.2	B	0.089	2.7
Beryllium		0.17	J	0.034	0.27
Cadmium		0.087	J	0.0096	0.27
Calcium		550	B	3.4	14
Chromium		5.9 J		0.091	0.68
Cobalt		1.5		0.089	0.68
Copper		2.5 J		0.089	1.4
Iron		4400	B	1.1	6.8
Lead		5.2		0.078	0.68
Magnesium		830 J	B	0.68	14
Manganese		29		0.091	1.4
Nickel		4.3		0.089	1.4
Potassium		420 J		43	270
Selenium		ND		0.32	0.68
Silver		ND		0.069	0.68
Sodium		ND		18	140
Thallium		ND		0.099	1.4
Vanadium		6.4		0.089	1.4
Zinc		11		0.80	3.4
Tin		2.1	UJ B	0.44	6.8

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	08/31/2009 1102			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.037	0.20

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Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-429-6.0/8.0-XXX**

Lab Sample ID: 360-24309-19
Client Matrix: Solid
% Moisture: 12.4

Date Sampled: 08/25/2009 1300
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.81 g
Date Analyzed:	08/28/2009 1459			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5800		0.82	3.2
Antimony		ND J		0.23	0.63
Arsenic		3.7		0.11	1.3
Barium		9.8	B	0.082	2.5
Beryllium		0.18	J	0.032	0.25
Cadmium		0.14	J	0.0088	0.25
Calcium		1200	B	3.2	13
Chromium		38 J		0.084	0.63
Cobalt		3.2		0.082	0.63
Copper		12 J		0.082	1.3
Iron		7200	B	1.0	6.3
Lead		25		0.072	0.63
Magnesium		1400 J	B	0.63	13
Manganese		50		0.084	1.3
Nickel		5.8		0.082	1.3
Potassium		410 J		39	250
Selenium		ND		0.30	0.63
Silver		0.47	J	0.063	0.63
Sodium		ND		16	130
Thallium		ND		0.091	1.3
Vanadium		13		0.082	1.3
Zinc		23		0.74	3.2
Tin		16 J	B	0.40	6.3

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	08/31/2009 1103			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.029	0.16

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Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-430-0.0/1.0-XXX**

Lab Sample ID: 360-24309-20
Client Matrix: Solid
% Moisture: 3.3

Date Sampled: 08/25/2009 1450
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.89 g
Date Analyzed:	08/28/2009 1501			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6100		0.71	2.7
Antimony		ND J		0.20	0.55
Arsenic		6.3		0.10	1.1
Barium		30	B	0.071	2.2
Beryllium		0.17	J	0.027	0.22
Cadmium		0.16	J	0.0077	0.22
Calcium		1600	B	2.7	11
Chromium		24 J		0.073	0.55
Cobalt		5.3		0.071	0.55
Copper		12 J		0.071	1.1
Iron		9500	B	0.87	5.5
Lead		2.3		0.062	0.55
Magnesium		2800 J	B	0.55	11
Manganese		110		0.073	1.1
Nickel		19		0.071	1.1
Potassium		2400 J		34	220
Selenium		ND		0.26	0.55
Silver		0.064	J	0.055	0.55
Sodium		46	J	14	110
Thallium		0.090	J EB	0.079	1.1
Vanadium		15		0.071	1.1
Zinc		15		0.64	2.7
Tin		8.9 J	B	0.35	5.5

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	08/31/2009 1108			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.031	0.17

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Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-430-8.0/10-DUP**

Lab Sample ID: 360-24309-22
Client Matrix: Solid
% Moisture: 7.8

Date Sampled: 08/25/2009 1500
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.50 g
Date Analyzed:	08/28/2009 1504			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5500		0.94	3.6
Antimony		ND J		0.26	0.72
Arsenic		1.7		0.13	1.4
Barium		8.9	~~B~~	0.094	2.9
Beryllium		0.18	J	0.036	0.29
Cadmium		0.14	J	0.010	0.29
Calcium		1000	~~B~~	3.6	14
Chromium		110 J		0.096	0.72
Cobalt		3.2		0.094	0.72
Copper		19 J		0.094	1.4
Iron		6100	~~B~~	1.2	7.2
Lead		2.6		0.083	0.72
Magnesium		1700 J	~~B~~	0.72	14
Manganese		68		0.097	1.4
Nickel		7.0		0.094	1.4
Potassium		750 J		45	290
Selenium		ND		0.34	0.72
Silver		1.9		0.073	0.72
Sodium		79	J	19	140
Thallium		ND		0.10	1.4
Vanadium		10		0.094	1.4
Zinc		13		0.85	3.6
Tin		50 J	~~B~~	0.46	7.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	08/31/2009 1110			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.032	0.17

4/7/10

Client: Olin Corporation

Job Number: 360-24309-1
Sdg Number: OCRI-06

Client Sample ID: **OC-SB-430-8.0/10-XXX**

Lab Sample ID: 360-24309-23
Client Matrix: Solid
% Moisture: 5.8

Date Sampled: 08/25/2009 1500
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48355		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48302		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.66 g
Date Analyzed:	08/28/2009 1345			Final Weight/Volume:	100 mL
Date Prepared:	08/28/2009 0735				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4800		0.83	3.2
Antimony		0.99 J		0.23	0.64
Arsenic		1.7		0.12	1.3
Barium		8.3	B	0.083	2.6
Beryllium		0.19	J	0.032	0.26
Cadmium		0.13	J	0.0090	0.26
Calcium		870	B	3.2	13
Chromium		91 J		0.085	0.64
Cobalt		2.8		0.083	0.64
Copper		18 J		0.083	1.3
Iron		6000	B	1.0	6.4
Lead		2.8		0.073	0.64
Magnesium		1600 J	B	0.64	13
Manganese		61		0.085	1.3
Nickel		6.3		0.083	1.3
Potassium		680 J		40	260
Selenium		ND		0.30	0.64
Silver		1.4		0.064	0.64
Sodium		69	J	17	130
Thallium		ND		0.092	1.3
Vanadium		10		0.083	1.3
Zinc		13		0.75	3.2
Tin		39 J	B	0.41	6.4

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48313		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	08/31/2009 1023			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0952				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.036	0.20

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Client: Olin Corporation

Job Number: 360-24309-2
Sdg Number: OCRI-06A

Client Sample ID: **OC-SB-407-26/28-XXX**

Lab Sample ID: 360-24309-8
Client Matrix: Solid
% Moisture: 9.0

Date Sampled: 08/26/2009 1125
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49406		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49332		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	2.00 g
Date Analyzed:	09/23/2009 1539			Final Weight/Volume:	100 mL
Date Prepared:	09/23/2009 0907				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10000		0.71	2.7
Antimony		ND J		0.20	0.55
Arsenic		4.2		0.10	1.1
Barium		57		0.071	0.55
Beryllium		0.33		0.027	0.22
Cadmium		0.37		0.0077	0.22
Calcium		3700	B	2.7	11
Chromium		16	B	0.073	0.55
Cobalt		11		0.071	0.55
Copper		23	B	0.071	1.1
Iron		22000	B	0.88	5.5
Lead		5.1	B	0.063	0.55
Magnesium		6600	B	0.55	11
Manganese		180		0.073	1.1
Nickel		17		0.071	1.1
Potassium		2700		34	220
Selenium		ND		0.26	0.55
Silver		0.055	J	0.055	0.55
Sodium		150	B	14	110
Thallium		ND		0.079	1.1
Vanadium		36		0.071	1.1
Zinc		23		0.65	2.7
Tin		4.8	J B	0.35	5.5

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Client: Olin Corporation

Job Number: 360-24309-2
Sdg Number: OCRI-06A

Client Sample ID: **OC-SB-414-20/22-XXX**

Lab Sample ID: 360-24309-13
Client Matrix: Solid
% Moisture: 7.7

Date Sampled: 08/26/2009 0910
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49406		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49332		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.92 g
Date Analyzed:	09/23/2009 1542			Final Weight/Volume:	100 mL
Date Prepared:	09/23/2009 0907				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9100		0.73	2.8
Antimony		ND J		0.20	0.56
Arsenic		2.2		0.10	1.1
Barium		35		0.073	0.56
Beryllium		0.23	J	0.028	0.23
Cadmium		0.25		0.0079	0.23
Calcium		3100	B	2.8	11
Chromium		18	B	0.075	0.56
Cobalt		12		0.073	0.56
Copper		33	B	0.073	1.1
Iron		16000	B	0.90	5.6
Lead		2.0	B	0.064	0.56
Magnesium		5800	B	0.56	11
Manganese		170		0.075	1.1
Nickel		13		0.073	1.1
Potassium		1300		35	230
Selenium		ND		0.26	0.56
Silver		ND		0.057	0.56
Sodium		120	B	15	110
Thallium		ND		0.082	1.1
Vanadium		29		0.073	1.1
Zinc		27		0.66	2.8
Tin		6.0 J	B	0.36	5.6

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Analytical Data

Client: Olin Corporation

Job Number: 360-24309-2
Sdg Number: OCRI-06A

Client Sample ID: **OC-SB-422-13/15-XXX**

Lab Sample ID: 360-24309-16
Client Matrix: Solid
% Moisture: 14.8

Date Sampled: 08/25/2009 1710
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49406		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49332		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.93 g
Date Analyzed:	09/23/2009 1545			Final Weight/Volume:	100 mL
Date Prepared:	09/23/2009 0907				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8000		0.79	3.0
Antimony		ND J		0.22	0.61
Arsenic		3.7		0.11	1.2
Barium		29		0.079	0.61
Beryllium		0.32		0.030	0.24
Cadmium		0.16	J	0.0085	0.24
Calcium		1000	~~B~~	3.0	12
Chromium		16	~~B~~	0.081	0.61
Cobalt		5.0		0.079	0.61
Copper		14	~~B~~	0.079	1.2
Iron		8900	~~B~~	0.97	6.1
Lead		3.5	~~B~~	0.069	0.61
Magnesium		2800	~~B~~	0.61	12
Manganese		85		0.081	1.2
Nickel		13		0.079	1.2
Potassium		1300		38	240
Selenium		ND		0.28	0.61
Silver		ND		0.061	0.61
Sodium		68	J ~~B~~	16	120
Thallium		ND		0.088	1.2
Vanadium		16		0.079	1.2
Zinc		18		0.72	3.0
Tin		5.7	J ~~B~~	0.39	6.1

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Client: Olin Corporation

Job Number: 360-24309-2
Sdg Number: OCRI-06A

Client Sample ID: **OC-SB-429-16/18-XXX**

Lab Sample ID: 360-24309-18
Client Matrix: Solid
% Moisture: 6.5

Date Sampled: 08/25/2009 1325
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49459		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49332		Lab File ID:	N/A
Dilution:	2.0			Initial Weight/Volume:	1.61 g
Date Analyzed:	09/24/2009 1333			Final Weight/Volume:	100 mL
Date Prepared:	09/23/2009 0907				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		15000		1.7	6.6
Antimony		ND J		0.48	1.3
Arsenic		0.99	J	0.24	2.7
Barium		23		0.17	1.3
Beryllium		0.21	J	0.066	0.53
Cadmium		0.42	J	0.019	0.53
Calcium		3800	~~B~~	6.6	27
Chromium		29	~~B~~	0.18	1.3
Cobalt		13		0.17	1.3
Copper		18	~~B~~	0.17	2.7
Iron		27000	~~B~~	2.1	13
Lead		1.3	~~B~~	0.15	1.3
Magnesium		14000	~~B~~	1.3	27
Manganese		330		0.18	2.7
Nickel		25		0.17	2.7
Potassium		1100		83	530
Selenium		ND		0.62	1.3
Silver		0.24	J	0.13	1.3
Sodium		140	J ~~B~~	35	270
Thallium		ND		0.19	2.7
Vanadium		34		0.17	2.7
Zinc		39		1.6	6.6
Tin		10	J ~~B~~	0.85	13

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Client: Olin Corporation

Job Number: 360-24309-2
Sdg Number: OCRI-06A

Client Sample ID: **OC-SB-430-19/21-XXX**

Lab Sample ID: 360-24309-21
Client Matrix: Solid
% Moisture: 4.7

Date Sampled: 08/25/2009 1535
Date Received: 08/26/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49406		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49332		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.59 g
Date Analyzed:	09/23/2009 1550			Final Weight/Volume:	100 mL
Date Prepared:	09/23/2009 0907				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		13000		0.86	3.3
Antimony		ND J		0.24	0.66
Arsenic		3.2		0.12	1.3
Barium		160		0.086	0.66
Beryllium		0.18	J	0.033	0.26
Cadmium		0.39		0.0092	0.26
Calcium		5900	~~B~~	3.3	13
Chromium		22	~~B~~	0.088	0.66
Cobalt		16		0.086	0.66
Copper		29	~~B~~	0.086	1.3
Iron		23000	~~B~~	1.1	6.6
Lead		1.1	~~B~~	0.075	0.66
Magnesium		10000	~~B~~	0.66	13
Manganese		240		0.088	1.3
Nickel		15		0.086	1.3
Potassium		5800		41	260
Selenium		ND		0.31	0.66
Silver		2.2		0.066	0.66
Sodium		310	~~B~~	17	130
Thallium		0.096 UL	~~J B~~	0.095	1.3
Vanadium		42		0.086	1.3
Zinc		35		0.78	3.3
Tin		6.9 J	^B	0.42	6.6

4/7/10

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

SITE: **Olin Chemical** Project #: 61571000/6.12 SDG #: OCRI-07/07A

LAB # : TAL 360-24327-1/2

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I (II) III (circle one)

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☐ ☒ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☑ ☐ ☐ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	See below. Post-digestion spikes %R limits = 75% - 125%

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) III (circle one)

Laboratory Control Samples (LCS) ☑ ☐ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate ☑ ☐ ☐ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☑ ☐ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	
Field Duplicate ☑ ☐ ☐ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☑ ☐ ☐ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution ☐ ☑ ☐ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☑ ☐ Are results of the diluted samples > the original sample results	

Validator's Signature: _____

Date: 4/7/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

QL Standard:
The percent recoveries of tin (59, 62, and 58) and potassium (68) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J/UJ).

Blanks:
Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Copper and thallium were reported in the equipment blank associated with OCRI-07 and 07A. Associated sample results for thallium were non detect, no further action required. Reported detections of copper were significantly greater than equipment blank results, the data was not qualified.

Calcium (8.83 mg/kg), copper (0.0673 mg/kg), iron (1.13 mg/kg), magnesium (2.13 mg/kg), and tin (0.463 mg/kg) were reported in the method blank (M360-48369) associated with all samples. Action levels were established at five times the reported method blank concentrations. With the exception of tin, sample results were greater than the action levels, no further action required. Sample results for tin that were less than the action level were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Calcium (7.85 mg/kg), chromium (0.147 mg/kg), copper (0.071 mg/kg), iron (1.98 mg/kg), magnesium (2.04 mg/kg), sodium (13.1 mg/kg), thallium (0.154 mg/kg), and tin (0.454 mg/kg) were reported in the method blank (M360-49332) associated with all samples. Action levels were established at five times the reported method blank concentrations. With the exception of sodium, sample results were greater than the action levels, no further action required. Sample results for sodium that were less than the action level were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Selenium and thallium were reported in the continuing calibration blanks (CCB) associated with a subset of samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for selenium and thallium were non detect, no further action required.

Matrix Spikes:
Sample OC-SB-410-6.0/8.0-XXX was submitted for MS analysis. The MS percent recovery of antimony (65) and iron (67) were less than the lower QC limit of 75. The unspiked sample result for iron was greater than four times the spiking concentration, no further action required. Post digestion spike recovery for antimony was within QC limits, indicating a matrix effect for antimony. Matrix spike

recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

SDG	Lab Sample ID	Field Sample ID	Antimony MS Recovery (%)
OCRI-03	360-24223-9	OC-SB-426-5.0/7.0-XXX	61
OCRI-04	360-24244-1	OC-SB-432-0.0/1.0-XXX	27
OCRI-04A	360-24244-5	OC-SB-443-18/20-XXX	32
OCRI-05	360-24251-19	OC-SB-446-5.0/7.0-XXX	80
OCRI-05	360-24251-4	OC-SB-433-5.0/7.0-XXX	70
OCRI-06	360-24309-23	OC-SB-430-8.0/10-XXX	44
OCRI-07	360-24327-12	OC-SB-410-6.0/8.0-XXX	65
OCRI-08	360-24343-10	OC-SB-451-2.5/4.5-XXX	62
OCRI-08	360-24343-17	OC-SB-455-6.0/8.0-XXX	46
OCRI-09	360-24365-4	OC-SB-442-8.0/10-XXX	50
OCRI-10	360-24417-10	OC-SB-465-8.0/10-XXX	63
OCRI-10A	360-24417-2	OC-SB-463-28/30-XXX	38
OCRI-11	360-24444-2	OC-SB-459-6.0/8.0-XXX	64
OCRI-11	360-24444-9	OC-SB-467-6.0/8.0-XXX	68
OCRI-12	360-24454-3	OC-SB-461-5.0/7.0-XXX	65
OCRI-13A	360-24499-3	OC-SB-469-28/30-XXX	61
OCRI-14	360-24563-14	OC-SB-456-7.0/9.0-XXX	60
OCRI-14	360-24563-5	OC-SB-427-8.0/10-XXX	67
OCRI-15	360-24582-22	OC-SS-416-0.0/1.0-XXX	56
OCRI-16	360-24634-1	OC-SS-417-0.0/1.0-XXX	61
OCRI-17	360-24665-1	OC-SS-434-0.0/1.0-XXX	29
OCRI-18	360-24686-1	OC-SB-400-17/19-XXX	67

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24327-1
Sdg Number: OCRI-07

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24327-1	OC-SB-403-0.0/1.0-XXX	Solid	08/26/2009 1325	08/27/2009 1710
360-24327-2	OC-SB-403-13/15-XXX	Solid	08/26/2009 1340	08/27/2009 1710
360-24327-3	OC-SB-403-6.0/8.0-XXX	Solid	08/26/2009 1330	08/27/2009 1710
360-24327-4	OC-SB-404-13/15-XXX	Solid	08/26/2009 1540	08/27/2009 1710
360-24327-5	OC-SB-404-5.0/7.0-XXX	Solid	08/26/2009 1520	08/27/2009 1710
360-24327-6	OC-SB-409-0.0/1.0-XXX	Solid	08/26/2009 1650	08/27/2009 1710
360-24327-7	OC-SB-409-15/17-XXX	Solid	08/26/2009 1715	08/27/2009 1710
360-24327-8	OC-SB-409-6.0/8.0-XXX	Solid	08/26/2009 1705	08/27/2009 1710
360-24327-9	OC-SB-410-0.0/1.0-XXX	Solid	08/27/2009 1010	08/27/2009 1710
360-24327-10	OC-SB-410-17/19-XXX	Solid	08/27/2009 1115	08/27/2009 1710
360-24327-11	OC-SB-410-6.0/8.0-DUP	Solid	08/27/2009 1015	08/27/2009 1710
360-24327-12	OC-SB-410-6.0/8.0-XXX	Solid	08/27/2009 1015	08/27/2009 1710
360-24327-12MS	OC-SB-410-6.0/8.0-XMS	Solid	08/27/2009 1015	08/27/2009 1710
360-24327-12MSD	OC-SB-410-6.0/8.0-MSD	Solid	08/27/2009 1015	08/27/2009 1710
360-24327-13	OC-SB-411-0.0/1.0-XXX	Solid	08/27/2009 1020	08/27/2009 1710
360-24327-14	OC-SB-411-4.7/6.7-XXX	Solid	08/27/2009 1035	08/27/2009 1710
360-24327-15	OC-SB-418-0.0/1.0-XXX	Solid	08/27/2009 0825	08/27/2009 1710
360-24327-16	OC-SB-418-15/17-XXX	Solid	08/27/2009 0900	08/27/2009 1710
360-24327-17	OC-SB-418-8/10-XXX	Solid	08/27/2009 0835	08/27/2009 1710
360-24327-18	OC-TBK-009	Solid	08/27/2009 1440	08/27/2009 1710
360-24327-19	OC-EBK-005	Water	08/27/2009 0800	08/27/2009 1710

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Client: Olin Corporation

Job Number: 360-24327-1
Sdg Number: OCRI-07

Client Sample ID: **OC-SB-403-0.0/1.0-XXX**

Lab Sample ID: 360-24327-1
Client Matrix: Solid
% Moisture: 6.3

Date Sampled: 08/26/2009 1325
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48403		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48369		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.54 g
Date Analyzed:	08/31/2009 1441			Final Weight/Volume:	100 mL
Date Prepared:	08/31/2009 0817				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10000		0.90	3.5
Antimony		ND J		0.25	0.69
Arsenic		17		0.13	1.4
Barium		30		0.090	0.69
Beryllium		0.51		0.035	0.28
Cadmium		0.31		0.0097	0.28
Calcium		7100	~~B~~	3.5	14
Chromium		25		0.092	0.69
Cobalt		6.3		0.090	0.69
Copper		14	~~B~~	0.090	1.4
Iron		16000	~~B~~	1.1	6.9
Lead		6.4		0.079	0.69
Magnesium		3900	~~B~~	0.69	14
Manganese		130		0.093	1.4
Nickel		18		0.090	1.4
Potassium		1700		43	280
Selenium		ND		0.32	0.69
Silver		0.086	J	0.070	0.69
Sodium		300		18	140
Thallium		ND		0.10	1.4
Vanadium		19		0.090	1.4
Zinc		29		0.82	3.5
Tin		8.8	~~B~~	0.44	6.9

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48374		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.28 g
Date Analyzed:	08/31/2009 1217			Final Weight/Volume:	50 mL
Date Prepared:	08/31/2009 0937				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.026	0.14

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Client: Olin Corporation

Job Number: 360-24327-1
Sdg Number: OCRI-07

Client Sample ID: **OC-SB-403-6.0/8.0-XXX**

Lab Sample ID: 360-24327-3
Client Matrix: Solid
% Moisture: 38.2

Date Sampled: 08/26/2009 1330
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48403		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48369		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.59 g
Date Analyzed:	08/31/2009 1444			Final Weight/Volume:	100 mL
Date Prepared:	08/31/2009 0817				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8200		1.3	5.1
Antimony		ND J		0.37	1.0
Arsenic		4.4		0.19	2.0
Barium		31		0.13	1.0
Beryllium		0.37	J	0.051	0.41
Cadmium		0.26	J	0.014	0.41
Calcium		7800	~~B~~	5.1	20
Chromium		7.2		0.14	1.0
Cobalt		1.9		0.13	1.0
Copper		11	~~B~~	0.13	2.0
Iron		4800	~~B~~	1.6	10
Lead		22		0.12	1.0
Magnesium		750	~~B~~	1.0	20
Manganese		61		0.14	2.0
Nickel		6.7		0.13	2.0
Potassium		370	J	64	410
Selenium		0.73	J	0.48	1.0
Silver		ND		0.10	1.0
Sodium		ND		26	200
Thallium		ND		0.15	2.0
Vanadium		18		0.13	2.0
Zinc		25		1.2	5.1
Tin		3.0	J,~~B~~	0.65	10

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48374		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.28 g
Date Analyzed:	08/31/2009 1219			Final Weight/Volume:	50 mL
Date Prepared:	08/31/2009 0937				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.039	0.21

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Client: Olin Corporation

Job Number: 360-24327-1
Sdg Number: OCRI-07

Client Sample ID: **OC-SB-404-5.0/7.0-XXX**

Lab Sample ID: 360-24327-5
Client Matrix: Solid
% Moisture: 14.6

Date Sampled: 08/26/2009 1520
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48403		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48369		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.62 g
Date Analyzed:	08/31/2009 1447			Final Weight/Volume:	100 mL
Date Prepared:	08/31/2009 0817				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4400		0.94	3.6
Antimony		ND J		0.26	0.72
Arsenic		1.5		0.13	1.4
Barium		6.6		0.094	0.72
Beryllium		0.11	J	0.036	0.29
Cadmium		0.060	J	0.010	0.29
Calcium		590	~~B~~	3.6	14
Chromium		5.8		0.096	0.72
Cobalt		1.3		0.094	0.72
Copper		2.3	~~B~~	0.094	1.4
Iron		3700	~~B~~	1.2	7.2
Lead		1.5		0.083	0.72
Magnesium		930	~~B~~	0.72	14
Manganese		32		0.097	1.4
Nickel		4.7		0.094	1.4
Potassium		550		45	290
Selenium		ND		0.34	0.72
Silver		ND		0.073	0.72
Sodium		31	J	19	140
Thallium		ND		0.10	1.4
Vanadium		5.7		0.094	1.4
Zinc		6.3		0.85	3.6
Tin		2.1	J ~~B~~	0.46	7.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48374		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	08/31/2009 1221			Final Weight/Volume:	50 mL
Date Prepared:	08/31/2009 0937				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.036	0.20

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Client: Olin Corporation

Job Number: 360-24327-1
Sdg Number: OCRI-07

Client Sample ID: **OC-SB-409-0.0/1.0-XXX**

Lab Sample ID: 360-24327-6
Client Matrix: Solid
% Moisture: 4.2

Date Sampled: 08/26/2009 1650
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48403		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48369		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.86 g
Date Analyzed:	08/31/2009 1450			Final Weight/Volume:	100 mL
Date Prepared:	08/31/2009 0817				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5600		0.73	2.8
Antimony		ND J		0.20	0.56
Arsenic		6.1		0.10	1.1
Barium		12		0.073	0.56
Beryllium		0.21	J	0.028	0.22
Cadmium		0.15	J	0.0079	0.22
Calcium		1100	~~B~~	2.8	11
Chromium		7.0		0.075	0.56
Cobalt		3.4		0.073	0.56
Copper		5.4	~~B~~	0.073	1.1
Iron		7500	~~B~~	0.89	5.6
Lead		4.2		0.064	0.56
Magnesium		1500	~~B~~	0.56	11
Manganese		74		0.075	1.1
Nickel		5.9		0.073	1.1
Potassium		610		35	220
Selenium		ND		0.26	0.56
Silver		ND		0.056	0.56
Sodium		54	J	15	110
Thallium		ND		0.081	1.1
Vanadium		10		0.073	1.1
Zinc		12		0.66	2.8
Tin		2.4	J ~~B~~	0.36	5.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48374		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	08/31/2009 1223			Final Weight/Volume:	50 mL
Date Prepared:	08/31/2009 0937				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.028	0.15

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Client: Olin Corporation

Job Number: 360-24327-1
Sdg Number: OCRI-07

Client Sample ID: **OC-SB-409-6.0/8.0-XXX**

Lab Sample ID: 360-24327-8
Client Matrix: Solid
% Moisture: 21.3

Date Sampled: 08/26/2009 1705
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48403		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48369		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.89 g
Date Analyzed:	08/31/2009 1453			Final Weight/Volume:	100 mL
Date Prepared:	08/31/2009 0817				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3600		0.87	3.4
Antimony		ND J		0.24	0.67
Arsenic		3.4		0.12	1.3
Barium		10		0.087	0.67
Beryllium		0.14	J	0.034	0.27
Cadmium		0.11	J	0.0094	0.27
Calcium		600	~~B~~	3.4	13
Chromium		6.4		0.089	0.67
Cobalt		1.8		0.087	0.67
Copper		3.5	~~B~~	0.087	1.3
Iron		4900	~~B~~	1.1	6.7
Lead		1.4		0.077	0.67
Magnesium		1000	~~B~~	0.67	13
Manganese		37		0.090	1.3
Nickel		5.2		0.087	1.3
Potassium		650		42	270
Selenium		ND		0.31	0.67
Silver		ND		0.068	0.67
Sodium		29	J	17	130
Thallium		ND		0.097	1.3
Vanadium		6.3		0.087	1.3
Zinc		9.3		0.79	3.4
Tin		2.2	J ~~B~~	0.43	6.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48374		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	08/31/2009 1229			Final Weight/Volume:	50 mL
Date Prepared:	08/31/2009 0937				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.041	0.22

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Client: Olin Corporation

Job Number: 360-24327-1
Sdg Number: OCRI-07

Client Sample ID: **OC-SB-410-0.0/1.0-XXX**

Lab Sample ID: 360-24327-9
Client Matrix: Solid
% Moisture: 10.1

Date Sampled: 08/27/2009 1010
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48403		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48369		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.97 g
Date Analyzed:	08/31/2009 1456			Final Weight/Volume:	100 mL
Date Prepared:	08/31/2009 0817				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6600		0.73	2.8
Antimony		ND J		0.20	0.56
Arsenic		2.9		0.10	1.1
Barium		12		0.073	0.56
Beryllium		0.21	J	0.028	0.23
Cadmium		0.29		0.0079	0.23
Calcium		430	~~B~~	2.8	11
Chromium		30		0.075	0.56
Cobalt		2.0		0.073	0.56
Copper		8.3	~~B~~	0.073	1.1
Iron		5500	~~B~~	0.90	5.6
Lead		5.4		0.064	0.56
Magnesium		1300	~~B~~	0.56	11
Manganese		36		0.075	1.1
Nickel		6.6		0.073	1.1
Potassium		410		35	230
Selenium		ND		0.26	0.56
Silver		0.48	J	0.057	0.56
Sodium		ND		15	110
Thallium		ND		0.082	1.1
Vanadium		8.6		0.073	1.1
Zinc		23		0.66	2.8
Tin		12	~~B~~	0.36	5.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48374		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	08/31/2009 1231			Final Weight/Volume:	50 mL
Date Prepared:	08/31/2009 0937				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.044	J	0.036	0.20

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Client: Olin Corporation

Job Number: 360-24327-1
Sdg Number: OCRI-07

Client Sample ID: **OC-SB-410-6.0/8.0-DUP**

Lab Sample ID: 360-24327-11
Client Matrix: Solid
% Moisture: 24.1

Date Sampled: 08/27/2009 1015
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48403		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48369		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.55 g
Date Analyzed:	08/31/2009 1459			Final Weight/Volume:	100 mL
Date Prepared:	08/31/2009 0817				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4100		1.1	4.2
Antimony		ND J		0.31	0.85
Arsenic		1.4	J	0.16	1.7
Barium		7.6		0.11	0.85
Beryllium		0.11	J	0.042	0.34
Cadmium		0.077	J	0.012	0.34
Calcium		790	~~B~~	4.2	17
Chromium		7.5		0.11	0.85
Cobalt		1.7		0.11	0.85
Copper		5.7	~~B~~	0.11	1.7
Iron		3900	~~B~~	1.4	8.5
Lead		1.5		0.097	0.85
Magnesium		1100	~~B~~	0.85	17
Manganese		41		0.11	1.7
Nickel		5.3		0.11	1.7
Potassium		580 J		53	340
Selenium		ND		0.40	0.85
Silver		ND		0.086	0.85
Sodium		49	J	22	170
Thallium		ND		0.12	1.7
Vanadium		6.2		0.11	1.7
Zinc		7.8		1.0	4.2
Tin		2.8	J ~~B~~	0.54	8.5

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48374		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.28 g
Date Analyzed:	08/31/2009 1233			Final Weight/Volume:	50 mL
Date Prepared:	08/31/2009 0937				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.032	0.17

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Client: Olin Corporation

Job Number: 360-24327-1
Sdg Number: OCRI-07

Client Sample ID: **OC-SB-410-6.0/8.0-XXX**

Lab Sample ID: 360-24327-12
Client Matrix: Solid
% Moisture: 23.4

Date Sampled: 08/27/2009 1015
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48403		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48369		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.58 g
Date Analyzed:	08/31/2009 1421			Final Weight/Volume:	100 mL
Date Prepared:	08/31/2009 0817				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4500		1.1	4.1
Antimony		0.71	J	0.30	0.83
Arsenic		1.7		0.15	1.7
Barium		8.6		0.11	0.83
Beryllium		0.12	J	0.041	0.33
Cadmium		0.13	J	0.012	0.33
Calcium		750	~~B~~	4.1	17
Chromium		8.4		0.11	0.83
Cobalt		1.6		0.11	0.83
Copper		6.8	~~B~~	0.11	1.7
Iron		4500	~~B~~	1.3	8.3
Lead		1.8		0.094	0.83
Magnesium		1200	~~B~~	0.83	17
Manganese		44		0.11	1.7
Nickel		6.5		0.11	1.7
Potassium		680 J		52	330
Selenium		ND		0.39	0.83
Silver		ND		0.083	0.83
Sodium		ND		21	170
Thallium		ND		0.12	1.7
Vanadium		6.6		0.11	1.7
Zinc		9.9		0.97	4.1
Tin		3.1	J ~~B~~	0.53	8.3

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48374		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.29 g
Date Analyzed:	08/31/2009 1211			Final Weight/Volume:	50 mL
Date Prepared:	08/31/2009 0937				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.031	0.17

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Client: Olin Corporation

Job Number: 360-24327-1
Sdg Number: OCRI-07

Client Sample ID: **OC-SB-411-0.0/1.0-XXX**

Lab Sample ID: 360-24327-13
Client Matrix: Solid
% Moisture: 6.7

Date Sampled: 08/27/2009 1020
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48403		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48369		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.72 g
Date Analyzed:	08/31/2009 1502			Final Weight/Volume:	100 mL
Date Prepared:	08/31/2009 0817				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4500		0.81	3.1
Antimony		ND J		0.23	0.62
Arsenic		5.4		0.11	1.2
Barium		9.3		0.081	0.62
Beryllium		0.20	J	0.031	0.25
Cadmium		0.12	J	0.0087	0.25
Calcium		1300	B	3.1	12
Chromium		6.8		0.083	0.62
Cobalt		5.6		0.081	0.62
Copper		3.8	B	0.081	1.2
Iron		5800	B	0.99	6.2
Lead		3.0		0.071	0.62
Magnesium		1100	B	0.62	12
Manganese		52		0.083	1.2
Nickel		5.3		0.081	1.2
Potassium		570		39	250
Selenium		ND		0.29	0.62
Silver		0.080	J	0.063	0.62
Sodium		110	J	16	120
Thallium		ND		0.090	1.2
Vanadium		6.8		0.081	1.2
Zinc		9.4		0.73	3.1
Tin		2.4	J B	0.40	6.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48374		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.24 g
Date Analyzed:	08/31/2009 1235			Final Weight/Volume:	50 mL
Date Prepared:	08/31/2009 0937				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.030	0.17

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Client: Olin Corporation

Job Number: 360-24327-1
Sdg Number: OCRI-07

Client Sample ID: **OC-SB-411-4.7/6.7-XXX**

Lab Sample ID: 360-24327-14
Client Matrix: Solid
% Moisture: 5.2

Date Sampled: 08/27/2009 1035
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48403		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48369		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.84 g
Date Analyzed:	08/31/2009 1505			Final Weight/Volume:	100 mL
Date Prepared:	08/31/2009 0817				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4200		0.75	2.9
Antimony		ND J		0.21	0.57
Arsenic		3.7		0.10	1.1
Barium		8.7		0.075	0.57
Beryllium		0.17	J	0.029	0.23
Cadmium		0.12	J	0.0080	0.23
Calcium		2000	~~B~~	2.9	11
Chromium		6.9		0.076	0.57
Cobalt		2.1		0.075	0.57
Copper		2.9	~~B~~	0.075	1.1
Iron		5800	~~B~~	0.91	5.7
Lead		1.6		0.065	0.57
Magnesium		1100	~~B~~	0.57	11
Manganese		85		0.077	1.1
Nickel		4.4		0.075	1.1
Potassium		520		36	230
Selenium		ND		0.27	0.57
Silver		0.060	J	0.058	0.57
Sodium		60	J	15	110
Thallium		ND		0.083	1.1
Vanadium		6.9		0.075	1.1
Zinc		8.4		0.67	2.9
Tin		2.5	J,~~B~~	0.37	5.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48374		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	08/31/2009 1237			Final Weight/Volume:	50 mL
Date Prepared:	08/31/2009 0937				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.031	0.17

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Client: Olin Corporation

Job Number: 360-24327-1
Sdg Number: OCRI-07

Client Sample ID: **OC-SB-418-0.0/1.0-XXX**

Lab Sample ID: 360-24327-15
Client Matrix: Solid
% Moisture: 7.8

Date Sampled: 08/27/2009 0825
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48403		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48369		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.83 g
Date Analyzed:	08/31/2009 1508			Final Weight/Volume:	100 mL
Date Prepared:	08/31/2009 0817				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8100		0.77	3.0
Antimony		ND J		0.21	0.59
Arsenic		11		0.11	1.2
Barium		20		0.077	0.59
Beryllium		0.36		0.030	0.24
Cadmium		0.26		0.0083	0.24
Calcium		1400	~~B~~	3.0	12
Chromium		59		0.079	0.59
Cobalt		4.4		0.077	0.59
Copper		7.7	~~B~~	0.077	1.2
Iron		12000	~~B~~	0.94	5.9
Lead		6.4		0.068	0.59
Magnesium		3100	~~B~~	0.59	12
Manganese		120		0.079	1.2
Nickel		12		0.077	1.2
Potassium		1300		37	240
Selenium		ND		0.28	0.59
Silver		0.61		0.060	0.59
Sodium		56	J	15	120
Thallium		ND		0.086	1.2
Vanadium		16		0.077	1.2
Zinc		20		0.70	3.0
Tin		23	~~B~~	0.38	5.9

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48374		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	08/31/2009 1240			Final Weight/Volume:	50 mL
Date Prepared:	08/31/2009 0937				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.035	0.19

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Client: Olin Corporation

Job Number: 360-24327-1
Sdg Number: OCRI-07

Client Sample ID: **OC-SB-418-8/10-XXX**

Lab Sample ID: 360-24327-17
Client Matrix: Solid
% Moisture: 9.1

Date Sampled: 08/27/2009 0835
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48403		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48369		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.66 g
Date Analyzed:	08/31/2009 1516			Final Weight/Volume:	100 mL
Date Prepared:	08/31/2009 0817				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9800		0.86	3.3
Antimony		ND J		0.24	0.66
Arsenic		16		0.12	1.3
Barium		39		0.086	0.66
Beryllium		0.43		0.033	0.27
Cadmium		0.29		0.0093	0.27
Calcium		2200	~~B~~	3.3	13
Chromium		14		0.088	0.66
Cobalt		7.5		0.086	0.66
Copper		16	~~B~~	0.086	1.3
Iron		15000	~~B~~	1.1	6.6
Lead		3.9		0.076	0.66
Magnesium		2500	~~B~~	0.66	13
Manganese		110		0.089	1.3
Nickel		13		0.086	1.3
Potassium		2000		41	270
Selenium		ND		0.31	0.66
Silver		ND		0.067	0.66
Sodium		110	J	17	130
Thallium		ND		0.096	1.3
Vanadium		18		0.086	1.3
Zinc		23		0.78	3.3
Tin		4.6	J ~~B~~	0.42	6.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48383		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48374		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.28 g
Date Analyzed:	08/31/2009 1242			Final Weight/Volume:	50 mL
Date Prepared:	08/31/2009 0937				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.053	J	0.027	0.15

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Client: Olin Corporation

Job Number: 360-24327-1
Sdg Number: OCRI-07

Client Sample ID: **OC-EBK-005**

Lab Sample ID: 360-24327-19
Client Matrix: Water

Date Sampled: 08/27/2009 0800
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48333		Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-48301		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/28/2009 1226			Final Weight/Volume:	50 mL
Date Prepared:	08/28/2009 0719				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	ND		39	100
Antimony	ND		2.9	6.0
Barium	ND		2.0	10
Arsenic	ND		2.3	10
Beryllium	ND		0.20	1.0
Cadmium	ND		0.20	1.0
Calcium	130	J	59	400
Chromium	ND		1.3	5.0
Cobalt	ND		2.0	10
Copper	21		1.7	10
Iron	98	J	34	100
Lead	ND		1.3	5.0
Magnesium	ND		50	400
Manganese	1.4	J	1.3	10
Nickel	ND		1.5	10
Potassium	ND		500	4000
Selenium	ND		2.7	10
Silver	ND		1.8	5.0
Sodium	ND		250	2000
Tin	ND		7.0	50
Vanadium	ND		1.5	10
Thallium	4.3	J	1.4	10
Zinc	ND		10	50

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 360-48431		Instrument ID:	Hg Analyzer
Preparation:	7470A	Prep Batch: 360-48366		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	09/01/2009 1007			Final Weight/Volume:	10 mL
Date Prepared:	08/31/2009 0734				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	ND		0.065	0.20

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24327-2
Sdg Number: OCRI-07A

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24327-2	OC-SB-403-13/15-XXX	Solid	08/26/2009 1340	08/27/2009 1710
360-24327-4	OC-SB-404-13/15-XXX	Solid	08/26/2009 1540	08/27/2009 1710
360-24327-7	OC-SB-409-15/17-XXX	Solid	08/26/2009 1715	08/27/2009 1710
360-24327-10	OC-SB-410-17/19-XXX	Solid	08/27/2009 1115	08/27/2009 1710
360-24327-16	OC-SB-418-15/17-XXX	Solid	08/27/2009 0900	08/27/2009 1710

Form I's updated

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Client: Olin Corporation

Job Number: 360-24327-2
Sdg Number: OCRI-07A

Client Sample ID: **OC-SB-403-13/15-XXX**

Lab Sample ID: 360-24327-2
Client Matrix: Solid
% Moisture: 20.3

Date Sampled: 08/26/2009 1340
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49406		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49332		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.95 g
Date Analyzed:	09/23/2009 1553			Final Weight/Volume:	100 mL
Date Prepared:	09/23/2009 0907				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3000		0.84	3.2
Antimony		ND 3		0.23	0.64
Arsenic		1.2	J	0.12	1.3
Barium		7.5		0.084	0.64
Beryllium		0.090	J	0.032	0.26
Cadmium		0.049	J	0.0090	0.26
Calcium		550	~~B~~	3.2	13
Chromium		5.3	~~B~~	0.086	0.64
Cobalt		1.6		0.084	0.64
Copper		4.9	~~B~~	0.084	1.3
Iron		3100	~~B~~	1.0	6.4
Lead		1.5	~~B~~	0.073	0.64
Magnesium		890	~~B~~	0.64	13
Manganese		32		0.086	1.3
Nickel		4.8		0.084	1.3
Potassium		620		40	260
Selenium		ND		0.30	0.64
Silver		ND		0.065	0.64
Sodium		28 U	~~J B~~	17	130
Thallium		ND		0.093	1.3
Vanadium		5.0		0.084	1.3
Zinc		8.1		0.76	3.2
Tin		1.8	J ~~B~~	0.41	6.4

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Client: Olin Corporation

Job Number: 360-24327-2
Sdg Number: OCRI-07A

Client Sample ID: **OC-SB-404-13/15-XXX**

Lab Sample ID: 360-24327-4
Client Matrix: Solid
% Moisture: 6.5

Date Sampled: 08/26/2009 1540
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49406		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49332		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	2.00 g
Date Analyzed:	09/23/2009 1556			Final Weight/Volume:	100 mL
Date Prepared:	09/23/2009 0907				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10000		0.70	2.7
Antimony		ND J		0.19	0.53
Arsenic		2.2		0.098	1.1
Barium		13		0.070	0.53
Beryllium		0.38		0.027	0.21
Cadmium		0.26		0.0075	0.21
Calcium		1400	~~B~~	2.7	11
Chromium		11	~~B~~	0.071	0.53
Cobalt		6.0		0.070	0.53
Copper		12	~~B~~	0.070	1.1
Iron		16000	~~B~~	0.85	5.3
Lead		4.1	~~B~~	0.061	0.53
Magnesium		5300	~~B~~	0.53	11
Manganese		200		0.071	1.1
Nickel		10		0.070	1.1
Potassium		930		33	210
Selenium		ND		0.25	0.53
Silver		ND		0.054	0.53
Sodium		14 U	~~J B~~	14	110
Thallium		ND		0.077	1.1
Vanadium		26		0.070	1.1
Zinc		34		0.63	2.7
Tin		3.3	J ~~B~~	0.34	5.3

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Client: Olin Corporation

Job Number: 360-24327-2
Sdg Number: OCRI-07A

Client Sample ID: **OC-SB-409-15/17-XXX**

Lab Sample ID: 360-24327-7
Client Matrix: Solid
% Moisture: 11.5

Date Sampled: 08/26/2009 1715
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49406		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49332		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.73 g
Date Analyzed:	09/23/2009 1559			Final Weight/Volume:	100 mL
Date Prepared:	09/23/2009 0907				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10000		0.85	3.3
Antimony		ND J		0.24	0.65
Arsenic		4.7		0.12	1.3
Barium		55		0.085	0.65
Beryllium		0.35		0.033	0.26
Cadmium		0.39		0.0091	0.26
Calcium		2800	~~B~~	3.3	13
Chromium		22	~~B~~	0.087	0.65
Cobalt		14		0.085	0.65
Copper		25	~~B~~	0.085	1.3
Iron		23000	~~B~~	1.0	6.5
Lead		0.75	~~B~~	0.075	0.65
Magnesium		6900	~~B~~	0.65	13
Manganese		180		0.087	1.3
Nickel		18		0.085	1.3
Potassium		2500		41	260
Selenium		ND		0.31	0.65
Silver		ND		0.066	0.65
Sodium		210	~~B~~	17	130
Thallium		ND		0.094	1.3
Vanadium		33		0.085	1.3
Zinc		17		0.77	3.3
Tin		7.3	~~B~~	0.42	6.5

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Client: Olin Corporation

Job Number: 360-24327-2
Sdg Number: OCRI-07A

Client Sample ID: **OC-SB-410-17/19-XXX**

Lab Sample ID: 360-24327-10
Client Matrix: Solid
% Moisture: 8.2

Date Sampled: 08/27/2009 1115
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49406		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49332		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.64 g
Date Analyzed:	09/23/2009 1602			Final Weight/Volume:	100 mL
Date Prepared:	09/23/2009 0907				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9500		0.86	3.3
Antimony		ND J		0.24	0.66
Arsenic		1.8		0.12	1.3
Barium		38		0.086	0.66
Beryllium		0.23	J	0.033	0.27
Cadmium		0.27		0.0093	0.27
Calcium		4100	~~B~~	3.3	13
Chromium		20	~~B~~	0.088	0.66
Cobalt		12		0.086	0.66
Copper		34	~~B~~	0.086	1.3
Iron		15000	~~B~~	1.1	6.6
Lead		1.8	~~B~~	0.076	0.66
Magnesium		7300	~~B~~	0.66	13
Manganese		150		0.089	1.3
Nickel		16		0.086	1.3
Potassium		2000		42	270
Selenium		ND		0.31	0.66
Silver		ND		0.067	0.66
Sodium		270	~~B~~	17	130
Thallium		ND		0.096	1.3
Vanadium		28		0.086	1.3
Zinc		17		0.78	3.3
Tin		6.7	~~B~~	0.43	6.6

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Client: Olin Corporation

Job Number: 360-24327-2
Sdg Number: OCRI-07A

Client Sample ID: **OC-SB-418-15/17-XXX**

Lab Sample ID: 360-24327-16
Client Matrix: Solid
% Moisture: 9.9

Date Sampled: 08/27/2009 0900
Date Received: 08/27/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49406		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49332		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.60 g
Date Analyzed:	09/23/2009 1605			Final Weight/Volume:	100 mL
Date Prepared:	09/23/2009 0907				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9100		0.90	3.5
Antimony		ND J		0.25	0.69
Arsenic		2.8		0.13	1.4
Barium		27		0.090	0.69
Beryllium		0.24	J	0.035	0.28
Cadmium		0.24	J	0.0097	0.28
Calcium		3400	~~B~~	3.5	14
Chromium		29	~~B~~	0.092	0.69
Cobalt		7.6		0.090	0.69
Copper		43	~~B~~	0.090	1.4
Iron		16000	~~B~~	1.1	6.9
Lead		1.2	~~B~~	0.079	0.69
Magnesium		4300	~~B~~	0.69	14
Manganese		110		0.093	1.4
Nickel		15		0.090	1.4
Potassium		1200		43	280
Selenium		ND		0.32	0.69
Silver		ND		0.070	0.69
Sodium		160	~~B~~	18	140
Thallium		ND		0.10	1.4
Vanadium		27		0.090	1.4
Zinc		17		0.82	3.5
Tin		10	~~B~~	0.44	6.9

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OCRI-07

Kleinfelder just acquired. SEA corrections

/ ICV/CCV OK

/ CRQL
tin (59, 62,)
K (68)

/ ICB/CCB

Se, Tl

/ MB
-48301

Ni 3.68 ug/L

/ -48369 - all 6010 samples

Ca	8.83	44.15
Cu	0.0673	0.3365
Fe	1.13	5.65
Mg	2.13	10.65
Sn	0.463	2.315

/ MS OC-SB-410-6.0/8.0-xxx

~~Al~~
Sb 65 PDS OK
Fe 67 (4x)

/ Lab Dup OK

/ LCS OK

/ serial dilution OK

EBLK
~~Ca~~
Cu
~~Fe~~
~~Mn~~
Tl

Cu 21 ug/L
Tl 4.3 ug/L

Cu $\frac{21 \frac{ug}{L} \times 0.1 L}{0.002 kg} = 1.05 mg/kg$
x5
AL 5.25 mg/kg

Tl $\frac{4.3 ug/L \times 0.1 L}{0.002 kg} =$ AL 1.075 mg/kg

0.21

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

SITE: **Olin Chemical** Project #: 6/07/00006.12 SDG #: OCRI-08/08A

LAB # : TAL 360-24343-1/2

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

Blanks				Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level.
Method:				
☑	☐	☐	Method blank was prepared with each batch of samples or with a maximum of 20 samples	
☒	☐	☐	Results >MDL	
☐	☐	☑	Absolute value negative MB results > 5x MDL	See below.
☐	☐	☑	For ICP/MS verify IS responses meet method criteria	
Calibration Blanks:				
☒	☐	☐	ICB/CCB results > IDL	See below.
☐	☐	☑	Absolute value of negative ICB/CCB results > 5x MDL	
☑	☐	☐	CCB analyzed every 10 samples or 2 hrs.	
Equipment/Rinseate Blanks:				
☒	☐	☐	Results >MDL	
☐	☐	☑	Absolute value of negative ICB/CCB results > 5x MDL	
Interference Check Sample				
☑	☐	☐	ICS analyzed at proper frequency	An ICS must be run at the beginning and end of run or every 8 hours.
☑	☐	☐	Interference present in sample at > 50% concentration in ICS	If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply.
☑	☐	☐	ICS AB %R 80%-120%	
ICP-MS Internal Standard Intensities				
☐	☐	☑	Internal standard relative intensities reported by the laboratory	
☐	☐	☑	Internal standard relative intensities are within 60 – 125 %	Qualify data based on Region 1 guideline
Matrix Spikes				
☐	☒	☐	All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x	See below.
☑	☐	☐	Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries	
☐	☑	☐	Was a field blank used for spike analysis	Post-digestion spikes %R limits = 75% - 125%

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) III (circle one)

Laboratory Control Samples (LCS) ☑ ☐ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate ☑ ☐ ☐ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☐ ☒ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	See below.
Field Duplicate ☑ ☐ ☐ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☑ ☐ ☐ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution ☐ ☑ ☐ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☑ ☐ Are results of the diluted samples > the original sample results	

Validator's Signature: [signature]

Date: 4/7/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

QL Standard:

The percent recovery of tin (60 and 63) was less than the lower QC limit of 70. Associated sample results were qualified estimated (J/UJ).

Blanks:

Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Copper and thallium were reported in the equipment blank associated with OCRI-08 and 08A. Associated sample results for thallium were non detect, no further action required. Reported detections of copper were significantly greater than equipment blank results, the data was not qualified.

Barium (0.408 mg/kg), calcium (8.02 mg/kg), chromium (0.0819 mg/kg), iron (0.89 mg/kg), magnesium (1.95 mg/kg), and tin (0.453 mg/kg) were reported in the method blank (M360-48419) associated with all samples. Action levels were established at five times the reported method blank concentrations. With the exception of tin, sample results were greater than the action levels, no further action required. Sample results for tin that were less than the action level were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Calcium (7.34 mg/kg), chromium (0.09 mg/kg), iron (1.32 mg/kg), magnesium (2.01 mg/kg), and tin (0.50 mg/kg) were reported in the method blank (M360-49527) associated with all samples. Action levels were established at five times the reported method blank concentrations. Sample results were greater than the action levels, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Selenium and thallium were reported in the continuing calibration blanks (CCB) associated with a subset of samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for selenium and thallium were non detect, no further action required.

Matrix Spikes:

Samples OC-SB-451-2.5/4.5-XXX and OC-SB-455-6.0/8.0-XXX were submitted for MS analysis. The MS percent recoveries of aluminum (203 and 35), antimony (62 and 46), and iron (148 and 13) were outside of the QC limits. The unspiked sample result for aluminum and iron in sample OC-SB-455-6.0/8.0-XXX and iron in sample OC-SB-451-2.5/4.5-XXX was greater than four times the spiking concentration, no further action required. Post digestion spike recovery for antimony was within QC

limits, indicating a matrix effect for antimony. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

SDG	Lab Sample ID	Field Sample ID	Antimony MS Recovery (%)
OCRI-03	360-24223-9	OC-SB-426-5.0/7.0-XXX	61
OCRI-04	360-24244-1	OC-SB-432-0.0/1.0-XXX	27
OCRI-04A	360-24244-5	OC-SB-443-18/20-XXX	32
OCRI-05	360-24251-19	OC-SB-446-5.0/7.0-XXX	80
OCRI-05	360-24251-4	OC-SB-433-5.0/7.0-XXX	70
OCRI-06	360-24309-23	OC-SB-430-8.0/10-XXX	44
OCRI-07	360-24327-12	OC-SB-410-6.0/8.0-XXX	65
OCRI-08	360-24343-10	OC-SB-451-2.5/4.5-XXX	62
OCRI-08	360-24343-17	OC-SB-455-6.0/8.0-XXX	46
OCRI-09	360-24365-4	OC-SB-442-8.0/10-XXX	50
OCRI-10	360-24417-10	OC-SB-465-8.0/10-XXX	63
OCRI-10A	360-24417-2	OC-SB-463-28/30-XXX	38
OCRI-11	360-24444-2	OC-SB-459-6.0/8.0-XXX	64
OCRI-11	360-24444-9	OC-SB-467-6.0/8.0-XXX	68
OCRI-12	360-24454-3	OC-SB-461-5.0/7.0-XXX	65
OCRI-13A	360-24499-3	OC-SB-469-28/30-XXX	61
OCRI-14	360-24563-14	OC-SB-456-7.0/9.0-XXX	60
OCRI-14	360-24563-5	OC-SB-427-8.0/10-XXX	67
OCRI-15	360-24582-22	OC-SS-416-0.0/1.0-XXX	56
OCRI-16	360-24634-1	OC-SS-417-0.0/1.0-XXX	61
OCRI-17	360-24665-1	OC-SS-434-0.0/1.0-XXX	29
OCRI-18	360-24686-1	OC-SB-400-17/19-XXX	67

Reported detections for aluminum were qualified estimated (J).

Laboratory Duplicate:

The laboratory performed a duplicate analysis of sample OC-SB-451-2.5/4.5-XXX (OCRI-08). The RPD for antimony (116) exceeded the QC limit of 35. Associated SDG sample results for antimony were qualified estimated (J/UJ).

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24343-1
Sdg Number: OCRI-08

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24343-1	OC-SB-444-0.0/1.0-XXX	Solid	08/27/2009 1320	08/28/2009 1710
360-24343-2	OC-SB-444-12/14-XXX	Solid	08/27/2009 1400	08/28/2009 1710
360-24343-3	OC-SB-444-5.0/7.0-XXX	Solid	08/27/2009 1330	08/28/2009 1710
360-24343-4	OC-SB-449-0.0/1.0-XXX	Solid	08/27/2009 1515	08/28/2009 1710
360-24343-5	OC-SB-449-11/13-XXX	Solid	08/27/2009 1600	08/28/2009 1710
360-24343-6	OC-SB-449-6.0/8.0-XXX	Solid	08/27/2009 1520	08/28/2009 1710
360-24343-7	OC-SB-451-0.0/1.0-XXX	Solid	08/28/2009 1120	08/28/2009 1710
360-24343-8	OC-SB-451-18/20-XXX	Solid	08/28/2009 1250	08/28/2009 1710
360-24343-9	OC-SB-451-2.5/4.5-DUP	Solid	08/28/2009 1140	08/28/2009 1710
360-24343-10	OC-SB-451-2.5/4.5-XXX	Solid	08/28/2009 1140	08/28/2009 1710
360-24343-10MS	OC-SB-451-2.5/4.5-XMS	Solid	08/28/2009 1140	08/28/2009 1710
360-24343-10MSD	OC-SB-451-2.5/4.5-MSD	Solid	08/28/2009 1140	08/28/2009 1710
360-24343-11	OC-SB-454-0.0/1.0-XXX	Solid	08/27/2009 1710	08/28/2009 1710
360-24343-12	OC-SB-454-18/20-XXX	Solid	08/27/2009 1745	08/28/2009 1710
360-24343-13	OC-SB-454-6.0/8.0-XXX	Solid	08/27/2009 1715	08/28/2009 1710
360-24343-14	OC-SB-455-0.0/1.0-XXX	Solid	08/28/2009 0830	08/28/2009 1710
360-24343-15	OC-SB-455-28/30-XXX	Solid	08/28/2009 0930	08/28/2009 1710
360-24343-16	OC-SB-455-6.0/8.0-DUP	Solid	08/28/2009 0840	08/28/2009 1710
360-24343-17	OC-SB-455-6.0/8.0-XXX	Solid	08/28/2009 0840	08/28/2009 1710
360-24343-17MS	OC-SB-455-6.0/8.0-XMS	Solid	08/28/2009 0840	08/28/2009 1710
360-24343-17MSD	OC-SB-455-6.0/8.0-MSD	Solid	08/28/2009 0840	08/28/2009 1710
360-24343-18	OC-SB-449-11/13-XXX	Solid	08/27/2009 1600	08/28/2009 1710
360-24343-19	OC-SB-449-6.0/8.0-XXX	Solid	08/27/2009 1520	08/28/2009 1710
360-24343-21	OC-SB-454-6.0/8.0-XXX	Solid	08/27/2009 1715	08/28/2009 1710
360-24343-22	OC-TBK-010	Solid	08/28/2009 1430	08/28/2009 1710

Form I's updated
4/7/10

Client: Olin Corporation

Job Number: 360-24343-1
Sdg Number: OCRI-08

Client Sample ID: **OC-SB-444-0.0/1.0-XXX**

Lab Sample ID: 360-24343-1
Client Matrix: Solid
% Moisture: 4.7

Date Sampled: 08/27/2009 1320
Date Received: 08/28/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48529		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48419		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.55 g
Date Analyzed:	09/02/2009 1218			Final Weight/Volume:	100 mL
Date Prepared:	09/02/2009 0740				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3100 J		0.88	3.4
Antimony		ND J		0.24	0.68
Arsenic		2.3		0.12	1.4
Barium		13	~~B~~	0.088	0.68
Beryllium		0.11	J	0.034	0.27
Cadmium		0.096	J	0.0095	0.27
Calcium		440	~~B~~	3.4	14
Chromium		170	~~B~~	0.090	0.68
Cobalt		2.0		0.088	0.68
Copper		4.9		0.088	1.4
Iron		6000	~~B~~	1.1	6.8
Lead		2.1		0.077	0.68
Magnesium		1200	~~B~~	0.68	14
Manganese		43		0.090	1.4
Nickel		5.5		0.088	1.4
Potassium		650		42	270
Selenium		ND		0.32	0.68
Silver		3.1		0.068	0.68
Sodium		28	J	18	140
Thallium		ND		0.098	1.4
Vanadium		8.3		0.088	1.4
Zinc		9.5		0.80	3.4
Tin		72 J	~~B~~	0.43	6.8

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48546		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/04/2009 0841			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.031	0.17

4/7/10

Client: Olin Corporation

Job Number: 360-24343-1
Sdg Number: OCRI-08

Client Sample ID: **OC-SB-444-5.0/7.0-XXX**

Lab Sample ID: 360-24343-3
Client Matrix: Solid
% Moisture: 11.3

Date Sampled: 08/27/2009 1330
Date Received: 08/28/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48529		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48419		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.88 g
Date Analyzed:	09/02/2009 1221			Final Weight/Volume:	100 mL
Date Prepared:	09/02/2009 0740				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3600 J		0.78	3.0
Antimony		ND J		0.22	0.60
Arsenic		3.1		0.11	1.2
Barium		8.2	B	0.078	0.60
Beryllium		0.10	J	0.030	0.24
Cadmium		0.094	J	0.0084	0.24
Calcium		620	B	3.0	12
Chromium		160	B	0.080	0.60
Cobalt		1.4		0.078	0.60
Copper		3.8		0.078	1.2
Iron		6000	B	0.96	6.0
Lead		1.4		0.068	0.60
Magnesium		1100	B	0.60	12
Manganese		37		0.080	1.2
Nickel		4.9		0.078	1.2
Potassium		570		37	240
Selenium		ND		0.28	0.60
Silver		2.9		0.060	0.60
Sodium		21	J	16	120
Thallium		ND		0.087	1.2
Vanadium		6.4		0.078	1.2
Zinc		9.0		0.71	3.0
Tin		67 J	B ^	0.38	6.0

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48546		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/04/2009 0843			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.033	0.18

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Analytical Data

Client: Olin Corporation

Job Number: 360-24343-1
Sdg Number: OCRI-08

Client Sample ID: **OC-SB-449-0.0/1.0-XXX**

Lab Sample ID: 360-24343-4
Client Matrix: Solid
% Moisture: 7.7

Date Sampled: 08/27/2009 1515
Date Received: 08/28/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48529		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48419		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.80 g
Date Analyzed:	09/02/2009 1224			Final Weight/Volume:	100 mL
Date Prepared:	09/02/2009 0740				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7700 J		0.78	3.0
Antimony		ND J		0.22	0.60
Arsenic		3.2		0.11	1.2
Barium		6.6	B	0.078	0.60
Beryllium		0.22	J	0.030	0.24
Cadmium		0.084	J	0.0084	0.24
Calcium		220	B	3.0	12
Chromium		6.7	B	0.080	0.60
Cobalt		1.6		0.078	0.60
Copper		2.7		0.078	1.2
Iron		5700	B	0.96	6.0
Lead		2.1		0.069	0.60
Magnesium		740	B	0.60	12
Manganese		29		0.080	1.2
Nickel		5.1		0.078	1.2
Potassium		380		38	240
Selenium		ND		0.28	0.60
Silver		ND		0.061	0.60
Sodium		ND		16	120
Thallium		ND		0.087	1.2
Vanadium		6.6		0.078	1.2
Zinc		15		0.71	3.0
Tin		2.1 UJ	~~B~~	0.39	6.0

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48546		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/04/2009 0845			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.035	0.19

4/7/10

Client: Olin Corporation

Job Number: 360-24343-1
Sdg Number: OCRI-08

Client Sample ID: **OC-SB-449-6.0/8.0-XXX**

Lab Sample ID: 360-24343-6
Client Matrix: Solid
% Moisture: 15.9

Date Sampled: 08/27/2009 1520
Date Received: 08/28/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48529		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48419		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.75 g
Date Analyzed:	09/02/2009 1226			Final Weight/Volume:	100 mL
Date Prepared:	09/02/2009 0740				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3700 J		0.88	3.4
Antimony		ND J		0.25	0.68
Arsenic		5.0		0.12	1.4
Barium		6.4	~~B~~	0.088	0.68
Beryllium		0.11	J	0.034	0.27
Cadmium		0.092	J	0.0095	0.27
Calcium		590	~~B~~	3.4	14
Chromium		20	~~B~~	0.090	0.68
Cobalt		2.0		0.088	0.68
Copper		5.9		0.088	1.4
Iron		5600	~~B~~	1.1	6.8
Lead		2.5		0.078	0.68
Magnesium		930	~~B~~	0.68	14
Manganese		37		0.091	1.4
Nickel		5.7		0.088	1.4
Potassium		600		42	270
Selenium		ND		0.32	0.68
Silver		0.11	J	0.068	0.68
Sodium		ND		18	140
Thallium		ND		0.098	1.4
Vanadium		7.5		0.088	1.4
Zinc		9.6		0.80	3.4
Tin		7.1 J	~~BA~~	0.43	6.8

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48546		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/04/2009 0847			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.039	0.21

4/7/10

Client: Olin Corporation

Job Number: 360-24343-1
Sdg Number: OCRI-08

Client Sample ID: **OC-SB-451-0.0/1.0-XXX**

Lab Sample ID: 360-24343-7
Client Matrix: Solid
% Moisture: 3.2

Date Sampled: 08/28/2009 1120
Date Received: 08/28/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48529		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48419		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.60 g
Date Analyzed:	09/02/2009 1229			Final Weight/Volume:	100 mL
Date Prepared:	09/02/2009 0740				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6400 J		0.84	3.2
Antimony		ND J		0.23	0.65
Arsenic		56		0.12	1.3
Barium		30	B	0.084	0.65
Beryllium		0.32		0.032	0.26
Cadmium		0.43		0.0090	0.26
Calcium		3400	B	3.2	13
Chromium		25	B	0.086	0.65
Cobalt		4.7		0.084	0.65
Copper		16		0.084	1.3
Iron		14000	B	1.0	6.5
Lead		44		0.074	0.65
Magnesium		2100	B	0.65	13
Manganese		120		0.086	1.3
Nickel		13		0.084	1.3
Potassium		1100		40	260
Selenium		ND		0.30	0.65
Silver		ND		0.065	0.65
Sodium		24	J	17	130
Thallium		ND		0.093	1.3
Vanadium		23		0.084	1.3
Zinc		77		0.76	3.2
Tin		23 J	B	0.41	6.5

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48546		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	09/04/2009 0854			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.32		0.035	0.19

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Client: Olin Corporation

Job Number: 360-24343-1
Sdg Number: OCRI-08

Client Sample ID: **OC-SB-451-2.5/4.5-DUP**

Lab Sample ID: 360-24343-9
Client Matrix: Solid
% Moisture: 5.6

Date Sampled: 08/28/2009 1140
Date Received: 08/28/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48529		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48419		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.85 g
Date Analyzed:	09/02/2009 1232			Final Weight/Volume:	100 mL
Date Prepared:	09/02/2009 0740				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		970 J		0.74	2.9
Antimony		ND J		0.21	0.57
Arsenic		1.3		0.10	1.1
Barium		7.5	~~B~~	0.074	0.57
Beryllium		0.054	J	0.029	0.23
Cadmium		0.36		0.0080	0.23
Calcium		750	~~B~~	2.9	11
Chromium		4.0	~~B~~	0.076	0.57
Cobalt		0.71		0.074	0.57
Copper		4.8		0.074	1.1
Iron		1900	~~B~~	0.91	5.7
Lead		4.0		0.065	0.57
Magnesium		320	~~B~~	0.57	11
Manganese		14		0.076	1.1
Nickel		4.2		0.074	1.1
Potassium		300		36	230
Selenium		ND		0.27	0.57
Silver		ND		0.058	0.57
Sodium		ND		15	110
Thallium		ND		0.083	1.1
Vanadium		11		0.074	1.1
Zinc		39		0.67	2.9
Tin		1.6	UJ ~~B~~	0.37	5.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48546		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/04/2009 0856			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.056	J	0.034	0.19

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Client: Olin Corporation

Job Number: 360-24343-1
Sdg Number: OCRI-08

Client Sample ID: **OC-SB-451-2.5/4.5-XXX**

Lab Sample ID: 360-24343-10
Client Matrix: Solid
% Moisture: 4.9

Date Sampled: 08/28/2009 1140
Date Received: 08/28/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48529		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48419		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.78 g
Date Analyzed:	09/02/2009 1158			Final Weight/Volume:	100 mL
Date Prepared:	09/02/2009 0740				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		880 J		0.77	3.0
Antimony		0.89 J		0.21	0.59
Arsenic		1.3		0.11	1.2
Barium		6.6	B	0.077	0.59
Beryllium		0.037	J	0.030	0.24
Cadmium		0.20	J	0.0083	0.24
Calcium		580	B	3.0	12
Chromium		3.4	B	0.079	0.59
Cobalt		0.56	J	0.077	0.59
Copper		3.9		0.077	1.2
Iron		1700	B	0.94	5.9
Lead		3.9		0.067	0.59
Magnesium		280	B	0.59	12
Manganese		13		0.079	1.2
Nickel		4.0		0.077	1.2
Potassium		270		37	240
Selenium		ND		0.28	0.59
Silver		ND		0.059	0.59
Sodium		ND		15	120
Thallium		ND		0.085	1.2
Vanadium		10		0.077	1.2
Zinc		38		0.69	3.0
Tin		1.6	U J B	0.38	5.9

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48546		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/04/2009 0836			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.034	0.19

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Client: Olin Corporation

Job Number: 360-24343-1
Sdg Number: OCRI-08

Client Sample ID: **OC-SB-454-0.0/1.0-XXX**

Lab Sample ID: 360-24343-11
Client Matrix: Solid
% Moisture: 3.9

Date Sampled: 08/27/2009 1710
Date Received: 08/28/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48529		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48419		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.65 g
Date Analyzed:	09/02/2009 1235			Final Weight/Volume:	100 mL
Date Prepared:	09/02/2009 0740				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		2000 J		0.82	3.2
Antimony		ND J		0.23	0.63
Arsenic		1.8		0.11	1.3
Barium		5.1	~~B~~	0.082	0.63
Beryllium		0.069	J	0.032	0.25
Cadmium		0.067	J	0.0088	0.25
Calcium		350	~~B~~	3.2	13
Chromium		19	~~B~~	0.084	0.63
Cobalt		1.2		0.082	0.63
Copper		2.8		0.082	1.3
Iron		4200	~~B~~	1.0	6.3
Lead		1.3		0.072	0.63
Magnesium		850	~~B~~	0.63	13
Manganese		30		0.084	1.3
Nickel		3.5		0.082	1.3
Potassium		460		39	250
Selenium		ND		0.30	0.63
Silver		0.19	J	0.063	0.63
Sodium		18	J	16	130
Thallium		ND		0.091	1.3
Vanadium		5.6		0.082	1.3
Zinc		8.8		0.74	3.2
Tin		7.3 J	~~B~~	0.40	6.3

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48546		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	09/04/2009 0857			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.035	0.19

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Client: Olin Corporation

Job Number: 360-24343-1
Sdg Number: OCRI-08

Client Sample ID: **OC-SB-454-6.0/8.0-XXX**

Lab Sample ID: 360-24343-13
Client Matrix: Solid
% Moisture: 15.0

Date Sampled: 08/27/2009 1715
Date Received: 08/28/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48529		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48419		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.97 g
Date Analyzed:	09/02/2009 1238			Final Weight/Volume:	100 mL
Date Prepared:	09/02/2009 0740				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		2700 J		0.78	3.0
Antimony		ND J		0.22	0.60
Arsenic		3.1		0.11	1.2
Barium		6.2	B	0.078	0.60
Beryllium		0.091	J	0.030	0.24
Cadmium		0.086	J	0.0084	0.24
Calcium		470	B	3.0	12
Chromium		120	B	0.079	0.60
Cobalt		1.4		0.078	0.60
Copper		2.8		0.078	1.2
Iron		5300	B	0.95	6.0
Lead		1.7		0.068	0.60
Magnesium		950	B	0.60	12
Manganese		35		0.080	1.2
Nickel		4.0		0.078	1.2
Potassium		620		37	240
Selenium		ND		0.28	0.60
Silver		2.2		0.060	0.60
Sodium		21	J	16	120
Thallium		ND		0.086	1.2
Vanadium		11		0.078	1.2
Zinc		9.5		0.70	3.0
Tin		51 J	B	0.38	6.0

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48546		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/04/2009 0859			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.035	0.19

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Client: Olin Corporation

Job Number: 360-24343-1
Sdg Number: OCRI-08

Client Sample ID: **OC-SB-455-6.0/8.0-DUP**

Lab Sample ID: 360-24343-16
Client Matrix: Solid
% Moisture: 24.2

Date Sampled: 08/28/2009 0840
Date Received: 08/28/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48529		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48419		Lab File ID:	N/A
Dilution:	2.0			Initial Weight/Volume:	1.85 g
Date Analyzed:	09/02/2009 1306			Final Weight/Volume:	100 mL
Date Prepared:	09/02/2009 0740				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		15000 J		1.9	7.1
Antimony		ND J		0.52	1.4
Arsenic		5.4		0.26	2.9
Barium		5.6	B	0.19	1.4
Beryllium		0.27	J	0.071	0.57
Cadmium		0.071	J	0.020	0.57
Calcium		680	B	7.1	29
Chromium		9.9	B	0.19	1.4
Cobalt		1.4		0.19	1.4
Copper		1.6	J	0.19	2.9
Iron		6300	B	2.3	14
Lead		3.2		0.16	1.4
Magnesium		750	B	1.4	29
Manganese		33		0.19	2.9
Nickel		4.1		0.19	2.9
Potassium		300	J	89	570
Selenium		ND		0.67	1.4
Silver		ND		0.14	1.4
Sodium		ND		37	290
Thallium		ND		0.21	2.9
Vanadium		11		0.19	2.9
Zinc		9.0		1.7	7.1
Tin		3.2	J B	0.91	14

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48546		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.24 g
Date Analyzed:	09/04/2009 0901			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.039	J	0.037	0.20

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Analytical Data

Client: Olin Corporation

Job Number: 360-24343-1
Sdg Number: OCRI-08

Client Sample ID: **OC-SB-455-6.0/8.0-XXX**

Lab Sample ID: 360-24343-17
Client Matrix: Solid
% Moisture: 24.2

Date Sampled: 08/28/2009 0840
Date Received: 08/28/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48529		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48419		Lab File ID:	N/A
Dilution:	2.0			Initial Weight/Volume:	1.80 g
Date Analyzed:	09/02/2009 1309			Final Weight/Volume:	100 mL
Date Prepared:	09/02/2009 0740				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		15000 J		1.9	7.3
Antimony		ND J		0.53	1.5
Arsenic		5.3		0.27	2.9
Barium		5.9	~~B~~	0.19	1.5
Beryllium		0.26	J	0.073	0.59
Cadmium		0.078	J	0.021	0.59
Calcium		570	~~B~~	7.3	29
Chromium		9.6	~~B~~	0.20	1.5
Cobalt		1.4	J	0.19	1.5
Copper		1.4	J	0.19	2.9
Iron		6400	~~B~~	2.3	15
Lead		3.4		0.17	1.5
Magnesium		700	~~B~~	1.5	29
Manganese		32		0.20	2.9
Nickel		3.9		0.19	2.9
Potassium		330	J	92	590
Selenium		ND		0.69	1.5
Silver		ND		0.15	1.5
Sodium		ND		38	290
Thallium		ND		0.21	2.9
Vanadium		12		0.19	2.9
Zinc		9.2		1.7	7.3
Tin		3.1	J,~~B~~ A	0.94	15

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48546		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	09/04/2009 0903			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.033	0.18

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SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24343-2
Sdg Number: OCRI-08A

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24343-2	OC-SB-444-12/14-XXX	Solid	08/27/2009 1400	08/28/2009 1710
360-24343-5	OC-SB-449-11/13-XXX	Solid	08/27/2009 1600	08/28/2009 1710
360-24343-8	OC-SB-451-18/20-XXX	Solid	08/28/2009 1250	08/28/2009 1710
360-24343-12	OC-SB-454-18/20-XXX	Solid	08/27/2009 1745	08/28/2009 1710
360-24343-15	OC-SB-455-28/30-XXX	Solid	08/28/2009 0930	08/28/2009 1710
360-24343-20	OC-SB-454-18/20-XXX	Solid	08/27/2009 1745	08/28/2009 1710

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Analytical Data

Client: Olin Corporation

Job Number: 360-24343-2
Sdg Number: OCRI-08A

Client Sample ID: **OC-SB-444-12/14-XXX**

Lab Sample ID: 360-24343-2
Client Matrix: Solid
% Moisture: 7.5

Date Sampled: 08/27/2009 1400
Date Received: 08/28/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49582		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49527		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.53 g
Date Analyzed:	09/28/2009 1325			Final Weight/Volume:	100 mL
Date Prepared:	09/28/2009 0810				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7800		0.92	3.5
Antimony		ND J		0.26	0.71
Arsenic		6.4		0.13	1.4
Barium		33		0.092	0.71
Beryllium		0.19	J	0.035	0.28
Cadmium		0.27	J	0.0099	0.28
Calcium		1700	~~B~~	3.5	14
Chromium		130	B	0.094	0.71
Cobalt		5.1		0.092	0.71
Copper		20		0.092	1.4
Iron		17000	~~B~~	1.1	7.1
Lead		4.4		0.081	0.71
Magnesium		3600	B	0.71	14
Manganese		110		0.094	1.4
Nickel		11		0.092	1.4
Potassium		1300		44	280
Selenium		ND		0.33	0.71
Silver		1.8		0.071	0.71
Sodium		52	J	18	140
Thallium		ND		0.10	1.4
Vanadium		23		0.092	1.4
Zinc		19		0.83	3.5
Tin		54 J	~~B~~	0.45	7.1

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Client: Olin Corporation

Job Number: 360-24343-2
Sdg Number: OCRI-08A

Client Sample ID: **OC-SB-449-11/13-XXX**

Lab Sample ID: 360-24343-5
Client Matrix: Solid
% Moisture: 10.9

Date Sampled: 08/27/2009 1600
Date Received: 08/28/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49582		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49527		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.89 g
Date Analyzed:	09/28/2009 1328			Final Weight/Volume:	100 mL
Date Prepared:	09/28/2009 0810				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5600 J		0.77	3.0
Antimony		ND J		0.21	0.59
Arsenic		4.6		0.11	1.2
Barium		20		0.077	0.59
Beryllium		0.15	J	0.030	0.24
Cadmium		0.11	J	0.0083	0.24
Calcium		1300	~~B~~	3.0	12
Chromium		160	~~B~~	0.079	0.59
Cobalt		2.8		0.077	0.59
Copper		8.3		0.077	1.2
Iron		7000	~~B~~	0.95	5.9
Lead		2.4		0.068	0.59
Magnesium		1900	~~B~~	0.59	12
Manganese		79		0.079	1.2
Nickel		7.5		0.077	1.2
Potassium		1000		37	240
Selenium		ND		0.28	0.59
Silver		2.5		0.060	0.59
Sodium		57	J	15	120
Thallium		ND		0.086	1.2
Vanadium		11		0.077	1.2
Zinc		16		0.70	3.0
Tin		67 J	~~B~~	0.38	5.9

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Client: Olin Corporation

Job Number: 360-24343-2
Sdg Number: OCRI-08A

Client Sample ID: **OC-SB-451-18/20-XXX**

Lab Sample ID: 360-24343-8
Client Matrix: Solid
% Moisture: 10.3

Date Sampled: 08/28/2009 1250
Date Received: 08/28/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49582		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49527		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.56 g
Date Analyzed:	09/28/2009 1331			Final Weight/Volume:	100 mL
Date Prepared:	09/28/2009 0810				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7400		0.93	3.6
Antimony		ND J		0.26	0.71
Arsenic		6.0		0.13	1.4
Barium		33		0.093	0.71
Beryllium		0.42		0.036	0.29
Cadmium		0.27	J	0.010	0.29
Calcium		1400	B	3.6	14
Chromium		48	B	0.095	0.71
Cobalt		5.9		0.093	0.71
Copper		12		0.093	1.4
Iron		12000	B	1.1	7.1
Lead		2.9		0.082	0.71
Magnesium		3000	B	0.71	14
Manganese		110		0.095	1.4
Nickel		16		0.093	1.4
Potassium		1600		45	290
Selenium		ND		0.33	0.71
Silver		0.34	J	0.072	0.71
Sodium		22	J	19	140
Thallium		ND		0.10	1.4
Vanadium		17		0.093	1.4
Zinc		66		0.84	3.6
Tin		19 J	B	0.46	7.1

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Client: Olin Corporation

Job Number: 360-24343-2
Sdg Number: OCRI-08A

Client Sample ID: **OC-SB-454-18/20-XXX**

Lab Sample ID: 360-24343-12
Client Matrix: Solid
% Moisture: 5.8

Date Sampled: 08/27/2009 1745
Date Received: 08/28/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49582		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49527		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.88 g
Date Analyzed:	09/28/2009 1334			Final Weight/Volume:	100 mL
Date Prepared:	09/28/2009 0810				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10000		0.73	2.8
Antimony		ND J		0.20	0.56
Arsenic		4.4		0.10	1.1
Barium		31		0.073	0.56
Beryllium		0.26		0.028	0.23
Cadmium		0.25		0.0079	0.23
Calcium		2800	B	2.8	11
Chromium		250	B	0.075	0.56
Cobalt		7.6		0.073	0.56
Copper		25		0.073	1.1
Iron		17000	B	0.90	5.6
Lead		1.4		0.064	0.56
Magnesium		5300	B	0.56	11
Manganese		110		0.075	1.1
Nickel		18		0.073	1.1
Potassium		2000		35	230
Selenium		ND		0.26	0.56
Silver		4.0		0.057	0.56
Sodium		260		15	110
Thallium		ND		0.082	1.1
Vanadium		28		0.073	1.1
Zinc		16		0.66	2.8
Tin		100 J	B	0.36	5.6

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Client: Olin Corporation

Job Number: 360-24343-2
Sdg Number: OCRI-08A

Client Sample ID: **OC-SB-455-28/30-XXX**

Lab Sample ID: 360-24343-15
Client Matrix: Solid
% Moisture: 7.8

Date Sampled: 08/28/2009 0930
Date Received: 08/28/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49582		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49527		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.69 g
Date Analyzed:	09/28/2009 1337			Final Weight/Volume:	100 mL
Date Prepared:	09/28/2009 0810				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6500		0.83	3.2
Antimony		ND J		0.23	0.64
Arsenic		2.9		0.12	1.3
Barium		26		0.083	0.64
Beryllium		0.16	J	0.032	0.26
Cadmium		0.22	J	0.0090	0.26
Calcium		2800	B	3.2	13
Chromium		18	B	0.085	0.64
Cobalt		7.8		0.083	0.64
Copper		23		0.083	1.3
Iron		14000	B	1.0	6.4
Lead		1.3		0.073	0.64
Magnesium		4200	B	0.64	13
Manganese		150		0.086	1.3
Nickel		14		0.083	1.3
Potassium		1700		40	260
Selenium		ND		0.30	0.64
Silver		ND		0.065	0.64
Sodium		110	J	17	130
Thallium		ND		0.093	1.3
Vanadium		21		0.083	1.3
Zinc		17		0.76	3.2
Tin		6.0	J B	0.41	6.4

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OCRI-08 (24343)

✓ ICV/CCV OK

✓ CRQL STD
Tin (60)

✓ ICB/CCB
Se, Tl

✓ MB 48419

Ba	0.408	2.04	>
Ca	8.02	40.1	>
Cr	0.0819	0.4095	>
Fe	0.890	4.45	>
Mg	1.95	9.75	>
Sn	0.453	2.265	

✓ MS OC-SB-451-2.5/4.5-xxx

Al	203	
Sb	62	
Fe	148	(4x)

✓ MS OC-SB-455-6.0/8.0-xxx

Al	65	(4x)
Sb	46	
Fe	13	(4x)

✓ LAB DUP OC-SB-451-2.5/4.5-xxx
~~Fe~~ Sb (116) 0.89 / 0.237 RL 0.5 ~~OK~~

PDS OK

ICS OK

LCS OK

Serial dilution OK

OCRI-08A (24343)

✓ ICV/CCV OK

✓ CRQL
Tin (63)

✓ ICB/CCB
Se, Tl

MB 49527

Ca	7.34	36.7	>
Cr	0.09	0.45	>
Fe	1.32	6.6	>
Mg	2.01	10.05	>
Sn	0.50	2.5	>

✓ ICS OK

✓ LCS OK

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) III (circle one)

SITE: **Olin Chemical** Project #: 6/07/0220/6.12 SDG #: OCRI-09/09A

LAB # : TAL 360-24365-1/2

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☐ ☒ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☑ ☐ ☐ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	See below. Post-digestion spikes %R limits = 75% - 125%

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Laboratory Control Samples (LCS) ☑ ☐ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate ☑ ☐ ☐ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☑ ☐ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	
Field Duplicate ☑ ☐ ☐ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☑ ☐ ☐ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution ☐ ☑ ☐ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☑ ☐ Are results of the diluted samples > the original sample results	

Validator's Signature: [signature]

Date: 4/8/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

QL Standard:
The percent recovery of tin (50, 61, 63, and 63) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J/UJ).

Blanks:
Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Copper and thallium were reported in the equipment blank associated with OCRI-09 and 09A. Reported detections of copper were significantly greater than equipment blank results, the data was not qualified. Associated sample detections for thallium that were less than the action level were qualified (EB) to indicate potential blank contamination associated with the equipment blank.

Calcium (5.65 mg/kg), iron (1.16 mg/kg), magnesium (1.71 mg/kg), and tin (0.480 mg/kg) were reported in the method blank (M360-48542) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Sample results were greater than the action levels, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Calcium (7.34 mg/kg), chromium (0.09 mg/kg), iron (1.32 mg/kg), magnesium (2.01 mg/kg), and tin (0.50 mg/kg) were reported in the method blank (M360-49527) associated with all samples. Action levels were established at five times the reported method blank concentrations. Sample results were greater than the action levels, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Selenium and thallium were reported in the continuing calibration blanks (CCB) associated with a subset of samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for selenium were non detect, no further action required. Reported detections of thallium that were less than the action level were qualified non detect (U).

Matrix Spikes:
Sample OC-SB-442-8.0/10-XXX was submitted for MS analysis. The MS percent recovery of aluminum (220), antimony (50), and iron (141) were outside of the QC limits. The unspiked sample result for aluminum and iron was greater than four times the spiking concentration, no further action required. Post digestion spike recovery for antimony was within QC limits, indicating a matrix effect for antimony. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less

than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

SDG	Lab Sample ID	Field Sample ID	Antimony MS Recovery (%)
OCRI-03	360-24223-9	OC-SB-426-5.0/7.0-XXX	61
OCRI-04	360-24244-1	OC-SB-432-0.0/1.0-XXX	27
OCRI-04A	360-24244-5	OC-SB-443-18/20-XXX	32
OCRI-05	360-24251-19	OC-SB-446-5.0/7.0-XXX	80
OCRI-05	360-24251-4	OC-SB-433-5.0/7.0-XXX	70
OCRI-06	360-24309-23	OC-SB-430-8.0/10-XXX	44
OCRI-07	360-24327-12	OC-SB-410-6.0/8.0-XXX	65
OCRI-08	360-24343-10	OC-SB-451-2.5/4.5-XXX	62
OCRI-08	360-24343-17	OC-SB-455-6.0/8.0-XXX	46
OCRI-09	360-24365-4	OC-SB-442-8.0/10-XXX	50
OCRI-10	360-24417-10	OC-SB-465-8.0/10-XXX	63
OCRI-10A	360-24417-2	OC-SB-463-28/30-XXX	38
OCRI-11	360-24444-2	OC-SB-459-6.0/8.0-XXX	64
OCRI-11	360-24444-9	OC-SB-467-6.0/8.0-XXX	68
OCRI-12	360-24454-3	OC-SB-461-5.0/7.0-XXX	65
OCRI-13A	360-24499-3	OC-SB-469-28/30-XXX	61
OCRI-14	360-24563-14	OC-SB-456-7.0/9.0-XXX	60
OCRI-14	360-24563-5	OC-SB-427-8.0/10-XXX	67
OCRI-15	360-24582-22	OC-SS-416-0.0/1.0-XXX	56
OCRI-16	360-24634-1	OC-SS-417-0.0/1.0-XXX	61
OCRI-17	360-24665-1	OC-SS-434-0.0/1.0-XXX	29
OCRI-18	360-24686-1	OC-SB-400-17/19-XXX	67

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24365-1
Sdg Number: OCRI-09

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24365-1	OC-SB-442-0.0/1.0-XXX	Solid	08/31/2009 1200	08/31/2009 1745
360-24365-2	OC-SB-442-20/22-XXX	Solid	08/31/2009 1320	08/31/2009 1745
360-24365-3	OC-SB-442-8.0/10-DUP	Solid	08/31/2009 1210	08/31/2009 1745
360-24365-4	OC-SB-442-8.0/10-XXX	Solid	08/31/2009 1210	08/31/2009 1745
360-24365-4MS	OC-SB-442-8.0/10-XMS	Solid	08/31/2009 1210	08/31/2009 1745
360-24365-4MSD	OC-SB-442-8.0/10-MSD	Solid	08/31/2009 1210	08/31/2009 1745
360-24365-5	OC-SB-447-0.0/1.0-XXX	Solid	08/31/2009 0810	08/31/2009 1745
360-24365-6	OC-SB-447-18/20-XXX	Solid	08/31/2009 0905	08/31/2009 1745
360-24365-7	OC-SB-447-3.0/5.0-XXX	Solid	08/31/2009 0825	08/31/2009 1745
360-24365-8	OC-SB-452-0.0/1.0-XXX	Solid	08/31/2009 1030	08/31/2009 1745
360-24365-9	OC-SB-452-13/15-XXX	Solid	08/31/2009 1100	08/31/2009 1745
360-24365-10	OC-SB-452-5.0/7.0-XXX	Solid	08/31/2009 1045	08/31/2009 1745
360-24365-11	OC-TBK-011	Solid	08/31/2009 1420	08/31/2009 1745
360-24365-12EB	OC-EBK-006	Water	08/31/2009 1415	08/31/2009 1745
360-24365-13	OC-SB-458-0.0/1.0-XXX	Solid	08/31/2009 1530	09/01/2009 1715
360-24365-14	OC-SB-458-22/24-XXX	Solid	08/31/2009 1630	09/01/2009 1715
360-24365-15	OC-SB-458-5.0/7.0-XXX	Solid	08/31/2009 1545	09/01/2009 1715
360-24365-16	OC-SB-460-0.0/1.0-XXX	Solid	09/01/2009 0840	09/01/2009 1715
360-24365-17	OC-SB-460-30/32-XXX	Solid	09/01/2009 1040	09/01/2009 1715
360-24365-18	OC-SB-460-5.5/7.5-XXX	Solid	09/01/2009 0850	09/01/2009 1715
360-24365-19	OC-PE-MS00149-METALS	Solid	09/01/2009 1000	09/01/2009 1715
360-24365-20	OC-PE-SS1039-SVOC	Solid	09/01/2009 1005	09/01/2009 1715
360-24365-21	OC-PE-TT2488-PCB	Solid	09/01/2009 1010	09/01/2009 1715
360-24365-22	OC-SB-PE-VS0355-VOC	Solid	09/01/2009 1015	09/01/2009 1715

Form I's updated
4/8/10

Client: Olin Corporation

Job Number: 360-24365-1
Sdg Number: OCRI-09

Client Sample ID: **OC-SB-442-0.0/1.0-XXX**

Lab Sample ID: 360-24365-1
Client Matrix: Solid
% Moisture: 6.4

Date Sampled: 08/31/2009 1200
Date Received: 08/31/2009 1745

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48592		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48542		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.55 g
Date Analyzed:	09/03/2009 1413			Final Weight/Volume:	100 mL
Date Prepared:	09/03/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5700		0.90	3.4
Antimony		ND J		0.25	0.69
Arsenic		6.3		0.13	1.4
Barium		15		0.090	0.69
Beryllium		0.16	J	0.034	0.28
Cadmium		0.17	J	0.0096	0.28
Calcium		1100	~~B~~	3.4	14
Chromium		22		0.092	0.69
Cobalt		3.2		0.090	0.69
Copper		6.8		0.090	1.4
Iron		9500	~~B~~	1.1	6.9
Lead		8.0		0.079	0.69
Magnesium		2000	~~B~~	0.69	14
Manganese		83		0.092	1.4
Nickel		13		0.090	1.4
Selenium		ND		0.32	0.69
Silver		0.11	J	0.069	0.69
Sodium		ND		18	140
Thallium		ND ~~B~~		0.10	1.4
Vanadium		15		0.090	1.4
Zinc		19		0.81	3.4
Tin		8.0 J	~~B~~	0.44	6.9

Method:	6010B	Analysis Batch: 360-48677		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48616		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.99 g
Date Analyzed:	09/04/2009 1539			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Potassium		1200		34	210

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48547		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.30 g
Date Analyzed:	09/04/2009 0926			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0913				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.024	0.13

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Client: Olin Corporation

Job Number: 360-24365-1
Sdg Number: OCRI-09

Client Sample ID: **OC-SB-442-8.0/10-DUP**

Lab Sample ID: 360-24365-3
Client Matrix: Solid
% Moisture: 12.1

Date Sampled: 08/31/2009 1210
Date Received: 08/31/2009 1745

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48592		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48542		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.98 g
Date Analyzed:	09/03/2009 1416			Final Weight/Volume:	100 mL
Date Prepared:	09/03/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3800		0.75	2.9
Antimony		ND J		0.21	0.57
Arsenic		2.8		0.10	1.1
Barium		11		0.075	0.57
Beryllium		0.17	J	0.029	0.23
Cadmium		0.077	J	0.0080	0.23
Calcium		700	B	2.9	11
Chromium		12		0.076	0.57
Cobalt		1.8		0.075	0.57
Copper		3.3		0.075	1.1
Iron		4700	B	0.92	5.7
Lead		1.2		0.066	0.57
Magnesium		990	B	0.57	11
Manganese		39		0.077	1.1
Nickel		6.4		0.075	1.1
Selenium		ND		0.27	0.57
Silver		ND		0.058	0.57
Sodium		40	J	15	110
Thallium		ND J		0.083	1.1
Vanadium		14		0.075	1.1
Zinc		18		0.68	2.9
Tin		4.1 J	J B	0.37	5.7

Method:	6010B	Analysis Batch: 360-48677		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48616		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.70 g
Date Analyzed:	09/04/2009 1542			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Potassium		690		42	270

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48547		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.26 g
Date Analyzed:	09/04/2009 0928			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0913				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.030	0.16

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Client: Olin Corporation

Job Number: 360-24365-1
Sdg Number: OCRI-09

Client Sample ID: **OC-SB-442-8.0/10-XXX**

Lab Sample ID: 360-24365-4
Client Matrix: Solid
% Moisture: 12.7

Date Sampled: 08/31/2009 1210
Date Received: 08/31/2009 1745

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48592		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48542		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.78 g
Date Analyzed:	09/03/2009 1359			Final Weight/Volume:	100 mL
Date Prepared:	09/03/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3300		0.84	3.2
Antimony		0.53	J	0.23	0.64
Arsenic		2.6		0.12	1.3
Barium		9.6		0.084	0.64
Beryllium		0.15	J	0.032	0.26
Cadmium		0.095	J	0.0090	0.26
Calcium		680	~~B~~	3.2	13
Chromium		14		0.086	0.64
Cobalt		1.8		0.084	0.64
Copper		3.2		0.084	1.3
Iron		4400	~~B~~	1.0	6.4
Lead		1.2		0.073	0.64
Magnesium		820	~~B~~	0.64	13
Manganese		33		0.086	1.3
Nickel		5.8		0.084	1.3
Selenium		ND		0.30	0.64
Silver		ND		0.065	0.64
Sodium		39	J	17	130
Thallium		ND		0.093	1.3
Vanadium		16		0.084	1.3
Zinc		18		0.76	3.2
Tin		5.3 J	J,~~B~~	0.41	6.4

Method:	6010B	Analysis Batch: 360-48677		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48616		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.67 g
Date Analyzed:	09/04/2009 1519			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Potassium		700		43	270

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48547		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/04/2009 0921			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0913				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.037	0.20

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Client: Olin Corporation

Job Number: 360-24365-1
Sdg Number: OCRI-09

Client Sample ID: **OC-SB-447-0.0/1.0-XXX**

Lab Sample ID: 360-24365-5
Client Matrix: Solid
% Moisture: 14.3

Date Sampled: 08/31/2009 0810
Date Received: 08/31/2009 1745

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48592		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48542		Lab File ID:	N/A
Dilution:	2.0			Initial Weight/Volume:	1.69 g
Date Analyzed:	09/03/2009 1522			Final Weight/Volume:	100 mL
Date Prepared:	09/03/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5900		1.8	6.9
Antimony		0.92	J	0.50	1.4
Arsenic		8.6		0.25	2.8
Barium		110		0.18	1.4
Beryllium		0.26	J	0.069	0.55
Cadmium		2.6		0.019	0.55
Calcium		16000	~~B~~	6.9	28
Chromium		100		0.18	1.4
Cobalt		12		0.18	1.4
Copper		150		0.18	2.8
Iron		55000	~~B~~	2.2	14
Lead		140		0.16	1.4
Magnesium		4800	~~B~~	1.4	28
Manganese		340		0.18	2.8
Nickel		71		0.18	2.8
Selenium		ND		0.65	1.4
Silver		0.60	J	0.14	1.4
Sodium		87	J	36	280
Thallium		0.43 U	~~J~~	0.20	2.8
Vanadium		240		0.18	2.8
Zinc		650		1.6	6.9
Tin		41 J	~~B~~	0.88	14

Method:	6010B	Analysis Batch: 360-48677		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48616		Lab File ID:	N/A
Dilution:	2.0			Initial Weight/Volume:	1.85 g
Date Analyzed:	09/04/2009 1548			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Potassium		900		79	500

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48547		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.29 g
Date Analyzed:	09/04/2009 0929			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0913				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.83		0.027	0.15

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Client: Olin Corporation

Job Number: 360-24365-1
Sdg Number: OCRI-09

Client Sample ID: **OC-SB-447-3.0/5.0-XXX**

Lab Sample ID: 360-24365-7
Client Matrix: Solid
% Moisture: 11.0

Date Sampled: 08/31/2009 0825
Date Received: 08/31/2009 1745

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48592		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48542		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.76 g
Date Analyzed:	09/03/2009 1428			Final Weight/Volume:	100 mL
Date Prepared:	09/03/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5900		0.83	3.2
Antimony		ND J		0.23	0.64
Arsenic		2.8		0.12	1.3
Barium		11		0.083	0.64
Beryllium		0.19	J	0.032	0.26
Cadmium		0.24	J	0.0089	0.26
Calcium		1500	~~B~~	3.2	13
Chromium		19		0.085	0.64
Cobalt		2.8		0.083	0.64
Copper		22		0.083	1.3
Iron		6900	~~B~~	1.0	6.4
Lead		7.1		0.073	0.64
Magnesium		980	~~B~~	0.64	13
Manganese		46		0.085	1.3
Nickel		52		0.083	1.3
Selenium		ND		0.30	0.64
Silver		0.086	J	0.064	0.64
Sodium		ND		17	130
Thallium		0.15 J&B	J	0.092	1.3
Vanadium		190		0.083	1.3
Zinc		38		0.75	3.2
Tin		7.3 J	~~B~~	0.41	6.4

Method:	6010B	Analysis Batch: 360-48677		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48616		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.75 g
Date Analyzed:	09/04/2009 1551			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Potassium		410		40	260

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48547		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/04/2009 0931			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0913				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.33		0.036	0.20

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Client: Olin Corporation

Job Number: 360-24365-1
Sdg Number: OCRI-09

Client Sample ID: **OC-SB-452-0.0/1.0-XXX**

Lab Sample ID: 360-24365-8
Client Matrix: Solid
% Moisture: 2.5

Date Sampled: 08/31/2009 1030
Date Received: 08/31/2009 1745

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48592		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48542		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.56 g
Date Analyzed:	09/03/2009 1431			Final Weight/Volume:	100 mL
Date Prepared:	09/03/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4400 J		0.85	3.3
Antimony		ND		0.24	0.66
Arsenic		5.7		0.12	1.3
Barium		12		0.085	0.66
Beryllium		0.17	J	0.033	0.26
Cadmium		0.23	J	0.0092	0.26
Calcium		1200	~~B~~	3.3	13
Chromium		18		0.087	0.66
Cobalt		2.5		0.085	0.66
Copper		7.3		0.085	1.3
Iron		7400	~~B~~	1.0	6.6
Lead		11		0.075	0.66
Magnesium		1200	~~B~~	0.66	13
Manganese		65		0.088	1.3
Nickel		9.4		0.085	1.3
Selenium		ND		0.31	0.66
Silver		0.13	J	0.066	0.66
Sodium		ND		17	130
Thallium		ND ~~J~~		0.095	1.3
Vanadium		13		0.085	1.3
Zinc		33		0.77	3.3
Tin		6.4 J	J ~~B~~	0.42	6.6

Method:	6010B	Analysis Batch: 360-48677		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48616		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.78 g
Date Analyzed:	09/04/2009 1554			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Potassium		630		36	230

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48547		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/04/2009 0937			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0913				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.11	J	0.033	0.18

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Client: Olin Corporation

Job Number: 360-24365-1
Sdg Number: OCRI-09

Client Sample ID: **OC-SB-452-5.0/7.0-XXX**

Lab Sample ID: 360-24365-10
Client Matrix: Solid
% Moisture: 17.2

Date Sampled: 08/31/2009 1045
Date Received: 08/31/2009 1745

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48592		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48542		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.92 g
Date Analyzed:	09/03/2009 1433			Final Weight/Volume:	100 mL
Date Prepared:	09/03/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		2800		0.82	3.1
Antimony		ND J		0.23	0.63
Arsenic		1.0	J	0.11	1.3
Barium		9.3		0.082	0.63
Beryllium		0.091	J	0.031	0.25
Cadmium		0.054	J	0.0088	0.25
Calcium		840	~~B~~	3.1	13
Chromium		28		0.084	0.63
Cobalt		1.2		0.082	0.63
Copper		3.8		0.082	1.3
Iron		3300	~~B~~	1.0	6.3
Lead		1.2		0.072	0.63
Magnesium		830	~~B~~	0.63	13
Manganese		32		0.084	1.3
Nickel		4.9		0.082	1.3
Selenium		ND		0.29	0.63
Silver		0.27	J	0.063	0.63
Sodium		50	J	16	130
Thallium		ND ~~J~~		0.091	1.3
Vanadium		8.8		0.082	1.3
Zinc		8.4		0.74	3.1
Tin		11 J	~~B~~	0.40	6.3

Method:	6010B	Analysis Batch: 360-48677		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48616		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.90 g
Date Analyzed:	09/04/2009 1557			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Potassium		550		40	250

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48547		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	09/04/2009 0939			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0913				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.037	0.20

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Client: Olin Corporation

Job Number: 360-24365-1
Sdg Number: OCRI-09

Client Sample ID: **OC-EBK-006**

Lab Sample ID: 360-24365-12EB
Client Matrix: Water

Date Sampled: 08/31/2009 1415
Date Received: 08/31/2009 1745

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48450		Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-48413		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	09/01/2009 1210			Final Weight/Volume:	50 mL
Date Prepared:	09/01/2009 0801				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	ND		39	100
Antimony	ND		2.9	6.0
Barium	ND		2.0	10
Arsenic	ND		2.3	10
Beryllium	ND		0.20	1.0
Cadmium	ND		0.20	1.0
Calcium	64	J	59	400
Chromium	ND		1.3	5.0
Cobalt	ND		2.0	10
Copper	9.4	J	1.7	10
Iron	41	J	34	100
Lead	ND		1.3	5.0
Magnesium	ND		50	400
Manganese	ND		1.3	10
Nickel	ND		1.5	10
Potassium	ND		500	4000
Selenium	ND		2.7	10
Silver	ND		1.8	5.0
Sodium	ND		250	2000
Tin	ND		7.0	50
Vanadium	ND		1.5	10
Thallium	4.4	J	1.4	10
Zinc	ND		10	50

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 360-48801		Instrument ID:	Hg Analyzer
Preparation:	7470A	Prep Batch: 360-48730		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	09/10/2009 1101			Final Weight/Volume:	10 mL
Date Prepared:	09/09/2009 0904				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	ND		0.065	0.20

Client: Olin Corporation

Job Number: 360-24365-1
Sdg Number: OCRI-09

Client Sample ID: **OC-SB-458-0.0/1.0-XXX**

Lab Sample ID: 360-24365-13
Client Matrix: Solid
% Moisture: 8.3

Date Sampled: 08/31/2009 1530
Date Received: 09/01/2009 1715

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48592		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48542		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.64 g
Date Analyzed:	09/03/2009 1436			Final Weight/Volume:	100 mL
Date Prepared:	09/03/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7200		0.86	3.3
Antimony		ND		0.24	0.67
Arsenic		5.5		0.12	1.3
Barium		10		0.086	0.67
Beryllium		0.22	J	0.033	0.27
Cadmium		0.16	J	0.0093	0.27
Calcium		440		3.3	13
Chromium		19		0.088	0.67
Cobalt		2.3		0.086	0.67
Copper		4.7		0.086	1.3
Iron		8000		1.1	6.7
Lead		5.8		0.076	0.67
Magnesium		1600		0.67	13
Manganese		55		0.089	1.3
Nickel		7.4		0.086	1.3
Selenium		ND		0.31	0.67
Silver		0.096	J	0.067	0.67
Sodium		ND		17	130
Thallium		ND		0.096	1.3
Vanadium		15		0.086	1.3
Zinc		15		0.78	3.3
Tin		6.7		0.43	6.7

Method:	6010B	Analysis Batch: 360-48677		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48616		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.63 g
Date Analyzed:	09/04/2009 1559			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Potassium		500		42	270

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48547		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/04/2009 0940			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0913				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.045	J	0.030	0.16

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Client: Olin Corporation

Job Number: 360-24365-1
Sdg Number: OCRI-09

Client Sample ID: **OC-SB-458-5.0/7.0-XXX**

Lab Sample ID: 360-24365-15
Client Matrix: Solid
% Moisture: 16.4

Date Sampled: 08/31/2009 1545
Date Received: 09/01/2009 1715

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48592		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48542		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.58 g
Date Analyzed:	09/03/2009 1439			Final Weight/Volume:	100 mL
Date Prepared:	09/03/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7700 ~~J~~		0.98	3.8
Antimony		ND J		0.27	0.76
Arsenic		4.0		0.14	1.5
Barium		5.8		0.098	0.76
Beryllium		0.20	J	0.038	0.30
Cadmium		0.090	J	0.011	0.30
Calcium		270	~~B~~	3.8	15
Chromium		7.1		0.10	0.76
Cobalt		2.3		0.098	0.76
Copper		5.2		0.098	1.5
Iron		6900	~~B~~	1.2	7.6
Lead		2.0		0.086	0.76
Magnesium		950	~~B~~	0.76	15
Manganese		49		0.10	1.5
Nickel		5.7		0.098	1.5
Selenium		ND		0.35	0.76
Silver		ND		0.076	0.76
Sodium		ND		20	150
Thallium		ND ~~J~~		0.11	1.5
Vanadium		8.1		0.098	1.5
Zinc		21		0.89	3.8
Tin		2.4 J	J ~~B~~	0.48	7.6

Method:	6010B	Analysis Batch: 360-48677		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48616		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.55 g
Date Analyzed:	09/04/2009 1608			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Potassium		400		48	310

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48547		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	09/04/2009 0942			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0913				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.037	0.20

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Client: Olin Corporation

Job Number: 360-24365-1
Sdg Number: OCRI-09

Client Sample ID: **OC-SB-460-0.0/1.0-XXX**

Lab Sample ID: 360-24365-16
Client Matrix: Solid
% Moisture: 8.1

Date Sampled: 09/01/2009 0840
Date Received: 09/01/2009 1715

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48592		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48542		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.92 g
Date Analyzed:	09/03/2009 1442			Final Weight/Volume:	100 mL
Date Prepared:	09/03/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3500		0.74	2.8
Antimony		ND J		0.21	0.57
Arsenic		6.3		0.10	1.1
Barium		11		0.074	0.57
Beryllium		0.14	J	0.028	0.23
Cadmium		0.077	J	0.0079	0.23
Calcium		550	~~B~~	2.8	11
Chromium		22		0.075	0.57
Cobalt		1.2		0.074	0.57
Copper		6.9		0.074	1.1
Iron		6400	~~B~~	0.90	5.7
Lead		7.6		0.065	0.57
Magnesium		640	~~B~~	0.57	11
Manganese		25		0.076	1.1
Nickel		3.4		0.074	1.1
Selenium		ND		0.27	0.57
Silver		0.21	J	0.057	0.57
Sodium		33	J	15	110
Thallium		ND J		0.082	1.1
Vanadium		9.3		0.074	1.1
Zinc		6.6		0.67	2.8
Tin		8.2 J	~~B~~	0.36	5.7

Method:	6010B	Analysis Batch: 360-48677		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48616		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.57 g
Date Analyzed:	09/04/2009 1611			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Potassium		560		43	280

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48547		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.24 g
Date Analyzed:	09/04/2009 0944			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0913				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.031	0.17

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Client: Olin Corporation

Job Number: 360-24365-1
Sdg Number: OCRI-09

Client Sample ID: **OC-SB-460-5.5/7.5-XXX**

Lab Sample ID: 360-24365-18
Client Matrix: Solid
% Moisture: 19.1

Date Sampled: 09/01/2009 0850
Date Received: 09/01/2009 1715

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48592		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48542		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.96 g
Date Analyzed:	09/03/2009 1445			Final Weight/Volume:	100 mL
Date Prepared:	09/03/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		11000		0.82	3.2
Antimony		ND 3		0.23	0.63
Arsenic		3.6		0.11	1.3
Barium		5.6		0.082	0.63
Beryllium		0.23	J	0.032	0.25
Cadmium		0.068	J	0.0088	0.25
Calcium		290	~~B~~	3.2	13
Chromium		11		0.084	0.63
Cobalt		1.7		0.082	0.63
Copper		2.2		0.082	1.3
Iron		5500	~~B~~	1.0	6.3
Lead		2.9		0.072	0.63
Magnesium		740	~~B~~	0.63	13
Manganese		27		0.084	1.3
Nickel		5.0		0.082	1.3
Selenium		ND		0.29	0.63
Silver		ND		0.063	0.63
Sodium		43	J	16	130
Thallium		ND ~~3~~		0.091	1.3
Vanadium		8.8		0.082	1.3
Zinc		9.8		0.74	3.2
Tin		3.8 J	J ~~B~~	0.40	6.3

Method:	6010B	Analysis Batch: 360-48677		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48616		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.82 g
Date Analyzed:	09/04/2009 1614			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 1225				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Potassium		420		42	270

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48547		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	09/04/2009 0946			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0913				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.031	0.17

4/2/10

Client: Olin Corporation

Job Number: 360-24365-1
Sdg Number: OCRI-09

Client Sample ID: **OC-PE-MS00149-METALS**

Lab Sample ID: 360-24365-19
Client Matrix: Solid

Date Sampled: 09/01/2009 1000
Date Received: 09/01/2009 1715

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48592		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48542		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.91 g
Date Analyzed:	09/03/2009 1448			Final Weight/Volume:	100 mL
Date Prepared:	09/03/2009 0829				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		1600		0.68	2.6
Antimony		30		0.19	0.52
Arsenic		40		0.095	1.0
Barium		1.5		0.068	0.52
Beryllium		15		0.026	0.21
Cadmium		2.9		0.0073	0.21
Calcium		2300	~~B~~	2.6	10
Chromium		0.96		0.070	0.52
Cobalt		100		0.068	0.52
Copper		0.68	J	0.068	1.0
Iron		2800	~~B~~	0.83	5.2
Lead		12		0.060	0.52
Magnesium		2800	~~B~~	0.52	10
Manganese		10		0.070	1.0
Nickel		80		0.068	1.0
Selenium		7.0		0.25	0.52
Silver		ND		0.053	0.52
Sodium		2500		14	100
Thallium		0.36	J	0.076	1.0
Vanadium		46		0.068	1.0
Zinc		1.6	J	0.62	2.6
Tin		0.76	J ~~B~~	0.34	5.2

Method:	6010B	Analysis Batch: 360-48677		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48616		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.98 g
Date Analyzed:	09/04/2009 1617			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 1225				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Potassium		130	J	32	200

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48603		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48547		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.30 g
Date Analyzed:	09/04/2009 0948			Final Weight/Volume:	50 mL
Date Prepared:	09/03/2009 0913				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		1.2		0.023	0.12

4/12/16

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24365-2
Sdg Number: OCRI-09A

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24365-2	OC-SB-442-20/22-XXX	Solid	08/31/2009 1320	08/31/2009 1745
360-24365-6	OC-SB-447-18/20-XXX	Solid	08/31/2009 0905	08/31/2009 1745
360-24365-9	OC-SB-452-13/15-XXX	Solid	08/31/2009 1100	08/31/2009 1745
360-24365-14	OC-SB-458-22/24-XXX	Solid	08/31/2009 1630	09/01/2009 1715
360-24365-17	OC-SB-460-30/32-XXX	Solid	09/01/2009 1040	09/01/2009 1715

Form I's updated
[illegible] 4/8/10

Client: Olin Corporation

Job Number: 360-24365-2
Sdg Number: OCRI-09A

Client Sample ID: **OC-SB-442-20/22-XXX**

Lab Sample ID: 360-24365-2
Client Matrix: Solid
% Moisture: 6.9

Date Sampled: 08/31/2009 1320
Date Received: 08/31/2009 1745

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49582		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49527		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.94 g
Date Analyzed:	09/28/2009 1340			Final Weight/Volume:	100 mL
Date Prepared:	09/28/2009 0810				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4600		0.72	2.8
Antimony		ND J		0.20	0.55
Arsenic		2.6		0.10	1.1
Barium		14		0.072	0.55
Beryllium		0.14	J	0.028	0.22
Cadmium		0.16	J	0.0078	0.22
Calcium		1500	~~B~~	2.8	11
Chromium		13	~~B~~	0.074	0.55
Cobalt		6.0		0.072	0.55
Copper		15		0.072	1.1
Iron		9700	~~B~~	0.88	5.5
Lead		1.5		0.063	0.55
Magnesium		2700	~~B~~	0.55	11
Manganese		93		0.074	1.1
Nickel		9.0		0.072	1.1
Potassium		1100		35	220
Selenium		ND		0.26	0.55
Silver		ND		0.056	0.55
Sodium		61	J	14	110
Thallium		ND ~~B~~		0.080	1.1
Vanadium		13		0.072	1.1
Zinc		12		0.65	2.8
Tin		4.2 J	J ~~B~~	0.35	5.5

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Client: Olin Corporation

Job Number: 360-24365-2
Sdg Number: OCRI-09A

Client Sample ID: **OC-SB-447-18/20-XXX**

Lab Sample ID: 360-24365-6
Client Matrix: Solid
% Moisture: 9.4

Date Sampled: 08/31/2009 0905
Date Received: 08/31/2009 1745

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 09/28/2009 1343
Date Prepared: 09/28/2009 0810

Analysis Batch: 360-49582
Prep Batch: 360-49527

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.63 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7400		0.88	3.4
Antimony		ND J		0.25	0.68
Arsenic		3.9		0.12	1.4
Barium		30		0.088	0.68
Beryllium		0.22	J	0.034	0.27
Cadmium		0.22	J	0.0095	0.27
Calcium		2000	~~B~~	3.4	14
Chromium		12	~~B~~	0.090	0.68
Cobalt		6.0		0.088	0.68
Copper		26		0.088	1.4
Iron		15000	~~B~~	1.1	6.8
Lead		1.4		0.077	0.68
Magnesium		3500	~~B~~	0.68	14
Manganese		93		0.090	1.4
Nickel		9.8		0.088	1.4
Potassium		1900		42	270
Selenium		ND		0.32	0.68
Silver		ND		0.068	0.68
Sodium		61	J	18	140
Thallium		ND ~~J~~		0.098	1.4
Vanadium		19		0.088	1.4
Zinc		22		0.80	3.4
Tin		3.6 J	J ~~B~~	0.43	6.8

7471A Mercury (CVAA)

Method: 7471A
Preparation: 7471A
Dilution: 1.0
Date Analyzed: 09/23/2009 1042
Date Prepared: 09/22/2009 0907

Analysis Batch: 360-49362
Prep Batch: 360-49278

Instrument ID: Hg Analyzer
Lab File ID: N/A
Initial Weight/Volume: 0.30 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.025	0.14

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Client: Olin Corporation

Job Number: 360-24365-2
Sdg Number: OCRI-09A

Client Sample ID: **OC-SB-452-13/15-XXX**

Lab Sample ID: 360-24365-9
Client Matrix: Solid
% Moisture: 8.0

Date Sampled: 08/31/2009 1100
Date Received: 08/31/2009 1745

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49582		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49527		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.57 g
Date Analyzed:	09/28/2009 1346			Final Weight/Volume:	100 mL
Date Prepared:	09/28/2009 0810				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7300		0.90	3.5
Antimony		ND J		0.25	0.69
Arsenic		7.8		0.13	1.4
Barium		24		0.090	0.69
Beryllium		0.21	J	0.035	0.28
Cadmium		0.23	J	0.0097	0.28
Calcium		3200	~~B~~	3.5	14
Chromium		17	~~B~~	0.092	0.69
Cobalt		7.2		0.090	0.69
Copper		29		0.090	1.4
Iron		15000	~~B~~	1.1	6.9
Lead		2.5		0.079	0.69
Magnesium		3200	~~B~~	0.69	14
Manganese		110		0.092	1.4
Nickel		13		0.090	1.4
Potassium		1000		43	280
Selenium		ND		0.32	0.69
Silver		ND		0.070	0.69
Sodium		130	J	18	140
Thallium		ND ~~J~~		0.10	1.4
Vanadium		30		0.090	1.4
Zinc		20		0.81	3.5
Tin		5.5 J	J ~~A~~ B	0.44	6.9

N. Olm 4/2/10

Analytical Data

Client: Olin Corporation

Job Number: 360-24365-2
Sdg Number: OCRI-09A

Client Sample ID: **OC-SB-458-22/24-XXX**

Lab Sample ID: 360-24365-14
Client Matrix: Solid
% Moisture: 8.0

Date Sampled: 08/31/2009 1630
Date Received: 09/01/2009 1715

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49582		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49527		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.77 g
Date Analyzed:	09/28/2009 1349			Final Weight/Volume:	100 mL
Date Prepared:	09/28/2009 0810				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5800		0.80	3.1
Antimony		ND J		0.22	0.61
Arsenic		3.5		0.11	1.2
Barium		16		0.080	0.61
Beryllium		0.18	J	0.031	0.25
Cadmium		0.14	J	0.0086	0.25
Calcium		1500	~~B~~	3.1	12
Chromium		13	~~B~~	0.082	0.61
Cobalt		4.0		0.080	0.61
Copper		11		0.080	1.2
Iron		10000	~~B~~	0.98	6.1
Lead		1.5		0.070	0.61
Magnesium		2600	~~B~~	0.61	12
Manganese		85		0.082	1.2
Nickel		8.2		0.080	1.2
Potassium		1100		38	250
Selenium		ND		0.29	0.61
Silver		ND		0.062	0.61
Sodium		68	J	16	120
Thallium		ND ~~J~~		0.089	1.2
Vanadium		13		0.080	1.2
Zinc		16		0.72	3.1
Tin		4.2 J	J ~~B~~	0.39	6.1

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Client: Olin Corporation

Job Number: 360-24365-2
Sdg Number: OCRI-09A

Client Sample ID: **OC-SB-460-30/32-XXX**

Lab Sample ID: 360-24365-17
Client Matrix: Solid
% Moisture: 9.6

Date Sampled: 09/01/2009 1040
Date Received: 09/01/2009 1715

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-50204		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-50159		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.85 g
Date Analyzed:	10/12/2009 1720			Final Weight/Volume:	100 mL
Date Prepared:	10/12/2009 0852				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5900		0.78	3.0
Antimony		ND J		0.22	0.60
Arsenic		3.9		0.11	1.2
Barium		24		0.078	0.60
Beryllium		0.19	J	0.030	0.24
Cadmium		0.28		0.0084	0.24
Calcium		1900	~~B~~	3.0	12
Chromium		120		0.080	0.60
Cobalt		5.3		0.078	0.60
Copper		19		0.078	1.2
Iron		13000	~~B~~	0.95	6.0
Lead		1.4		0.068	0.60
Magnesium		3300	~~B~~	0.60	12
Manganese		96		0.080	1.2
Nickel		9.9		0.078	1.2
Potassium		1400		37	240
Selenium		ND		0.28	0.60
Silver		1.5		0.060	0.60
Sodium		68	J	16	120
Thallium		ND ~~J~~		0.086	1.2
Vanadium		19		0.078	1.2
Zinc		17		0.70	3.0
Tin		50 J	~~B~~	0.38	6.0

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OCRI-09 (24365)

ICV/CCV OK

/CRQL STD

Sn (59, 61)

✓ICB/CCB

Se, Tl.

MB 48542 (Sel 05)

Ca	5.65	28.25 >
Fe	1.16	5.8 >
Mg	1.71	8.55 >
Sn	0.48	2.4 >

ICS ok/

✓MS OC-SB-442-8.0/10-xxx

Al	220 (4x)	PDS OK
Sb	60	
Fe	141 (4x)	

Lab Dup OC-SB-442-8.0/10-xxx OK

LCS OK

serial dilution OK

EQB

Ca	64	
Cu	9.4	$\frac{9.4\ mg/L \times 0.1L}{0.0012\ kg} = 0.47\ mg/kg$
Fe	41	
Tl	4.4	$\frac{4.4 \times .1}{\ldots} = 0.220\ mg/kg$

OCRI-09A (24365)

ICV/CCV OK

CRQL STD

Sn (63, 63)

ICB/CCB

Se, Tl

MB 49527 See (05)

See -08A

ICS OK/

LCS OK/

Ca	36.7 >
Cr	0.45 >
Fe	6.6 >
Mg	10.05 >
Sn	2.5 >

13-IN
ANALYSIS RUN LOG
METALS

$\frac{1.88\ \mu g/L \times 0.1L}{0.002\ kg} = 94\ \mu g/kg = 0.094\ mg/kg \times 5 =$

Al = 0.47 g/kg

Lab Name: TestAmerica Westfield Job No.: 360-24365-1

SDG No.: OCRI-09

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/03/2009 09:29 End Date: 09/03/2009 16:37

Lab Sample ID	D/F	Type	Time	Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn	Tl
				Analytes																			
ZZZZZZ			09:29																				
ZZZZZZ			09:32																				
ZZZZZZ			09:35																				
ZZZZZZ			09:38																				
ZZZZZZ			09:40																				
ICV 360-48592/6	1		09:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-48592/7	1		09:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-48592/8	1		09:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-48592/9	1		09:52	X		X	X	X		X		X						X	X	X	X		
ICSA 360-48592/10	1		09:55	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-48592/11	1		09:58	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			10:01																				
CCV 360-48592/13	1		10:04	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48592/14	1		10:06	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-48592/15	1		10:09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICV 360-48592/16			10:12																				
ICV 360-48592/17			10:15																				
ICV 360-48592/18	1		10:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-48592/19			10:32																				
CRI 360-48592/20	1		10:35																				X
CCV 360-48592/21	1		11:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48592/22	1		11:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MB 360-48542/1-A	1	T	13:44	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-48592/24	1		13:47	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48592/25	1		13:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 360-48542/2-A	1	T	13:53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCSD 360-48542/3-A	1	T	13:56	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24365-4	1	T	13:59	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24365-4 DU	1	T	14:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24365-4 MS	1	T	14:05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24365-4 SD	5	T	14:07	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24365-4 PDS	1	T	14:10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24365-1	1	T	14:13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24365-3	1	T	14:16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			14:19																				
CCV 360-48592/36	1		14:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48592/37	1		14:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X 1.88
360-24365-7	1	T	14:28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24365-8	1	T	14:31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24365-10	1	T	14:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24365-13	1	T	14:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24365-15	1	T	14:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24365-1

SDG No.: OCRI-09

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/03/2009 09:29 End Date: 09/03/2009 16:37

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn	Tl
360-24365-16	1	T	14:42	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24365-18	1	T	14:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24365-19	1	T	14:48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			14:51																				
ZZZZZZ			14:54																				
CCV 360-48592/48	1		14:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48592/49	1		14:59	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			15:08																				
ZZZZZZ			15:10																				
ZZZZZZ			15:13																				
ZZZZZZ			15:16																				
ZZZZZZ			15:19																				
360-24365-5	2	T	15:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-48592/56	1		15:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48592/57	1		15:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X — 2.16
ICSA 360-48592/58	1		16:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-48592/59	1		16:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) III (circle one)

SITE: **Olin Chemical** Project #: 6/07/0022/6/2 SDG #: OCRI-10/10A

LAB # : TAL 360-24417-1/2

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☐ ☒ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☑ ☐ ☐ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	See below. Post-digestion spikes %R limits = 75% - 125%

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Laboratory Control Samples (LCS) ☑ ☐ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate ☐ ☒ ☐ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☑ ☐ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	See below.
Field Duplicate ☑ ☐ ☐ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☑ ☐ ☐ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution ☒ ☐ ☐ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☑ ☐ Are results of the diluted samples > the original sample results	.See below.

Validator's Signature: _____

Date: 4/8/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

QL Standard:

The percent recovery of tin (5, and 63) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J/UJ).

Blanks:

Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Copper and mercury were reported in the equipment blank associated with OCRI-10 and 10A. Reported detections of copper were significantly greater than equipment blank results, the data was not qualified. Associated sample detections for mercury that were less than the action level were qualified (EB) to indicate potential blank contamination associated with the equipment blank.

Barium (0.078 mg/kg), calcium (7.56 mg/kg), iron (1.37 mg/kg), magnesium (2.27 mg/kg), thallium (0.116 mg/kg), and tin (0.418 mg/kg) were reported in the method blank (M360-48596) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. With the exception of thallium and tin, sample results were greater than the action levels, no further action required. Sample results for thallium were non detect, no further action required. Sample results for tin that were less than the action level were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Calcium (7.0 mg/kg), iron (2.27 mg/kg), magnesium (1.80 mg/kg), and tin (0.511 mg/kg) were reported in the method blank (M360-49084) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Sample results were greater than the action levels, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Selenium and thallium were reported in the continuing calibration blanks (CCB) associated with a subset of samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Reported detections of selenium and thallium that were less than the action levels were qualified non detect (U).

Matrix Spikes:

Sample OC-SB-465-8.0/10-XXX was submitted for MS analysis. The MS percent recovery of antimony (63) and iron (162) were outside of the QC limits. The unspiked sample result for iron was greater than four times the spiking concentration, no further action required. Post digestion spike recovery for antimony was within QC limits, indicating a matrix effect for antimony. Matrix spike recovery for the

analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

Sample OC-SB-463-28/30-XXX was submitted for MS analysis. The MS percent recovery of aluminum (287), antimony (38), calcium (161), iron (325), magnesium (62), manganese (-16), and potassium (144) were outside of the QC limits. The unspiked sample results for aluminum, iron, magnesium, and manganese were greater than four times the spiking concentration, no further action required. Reported detections for calcium and potassium were qualified estimated (J). Post digestion spike recovery for antimony was within QC limits, indicating a matrix effect for antimony. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

SDG	Lab Sample ID	Field Sample ID	Antimony MS Recovery (%)
OCRI-03	360-24223-9	OC-SB-426-5.0/7.0-XXX	61
OCRI-04	360-24244-1	OC-SB-432-0.0/1.0-XXX	27
OCRI-04A	360-24244-5	OC-SB-443-18/20-XXX	32
OCRI-05	360-24251-19	OC-SB-446-5.0/7.0-XXX	80
OCRI-05	360-24251-4	OC-SB-433-5.0/7.0-XXX	70
OCRI-06	360-24309-23	OC-SB-430-8.0/10-XXX	44
OCRI-07	360-24327-12	OC-SB-410-6.0/8.0-XXX	65
OCRI-08	360-24343-10	OC-SB-451-2.5/4.5-XXX	62
OCRI-08	360-24343-17	OC-SB-455-6.0/8.0-XXX	46
OCRI-09	360-24365-4	OC-SB-442-8.0/10-XXX	50
OCRI-10	360-24417-10	OC-SB-465-8.0/10-XXX	63
OCRI-10A	360-24417-2	OC-SB-463-28/30-XXX	38
OCRI-11	360-24444-2	OC-SB-459-6.0/8.0-XXX	64
OCRI-11	360-24444-9	OC-SB-467-6.0/8.0-XXX	68
OCRI-12	360-24454-3	OC-SB-461-5.0/7.0-XXX	65
OCRI-13A	360-24499-3	OC-SB-469-28/30-XXX	61
OCRI-14	360-24563-14	OC-SB-456-7.0/9.0-XXX	60
OCRI-14	360-24563-5	OC-SB-427-8.0/10-XXX	67
OCRI-15	360-24582-22	OC-SS-416-0.0/1.0-XXX	56
OCRI-16	360-24634-1	OC-SS-417-0.0/1.0-XXX	61
OCRI-17	360-24665-1	OC-SS-434-0.0/1.0-XXX	29
OCRI-18	360-24686-1	OC-SB-400-17/19-XXX	67

Laboratory Duplicate:
The percent difference for calcium (40) and sodium (38) exceeded the QC limit of 35. The results for calcium and sodium in associated samples were qualified estimated (J).

Serial Dilution:

The percent difference for chromium (16) exceeded the QC limit of 15. The diluted result for chromium was greater than the undiluted result. Reported detections for chromium in associated samples were qualified estimated (J).

The percent difference for manganese (16) exceeded the QC limit of 15. The diluted result for manganese was greater than the undiluted result. Reported detections for manganese in associated samples were qualified estimated (J).

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24417-1
Sdg Number: OCRI-10

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24417-1	OC-SB-463-0.0/1.0-XXX	Solid	09/01/2009 1300	09/02/2009 1710
360-24417-2	OC-SB-463-28/30-XXX	Solid	09/01/2009 1450	09/02/2009 1710
360-24417-3	OC-SB-463-6.0/8.0-XXX	Solid	09/01/2009 1310	09/02/2009 1710
360-24417-4	OC-SB-464-0.0/1.0-XXX	Solid	09/01/2009 1550	09/02/2009 1710
360-24417-5	OC-SB-464-26/28-XXX	Solid	09/01/2009 1650	09/02/2009 1710
360-24417-6	OC-SB-464-5.0/7.0-XXX	Solid	09/01/2009 1650	09/02/2009 1710
360-24417-7	OC-SB-465-0.0/1.0-XXX	Solid	09/02/2009 0735	09/02/2009 1710
360-24417-8	OC-SB-465-16/18-XXX	Solid	09/02/2009 0825	09/02/2009 1710
360-24417-9	OC-SB-465-8.0/10-DUP	Solid	09/02/2009 0745	09/02/2009 1710
360-24417-10	OC-SB-465-8.0/10-XXX	Solid	09/02/2009 0745	09/02/2009 1710
360-24417-10MS	OC-SB-465-8.0/10-XMS	Solid	09/02/2009 0745	09/02/2009 1710
360-24417-10MSD	OC-SB-465-8.0/10-MSD	Solid	09/02/2009 0745	09/02/2009 1710
360-24417-11	OC-SB-468-0.0/1.0-XXX	Solid	09/02/2009 1005	09/02/2009 1710
360-24417-12	OC-SB-468-31/33-XXX	Solid	09/02/2009 1100	09/02/2009 1710
360-24417-13	OC-SB-468-8.0/10-XXX	Solid	09/02/2009 1010	09/02/2009 1710
360-24417-14	OC-SB-471-0.0/1.0-XXX	Solid	09/02/2009 1315	09/02/2009 1710
360-24417-15	OC-SB-471-3.0/5.0-XXX	Solid	09/02/2009 1330	09/02/2009 1710
360-24417-16	OC-SB-471-26/28-XXX	Solid	09/02/2009 1430	09/02/2009 1710
360-24417-17	OC-TBK-012	Solid	09/02/2009 1450	09/02/2009 1710

Form I's updated.
4/8/10

Client: Olin Corporation

Job Number: 360-24417-1
Sdg Number: OCRI-10

Client Sample ID: **OC-SB-463-0.0/1.0-XXX**

Lab Sample ID: 360-24417-1
Client Matrix: Solid
% Moisture: 3.8

Date Sampled: 09/01/2009 1300
Date Received: 09/02/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48668		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48596		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.55 g
Date Analyzed:	09/04/2009 1408			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 0857				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5000		0.87	3.4
Antimony		ND J		0.24	0.67
Arsenic		6.8		0.12	1.3
Barium		11	~~B~~	0.087	0.67
Beryllium		0.18	J	0.034	0.27
Cadmium		0.11	J	0.0094	0.27
Calcium		600	~~B~~	3.4	13
Chromium		14 J		0.089	0.67
Cobalt		2.9		0.087	0.67
Copper		4.1		0.087	1.3
Iron		7000	~~B~~	1.1	6.7
Lead		2.4		0.077	0.67
Magnesium		1000	~~B~~	0.67	13
Manganese		54		0.090	1.3
Nickel		5.0		0.087	1.3
Potassium		660		42	270
Selenium		ND		0.31	0.67
Silver		0.13	J	0.067	0.67
Sodium		22	J	17	130
Thallium		ND		0.097	1.3
Vanadium		7.6		0.087	1.3
Zinc		11		0.79	3.4
Tin		5.0	J ~~B~~	0.43	6.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.28 g
Date Analyzed:	09/09/2009 1346			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.025	0.14

4/8/10

Client: Olin Corporation

Job Number: 360-24417-1
Sdg Number: OCRI-10

Client Sample ID: **OC-SB-463-6.0/8.0-XXX**

Lab Sample ID: 360-24417-3
Client Matrix: Solid
% Moisture: 15.9

Date Sampled: 09/01/2009 1310
Date Received: 09/02/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48668		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48596		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.77 g
Date Analyzed:	09/04/2009 1417			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 0857				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4200		0.87	3.4
Antimony		ND 3		0.24	0.67
Arsenic		3.2		0.12	1.3
Barium		6.5	B	0.087	0.67
Beryllium		0.17	J	0.034	0.27
Cadmium		0.084	J	0.0094	0.27
Calcium		300	B	3.4	13
Chromium		5.9 3		0.089	0.67
Cobalt		2.1		0.087	0.67
Copper		2.7		0.087	1.3
Iron		5300	B	1.1	6.7
Lead		1.4		0.077	0.67
Magnesium		940	B	0.67	13
Manganese		33		0.090	1.3
Nickel		5.1		0.087	1.3
Potassium		450		42	270
Selenium		ND		0.31	0.67
Silver		ND		0.068	0.67
Sodium		ND		17	130
Thallium		ND		0.097	1.3
Vanadium		5.8		0.087	1.3
Zinc		12		0.79	3.4
Tin		1.9	U J B	0.43	6.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.26 g
Date Analyzed:	09/09/2009 1349			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.031	0.17

4/9/10

Analytical Data

Client: Olin Corporation

Job Number: 360-24417-1
Sdg Number: OCRI-10

Client Sample ID: **OC-SB-464-0.0/1.0-XXX**

Lab Sample ID: 360-24417-4
Client Matrix: Solid
% Moisture: 5.9

Date Sampled: 09/01/2009 1550
Date Received: 09/02/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48668		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48596		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.79 g
Date Analyzed:	09/04/2009 1420			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 0857				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5700		0.77	3.0
Antimony		ND J		0.21	0.59
Arsenic		3.7		0.11	1.2
Barium		9.2	~~B~~	0.077	0.59
Beryllium		0.14	J	0.030	0.24
Cadmium		0.095	J	0.0083	0.24
Calcium		720	~~B~~	3.0	12
Chromium		20 J		0.079	0.59
Cobalt		2.0		0.077	0.59
Copper		3.4		0.077	1.2
Iron		6900	~~B~~	0.95	5.9
Lead		3.0		0.068	0.59
Magnesium		1200	~~B~~	0.59	12
Manganese		53		0.079	1.2
Nickel		7.6		0.077	1.2
Potassium		960		37	240
Selenium		ND		0.28	0.59
Silver		0.17	J	0.060	0.59
Sodium		31	J	15	120
Thallium		ND		0.086	1.2
Vanadium		8.3		0.077	1.2
Zinc		14		0.70	3.0
Tin		7.0 J	~~B~~	0.38	5.9

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	09/09/2009 1351			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.027	0.15

4/2/10

Client: Olin Corporation

Job Number: 360-24417-1
Sdg Number: OCRI-10

Client Sample ID: **OC-SB-464-5.0/7.0-XXX**

Lab Sample ID: 360-24417-6
Client Matrix: Solid
% Moisture: 12.2

Date Sampled: 09/01/2009 1650
Date Received: 09/02/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48668		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48596		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.55 g
Date Analyzed:	09/04/2009 1422			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 0857				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		2800		0.96	3.7
Antimony		ND J		0.27	0.73
Arsenic		3.2		0.13	1.5
Barium		7.5	~~B~~	0.096	0.73
Beryllium		0.086	J	0.037	0.29
Cadmium		0.074	J	0.010	0.29
Calcium		990	~~B~~	3.7	15
Chromium		40 J		0.098	0.73
Cobalt		1.2		0.096	0.73
Copper		3.5		0.096	1.5
Iron		5200	~~B~~	1.2	7.3
Lead		3.1		0.084	0.73
Magnesium		780	~~B~~	0.73	15
Manganese		34		0.098	1.5
Nickel		6.3		0.096	1.5
Potassium		380		46	290
Selenium		ND		0.34	0.73
Silver		0.50	J	0.074	0.73
Sodium		22	J	19	150
Thallium		ND		0.11	1.5
Vanadium		5.7		0.096	1.5
Zinc		7.0		0.86	3.7
Tin		16 J	~~B~~	0.47	7.3

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.29 g
Date Analyzed:	09/09/2009 1352			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.052	J	0.027	0.15

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Client: Olin Corporation

Job Number: 360-24417-1
Sdg Number: OCRI-10

Client Sample ID: **OC-SB-465-0.0/1.0-XXX**

Lab Sample ID: 360-24417-7
Client Matrix: Solid
% Moisture: 5.0

Date Sampled: 09/02/2009 0735
Date Received: 09/02/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48668		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48596		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.71 g
Date Analyzed:	09/04/2009 1425			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 0857				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		1500		0.80	3.1
Antimony		ND J		0.22	0.62
Arsenic		2.2		0.11	1.2
Barium		5.9	~~B~~	0.080	0.62
Beryllium		0.053	J	0.031	0.25
Cadmium		0.099	J	0.0086	0.25
Calcium		530	~~B~~	3.1	12
Chromium		5.9 J		0.082	0.62
Cobalt		1.1		0.080	0.62
Copper		2.5		0.080	1.2
Iron		3600	~~B~~	0.98	6.2
Lead		1.2		0.070	0.62
Magnesium		640	~~B~~	0.62	12
Manganese		26		0.082	1.2
Nickel		3.7		0.080	1.2
Potassium		460		38	250
Selenium		ND		0.29	0.62
Silver		ND		0.062	0.62
Sodium		ND		16	120
Thallium		ND		0.089	1.2
Vanadium		4.6		0.080	1.2
Zinc		8.6		0.72	3.1
Tin		2.0	U J ~~B~~	0.39	6.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.29 g
Date Analyzed:	09/09/2009 1358			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.074	J	0.025	0.13

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Client: Olin Corporation

Job Number: 360-24417-1
Sdg Number: OCRI-10

Client Sample ID: **OC-SB-465-8.0/10-DUP**

Lab Sample ID: 360-24417-9
Client Matrix: Solid
% Moisture: 11.1

Date Sampled: 09/02/2009 0745
Date Received: 09/02/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48668		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48596		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.70 g
Date Analyzed:	09/04/2009 1428			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 0857				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3600		0.86	3.3
Antimony		ND J		0.24	0.66
Arsenic		2.4		0.12	1.3
Barium		5.2	~~B~~	0.086	0.66
Beryllium		0.11	J	0.033	0.26
Cadmium		0.071	J	0.0093	0.26
Calcium		510	~~B~~	3.3	13
Chromium		6.0 J		0.088	0.66
Cobalt		1.6		0.086	0.66
Copper		2.1		0.086	1.3
Iron		5000	~~B~~	1.1	6.6
Lead		0.99		0.076	0.66
Magnesium		900	~~B~~	0.66	13
Manganese		31		0.088	1.3
Nickel		5.3		0.086	1.3
Potassium		440		41	260
Selenium		ND		0.31	0.66
Silver		ND		0.067	0.66
Sodium		37	J	17	130
Thallium		ND		0.096	1.3
Vanadium		5.5		0.086	1.3
Zinc		7.4		0.78	3.3
Tin		2.0	U J ~~B~~	0.42	6.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.24 g
Date Analyzed:	09/09/2009 1400			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.032	0.17

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Client: Olin Corporation

Job Number: 360-24417-1
Sdg Number: OCRI-10

Client Sample ID: **OC-SB-465-8.0/10-XXX**

Lab Sample ID: 360-24417-10
Client Matrix: Solid
% Moisture: 11.5

Date Sampled: 09/02/2009 0745
Date Received: 09/02/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48668		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48596		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.53 g
Date Analyzed:	09/04/2009 1318			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 0857				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3800		0.96	3.7
Antimony		0.46 J	J	0.27	0.74
Arsenic		2.5		0.13	1.5
Barium		5.6	~~B~~	0.096	0.74
Beryllium		0.12	J	0.037	0.30
Cadmium		0.084	J	0.010	0.30
Calcium		640	~~B~~	3.7	15
Chromium		6.8 J		0.098	0.74
Cobalt		1.7		0.096	0.74
Copper		2.2		0.096	1.5
Iron		5700	~~B~~	1.2	7.4
Lead		1.4		0.084	0.74
Magnesium		950	~~B~~	0.74	15
Manganese		33		0.099	1.5
Nickel		5.9		0.096	1.5
Potassium		630		46	300
Selenium		ND		0.35	0.74
Silver		ND		0.074	0.74
Sodium		37	J	19	150
Thallium		ND		0.11	1.5
Vanadium		6.4		0.096	1.5
Zinc		7.5		0.87	3.7
Tin		2.2	J ~~B~~	0.47	7.4

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.26 g
Date Analyzed:	09/09/2009 1340			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.030	0.16

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Client: Olin Corporation

Job Number: 360-24417-1
Sdg Number: OCRI-10

Client Sample ID: **OC-SB-468-0.0/1.0-XXX**

Lab Sample ID: 360-24417-11
Client Matrix: Solid
% Moisture: 13.3

Date Sampled: 09/02/2009 1005
Date Received: 09/02/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48668		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48596		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.85 g
Date Analyzed:	09/04/2009 1431			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 0857				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8700		0.81	3.1
Antimony		ND J		0.23	0.62
Arsenic		5.1		0.11	1.2
Barium		10	~~B~~	0.081	0.62
Beryllium		0.24	J	0.031	0.25
Cadmium		0.094	J	0.0087	0.25
Calcium		3100	~~B~~	3.1	12
Chromium		11 J		0.083	0.62
Cobalt		1.8		0.081	0.62
Copper		2.7		0.081	1.2
Iron		5500	~~B~~	0.99	6.2
Lead		3.9		0.071	0.62
Magnesium		980	~~B~~	0.62	12
Manganese		48		0.083	1.2
Nickel		5.2		0.081	1.2
Potassium		510		39	250
Selenium		ND		0.29	0.62
Silver		ND		0.063	0.62
Sodium		53	J	16	120
Thallium		ND		0.090	1.2
Vanadium		8.9		0.081	1.2
Zinc		12		0.73	3.1
Tin		3.7	J ~~B~~	0.40	6.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/09/2009 1402			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.031	0.17

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Client: Olin Corporation

Job Number: 360-24417-1
Sdg Number: OCRI-10

Client Sample ID: **OC-SB-468-8.0/10-XXX**

Lab Sample ID: 360-24417-13
Client Matrix: Solid
% Moisture: 12.8

Date Sampled: 09/02/2009 1010
Date Received: 09/02/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48668		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48596		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.95 g
Date Analyzed:	09/04/2009 1434			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 0857				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3800		0.76	2.9
Antimony		ND J		0.21	0.59
Arsenic		1.0	J	0.11	1.2
Barium		5.7	~~B~~	0.076	0.59
Beryllium		0.088	J	0.029	0.24
Cadmium		0.047	J	0.0082	0.24
Calcium		630	~~B~~	2.9	12
Chromium		5.6 J		0.078	0.59
Cobalt		1.3		0.076	0.59
Copper		1.2		0.076	1.2
Iron		3500	~~B~~	0.94	5.9
Lead		1.0		0.067	0.59
Magnesium		890	~~B~~	0.59	12
Manganese		31		0.079	1.2
Nickel		4.9		0.076	1.2
Potassium		510		37	240
Selenium		ND		0.28	0.59
Silver		ND		0.059	0.59
Sodium		50	J	15	120
Thallium		ND		0.085	1.2
Vanadium		4.9		0.076	1.2
Zinc		6.4		0.69	2.9
Tin		1.8	U J ~~B~~	0.38	5.9

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.28 g
Date Analyzed:	09/09/2009 1454			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.028	0.15

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Client: Olin Corporation

Job Number: 360-24417-1
Sdg Number: OCRI-10

Client Sample ID: **OC-SB-471-0.0/1.0-XXX**

Lab Sample ID: 360-24417-14
Client Matrix: Solid
% Moisture: 8.3

Date Sampled: 09/02/2009 1315
Date Received: 09/02/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48668		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48596		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.77 g
Date Analyzed:	09/04/2009 1437			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 0857				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6600		0.80	3.1
Antimony		ND J		0.22	0.62
Arsenic		5.7		0.11	1.2
Barium		9.6	~~B~~	0.080	0.62
Beryllium		0.20	J	0.031	0.25
Cadmium		0.13	J	0.0086	0.25
Calcium		1700	~~B~~	3.1	12
Chromium		14 J		0.082	0.62
Cobalt		2.1		0.080	0.62
Copper		5.6		0.080	1.2
Iron		7600	~~B~~	0.98	6.2
Lead		5.4		0.070	0.62
Magnesium		1100	~~B~~	0.62	12
Manganese		43		0.082	1.2
Nickel		5.5		0.080	1.2
Potassium		520		39	250
Selenium		ND		0.29	0.62
Silver		ND		0.062	0.62
Sodium		ND		16	120
Thallium		ND		0.089	1.2
Vanadium		9.6		0.080	1.2
Zinc		21		0.72	3.1
Tin		5.0	J ~~B~~ A	0.39	6.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	09/09/2009 1406			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.028	J E B	0.027	0.15

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Client: Olin Corporation

Job Number: 360-24417-1
Sdg Number: OCRI-10

Client Sample ID: **OC-SB-471-3.0/5.0-XXX**

Lab Sample ID: 360-24417-15
Client Matrix: Solid
% Moisture: 18.9

Date Sampled: 09/02/2009 1330
Date Received: 09/02/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48668		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48596		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.64 g
Date Analyzed:	09/04/2009 1440			Final Weight/Volume:	100 mL
Date Prepared:	09/04/2009 0857				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9500		0.98	3.8
Antimony		ND J		0.27	0.75
Arsenic		4.3		0.14	1.5
Barium		5.8	~~B~~	0.098	0.75
Beryllium		0.20	J	0.038	0.30
Cadmium		0.14	J	0.011	0.30
Calcium		480	~~B~~	3.8	15
Chromium		7.9 J		0.10	0.75
Cobalt		1.6		0.098	0.75
Copper		1.6		0.098	1.5
Iron		7000	~~B~~	1.2	7.5
Lead		2.7		0.086	0.75
Magnesium		800	~~B~~	0.75	15
Manganese		27		0.10	1.5
Nickel		4.4		0.098	1.5
Potassium		330		47	300
Selenium		ND		0.35	0.75
Silver		0.081	J	0.076	0.75
Sodium		ND		20	150
Thallium		ND		0.11	1.5
Vanadium		9.2		0.098	1.5
Zinc		16		0.88	3.8
Tin		2.5	J ~~B~~	0.48	7.5

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	09/09/2009 1408			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.048	J	0.031	0.17

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SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24417-2
Sdg Number: OCRI-10A

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24417-2	OC-SB-463-28/30-XXX	Solid	09/01/2009 1450	09/02/2009 1710
360-24417-5	OC-SB-464-26/28-XXX	Solid	09/01/2009 1650	09/02/2009 1710
360-24417-8	OC-SB-465-16/18-XXX	Solid	09/02/2009 0825	09/02/2009 1710
360-24417-12	OC-SB-468-31/33-XXX	Solid	09/02/2009 1100	09/02/2009 1710
360-24417-16	OC-SB-471-26/28-XXX	Solid	09/02/2009 1430	09/02/2009 1710

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Client: Olin Corporation

Job Number: 360-24417-2
Sdg Number: OCRI-10A

Client Sample ID: **OC-SB-463-28/30-XXX**

Lab Sample ID: 360-24417-2
Client Matrix: Solid
% Moisture: 9.2

Date Sampled: 09/01/2009 1450
Date Received: 09/02/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49137		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.99 g
Date Analyzed:	09/17/2009 1525			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8100		0.72	2.8
Antimony		ND J		0.20	0.55
Arsenic		3.0		0.10	1.1
Barium		31		0.072	0.55
Beryllium		0.24		0.028	0.22
Cadmium		0.24		0.0077	0.22
Calcium		2900 J	~~B~~	2.8	11
Chromium		16		0.074	0.55
Cobalt		9.9		0.072	0.55
Copper		16		0.072	1.1
Iron		16000	~~B~~	0.88	5.5
Lead		2.5		0.063	0.55
Magnesium		6500	~~B~~	0.55	11
Manganese		330 J		0.074	1.1
Nickel		15		0.072	1.1
Potassium		1700 J		35	220
Selenium		0.31 U	~~J~~	0.26	0.55
Silver		ND		0.056	0.55
Sodium		71	J	14	110
Thallium		0.20 U	~~J~~	0.080	1.1
Vanadium		20		0.072	1.1
Zinc		27		0.65	2.8
Tin		5.0	J ~~B~~	0.35	5.5

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Analytical Data

Client: Olin Corporation

Job Number: 360-24417-2
Sdg Number: OCRI-10A

Client Sample ID: **OC-SB-464-26/28-XXX**

Lab Sample ID: 360-24417-5
Client Matrix: Solid
% Moisture: 7.5

Date Sampled: 09/01/2009 1650
Date Received: 09/02/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49137		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.60 g
Date Analyzed:	09/17/2009 1545			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9600		0.88	3.4
Antimony		ND J		0.24	0.68
Arsenic		3.2		0.12	1.4
Barium		62		0.088	0.68
Beryllium		0.22	J	0.034	0.27
Cadmium		0.22	J	0.0095	0.27
Calcium		3700 J	~~B~~	3.4	14
Chromium		53		0.090	0.68
Cobalt		11		0.088	0.68
Copper		50		0.088	1.4
Iron		15000	~~B~~	1.1	6.8
Lead		7.4		0.077	0.68
Magnesium		7100	~~B~~	0.68	14
Manganese		230 J		0.090	1.4
Nickel		23		0.088	1.4
Potassium		3700 J		42	270
Selenium		ND		0.32	0.68
Silver		0.38	J	0.068	0.68
Sodium		450 J		18	140
Thallium		0.13 U	~~J~~	0.098	1.4
Vanadium		24		0.088	1.4
Zinc		28		0.79	3.4
Tin		19 J	~~BA~~	0.43	6.8

4/8/10

Analytical Data

Client: Olin Corporation

Job Number: 360-24417-2
Sdg Number: OCRI-10A

Client Sample ID: **OC-SB-465-16/18-XXX**

Lab Sample ID: 360-24417-8
Client Matrix: Solid
% Moisture: 9.6

Date Sampled: 09/02/2009 0825
Date Received: 09/02/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49137		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.96 g
Date Analyzed:	09/17/2009 1548			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4700		0.73	2.8
Antimony		ND J		0.20	0.56
Arsenic		6.6		0.10	1.1
Barium		13		0.073	0.56
Beryllium		0.17	J	0.028	0.23
Cadmium		0.090	J	0.0079	0.23
Calcium		840 J	~~B~~	2.8	11
Chromium		9.2		0.075	0.56
Cobalt		2.5		0.073	0.56
Copper		6.2		0.073	1.1
Iron		7700	~~B~~	0.90	5.6
Lead		2.9		0.064	0.56
Magnesium		1700	~~B~~	0.56	11
Manganese		61 J		0.075	1.1
Nickel		6.5		0.073	1.1
Potassium		870 J		35	230
Selenium		ND		0.26	0.56
Silver		ND		0.057	0.56
Sodium		47	J	15	110
Thallium		ND		0.082	1.1
Vanadium		9.3		0.073	1.1
Zinc		11		0.66	2.8
Tin		2.9	J ~~B~~	0.36	5.6

4/20/10

Client: Olin Corporation

Job Number: 360-24417-2
Sdg Number: OCRI-10A

Client Sample ID: **OC-SB-468-31/33-XXX**

Lab Sample ID: 360-24417-12
Client Matrix: Solid
% Moisture: 7.4

Date Sampled: 09/02/2009 1100
Date Received: 09/02/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49137		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.51 g
Date Analyzed:	09/17/2009 1551			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5900		0.93	3.6
Antimony		ND J		0.26	0.72
Arsenic		3.8		0.13	1.4
Barium		42		0.093	0.72
Beryllium		0.15	J	0.036	0.29
Cadmium		0.15	J	0.010	0.29
Calcium		3200 J	~~B~~	3.6	14
Chromium		23		0.095	0.72
Cobalt		7.1		0.093	0.72
Copper		14		0.093	1.4
Iron		12000	~~B~~	1.1	7.2
Lead		1.6		0.082	0.72
Magnesium		3800	~~B~~	0.72	14
Manganese		110 J		0.096	1.4
Nickel		15		0.093	1.4
Potassium		2000 J		45	290
Selenium		ND		0.33	0.72
Silver		ND		0.072	0.72
Sodium		190 J		19	140
Thallium		ND		0.10	1.4
Vanadium		18		0.093	1.4
Zinc		19		0.84	3.6
Tin		7.9 J	~~B~~	0.46	7.2

4/9/10

Client: Olin Corporation

Job Number: 360-24417-2
Sdg Number: OCRI-10A

Client Sample ID: **OC-SB-471-26/28-XXX**

Lab Sample ID: 360-24417-16
Client Matrix: Solid
% Moisture: 8.0

Date Sampled: 09/02/2009 1430
Date Received: 09/02/2009 1710

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49137		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49084		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.80 g
Date Analyzed:	09/17/2009 1553			Final Weight/Volume:	100 mL
Date Prepared:	09/17/2009 0926				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7800		0.78	3.0
Antimony		ND J		0.22	0.60
Arsenic		3.6		0.11	1.2
Barium		43		0.078	0.60
Beryllium		0.20	J	0.030	0.24
Cadmium		0.20	J	0.0085	0.24
Calcium		3300 J	~~B~~	3.0	12
Chromium		21		0.080	0.60
Cobalt		9.6		0.078	0.60
Copper		16		0.078	1.2
Iron		16000	~~B~~	0.96	6.0
Lead		1.3		0.069	0.60
Magnesium		5200	~~B~~	0.60	12
Manganese		150 J		0.081	1.2
Nickel		15		0.078	1.2
Potassium		2500 J		38	240
Selenium		ND		0.28	0.60
Silver		ND		0.061	0.60
Sodium		170 J		16	120
Thallium		ND		0.087	1.2
Vanadium		25		0.078	1.2
Zinc		23		0.71	3.0
Tin		6.9 J	~~B~~	0.39	6.0

4/2/10

OCRI 10 ~~/10A~~ (24417)

✓ ICV/CCV OK

✓ CRQL STD

Sn (57)

ICB/CCB

Se, Tl

✓ ICS OK

MB 48596

Ba	0.078	0.39 >
Ca	7.56	37.8 >
Fe	1.37	6.85 >
Mg	2.27	11.35 >
Tl	0.116	0.58 ND
Sn	0.418	2.09 <

✓ ICS OK

✓ MS OC-SB-465-8.0/10 xxx

~~Al~~

Sb (63)

Fe (162) (4x).

PDS OK

✓ LAB DUP OK

✓ LCS OK

✓ Serial dilution

Cr 6.8 7.85 16

OCRI 10A

✓ ICV/CCV OK

✓ CRQL

Sn (63)

✓ ICB/CCB

Se, Tl

✓ ICS OK

MB 49084

Ca	7.0	35 >
Fe	2.27	11.35 >
Mg	1.80	9 >
Sn	0.511	2.55 >

✓ MS OC-SB-463-28/30-xxx

Al 287 (4x)

Sb 38

Ca 161

Fe 325 (4x)

Mg 62 (4x)

Mn -16 (4x)

K 144

✓ PDS failed for

Mg
Mn (4x) OK

✓ Lab Dup OC-SB-463-28/30-xxx

Ca 40

Na 38

✓ LCS OK

✓ Serial dilution

Mn 330 379 16

✓ EQB Cu 5.1 = 0.255 Hg 0.12

~~Fe 3.5 1.75~~

$\frac{0.12 \times 0.05L}{0.[illegible]} = 30 \mu g/kg = 0.03 mg/kg$

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24417-2

SDG No.: OCRI-10A

Concentration Units: ug/L

Analyte	RL	CCB 360-49137/32 09/17/2009 15:42		CCB 360-49137/44 09/17/2009 16:17		CCB 360-49137/54 09/17/2009 16:46			
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND		ND			
Al	100	ND		ND		ND			
As	10	ND		ND		ND			
Ba	10	ND		ND		ND			
Be	1.0	ND		ND		ND			
Ca	400	ND		ND		ND			
Cd	1.0	ND		ND		ND			
Co	10	ND		ND		ND			
Cr	5.0	ND		ND		ND			
Cu	10	ND		ND		ND			
Fe	100	ND		ND		ND			
K	4000	ND		ND		ND			
Mg	400	ND		ND		ND			
Mn	10	ND		ND		ND			
Na	2000	ND		ND		ND			
Ni	10	ND		ND		ND			
Pb	5.0	ND		ND		ND			
Sb	10	ND		ND		ND			
Se	10	6.00	J	3.60	J	ND			
Sn	50	ND		ND		ND			
Tl	10	3.03	J	1.54	J	2.10	J		
V	10	ND		ND		ND			
Zn	50	ND		ND		ND			

Se $\frac{6.0\ ug/L \times 0.1L}{\cancel{5}\ 2g} = 0.3\ mg/kg \times 5 = 1.5\ mg/kg$ RL

Tl $\frac{3.03\ ug/L \times 0.1L}{2g} = 0.1515\ mg/kg \times 5 = 0.7575\ mg/kg$

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24417-2

SDG No.: OCRI-10A

Concentration Units: ug/L

Analyte	RL	ICB 360-49137/7 09/17/2009 11:29		CCB 360-49137/14 09/17/2009 11:49		CCB 360-49137/20 09/17/2009 12:43		CCB 360-49137/22 09/17/2009 15:05	
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND		ND		ND	
Al	100	ND		ND		ND		ND	
As	10	ND		ND		ND		ND	
Ba	10	ND		ND		ND		ND	
Be	1.0	ND		ND		ND		ND	
Ca	400	ND		ND		ND		ND	
Cd	1.0	ND		ND		ND		ND	
Co	10	ND		ND		ND		ND	
Cr	5.0	ND		ND		ND		ND	
Cu	10	ND		ND		ND		ND	
Fe	100	ND		ND		ND		ND	
K	4000	ND		ND		ND		ND	
Mg	400	ND		ND		ND		ND	
Mn	10	ND		ND		ND		ND	
Na	2000	ND		ND		ND		ND	
Ni	10	ND		ND		ND		ND	
Pb	5.0	ND		ND		ND		ND	
Sb	10	3.22	J	ND		ND		ND	
Se	10	3.52	J	5.00	J	4.21	J	6.70	J
Sn	50	ND		ND		ND		ND	
Tl	10	ND		1.53	J	1.75	J	ND	
V	10	ND		ND		ND		ND	
Zn	50	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24417-2

SDG No.: OCRI-10A

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/17/2009 11:12 End Date: 09/17/2009 16:54

Lab Sample ID	D/F	Type	Time	Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
				Analytes																			
ZZZZZZ			11:12																				
ZZZZZZ			11:15																				
ZZZZZZ			11:17																				
ZZZZZZ			11:20																				
ZZZZZZ			11:23																				
ICV 360-49137/6	1		11:26	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
ICB 360-49137/7	1		11:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-49137/8	1		11:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-49137/9	1		11:35	X		X	X	X		X		X							X	X	X	X	
ICSA 360-49137/10	1		11:38	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-49137/11	1		11:41	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			11:44																				
CCV 360-49137/13	1		11:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49137/14	1		11:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-49137/15			11:52																				
ICV 360-49137/16	1		11:55												X								
ICV 360-49137/17			11:58																				
CRI 360-49137/18			12:10																				
CCV 360-49137/19	1		12:40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49137/20	1		12:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-49137/21	1		15:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49137/22	1		15:05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MB 360-49084/1-A	1	T	15:16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 360-49084/2-A	1	T	15:19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCSD 360-49084/3-A	1	T	15:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24417-2	1	T	15:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24417-2 DU	1	T	15:27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24417-2 MS	1	T	15:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24417-2 SD	5	T	15:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24417-2 PDS	1	T	15:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-49137/31	1		15:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49137/32	1		15:42	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24417-5	1	T	15:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24417-8	1	T	15:48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24417-12	1	T	15:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24417-16	1	T	15:53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			15:56																				
ZZZZZZ			15:59																				
ZZZZZZ			16:02																				
ZZZZZZ			16:05																				
ZZZZZZ			16:08																				
ZZZZZZ			16:11																				

6.7

6

3.03

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24417-2

SDG No.: OCRI-10A

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/17/2009 11:12 End Date: 09/17/2009 16:54

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
CCV 360-49137/43	1		16:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49137/44	1		16:17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	~~X~~
ZZZZZZ			16:19																				
ZZZZZZ			16:22																				
ZZZZZZ			16:25																			3.6	
ZZZZZZ			16:28																				
ZZZZZZ			16:31																				
ZZZZZZ			16:34																				
ZZZZZZ			16:37																				
ZZZZZZ			16:40																				
CCV 360-49137/53	1		16:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49137/54	1		16:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 360-49137/55	1		16:48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-49137/56	1		16:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:54																				

1.54

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24417-2

SDG No.: OCRI-10A

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/17/2009 11:12 End Date: 09/17/2009 16:54

Lab Sample ID	D/F	Type	Time	Analytes																				
				Tl	V	Zn																		
ZZZZZZ			11:12																					
ZZZZZZ			11:15																					
ZZZZZZ			11:17																					
ZZZZZZ			11:20																					
ZZZZZZ			11:23																					
ICV 360-49137/6	1		11:26	X	X	X																		
ICB 360-49137/7	1		11:29	X	X	X																		
CRI 360-49137/8	1		11:32	X	X	X																		
CRI 360-49137/9	1		11:35	X	X	X																		
ICSA 360-49137/10	1		11:38	X	X	X																		
ICSAB 360-49137/11	1		11:41	X	X	X																		
ZZZZZZ			11:44																					
CCV 360-49137/13	1		11:46	X	X	X																		
CCB 360-49137/14	1		11:49	X	X	X																		
ICB 360-49137/15			11:52																					
ICV 360-49137/16	1		11:55																					
ICV 360-49137/17			11:58																					
CRI 360-49137/18			12:10																					
CCV 360-49137/19	1		12:40	X	X	X																		
CCB 360-49137/20	1		12:43	X	X	X																		
CCV 360-49137/21	1		15:02	X	X	X																		
CCB 360-49137/22	1		15:05	X	X	X																		
MB 360-49084/1-A	1	T	15:16	X	X	X																		
LCS 360-49084/2-A	1	T	15:19	X	X	X																		
LCSD 360-49084/3-A	1	T	15:22	X	X	X																		
360-24417-2	1	T	15:25	X	X	X																		
360-24417-2 DU	1	T	15:27	X	X	X																		
360-24417-2 MS	1	T	15:30	X	X	X																		
360-24417-2 SD	5	T	15:33	X	X	X																		
360-24417-2 PDS	1	T	15:36	X	X	X																		
CCV 360-49137/31	1		15:39	X	X	X																		
CCB 360-49137/32	1		15:42	X	X	X																		
360-24417-5	1	T	15:45	X	X	X																		
360-24417-8	1	T	15:48	X	X	X																		
360-24417-12	1	T	15:51	X	X	X																		
360-24417-16	1	T	15:53	X	X	X																		
ZZZZZZ			15:56																					
ZZZZZZ			15:59																					
ZZZZZZ			16:02																					
ZZZZZZ			16:05																					
ZZZZZZ			16:08																					
ZZZZZZ			16:11																					

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24417-2

SDG No.: OCRI-10A

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/17/2009 11:12 End Date: 09/17/2009 16:54

Lab Sample ID	D/F	Type	Time	Analytes																			
				Tl	V	Zn																	
CCV 360-49137/43	1		16:14	X	X	X																	
CCB 360-49137/44	1		16:17	X	X	X																	
ZZZZZZ			16:19																				
ZZZZZZ			16:22																				
ZZZZZZ			16:25																				
ZZZZZZ			16:28																				
ZZZZZZ			16:31																				
ZZZZZZ			16:34																				
ZZZZZZ			16:37																				
ZZZZZZ			16:40																				
CCV 360-49137/53	1		16:43	X	X	X																	
CCB 360-49137/54	1		16:46	X	X	X																	
ICSA 360-49137/55	1		16:48	X	X	X																	
ICSAB 360-49137/56	1		16:51	X	X	X																	
ZZZZZZ			16:54																				

Prep Types
T = Total/NA

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

SITE: **Olin Chemical** Project #: 6/07/00012 SDG #: OCRI-11/11A

LAB # : TAL 360-24444-1/2

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☐ ☒ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☑ ☐ ☐ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	See below. Post-digestion spikes %R limits = 75% - 125%

INORGANICS
TAL METALS (including mercury)
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OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Laboratory Control Samples (LCS) ☑ ☐ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate ☑ ☐ ☐ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☑ ☐ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	
Field Duplicate ☑ ☐ ☐ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☑ ☐ ☐ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution ☐ ☑ ☐ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☑ ☐ Are results of the diluted samples > the original sample results	

Validator's Signature: [signature]

Date: 4/9/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

QL Standard:
The percent recovery of tin (57, 66, and 63) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J/UJ).

Blanks:
Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Copper and mercury were reported in the equipment blank associated with OCRI-11 and 11A. Reported detections of copper were significantly greater than equipment blank results, the data was not qualified. Associated sample results for mercury were non detect, no further action required.

Calcium (8.45 mg/kg), chromium (0.0911 mg/kg), iron (1.60 mg/kg), magnesium (2.32 mg/kg), sodium (13.5 mg/kg), and tin (0.491 mg/kg) were reported in the method blank (M360-48665) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. With the exception of sodium and tin, sample results were greater than the action levels, no further action required. Sample results for sodium and tin that were less than the action level were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Calcium (8.34 mg/kg), iron (1.09 mg/kg), magnesium (2.07 mg/kg), selenium (1.22 mg/kg), and tin (0.443 mg/kg) were reported in the method blank (M360-49128) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. With the exception of selenium, sample results were greater than the action levels, no further action required. Associated sample results for selenium were non detect, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Arsenic, selenium, and thallium were reported in the continuing calibration blanks (CCB) associated with a subset of samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for selenium and thallium were non detect, no further action required. Associated sample results for arsenic were greater than the action level, no further action required.

Matrix Spikes:
Sample OC-SB-459-6.0/8.0-XXX was submitted for MS analysis. The MS percent recovery of

aluminum (242), antimony (64), and iron (135) were outside of the QC limits. The unspiked sample results for aluminum and iron were greater than four times the spiking concentration, no further action required. Post digestion spike recovery for antimony was within QC limits, indicating a matrix effect for antimony. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

Sample OC-SB-467-6.0/8.0-XXX was submitted for MS analysis. The MS percent recovery of aluminum (314), antimony (68), and iron (241) were outside of the QC limits. The unspiked sample results for aluminum and iron were greater than four times the spiking concentration, no further action required. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

SDG	Lab Sample ID	Field Sample ID	Antimony MS Recovery (%)
OCRI-03	360-24223-9	OC-SB-426-5.0/7.0-XXX	61
OCRI-04	360-24244-1	OC-SB-432-0.0/1.0-XXX	27
OCRI-04A	360-24244-5	OC-SB-443-18/20-XXX	32
OCRI-05	360-24251-19	OC-SB-446-5.0/7.0-XXX	80
OCRI-05	360-24251-4	OC-SB-433-5.0/7.0-XXX	70
OCRI-06	360-24309-23	OC-SB-430-8.0/10-XXX	44
OCRI-07	360-24327-12	OC-SB-410-6.0/8.0-XXX	65
OCRI-08	360-24343-10	OC-SB-451-2.5/4.5-XXX	62
OCRI-08	360-24343-17	OC-SB-455-6.0/8.0-XXX	46
OCRI-09	360-24365-4	OC-SB-442-8.0/10-XXX	50
OCRI-10	360-24417-10	OC-SB-465-8.0/10-XXX	63
OCRI-10A	360-24417-2	OC-SB-463-28/30-XXX	38
OCRI-11	360-24444-2	OC-SB-459-6.0/8.0-XXX	64
OCRI-11	360-24444-9	OC-SB-467-6.0/8.0-XXX	68
OCRI-12	360-24454-3	OC-SB-461-5.0/7.0-XXX	65
OCRI-13A	360-24499-3	OC-SB-469-28/30-XXX	61
OCRI-14	360-24563-14	OC-SB-456-7.0/9.0-XXX	60
OCRI-14	360-24563-5	OC-SB-427-8.0/10-XXX	67
OCRI-15	360-24582-22	OC-SS-416-0.0/1.0-XXX	56
OCRI-16	360-24634-1	OC-SS-417-0.0/1.0-XXX	61
OCRI-17	360-24665-1	OC-SS-434-0.0/1.0-XXX	29
OCRI-18	360-24686-1	OC-SB-400-17/19-XXX	67

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24444-1
Sdg Number: OCRI-11

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24444-1	OC-SB-459-6.0/8.0-DUP	Solid	09/03/2009 1130	09/03/2009 1650
360-24444-2	OC-SB-459-6.0/8.0-XXX	Solid	09/03/2009 1130	09/03/2009 1650
360-24444-2MS	OC-SB-459-6.0/8.0-XMS	Solid	09/03/2009 1130	09/03/2009 1650
360-24444-2MSD	OC-SB-459-6.0/8.0-MSD	Solid	09/03/2009 1130	09/03/2009 1650
360-24444-3	OC-SB-462-0.0/1.0-XXX	Solid	09/03/2009 0900	09/03/2009 1650
360-24444-4	OC-SB-462-31/33-XXX	Solid	09/03/2009 1015	09/03/2009 1650
360-24444-5	OC-SB-462-4.0/6.0-XXX	Solid	09/03/2009 0910	09/03/2009 1650
360-24444-6	OC-SB-467-0.0/1.0-XXX	Solid	09/02/2009 1605	09/03/2009 1650
360-24444-7	OC-SB-467-30/32-XXX	Solid	09/02/2009 1730	09/03/2009 1650
360-24444-8	OC-SB-467-6.0/8.0-DUP	Solid	09/02/2009 1625	09/03/2009 1650
360-24444-9	OC-SB-467-6.0/8.0-XXX	Solid	09/02/2009 1625	09/03/2009 1650
360-24444-9MS	OC-SB-467-6.0/8.0-XMS	Solid	09/02/2009 1625	09/03/2009 1650
360-24444-9MSD	OC-SB-467-6.0/8.0-MSD	Solid	09/02/2009 1625	09/03/2009 1650
360-24444-10	OC-TBK-013	Solid	09/03/2009 1400	09/03/2009 1650
360-24444-11	OC-SB-459-26/28-XXX	Solid	09/03/2009 1225	09/03/2009 1650
360-24444-12	OC-SB-459-0.0/1.0-XXX	Solid	09/03/2009 1110	09/03/2009 1650
360-24444-13	OC-SB-459-26/28-XXX	Solid	09/03/2009 1225	09/03/2009 1650
360-24444-14	OC-SB-459-6.0/8.0-DUP	Solid	09/03/2009 1130	09/03/2009 1650
360-24444-15	OC-SB-459-6.0/8.0-XXX	Solid	09/03/2009 1130	09/03/2009 1650
360-24444-15MS	OC-SB-459-6.0/8.0-XMS	Solid	09/03/2009 1130	09/03/2009 1650
360-24444-16	OC-EBK-007	Water	09/03/2009 0800	09/03/2009 1650

Form I's updated
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Client: Olin Corporation

Job Number: 360-24444-1
Sdg Number: OCRI-11

Client Sample ID: **OC-SB-459-6.0/8.0-DUP**

Lab Sample ID: 360-24444-1
Client Matrix: Solid
% Moisture: 12.8

Date Sampled: 09/03/2009 1130
Date Received: 09/03/2009 1650

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48721		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48665		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.74 g
Date Analyzed:	09/08/2009 1547			Final Weight/Volume:	100 mL
Date Prepared:	09/08/2009 0716				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4900	~~A~~	0.86	3.3
Antimony		ND 3		0.24	0.66
Arsenic		3.2		0.12	1.3
Barium		6.7		0.086	0.66
Beryllium		0.11	J	0.033	0.26
Cadmium		0.070	J	0.0092	0.26
Calcium		290	~~B~~	3.3	13
Chromium		7.4	~~B~~	0.088	0.66
Cobalt		1.7		0.086	0.66
Copper		3.5		0.086	1.3
Iron		5200	~~B~~	1.1	6.6
Lead		2.4		0.075	0.66
Magnesium		880	~~B~~	0.66	13
Manganese		36		0.088	1.3
Nickel		4.6		0.086	1.3
Potassium		530		41	260
Selenium		ND		0.31	0.66
Silver		ND		0.066	0.66
Sodium		ND		17	130
Thallium		ND		0.095	1.3
Vanadium		7.1		0.086	1.3
Zinc		12		0.78	3.3
Tin		2.6	J ~~B A~~	0.42	6.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.30 g
Date Analyzed:	09/09/2009 1409			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.026	0.14

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Client: Olin Corporation

Job Number: 360-24444-1
Sdg Number: OCRI-11

Client Sample ID: **OC-SB-459-6.0/8.0-XXX**

Lab Sample ID: 360-24444-2
Client Matrix: Solid
%.Moisture: 12.8

Date Sampled: 09/03/2009 1130
Date Received: 09/03/2009 1650

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48721		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48665		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.61 g
Date Analyzed:	09/08/2009 1532			Final Weight/Volume:	100 mL
Date Prepared:	09/08/2009 0716				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4600		0.93	3.6
Antimony		ND 3		0.26	0.71
Arsenic		3.1		0.13	1.4
Barium		6.4		0.093	0.71
Beryllium		0.11	J	0.036	0.28
Cadmium		0.086	J	0.010	0.28
Calcium		310	B	3.6	14
Chromium		7.4	B	0.095	0.71
Cobalt		1.7		0.093	0.71
Copper		3.7		0.093	1.4
Iron		5100	B	1.1	7.1
Lead		2.4		0.081	0.71
Magnesium		850	B	0.71	14
Manganese		34		0.095	1.4
Nickel		4.7		0.093	1.4
Potassium		460		45	280
Selenium		ND		0.33	0.71
Silver		ND		0.072	0.71
Sodium		ND		19	140
Thallium		ND		0.10	1.4
Vanadium		6.9		0.093	1.4
Zinc		12		0.84	3.6
Tin		2.6	J B	0.46	7.1

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.31 g
Date Analyzed:	09/09/2009 1411			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.025	0.14

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Client: Olin Corporation

Job Number: 360-24444-1
Sdg Number: OCRI-11

Client Sample ID: **OC-SB-462-0.0/1.0-XXX**

Lab Sample ID: 360-24444-3
Client Matrix: Solid
% Moisture: 3.7

Date Sampled: 09/03/2009 0900
Date Received: 09/03/2009 1650

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48721		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48665		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.70 g
Date Analyzed:	09/08/2009 1550			Final Weight/Volume:	100 mL
Date Prepared:	09/08/2009 0716				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7700	~~A~~	0.79	3.1
Antimony		ND J		0.22	0.61
Arsenic		13		0.11	1.2
Barium		34		0.079	0.61
Beryllium		0.28		0.031	0.24
Cadmium		0.17	J	0.0086	0.24
Calcium		1000	~~B~~	3.1	12
Chromium		11	~~B~~	0.081	0.61
Cobalt		3.9		0.079	0.61
Copper		8.3		0.079	1.2
Iron		12000	~~B~~	0.97	6.1
Lead		4.3		0.070	0.61
Magnesium		2000	~~B~~	0.61	12
Manganese		190		0.082	1.2
Nickel		8.4		0.079	1.2
Potassium		1100		38	240
Selenium		ND		0.29	0.61
Silver		ND		0.061	0.61
Sodium		34 u	~~J B~~	16	120
Thallium		ND		0.088	1.2
Vanadium		12		0.079	1.2
Zinc		14		0.72	3.1
Tin		3.7	J ~~B~~ A	0.39	6.1

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.30 g
Date Analyzed:	09/09/2009 1416			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.024	0.13

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Client: Olin Corporation

Job Number: 360-24444-1
Sdg Number: OCRI-11

Client Sample ID: **OC-SB-462-4.0/6.0-XXX**

Lab Sample ID: 360-24444-5
Client Matrix: Solid
% Moisture: 14.0

Date Sampled: 09/03/2009 0910
Date Received: 09/03/2009 1650

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48721		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48665		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.78 g
Date Analyzed:	09/08/2009 1558			Final Weight/Volume:	100 mL
Date Prepared:	09/08/2009 0716				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9300	~~A~~	0.85	3.3
Antimony		ND J		0.24	0.65
Arsenic		4.7		0.12	1.3
Barium		11		0.085	0.65
Beryllium		0.23	J	0.033	0.26
Cadmium		0.13	J	0.0092	0.26
Calcium		770	~~B~~	3.3	13
Chromium		18	~~B~~	0.087	0.65
Cobalt		2.0		0.085	0.65
Copper		4.2		0.085	1.3
Iron		7600	~~B~~	1.0	6.5
Lead		8.5		0.075	0.65
Magnesium		850	~~B~~	0.65	13
Manganese		46		0.087	1.3
Nickel		5.6		0.085	1.3
Potassium		490		41	260
Selenium		ND		0.31	0.65
Silver		0.10	J	0.066	0.65
Sodium		ND		17	130
Thallium		ND		0.095	1.3
Vanadium		10		0.085	1.3
Zinc		14		0.77	3.3
Tin		6.6 J	~~B~~	0.42	6.5

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.24 g
Date Analyzed:	09/09/2009 1421			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.033	0.18

4/9/10

Client: Olin Corporation

Job Number: 360-24444-1
Sdg Number: OCRI-11

Client Sample ID: **OC-SB-467-6.0/8.0-DUP**

Lab Sample ID: 360-24444-8
Client Matrix: Solid
% Moisture: 16.0

Date Sampled: 09/02/2009 1625
Date Received: 09/03/2009 1650

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48721		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48665		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.70 g
Date Analyzed:	09/08/2009 1601			Final Weight/Volume:	100 mL
Date Prepared:	09/08/2009 0716				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3800	~~K~~	0.91	3.5
Antimony		ND J		0.25	0.70
Arsenic		3.9		0.13	1.4
Barium		6.4		0.091	0.70
Beryllium		0.16	J	0.035	0.28
Cadmium		0.080	J	0.0098	0.28
Calcium		530	~~B~~	3.5	14
Chromium		5.9	~~B~~	0.093	0.70
Cobalt		2.0		0.091	0.70
Copper		2.9		0.091	1.4
Iron		5500	~~B~~	1.1	7.0
Lead		1.4		0.080	0.70
Magnesium		960	~~B~~	0.70	14
Manganese		35		0.094	1.4
Nickel		5.1		0.091	1.4
Potassium		530		44	280
Selenium		ND		0.33	0.70
Silver		ND		0.070	0.70
Sodium		ND		18	140
Thallium		ND		0.10	1.4
Vanadium		6.0		0.091	1.4
Zinc		13		0.82	3.5
Tin		2.0	u J ~~B~~	0.45	7.0

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/09/2009 1423			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.032	0.18

4/9/10

Client: Olin Corporation

Job Number: 360-24444-1
Sdg Number: OCRI-11

Client Sample ID: **OC-SB-467-6.0/8.0-XXX**

Lab Sample ID: 360-24444-9
Client Matrix: Solid
% Moisture: 17.1

Date Sampled: 09/02/2009 1625
Date Received: 09/03/2009 1650

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48721		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48665		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.68 g
Date Analyzed:	09/08/2009 1604			Final Weight/Volume:	100 mL
Date Prepared:	09/08/2009 0716				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3700	~~B~~	0.93	3.6
Antimony		ND J		0.26	0.72
Arsenic		3.8		0.13	1.4
Barium		7.5		0.093	0.72
Beryllium		0.15	J	0.036	0.29
Cadmium		0.079	J	0.010	0.29
Calcium		530	~~B~~	3.6	14
Chromium		5.8	~~B~~	0.096	0.72
Cobalt		2.1		0.093	0.72
Copper		3.0		0.093	1.4
Iron		5200	~~B~~	1.1	7.2
Lead		1.4		0.082	0.72
Magnesium		950	~~B~~	0.72	14
Manganese		34		0.096	1.4
Nickel		5.1		0.093	1.4
Potassium		560		45	290
Selenium		ND		0.34	0.72
Silver		ND		0.072	0.72
Sodium		ND		19	140
Thallium		ND		0.10	1.4
Vanadium		6.1		0.093	1.4
Zinc		13		0.84	3.6
Tin		2.0	u J ~~B~~	0.46	7.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.28 g
Date Analyzed:	09/09/2009 1426			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.029	0.16

4/9/10

Client: Olin Corporation

Job Number: 360-24444-1
Sdg Number: OCRI-11

Client Sample ID: **OC-SB-459-0.0/1.0-XXX**

Lab Sample ID: 360-24444-12
Client Matrix: Solid
% Moisture: 6.1

Date Sampled: 09/03/2009 1110
Date Received: 09/03/2009 1650

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48721		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48665		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.91 g
Date Analyzed:	09/08/2009 1610			Final Weight/Volume:	100 mL
Date Prepared:	09/08/2009 0716				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8400		0.72	2.8
Antimony		ND J		0.20	0.56
Arsenic		5.6		0.10	1.1
Barium		11		0.072	0.56
Beryllium		0.26		0.028	0.22
Cadmium		0.14	J	0.0078	0.22
Calcium		810	~~B~~	2.8	11
Chromium		12	~~B~~	0.074	0.56
Cobalt		3.2		0.072	0.56
Copper		5.1		0.072	1.1
Iron		8500	~~B~~	0.89	5.6
Lead		4.7		0.064	0.56
Magnesium		1200	~~B~~	0.56	11
Manganese		74		0.074	1.1
Nickel		6.5		0.072	1.1
Potassium		650		35	220
Selenium		ND		0.26	0.56
Silver		ND		0.056	0.56
Sodium		41 U	~~J B~~	14	110
Thallium		ND		0.081	1.1
Vanadium		11		0.072	1.1
Zinc		16		0.66	2.8
Tin		4.4	J ~~B~~	0.36	5.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48671		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.29 g
Date Analyzed:	09/09/2009 1430			Final Weight/Volume:	50 mL
Date Prepared:	09/08/2009 0829				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.025	0.14

4/9/10

Client: Olin Corporation

Job Number: 360-24444-1
Sdg Number: OCRI-11

Client Sample ID: **OC-EBK-007**

Lab Sample ID: 360-24444-16
Client Matrix: Water

Date Sampled: 09/03/2009 0800
Date Received: 09/03/2009 1650

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48667		Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-48595		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	09/04/2009 1232			Final Weight/Volume:	50 mL
Date Prepared:	09/04/2009 0735				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	ND		39	100
Antimony	ND		2.9	6.0
Barium	ND		2.0	10
Arsenic	ND		2.3	10
Beryllium	ND		0.20	1.0
Cadmium	ND		0.20	1.0
Calcium	ND		59	400
Chromium	ND		1.3	5.0
Cobalt	ND		2.0	10
Copper	5.1	J	1.7	10
Iron	35	J	34	100
Lead	ND		1.3	5.0
Magnesium	ND		50	400
Manganese	ND		1.3	10
Nickel	ND		1.5	10
Potassium	ND		500	4000
Selenium	ND		2.7	10
Silver	ND		1.8	5.0
Sodium	ND		250	2000
Tin	ND		7.0	50
Vanadium	ND		1.5	10
Thallium	ND		1.4	10
Zinc	ND		10	50

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 360-48801		Instrument ID:	Hg Analyzer
Preparation:	7470A	Prep Batch: 360-48730		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	09/10/2009 1106			Final Weight/Volume:	10 mL
Date Prepared:	09/09/2009 0904				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.12	J	0.065	0.20

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24444-2
Sdg Number: OCRI-11A

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24444-4	OC-SB-462-31/33-XXX	Solid	09/03/2009 1015	09/03/2009 1650
360-24444-7	OC-SB-467-30/32-XXX	Solid	09/02/2009 1730	09/03/2009 1650
360-24444-13	OC-SB-459-26/28-XXX	Solid	09/03/2009 1225	09/03/2009 1650

Form 1b
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Client: Olin Corporation

Job Number: 360-24444-2
Sdg Number: OCRI-11A

Client Sample ID: **OC-SB-462-31/33-XXX**

Lab Sample ID: 360-24444-4
Client Matrix: Solid
% Moisture: 8.4

Date Sampled: 09/03/2009 1015
Date Received: 09/03/2009 1650

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.97 g
Date Analyzed:	09/18/2009 1330			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6000		0.72	2.8
Antimony		ND J		0.20	0.55
Arsenic		2.2		0.10	1.1
Barium		26		0.072	0.55
Beryllium		0.17	J	0.028	0.22
Cadmium		0.18	J	0.0078	0.22
Calcium		3400	~~B~~	2.8	11
Chromium		150		0.074	0.55
Cobalt		7.6		0.072	0.55
Copper		20		0.072	1.1
Iron		13000	~~B~~	0.88	5.5
Lead		1.4		0.063	0.55
Magnesium		4100	~~B~~	0.55	11
Manganese		160		0.074	1.1
Nickel		6.3		0.072	1.1
Potassium		1800		35	220
Selenium		ND		0.26	0.55
Silver		2.4		0.056	0.55
Sodium		92	J	14	110
Thallium		ND		0.080	1.1
Vanadium		17		0.072	1.1
Zinc		15		0.65	2.8
Tin		59 J	~~B~~	0.35	5.5

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Client: Olin Corporation

Job Number: 360-24444-2
Sdg Number: OCRI-11A

Client Sample ID: **OC-SB-467-30/32-XXX**

Lab Sample ID: 360-24444-7
Client Matrix: Solid
% Moisture: 10.8

Date Sampled: 09/02/2009 1730
Date Received: 09/03/2009 1650

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.65 g
Date Analyzed:	09/18/2009 1333			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8400		0.88	3.4
Antimony		0.33	J	0.25	0.68
Arsenic		4.2		0.12	1.4
Barium		73		0.088	0.68
Beryllium		0.20	J	0.034	0.27
Cadmium		0.24	J	0.0095	0.27
Calcium		3100	~~B~~	3.4	14
Chromium		250		0.090	0.68
Cobalt		13		0.088	0.68
Copper		26		0.088	1.4
Iron		17000	~~B~~	1.1	6.8
Lead		1.7		0.078	0.68
Magnesium		5400	~~B~~	0.68	14
Manganese		220		0.091	1.4
Nickel		14		0.088	1.4
Potassium		3600		42	270
Selenium		ND		0.32	0.68
Silver		3.9		0.068	0.68
Sodium		200		18	140
Thallium		ND		0.098	1.4
Vanadium		27		0.088	1.4
Zinc		24		0.80	3.4
Tin		100 J	~~B~~	0.43	6.8

4/9/10

Client: Olin Corporation

Job Number: 360-24444-2
Sdg Number: OCRI-11A

Client Sample ID: **OC-SB-459-26/28-XXX**

Lab Sample ID: 360-24444-13
Client Matrix: Solid
% Moisture: 9.7

Date Sampled: 09/03/2009 1225
Date Received: 09/03/2009 1650

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.88 g
Date Analyzed:	09/18/2009 1336			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7500		0.77	2.9
Antimony		ND J		0.21	0.59
Arsenic		3.8		0.11	1.2
Barium		11		0.077	0.59
Beryllium		0.27		0.029	0.24
Cadmium		0.14	J	0.0082	0.24
Calcium		1400	B	2.9	12
Chromium		460		0.078	0.59
Cobalt		3.7		0.077	0.59
Copper		16		0.077	1.2
Iron		11000	B	0.94	5.9
Lead		1.7		0.067	0.59
Magnesium		2800	B	0.59	12
Manganese		80		0.079	1.2
Nickel		8.6		0.077	1.2
Potassium		840		37	240
Selenium		ND		0.28	0.59
Silver		8.4		0.059	0.59
Sodium		430		15	120
Thallium		ND		0.085	1.2
Vanadium		18		0.077	1.2
Zinc		14		0.69	2.9
Tin		190 J	B	0.38	5.9

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OCRI-1Φ (24444)

Field Dups OK ✓

✓ ICV/CCV OK

✓ CRQL STD

Sn (57, 66)

EQBLK		AL
Cu	5.1	0.255
~~Fe~~	~~35~~	
Hg	0.12	0.03

ICB/CCB

Se, Tl, As 48721-34 ~~48721~~-46

affects -5-8-9-12, -1,2-3

As $\frac{2.62 mg/L \times 0.1L}{2g} = 0.131 mg/kg \times 5 = 0.655$

✓ MB 48665

Ca	8.45	42.25	>
Cr	0.0911	0.4555	>
Fe	1.60	8	>
Mg	2.32	11.6	>
Na	13.5	67.5	<
Sn	0.491	2.455	<

✓ ICS/OK

MS OC-SB-459-6.0/8.0-xxx ✓

Al	242	(4x)
Sb	64	
Fe	135	(4x)

PDS OK

MS OC-SB-467-6.0/8.0-xxx ✓

Al	314	(4x)
Sb	68	
Fe	241	(4x)

✓ Lab DUP OK

✓ LCS OK

✓ serial dilution OK

OCRI-11A

ICV/CCV OK

~~Sb~~ CRQL Sn (63)

ICB/CCB

Se, Tl

MB 49128

Ca	8.34	41.7	>
Fe	1.09	5.45	>
Mg	2.07	10.35	>
Se	0.244	1.22	ND
Sn	0.443	2.215	>

ISS OK

LCS OK

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) III (circle one)

SITE: **Olin Chemical** Project #: 6/07/00016, 12 SDG #: OCRI-12/12A

LAB # : TAL 360-24454-1/2

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☐ ☒ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☑ ☐ ☐ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	See below. Post-digestion spikes %R limits = 75% - 125%

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

Laboratory Control Samples (LCS) ☑ ☐ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate ☑ ☐ ☐ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☑ ☐ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	
Field Duplicate ☐ ☐ ☑ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☐ ☐ ☑ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution ☐ ☑ ☐ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☑ ☐ Are results of the diluted samples > the original sample results	

Validator's Signature: _____

Date: 4/9/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

QL Standard:
The percent recovery of tin (61, 62, and 58) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J/UJ).

Blanks:
Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Copper was reported in the equipment blank associated with OCRI-12 and 12A. Reported detections of copper were significantly greater than equipment blank results, the data was not qualified.

Barium (0.073 mg/kg), calcium (10 mg/kg), chromium (0.137 mg/kg), iron (1.72 mg/kg), magnesium (2.71 mg/kg), sodium (14.1 mg/kg), and tin (0.501 mg/kg) were reported in the method blank (M360-48719) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. With the exception of sodium and tin, sample results were greater than the action levels, no further action required. Sample results for sodium and tin that were less than the action level were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Calcium (7.26 mg/kg), chromium (0.0787 mg/kg), iron (1.16 mg/kg), lead (0.0939 mg/kg), magnesium (9.05 mg/kg), nickel (0.144 mg/kg), and tin (0.445 mg/kg) were reported in the method blank (M360-49270) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Associated sample results were greater than the action levels, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Potassium and thallium were reported in the continuing calibration blanks (CCB) associated with a subset of samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for thallium were non detect, no further action required. Associated sample results for potassium were greater than the action level, no further action required.

Arsenic, beryllium, cadmium, selenium, and thallium were reported in the CCBs associated with a subset of samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for arsenic, beryllium, and cadmium were greater than the action levels, no further action required. Associated sample results for selenium and thallium were non detect, no further action required.

Matrix Spikes:

Sample OC-SB-461-5.0/7.0-XXX was submitted for MS analysis. The MS percent recovery of aluminum (142), antimony (65), and iron (56) were outside of the QC limits. The unspiked sample results for aluminum and iron were greater than four times the spiking concentration, no further action required. Post digestion spike recovery for antimony was within QC limits, indicating a matrix effect for antimony. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

SDG	Lab Sample ID	Field Sample ID	Antimony MS Recovery (%)
OCRI-03	360-24223-9	OC-SB-426-5.0/7.0-XXX	61
OCRI-04	360-24244-1	OC-SB-432-0.0/1.0-XXX	27
OCRI-04A	360-24244-5	OC-SB-443-18/20-XXX	32
OCRI-05	360-24251-19	OC-SB-446-5.0/7.0-XXX	80
OCRI-05	360-24251-4	OC-SB-433-5.0/7.0-XXX	70
OCRI-06	360-24309-23	OC-SB-430-8.0/10-XXX	44
OCRI-07	360-24327-12	OC-SB-410-6.0/8.0-XXX	65
OCRI-08	360-24343-10	OC-SB-451-2.5/4.5-XXX	62
OCRI-08	360-24343-17	OC-SB-455-6.0/8.0-XXX	46
OCRI-09	360-24365-4	OC-SB-442-8.0/10-XXX	50
OCRI-10	360-24417-10	OC-SB-465-8.0/10-XXX	63
OCRI-10A	360-24417-2	OC-SB-463-28/30-XXX	38
OCRI-11	360-24444-2	OC-SB-459-6.0/8.0-XXX	64
OCRI-11	360-24444-9	OC-SB-467-6.0/8.0-XXX	68
OCRI-12	360-24454-3	OC-SB-461-5.0/7.0-XXX	65
OCRI-13A	360-24499-3	OC-SB-469-28/30-XXX	61
OCRI-14	360-24563-14	OC-SB-456-7.0/9.0-XXX	60
OCRI-14	360-24563-5	OC-SB-427-8.0/10-XXX	67
OCRI-15	360-24582-22	OC-SS-416-0.0/1.0-XXX	56
OCRI-16	360-24634-1	OC-SS-417-0.0/1.0-XXX	61
OCRI-17	360-24665-1	OC-SS-434-0.0/1.0-XXX	29
OCRI-18	360-24686-1	OC-SB-400-17/19-XXX	67

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24454-1
Sdg Number: OCRI-12

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24454-1	OC-SB-461-0.0/1.0-XXX	Solid	09/03/2009 1420	09/04/2009 1605
360-24454-2	OC-SB-461-28/30-XXX	Solid	09/03/2009 1650	09/04/2009 1605
360-24454-3	OC-SB-461-5.0/7.0-XXX	Solid	09/03/2009 1430	09/04/2009 1605
360-24454-4	OC-SB-470-0.0/1.0-XXX	Solid	09/04/2009 1015	09/04/2009 1605
360-24454-5	OC-SB-470-31/33-XXX	Solid	09/04/2009 1120	09/04/2009 1605
360-24454-6	OC-SB-470-7.0/9.0-XXX	Solid	09/04/2009 1020	09/04/2009 1605
360-24454-7	OC-SB-472-0.0/1.0-XXX	Solid	09/04/2009 0745	09/04/2009 1605
360-24454-8	OC-SB-472-30/32-XXX	Solid	09/04/2009 0850	09/04/2009 1605
360-24454-9	OC-SB-472-8.0/10-XXX	Solid	09/04/2009 0755	09/04/2009 1605
360-24454-10	OC-TBK-014	Solid	09/04/2009 1130	09/04/2009 1605
360-24454-12	OC-SB-461-5.0/7.0-XXX	Solid	09/03/2009 1430	09/04/2009 1605
360-24454-13	OC-SB-470-0.0/1.0-XXX	Solid	09/04/2009 1015	09/04/2009 1605
360-24454-15	OC-SB-470-7.0/9.0-XXX	Solid	09/04/2009 1020	09/04/2009 1605
360-24454-16	OC-SB-472-30/32-XXX	Solid	09/04/2009 0850	09/04/2009 1605
360-24454-17	OC-SB-472-8.0/10-XXX	Solid	09/04/2009 0755	09/04/2009 1605
360-24454-18EB	OC-EBK-008	Water	09/08/2009 1100	09/08/2009 1630

Form I's updated
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Client: Olin Corporation

Job Number: 360-24454-1
Sdg Number: OCRI-12

Client Sample ID: **OC-SB-461-5.0/7.0-XXX**

Lab Sample ID: 360-24454-3
Client Matrix: Solid
% Moisture: 14.6

Date Sampled: 09/03/2009 1430
Date Received: 09/04/2009 1605

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48775		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48719		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.66 g
Date Analyzed:	09/09/2009 1459			Final Weight/Volume:	100 mL
Date Prepared:	09/09/2009 0807				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3000		0.92	3.5
Antimony		ND		0.26	0.71
Arsenic		3.1		0.13	1.4
Barium		8.8	B	0.092	0.71
Beryllium		0.17	J	0.035	0.28
Cadmium		0.080	J	0.0099	0.28
Calcium		410	B	3.5	28
Chromium		11	B	0.094	0.71
Cobalt		1.6		0.092	0.71
Copper		2.9		0.092	1.4
Iron		4500	B	1.1	7.1
Lead		1.2		0.081	0.71
Magnesium		960	B	0.71	14
Manganese		49		0.094	1.4
Nickel		4.4		0.092	1.4
Potassium		470		44	280
Selenium		ND		0.33	0.71
Silver		ND		0.071	0.71
Sodium		20	J B	18	140
Thallium		ND		0.10	1.4
Vanadium		5.4		0.092	1.4
Zinc		7.8		0.83	3.5
Tin		4.0	J B	0.45	7.1

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48743		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.26 g
Date Analyzed:	09/09/2009 1503			Final Weight/Volume:	50 mL
Date Prepared:	09/09/2009 1043				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.031	0.17

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Client: Olin Corporation

Job Number: 360-24454-1
Sdg Number: OCRI-12

Client Sample ID: **OC-SB-470-0.0/1.0-XXX**

Lab Sample ID: 360-24454-4
Client Matrix: Solid
% Moisture: 9.7

Date Sampled: 09/04/2009 1015
Date Received: 09/04/2009 1605

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48775		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48719		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.76 g
Date Analyzed:	09/09/2009 1519			Final Weight/Volume:	100 mL
Date Prepared:	09/09/2009 0807				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6300		0.82	3.1
Antimony		ND J		0.23	0.63
Arsenic		4.2		0.11	1.3
Barium		18	~~B~~	0.082	0.63
Beryllium		0.26		0.031	0.25
Cadmium		0.31		0.0088	0.25
Calcium		9500	~~B~~	3.1	25
Chromium		96	~~B~~	0.084	0.63
Cobalt		2.7		0.082	0.63
Copper		5.5		0.082	1.3
Iron		7000	~~B~~	1.0	6.3
Lead		4.7		0.072	0.63
Magnesium		1700	~~B~~	0.63	13
Manganese		110		0.084	1.3
Nickel		8.1		0.082	1.3
Potassium		1500		39	250
Selenium		ND		0.29	0.63
Silver		1.4		0.063	0.63
Sodium		38 U	~~J B~~	16	130
Thallium		ND		0.091	1.3
Vanadium		9.9		0.082	1.3
Zinc		41		0.74	3.1
Tin		42 J	~~B~~	0.40	6.3

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48743		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.26 g
Date Analyzed:	09/09/2009 1512			Final Weight/Volume:	50 mL
Date Prepared:	09/09/2009 1043				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.031	J	0.029	0.16

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Client: Olin Corporation

Job Number: 360-24454-1
Sdg Number: OCRI-12

Client Sample ID: **OC-SB-470-7.0/9.0-XXX**

Lab Sample ID: 360-24454-6
Client Matrix: Solid
% Moisture: 4.7

Date Sampled: 09/04/2009 1020
Date Received: 09/04/2009 1605

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48775		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48719		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.75 g
Date Analyzed:	09/09/2009 1522			Final Weight/Volume:	100 mL
Date Prepared:	09/09/2009 0807				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6400		0.78	3.0
Antimony		ND J		0.22	0.60
Arsenic		9.9		0.11	1.2
Barium		18	B	0.078	0.60
Beryllium		0.21	J	0.030	0.24
Cadmium		0.15	J	0.0084	0.24
Calcium		1600	B	3.0	24
Chromium		280	B	0.080	0.60
Cobalt		2.5		0.078	0.60
Copper		6.7		0.078	1.2
Iron		8800	B	0.96	6.0
Lead		3.1		0.068	0.60
Magnesium		1800	B	0.60	12
Manganese		62		0.080	1.2
Nickel		5.6		0.078	1.2
Potassium		890		37	240
Selenium		ND		0.28	0.60
Silver		4.5		0.060	0.60
Sodium		150	B	16	120
Thallium		ND		0.087	1.2
Vanadium		12		0.078	1.2
Zinc		11		0.71	3.0
Tin		120 J	B	0.38	6.0

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48743		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/09/2009 1514			Final Weight/Volume:	50 mL
Date Prepared:	09/09/2009 1043				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.029	0.16

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Client: Olin Corporation

Job Number: 360-24454-1
Sdg Number: OCRI-12

Client Sample ID: **OC-SB-472-0.0/1.0-XXX**

Lab Sample ID: 360-24454-7
Client Matrix: Solid
% Moisture: 7.0

Date Sampled: 09/04/2009 0745
Date Received: 09/04/2009 1605

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48775		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48719		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.91 g
Date Analyzed:	09/09/2009 1525			Final Weight/Volume:	100 mL
Date Prepared:	09/09/2009 0807				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7900		0.73	2.8
Antimony		ND J		0.20	0.56
Arsenic		3.8		0.10	1.1
Barium		28	~~B~~	0.073	0.56
Beryllium		0.31		0.028	0.23
Cadmium		0.19	J	0.0079	0.23
Calcium		1300	~~B~~	2.8	23
Chromium		8.8	~~B~~	0.075	0.56
Cobalt		3.4		0.073	0.56
Copper		9.4		0.073	1.1
Iron		9000	~~B~~	0.90	5.6
Lead		28		0.064	0.56
Magnesium		1600	~~B~~	0.56	11
Manganese		100		0.075	1.1
Nickel		6.1		0.073	1.1
Potassium		1400		35	230
Selenium		ND		0.26	0.56
Silver		ND		0.057	0.56
Sodium		34 U	~~J B~~	15	110
Thallium		ND		0.081	1.1
Vanadium		12		0.073	1.1
Zinc		22		0.66	2.8
Tin		2.9	J ~~B~~	0.36	5.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48743		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.32 g
Date Analyzed:	09/09/2009 1516			Final Weight/Volume:	50 mL
Date Prepared:	09/09/2009 1043				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.16		0.023	0.12

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Client: Olin Corporation

Job Number: 360-24454-1
Sdg Number: OCRI-12

Client Sample ID: **OC-SB-472-30/32-XXX**

Lab Sample ID: 360-24454-8
Client Matrix: Solid
% Moisture: 8.9

Date Sampled: 09/04/2009 0850
Date Received: 09/04/2009 1605

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48775		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48719		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.71 g
Date Analyzed:	09/09/2009 1528			Final Weight/Volume:	100 mL
Date Prepared:	09/09/2009 0807				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8100		0.83	3.2
Antimony		ND 3		0.23	0.64
Arsenic		4.0		0.12	1.3
Barium		39	B	0.083	0.64
Beryllium		0.16	J	0.032	0.26
Cadmium		0.31		0.0090	0.26
Calcium		3200	B	3.2	26
Chromium		280	B	0.085	0.64
Cobalt		8.5		0.083	0.64
Copper		23		0.083	1.3
Iron		17000	B	1.0	6.4
Lead		2.2		0.073	0.64
Magnesium		5000	B	0.64	13
Manganese		140		0.086	1.3
Nickel		13		0.083	1.3
Potassium		2100		40	260
Selenium		ND		0.30	0.64
Silver		4.1		0.065	0.64
Sodium		170	B	17	130
Thallium		ND		0.093	1.3
Vanadium		30		0.083	1.3
Zinc		21		0.76	3.2
Tin		120 3	B	0.41	6.4

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48743		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.30 g
Date Analyzed:	09/09/2009 1518			Final Weight/Volume:	50 mL
Date Prepared:	09/09/2009 1043				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.025	0.14

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Client: Olin Corporation

Job Number: 360-24454-1
Sdg Number: OCRI-12

Client Sample ID: **OC-SB-472-8.0/10-XXX**

Lab Sample ID: 360-24454-9
Client Matrix: Solid
% Moisture: 15.3

Date Sampled: 09/04/2009 0755
Date Received: 09/04/2009 1605

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48775		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48719		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.62 g
Date Analyzed:	09/09/2009 1531			Final Weight/Volume:	100 mL
Date Prepared:	09/09/2009 0807				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		2200		0.95	3.6
Antimony		ND J		0.26	0.73
Arsenic		4.3		0.13	1.5
Barium		9.5	~~B~~	0.095	0.73
Beryllium		0.12	J	0.036	0.29
Cadmium		0.071	J	0.010	0.29
Calcium		1100	~~B~~	3.6	29
Chromium		6.6	~~B~~	0.097	0.73
Cobalt		0.97		0.095	0.73
Copper		2.6		0.095	1.5
Iron		3500	~~B~~	1.2	7.3
Lead		2.2		0.083	0.73
Magnesium		500	~~B~~	0.73	15
Manganese		23		0.097	1.5
Nickel		2.6		0.095	1.5
Potassium		490		46	290
Selenium		ND		0.34	0.73
Silver		ND		0.073	0.73
Sodium		46 u	~~J B~~	19	150
Thallium		ND		0.11	1.5
Vanadium		4.4		0.095	1.5
Zinc		7.4		0.86	3.6
Tin		2.3	J ~~B~~	0.47	7.3

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48764		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48743		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/09/2009 1520			Final Weight/Volume:	50 mL
Date Prepared:	09/09/2009 1043				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.032	0.17

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Client: Olin Corporation

Job Number: 360-24454-1
Sdg Number: OCRI-12

Client Sample ID: **OC-EBK-008**

Lab Sample ID: 360-24454-18EB
Client Matrix: Water

Date Sampled: 09/08/2009 1100
Date Received: 09/08/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48774		Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-48718		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	09/09/2009 1424			Final Weight/Volume:	50 mL
Date Prepared:	09/09/2009 0756				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	ND		39	100
Antimony	ND		2.9	6.0
Barium	ND		2.0	10
Arsenic	ND		2.3	10
Beryllium	ND		0.20	1.0
Cadmium	ND		0.20	1.0
Calcium	68	J	59	400
Chromium	ND		1.3	5.0
Cobalt	ND		2.0	10
Copper	3.7	J	1.7	10
Iron	45	J	34	100
Lead	ND		1.3	5.0
Magnesium	ND		50	400
Manganese	1.4	J	1.3	10
Nickel	ND		1.5	10
Potassium	ND		500	4000
Selenium	ND		2.7	10
Silver	ND		1.8	5.0
Sodium	ND		250	2000
Tin	ND		7.0	50
Vanadium	ND		1.5	10
Thallium	ND		1.4	10
Zinc	ND		10	50

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 360-48801		Instrument ID:	Hg Analyzer
Preparation:	7470A	Prep Batch: 360-48730		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	09/10/2009 1128			Final Weight/Volume:	10 mL
Date Prepared:	09/09/2009 0904				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	ND		0.065	0.20

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24454-2
Sdg Number: OCRI-12A

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24454-2	OC-SB-461-28/30-XXX	Solid	09/03/2009 1650	09/04/2009 1605
360-24454-5	OC-SB-470-31/33-XXX	Solid	09/04/2009 1120	09/04/2009 1605
360-24454-14	OC-SB-470-31/33-XXX	Solid	09/04/2009 1120	09/04/2009 1605

Client: Olin Corporation

Job Number: 360-24454-2
Sdg Number: OCRI-12A

Client Sample ID: **OC-SB-461-28/30-XXX**

Lab Sample ID: 360-24454-2
Client Matrix: Solid
% Moisture: 6.4

Date Sampled: 09/03/2009 1650
Date Received: 09/04/2009 1605

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49334		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49270		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.72 g
Date Analyzed:	09/22/2009 1913			Final Weight/Volume:	100 mL
Date Prepared:	09/22/2009 0843				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7300		0.81	3.1
Antimony		ND 3		0.22	0.62
Arsenic		4.8		0.11	1.2
Barium		20		0.081	0.62
Beryllium		0.16	J	0.031	0.25
Cadmium		0.26		0.0087	0.25
Calcium		2500	~~B~~	3.1	12
Chromium		230	~~B~~	0.083	0.62
Cobalt		7.5		0.081	0.62
Copper		25		0.081	1.2
Iron		16000	~~B~~	0.99	6.2
Lead		4.0	~~B~~	0.071	0.62
Magnesium		4900	~~B~~	0.62	12
Manganese		110		0.083	1.2
Nickel		13	~~B~~	0.081	1.2
Potassium		1000		39	250
Selenium		ND		0.29	0.62
Silver		3.5		0.062	0.62
Sodium		280		16	120
Vanadium		31		0.081	1.2
Zinc		20		0.73	3.1
Tin		100 3	~~B~~	0.40	6.2

Method:	6010B	Analysis Batch: 360-49403		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49270		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.72 g
Date Analyzed:	09/23/2009 1201			Final Weight/Volume:	100 mL
Date Prepared:	09/22/2009 0843				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Thallium		ND		0.090	1.2

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Client: Olin Corporation

Job Number: 360-24454-2
Sdg Number: OCRI-12A

Client Sample ID: **OC-SB-470-31/33-XXX**

Lab Sample ID: 360-24454-5
Client Matrix: Solid
% Moisture: 10.1

Date Sampled: 09/04/2009 1120
Date Received: 09/04/2009 1605

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49334		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49270		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.91 g
Date Analyzed:	09/22/2009 1916			Final Weight/Volume:	100 mL
Date Prepared:	09/22/2009 0843				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4000		0.76	2.9
Antimony		ND J		0.21	0.58
Arsenic		5.0		0.11	1.2
Barium		48		0.076	0.58
Beryllium		0.082	J	0.029	0.23
Cadmium		0.22	J	0.0082	0.23
Calcium		1900	~~B~~	2.9	12
Chromium		50	~~B~~	0.077	0.58
Cobalt		4.3		0.076	0.58
Copper		5.3		0.076	1.2
Iron		13000	~~B~~	0.93	5.8
Lead		3.6	~~B~~	0.066	0.58
Magnesium		1800	~~B~~	0.58	12
Manganese		75		0.078	1.2
Nickel		3.2	~~B~~	0.076	1.2
Potassium		2300		36	230
Selenium		ND		0.27	0.58
Silver		0.35	J	0.059	0.58
Sodium		260		15	120
Vanadium		21		0.076	1.2
Zinc		14		0.68	2.9
Tin		20 J	~~B~~	0.37	5.8

Method:	6010B	Analysis Batch: 360-49403		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49270		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.91 g
Date Analyzed:	09/23/2009 1204			Final Weight/Volume:	100 mL
Date Prepared:	09/22/2009 0843				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Thallium		ND		0.084	1.2

4/9/10

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

ICV Source: ICV1 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	ICV 360-49334/6 09/22/2009 15:42				CCV 360-49334/13 09/22/2009 16:01				CCV 360-49334/21 09/22/2009 18:16			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Ag	974		1000	97	993		1000	99	980		1000	98
Al	973		1000	97	4970		5000	99	4850		5000	97
As	961		1000	96	990		1000	99	970		1000	97
Ba	975		1000	97	994		1000	99	974		1000	97
Be	976		1000	98	992		1000	99	987		1000	99
Cd	978		1000	98	990		1000	99	984		1000	98
Co	982		1000	98	990		1000	99	982		1000	98
Cr	965		1000	96	991		1000	99	985		1000	98
Cu	986		1000	99	992		1000	99	968		1000	97
Fe	963		1000	96	4960		5000	99	4910		5000	98
Mn	977		1000	98	991		1000	99	983		1000	98
Ni	981		1000	98	988		1000	99	985		1000	99
Pb	982		1000	98	991		1000	99	983		1000	98
Sb	953		1000	95	993		1000	99	967		1000	97
Se	980		1000	98	991		1000	99	968		1000	97
V	978		1000	98	991		1000	99	981		1000	98
Zn	988		1000	99	987		1000	99	990		1000	99
Tl	969		1000	97	992		1000	99	978		1000	98

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

ICV Source: ICV1 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	CCV 360-49334/26 09/22/2009 18:50				CCV 360-49334/38 09/22/2009 19:25				CCV 360-49334/47 09/22/2009 19:51			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Ag	987		1000	99	991		1000	99	993		1000	99
Al	4890		5000	98	4920		5000	98	4950		5000	99
As	979		1000	98	982		1000	98	984		1000	98
Ba	982		1000	98	983		1000	98	987		1000	99
Be	989		1000	99	993		1000	99	997		1000	100
Cd	986		1000	99	994		1000	99	995		1000	100
Co	984		1000	98	993		1000	99	994		1000	99
Cr	987		1000	99	994		1000	99	996		1000	100
Cu	986		1000	99	981		1000	98	994		1000	99
Fe	4930		5000	99	4980		5000	100	4990		5000	100
Mn	985		1000	98	992		1000	99	995		1000	99
Ni	987		1000	99	996		1000	100	996		1000	100
Pb	987		1000	99	996		1000	100	995		1000	99
Sb	987		1000	99	981		1000	98	986		1000	99
Se	976		1000	98	974		1000	97	980		1000	98
V	984		1000	98	990		1000	99	993		1000	99
Zn	988		1000	99	998		1000	100	997		1000	100
Tl	985		1000	98	986		1000	99	987		1000	99

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

ICV Source: ICV2 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	ICV 360-49334/6 09/22/2009 15:42				CCV 360-49334/13 09/22/2009 16:01				CCV 360-49334/21 09/22/2009 18:16			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Ca	9780		10000	98	19800		20000	99	19700		20000	99
Mg	9690		10000	97	19800		20000	99	19700		20000	99
Na	9130		10000	91	19900		20000	100	19800		20000	99
Sn	978		1000	98	991		1000	99	979		1000	98

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

ICV Source: ICV2 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	CCV 360-49334/26 09/22/2009 18:50				CCV 360-49334/38 09/22/2009 19:25				CCV 360-49334/47 09/22/2009 19:51			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Ca	19700		20000	99	19900		20000	99	19900		20000	100
Mg	19700		20000	99	19900		20000	100	20000		20000	100
Na	19700		20000	99	20100		20000	100	20100		20000	101
Sn	986		1000	99	991		1000	99	990		1000	99

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

ICV Source: ME ICV KNa_00003 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	CCV 360-49334/13 09/22/2009 16:01				ICV 360-49334/16 09/22/2009 16:09				CCV 360-49334/21 09/22/2009 18:16			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
K	19800		20000	99	76300		75000	102	19600		20000	98

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

ICV Source: ME ICV KNa_00003 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	CCV 360-49334/26 09/22/2009 18:50				CCV 360-49334/38 09/22/2009 19:25				CCV 360-49334/47 09/22/2009 19:51			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
K	19800		20000	99	19900		20000	99	19900		20000	100

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

ICV Source: ICV1 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	ICV 360-49403/6 09/23/2009 10:45				CCV 360-49403/13 09/23/2009 11:06				CCV 360-49403/24 09/23/2009 11:44			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Tl	983		1000	98	996		1000	100	995		1000	100
Ag	984		1000	98	992		1000	99	995		1000	100
Al	987		1000	99	4940		5000	99	4960		5000	99
As	981		1000	98	994		1000	99	1000		1000	100
Ba	987		1000	99	988		1000	99	991		1000	99
Be	992		1000	99	992		1000	99	998		1000	100
Cd	991		1000	99	993		1000	99	997		1000	100
Co	997		1000	100	993		1000	99	997		1000	100
Cr	985		1000	98	992		1000	99	1000		1000	100
Cu	976		1000	98	983		1000	98	992		1000	99
Fe	974		1000	97	5000		5000	100	5030		5000	101
Mn	991		1000	99	991		1000	99	996		1000	100
Ni	995		1000	100	990		1000	99	998		1000	100
Pb	993		1000	99	992		1000	99	995		1000	99
Sb	950		1000	95	990		1000	99	994		1000	99
Se	994		1000	99	999		1000	100	996		1000	100
V	994		1000	99	990		1000	99	995		1000	100
Zn	999		1000	100	993		1000	99	997		1000	100

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

ICV Source: ICV1 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	CCV 360-49403/36 09/23/2009 12:19				CCV 360-49403/38 09/23/2009 17:35							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Tl	1000		1000	100	970		1000	97				
Ag	997		1000	100	974		1000	97				
Al	4970		5000	99	4870		5000	97				
As	999		1000	100	976		1000	98				
Ba	994		1000	99	978		1000	98				
Be	1000		1000	100	973		1000	97				
Cd	999		1000	100	968		1000	97				
Co	999		1000	100	971		1000	97				
Cr	1000		1000	100	980		1000	98				
Cu	998		1000	100	978		1000	98				
Fe	5050		5000	101	4900		5000	98				
Mn	999		1000	100	972		1000	97				
Ni	997		1000	100	978		1000	98				
Pb	997		1000	100	967		1000	97				
Sb	994		1000	99	973		1000	97				
Se	999		1000	100	965		1000	96				
V	998		1000	100	972		1000	97				
Zn	999		1000	100	965		1000	96				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

ICV Source: ICV2 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	ICV 360-49403/6 09/23/2009 10:45				CCV 360-49403/13 09/23/2009 11:06				CCV 360-49403/24 09/23/2009 11:44			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Ca	9990		10000	100	19800		20000	99	19900		20000	100
Mg	9850		10000	99	19900		20000	99	20000		20000	100
Na	9250		10000	92	19900		20000	100	19900		20000	100
Sn	982		1000	98	989		1000	99	993		1000	99

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

ICV Source: ICV2 ICP_00004 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	CCV 360-49403/36 09/23/2009 12:19				CCV 360-49403/38 09/23/2009 17:35							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Ca	20000		20000	100	19400		20000	97				
Mg	20000		20000	100	19400		20000	97				
Na	20000		20000	100	19500		20000	97				
Sn	994		1000	99	963		1000	96				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

ICV Source: ME ICV KNa_00003 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	CCV 360-49403/13 09/23/2009 11:06				ICV 360-49403/16 09/23/2009 11:15				CCV 360-49403/24 09/23/2009 11:44			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
K	19900		20000	99	76800		75000	102	19900		20000	99

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

ICV Source: ME ICV KNa_00003 Concentration Units: ug/L

CCV Source: MEVARCCV_00009

Analyte	CCV 360-49403/36 09/23/2009 12:19				CCV 360-49403/38 09/23/2009 17:35							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
K	20200		20000	101	19900		20000	99				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Analysis Method: 6010B Instrument ID: Varian ICP

Lab Sample ID: CRI 360-49334/8 Concentration Units: ug/L

CRQL Check Standard Source: CRI-RL ICP_00004

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	100	104		104	70-130
Antimony	10.0	9.07	J	91	70-130
Arsenic	10.0	9.02	J	90	70-130
Barium	10.0	11.1		111	70-130
Beryllium	1.00	1.01		101	70-130
Cadmium	1.00	0.994	J	99	70-130
Calcium	400	411		103	70-130
Chromium	5.00	4.75	J	95	70-130
Cobalt	10.0	10.9		109	70-130
Copper	10.0	11.1		111	70-130
Iron	100	106		106	70-130
Lead	5.00	5.32		106	70-130
Magnesium	400	427		107	70-130
Manganese	10.0	10.6		106	70-130
Nickel	10.0	10.4		104	70-130
Potassium	4000	3510	J	88	70-130
Selenium	10.0	12.1		121	70-130
Silver	5.00	4.46	J	89	70-130
Sodium	2000	1970	J	99	70-130
Thallium	10.0	9.30	J	93	70-130
Vanadium	10.0	10.1		101	70-130
Zinc	50.0	51.8		104	70-130
Tin	50.0	30.8	J	62	70-130

Lab Sample ID: CRI 360-49334/9 Concentration Units: ug/L

CRQL Check Standard Source: CRI-MCPICP_00006

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Antimony	6.00	6.33	J	105	70-130
Arsenic	50.0	49.2		98	70-130
Barium	2000	2180		109	70-130
Beryllium	4.00	4.20		105	70-130
Cadmium	5.00	5.28		106	70-130
Chromium	100	108		108	70-130
Lead	15.0	17.1		114	70-130

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

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Analysis Method: 6010B Instrument ID: Varian ICP

Lab Sample ID: CRI 360-49334/9 Concentration Units: ug/L

CRQL Check Standard Source: CRI-MCPICP_00006

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Nickel	100	113		113	70-130
Selenium	50.0	51.5		103	70-130
Silver	7.00	7.37		105	70-130
Vanadium	50.0	52.4		105	70-130
Zinc	900	960		107	70-130

Lab Sample ID: CRI 360-49403/8 Concentration Units: ug/L

CRQL Check Standard Source: CRI-RL ICP_00004

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	100	97.6	J	98	70-130
Antimony	10.0	9.08	J	91	70-130
Arsenic	10.0	9.72	J	97	70-130
Barium	10.0	11.0		110	70-130
Beryllium	1.00	1.01		101	70-130
Cadmium	1.00	1.07		107	70-130
Calcium	400	413		103	70-130
Chromium	5.00	5.23		105	70-130
Cobalt	10.0	10.7		107	70-130
Copper	10.0	10.9		109	70-130
Iron	100	105		105	70-130
Lead	5.00	5.09		102	70-130
Magnesium	400	421		105	70-130
Manganese	10.0	10.6		106	70-130
Nickel	10.0	10.5		105	70-130
Potassium	4000	3570	J	89	70-130
Silver	5.00	3.83	J	77	70-130
Sodium	2000	2020		101	70-130
Thallium	10.0	10.8		108	70-130
Vanadium	10.0	10.4		104	70-130
Zinc	50.0	51.5		103	70-130
Tin	50.0	28.9	J	58	70-130

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

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Analysis Method: 6010B Instrument ID: Varian ICP

Lab Sample ID: CRI 360-49403/9 Concentration Units: ug/L

CRQL Check Standard Source: CRI-MCPICP_00006

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Antimony	6.00	6.37	J	106	70-130
Arsenic	50.0	48.8		98	70-130
Barium	2000	2120		106	70-130
Beryllium	4.00	4.17		104	70-130
Cadmium	5.00	5.17		103	70-130
Chromium	100	107		107	70-130
Lead	15.0	16.8		112	70-130
Nickel	100	110		110	70-130
Selenium	50.0	49.4		99	70-130
Silver	7.00	7.45		106	70-130
Thallium	2.00	2.02	J	101	70-130
Vanadium	50.0	51.8		104	70-130
Zinc	900	943		105	70-130

Lab Sample ID: CRI 360-49403/18 Concentration Units: ug/L

CRQL Check Standard Source: CRI-RL ICP_00004

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Selenium	10.0	12.5		125	70-130

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

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Concentration Units: ug/L

Analyte	RL	ICB 360-49334/7 09/22/2009 15:45		CCB 360-49334/14 09/22/2009 16:04		CCB 360-49334/22 09/22/2009 18:18		CCB 360-49334/27 09/22/2009 18:53	
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND		ND		ND	
Al	100	ND		ND		ND		ND	
As	10	ND		ND		ND		ND	
Ba	10	ND		ND		ND		ND	
Be	1.0	ND		ND		ND		0.222	J
Ca	400	ND		ND		ND		ND	
Cd	1.0	ND		ND		0.224	J	0.214	J
Co	10	ND		ND		ND		ND	
Cr	5.0	ND		ND		ND		ND	
Cu	10	ND		ND		ND		ND	
Fe	100	ND		ND		ND		ND	
K	4000	ND		ND		ND		ND	
Mg	400	ND		ND		ND		ND	
Mn	10	ND		ND		ND		ND	
Na	2000	ND		ND		ND		ND	
Ni	10	ND		ND		ND		ND	
Pb	5.0	ND		ND		ND		ND	
Sb	10	ND		ND		ND		3.85	J
Se	10	2.86	J	3.74	J	3.08	J	5.32	J
Sn	50	ND		ND		ND		ND	
V	10	ND		ND		ND		ND	
Zn	50	ND		ND		ND		ND	
Tl	10	ND		ND		ND		ND	

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Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Concentration Units: ug/L

Analyte	RL	CCB 360-49334/39 09/22/2009 19:28		CCB 360-49334/48 09/22/2009 19:54					
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND					
Al	100	ND		ND					
As	10	2.46	J	ND					
Ba	10	ND		ND					
Be	1.0	0.234	J	0.257	J				
Ca	400	ND		ND					
Cd	1.0	0.244	J	0.291	J				
Co	10	ND		ND					
Cr	5.0	ND		ND					
Cu	10	ND		ND					
Fe	100	ND		ND					
K	4000	ND		ND					
Mg	400	ND		ND					
Mn	10	ND		ND					
Na	2000	ND		ND					
Ni	10	ND		ND					
Pb	5.0	ND		ND					
Sb	10	ND		ND					
Se	10	4.34	J	ND					
Sn	50	ND		ND					
V	10	ND		ND					
Zn	50	ND		ND					
Tl	10	ND		ND					

As $\frac{2.46 \times .1}{2}$ = AL = 0.615 > Tl ND

Be $\frac{.234 \times .1}{2}$ = AL = 0.0585 >

Cd $\frac{.244 \times .1}{2}$ = AL = 0.061 >

Se $\frac{5.34 \times .1}{2}$ = AL = 1.33 ND

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Concentration Units: ug/L

Analyte	RL	ICB 360-49403/7 09/23/2009 10:48		CCB 360-49403/14 09/23/2009 11:09		CCB 360-49403/25 09/23/2009 11:47		CCB 360-49403/37 09/23/2009 12:22	
		Found	C	Found	C	Found	C	Found	C
Tl	10	1.55	J	ND		ND		ND	
Ag	5.0	ND		ND		ND		ND	
Al	100	ND		ND		ND		ND	
As	10	ND		ND		ND		ND	
Ba	10	ND		ND		ND		ND	
Be	1.0	ND		ND		ND		ND	
Ca	400	ND		ND		ND		ND	
Cd	1.0	ND		ND		ND		ND	
Co	10	ND		ND		ND		ND	
Cr	5.0	ND		ND		ND		ND	
Cu	10	ND		ND		ND		ND	
Fe	100	ND		ND		ND		ND	
K	4000	ND		ND		ND		ND	
Mg	400	ND		ND		ND		ND	
Mn	10	ND		ND		ND		ND	
Na	2000	ND		ND		ND		ND	
Ni	10	ND		ND		ND		ND	
Pb	5.0	ND		ND		ND		ND	
Sb	10	ND		ND		ND		ND	
Se	10	3.20	J	3.00	J	4.44	J	ND	
Sn	50	ND		ND		ND		ND	
V	10	ND		ND		ND		ND	
Zn	50	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Concentration Units: ug/L

Analyte	RL	CCB 360-49403/39 09/23/2009 17:38							
		Found	C	Found	C	Found	C	Found	C
Tl	10	1.99	J						
Ag	5.0	ND							
Al	100	ND							
As	10	ND							
Ba	10	ND							
Be	1.0	0.214	J						
Ca	400	ND							
Cd	1.0	0.209	J						
Co	10	ND							
Cr	5.0	ND							
Cu	10	ND							
Fe	100	ND							
K	4000	ND							
Mg	400	ND							
Mn	10	ND							
Na	2000	ND							
Ni	10	ND							
Pb	5.0	ND							
Sb	10	ND							
Se	10	ND							
Sn	50	ND							
V	10	ND							
Zn	50	ND							

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Concentration Units: mg/Kg Lab Sample ID: MB 360-49270/1-A

Instrument Code: Varian ICP Batch No.: 49334

CAS No.	Analyte	Concentration	C	RL	Method
7429-90-5	Aluminum	ND			6010B
7440-36-0	Antimony	ND			6010B
7440-38-2	Arsenic	ND			6010B
7440-39-3	Barium	ND			6010B
7440-41-7	Beryllium	ND			6010B
7440-43-9	Cadmium	ND			6010B
7440-70-2	Calcium	7.26	J	36.3	6010B
7440-47-3	Chromium	0.0787	J	0.3935	6010B
7440-48-4	Cobalt	ND			6010B
7440-50-8	Copper	ND			6010B
7439-89-6	Iron	1.16	J	5.8	6010B
7439-92-1	Lead	0.0939	J	0.4695	6010B
7439-95-4	Magnesium	1.81	J	9.05	6010B
7439-96-5	Manganese	ND			6010B
7440-02-0	Nickel	0.144	J	0.72	6010B
7440-09-7	Potassium	ND			6010B
7782-49-2	Selenium	ND			6010B
7440-22-4	Silver	ND			6010B
7440-23-5	Sodium	ND			6010B
7440-62-2	Vanadium	ND			6010B
7440-66-6	Zinc	ND			6010B
7440-31-5	Tin	0.445	J	2.225	6010B

all sample results
7 AL.

FORM III-IN

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Concentration Units: mg/Kg Lab Sample ID: MB 360-49270/1-A

Instrument Code: Varian ICP Batch No.: 49403

CAS No.	Analyte	Concentration	C	Q	Method
7440-28-0	Thallium	ND			6010B

FORM III-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Lab Sample ID: ICSA 360-49334/10 Instrument ID: Varian ICP

Lab File ID: ICS Source: ICSA wk_00004

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Ag		0.411	
Al	100000	117437	117
As		1.02	
Ba		0.400	
Be		0.0036	
Ca	100000	110403	110
Cd		0.639	
Co		1.71	
Cr		-0.362	
Cu		0.368	
Fe	40000	44269	111
K		2026	
Mg	100000	112386	112
Mn		3.01	
Na		176	
Ni		4.91	
Pb		-2.64	
Sb		-0.953	
Se		-1.24	
Sn		0.815	
V		1.90	
Zn		1.82	
B		*2.13*	
Li		*0.789*	
Mo		*0.748*	
Si		*-1.38*	
Si		*-0.347*	
SiO2		*-2.95*	
Sr		*0.594*	
Ti		*1.68*	
Tl		*-2.24*	
Zr		*0.400*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Lab Sample ID: ICSAB 360-49334/11 Instrument ID: Varian ICP

Lab File ID: ICS Source: ICSAB_00009

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Ag	**600**	**604**	**101**
Al	**100000**	**114159**	**114**
As	**2000**	**1955**	**98**
Ba	**600**	**589**	**98**
Be	**200**	**191**	**95**
Ca	**100000**	**106302**	**106**
Cd	**600**	**565**	**94**
Co	**600**	**565**	**94**
Cr	**600**	**563**	**94**
Cu	**600**	**599**	**100**
Fe	**40000**	**43027**	**108**
K	**40000**	**41242**	**103**
Mg	**100000**	**107376**	**107**
Mn	**400**	**381**	**95**
Na		**12.2**	
Ni	**600**	**568**	**95**
Pb	**2000**	**1851**	**93**
Sb		**941**	
Se	**1000**	**971**	**97**
Sn		**251**	
V	**600**	**583**	**97**
Zn	**600**	**549**	**91**
B		*2.14*	
Li		*0.833*	
Mo		*0.731*	
Si		*-1.79*	
Si		*0.390*	
SiO2		*-3.84*	
Sr		*0.615*	
Ti		*1.63*	
Tl	*2000*	*1844*	*92*
Zr		*1.55*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Lab Sample ID: ICSA 360-49334/49 Instrument ID: Varian ICP

Lab File ID: ICS Source: ICSA wk_00004

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Ag		**0.373**	
Al	**100000**	**116400**	**116**
As		**1.08**	
Ba		**0.379**	
Be		**0.0033**	
Ca	**100000**	**110140**	**110**
Cd		**0.606**	
Co		**1.71**	
Cr		**-0.790**	
Cu		**0.314**	
Fe	**40000**	**44209**	**111**
K		**1500**	
Mg	**100000**	**112445**	**112**
Mn		**3.03**	
Na		**140**	
Ni		**4.90**	
Pb		**-2.62**	
Sb		**-0.546**	
Se		**-0.680**	
Sn		**1.20**	
V		**1.82**	
Zn		**-0.0794**	
B		*7.87*	
Li		*0.868*	
Mo		*2.44*	
Si		*0.189*	
Si		*0.967*	
SiO2		*0.404*	
Sr		*0.596*	
Ti		*1.88*	
Tl		*-3.71*	
Zr		*0.619*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Lab Sample ID: ICSAB 360-49334/50 Instrument ID: Varian ICP

Lab File ID: ICS Source: ICSAB_00009

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Ag	**600**	**599**	**100**
Al	**100000**	**112300**	**112**
As	**2000**	**1926**	**96**
Ba	**600**	**579**	**97**
Be	**200**	**189**	**95**
Ca	**100000**	**105328**	**105**
Cd	**600**	**562**	**94**
Co	**600**	**561**	**93**
Cr	**600**	**557**	**93**
Cu	**600**	**586**	**98**
Fe	**40000**	**42796**	**107**
K	**40000**	**41722**	**104**
Mg	**100000**	**106778**	**107**
Mn	**400**	**377**	**94**
Na		**-8.13**	
Ni	**600**	**563**	**94**
Pb	**2000**	**1845**	**92**
Sb		**931**	
Se	**1000**	**946**	**95**
Sn		**250**	
V	**600**	**577**	**96**
Zn	**600**	**544**	**91**
B		*4.75*	
Li		*0.838*	
Mo		*1.13*	
Si		*-0.0639*	
Si		*0.544*	
SiO2		*-0.137*	
Sr		*0.615*	
Ti		*1.76*	
Tl	*2000*	*1831*	*92*
Zr		*2.69*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Lab Sample ID: ICSA 360-49403/10 Instrument ID: Varian ICP

Lab File ID: ICS Source: ICSA wk_00004

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Tl		**-1.53**	
Ag		0.377	
Al	100000	114656	115
As		0.809	
B		3.43	
Ba		0.474	
Be		0.0065	
Ca	100000	106348	106
Cd		0.593	
Co		2.17	
Cr		0.377	
Cu		0.749	
Fe	40000	44321	111
K		1891	
Li		1.03	
Mg	100000	111527	112
Mn		3.22	
Mo		0.897	
Na		147	
Ni		4.95	
Pb		-0.923	
Sb		0.0428	
Se		0.394	
Si		-0.207	
Si		-0.0582	
SiO2		-0.444	
Sn		1.85	
Sr		0.610	
Ti		1.68	
V		1.72	
Zn		0.0601	
Zr		0.546	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Lab Sample ID: ICSAB 360-49403/11 Instrument ID: Varian ICP

Lab File ID: ICS Source: ICSAB_00009

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Tl	**2000**	**1875**	**94**
Ag	600	613	102
Al	100000	111924	112
As	2000	1989	99
B		2.48	
Ba	600	593	99
Be	200	193	97
Ca	100000	102982	103
Cd	600	575	96
Co	600	580	97
Cr	600	575	96
Cu	600	605	101
Fe	40000	43159	108
K	40000	42722	107
Li		1.02	
Mg	100000	107314	107
Mn	400	388	97
Mo		0.594	
Na		-12.3	
Ni	600	583	97
Pb	2000	1885	94
Sb		942	
Se	1000	986	99
Si		-1.24	
Si		0.268	
SiO2		-2.65	
Sn		254	
Sr		0.637	
Ti		1.73	
V	600	593	99
Zn	600	554	92
Zr		1.64	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Lab Sample ID: ICSA 360-49403/40 Instrument ID: Varian ICP

Lab File ID: ICS Source: ICSA wk_00004

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Tl		**1.32**	
Ag		0.626	
Al	100000	112659	113
As		1.42	
B		8.63	
Ba		0.487	
Be		0.0019	
Ca	100000	103536	104
Cd		0.495	
Co		1.99	
Cr		0.556	
Cu		0.826	
Fe	40000	43405	109
K		1399	
Li		1.08	
Mg	100000	109089	109
Mn		3.17	
Mo		2.97	
Na		133	
Ni		4.92	
Pb		-1.56	
Sb		-0.916	
Se		1.27	
Si		-0.523	
Si		-0.947	
SiO2		-1.12	
Sn		1.10	
Sr		0.600	
Ti		1.73	
V		2.02	
Zn		-0.828	
Zr		0.853	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

SDG No.: OCRI-12A

Lab Sample ID: ICSAB 360-49403/41 Instrument ID: Varian ICP

Lab File ID: ICS Source: ICSAB_00009

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Tl	**2000**	**1840**	**92**
Ag	600	600	100
Al	100000	109536	110
As	2000	1945	97
B		5.86	
Ba	600	583	97
Be	200	189	95
Ca	100000	101702	102
Cd	600	563	94
Co	600	567	95
Cr	600	570	95
Cu	600	593	99
Fe	40000	42183	105
K	40000	42207	106
Li		1.09	
Mg	100000	104820	105
Mn	400	380	95
Mo		1.30	
Na		29.6	
Ni	600	575	96
Pb	2000	1842	92
Sb		923	
Se	1000	949	95
Si		-0.662	
Si		-0.662	
SiO2		-1.42	
Sn		243	
Sr		0.626	
Ti		1.65	
V	600	580	97
Zn	600	542	90
Zr		3.13	

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

FORM IVA-IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 360-49270/2-A

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

Sample Matrix: Solid LCS Source: stlma-3_00039

Analyte	Solid(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	250	219		87	80	120		6010B
Antimony	50.0	43.8		88	80	120		6010B
Arsenic	50.0	43.5		87	80	120		6010B
Barium	50.0	44.6		89	80	120		6010B
Beryllium	50.0	44.2		88	80	120		6010B
Cadmium	50.0	43.9		88	80	120		6010B
Calcium	1000	896		90	80	120		6010B
Chromium	50.0	44.8		90	80	120		6010B
Cobalt	50.0	44.4		89	80	120		6010B
Copper	50.0	44.5		89	80	120		6010B
Iron	250	226		90	80	120		6010B
Lead	50.0	44.2		88	80	120		6010B
Magnesium	1000	876		88	80	120		6010B
Manganese	50.0	44.6		89	80	120		6010B
Nickel	50.0	44.3		89	80	120		6010B
Potassium	1000	851		85	80	120		6010B
Selenium	50.0	43.4		87	80	120		6010B
Silver	50.0	43.9		88	80	120		6010B
Sodium	1000	871		87	80	120		6010B
Vanadium	50.0	44.4		89	80	120		6010B
Zinc	50.0	44.0		88	80	120		6010B
Tin	50.0	46.1		92	80	120		6010B

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

FORM VIIA - IN

7D-IN
LAB CONTROL SAMPLE DUPLICATE
METALS

Lab ID: LCSD 360-49270/3-A

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

Sample Matrix: Solid LCS Source: stlma-3_00039

Analyte	(SDR)	C	Spike Added	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Aluminum	219		250	87	80-120	0	30		6010B
Antimony	44.2		50.0	88	80-120	1	30		6010B
Arsenic	43.6		50.0	87	80-120	0	30		6010B
Barium	44.6		50.0	89	80-120	0	30		6010B
Beryllium	44.2		50.0	88	80-120	0	30		6010B
Cadmium	44.0		50.0	88	80-120	0	30		6010B
Calcium	897		1000	90	80-120	0	30		6010B
Chromium	44.9		50.0	90	80-120	0	30		6010B
Cobalt	44.5		50.0	89	80-120	0	30		6010B
Copper	44.5		50.0	89	80-120	0	30		6010B
Iron	226		250	90	80-120	0	30		6010B
Lead	44.2		50.0	88	80-120	0	30		6010B
Magnesium	876		1000	88	80-120	0	30		6010B
Manganese	44.7		50.0	89	80-120	0	30		6010B
Nickel	44.3		50.0	89	80-120	0	30		6010B
Potassium	846		1000	85	80-120	1	30		6010B
Selenium	43.3		50.0	87	80-120	0	30		6010B
Silver	43.9		50.0	88	80-120	0	30		6010B
Sodium	868		1000	87	80-120	0	30		6010B
Vanadium	44.5		50.0	89	80-120	0	30		6010B
Zinc	44.0		50.0	88	80-120	0	30		6010B
Tin	46.2		50.0	92	80-120	0	30		6010B

SDR = Spike Duplicate Results
Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIID - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 360-49270/2-A

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

Sample Matrix: Solid LCS Source: stlma-3_00039

Analyte	Solid(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Thallium	50.0	44.3		89	80	120		6010B

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

FORM VIIA - IN

7D-IN
LAB CONTROL SAMPLE DUPLICATE
METALS

Lab ID: LCSD 360-49270/3-A

Lab Name: TestAmerica Westfield Job No.: 360-24454-2

Sample Matrix: Solid LCS Source: stlma-3_00039

Analyte	(SDR)	C	Spike Added	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Thallium	44.2		50.0	88	80-120	0	30		6010B

SDR = Spike Duplicate Results
Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIID - IN

OCRI -12 (244454)

✓ ICV/CCV OK

✓ CRQL STD

Sn (41)

✓ ICB/CCB

Tl

K

✓ MB 48719

Ba	0.073	0.365	>
Ca	10	50	>
Cr	0.137	0.685	>
Fe	1.72	8.6	>
Mg	2.71	13.55	>
Na	14.1	70.5	<
Sn	0.501	2.505	<

✓ ICS OK

✓ MS OC-SB - 461-5.0/7.0-xxx

Al 142 (4x)

Sb 65 PDS OK

Fe 56 (4x)

✓ LAB DUP OK

✓ LCS OK

✓ Serial Dilution OK

EQ BK

Cu $\frac{3.7 g/L \times 0.1}{2 g} = 0.185 g/L$ $\frac{1L}{0.925}$

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

SITE: **Olin Chemical** Project #: 6/07/0006.12 SDG #: OCRI-13/13A

LAB # : TAL 360-24499-1/2

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☐ ☒ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☑ ☐ ☐ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	See below. Post-digestion spikes %R limits = 75% - 125%

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

Laboratory Control Samples (LCS) ☑ ☐ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate ☐ ☒ ☐ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☐ ☒ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	See below.
Field Duplicate ☐ ☐ ☑ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☐ ☐ ☑ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution ☐ ☑ ☐ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☑ ☐ Are results of the diluted samples > the original sample results	

Validator's Signature: [signature]

Date: 4/12/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

QL Standard:
The percent recovery of tin (63 and 60) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J/UJ).

Blanks:
Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Copper, lead, selenium, silver, thallium, and zinc were reported in the equipment blank associated with OCRI-13 and 13A. Reported detections of copper, lead, silver, thallium, and zinc were significantly greater than equipment blank results, the data was not qualified. Associated sample results for selenium were non detect, no further action required.

Barium (0.00685 mg/kg), calcium (10.3 mg/kg), chromium (0.161 mg/kg), iron (1.29 mg/kg), lead (0.131), magnesium (2.95 mg/kg), silver (0.0960 mg/kg), and tin (0.544 mg/kg) were reported in the method blank (M360-48897) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. With the exception of silver and tin, sample results were greater than the action levels, no further action required. Sample results for silver and tin that were less than the action level were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Calcium (6.54 mg/kg), chromium (0.0755 mg/kg), iron (0.867 mg/kg), magnesium (1.66 mg/kg), and tin (0.468 mg/kg) were reported in the method blank (M360-49675) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Associated sample results were greater than the action levels, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Silver, selenium, and thallium were reported in the continuing calibration blanks (CCB) associated with a subset of samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for selenium were non detect, no further action required. Associated sample results for silver were greater than the action level, no further action required. Sample results for thallium that were less than the action level were qualified non detect (U).

Antimony, selenium, and thallium were reported in the CCBs associated with a subset of samples. Action levels were established at five times the highest reported blank concentrations and the raw data was

reviewed. Associated sample results for antimony and selenium were non detect, no further action required. Associated sample results for thallium were greater than the action level, no further action required. Sample results for thallium that were less than the action level were qualified non detect (U).

Matrix Spikes:

Sample OC-SB-469-28/30-XXX was submitted for MS analysis. The MS percent recovery of aluminum (51), antimony (61), calcium (31), chromium (52), copper (46), iron (-6410), manganese (-190), nickel (58), and tin (71) were less than the lower QC limit of 75. The unspiked sample results for aluminum and iron were greater than four times the spiking concentration, no further action required. With the exception of manganese, post digestion spike recoveries were within QC limits. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

SDG	Lab Sample ID	Field Sample ID	Antimony MS Recovery (%)
OCRI-03	360-24223-9	OC-SB-426-5.0/7.0-XXX	61
OCRI-04	360-24244-1	OC-SB-432-0.0/1.0-XXX	27
OCRI-04A	360-24244-5	OC-SB-443-18/20-XXX	32
OCRI-05	360-24251-19	OC-SB-446-5.0/7.0-XXX	80
OCRI-05	360-24251-4	OC-SB-433-5.0/7.0-XXX	70
OCRI-06	360-24309-23	OC-SB-430-8.0/10-XXX	44
OCRI-07	360-24327-12	OC-SB-410-6.0/8.0-XXX	65
OCRI-08	360-24343-10	OC-SB-451-2.5/4.5-XXX	62
OCRI-08	360-24343-17	OC-SB-455-6.0/8.0-XXX	46
OCRI-09	360-24365-4	OC-SB-442-8.0/10-XXX	50
OCRI-10	360-24417-10	OC-SB-465-8.0/10-XXX	63
OCRI-10A	360-24417-2	OC-SB-463-28/30-XXX	38
OCRI-11	360-24444-2	OC-SB-459-6.0/8.0-XXX	64
OCRI-11	360-24444-9	OC-SB-467-6.0/8.0-XXX	68
OCRI-12	360-24454-3	OC-SB-461-5.0/7.0-XXX	65
OCRI-13A	360-24499-3	OC-SB-469-28/30-XXX	61
OCRI-14	360-24563-14	OC-SB-456-7.0/9.0-XXX	60
OCRI-14	360-24563-5	OC-SB-427-8.0/10-XXX	67
OCRI-15	360-24582-22	OC-SS-416-0.0/1.0-XXX	56
OCRI-16	360-24634-1	OC-SS-417-0.0/1.0-XXX	61
OCRI-17	360-24665-1	OC-SS-434-0.0/1.0-XXX	29
OCRI-18	360-24686-1	OC-SB-400-17/19-XXX	67

Associated sample results for calcium, chromium, copper, manganese, nickel, and tin were qualified estimated (J).

Laboratory Duplicate:

The laboratory performed a duplicate analysis of sample OC-SB-469-28/30-XXX (OCRI-13). The RPD for aluminum (56), arsenic (84), cadmium (158), calcium (98), chromium (106), cobalt (111), copper (170), iron (168), lead (42), manganese (166), nickel (176), and tin (105) exceeded the QC limit of 35. Associated SDG sample results for aluminum, arsenic, cadmium, calcium, chromium, cobalt, copper, iron, lead, manganese, nickel, and tin were qualified estimated (J).

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24499-1
Sdg Number: OCRI-13

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24499-1	OC-SB-466-6.0/8.0-XXX	Solid	09/08/2009 1350	09/09/2009 1810
360-24499-2	OC-SB-469-0.0/1.0-XXX	Solid	09/08/2009 1715	09/09/2009 1810
360-24499-3	OC-SB-469-28/30-XXX	Solid	09/09/2009 1040	09/09/2009 1810
360-24499-4	OC-SB-469-36/37-XXX	Solid	09/09/2009 1145	09/09/2009 1810
360-24499-5	OC-SB-469-7.0/9.0-XXX	Solid	09/09/2009 0750	09/09/2009 1810
360-24499-6	OC-SB-466-0.0/1.0-XXX	Solid	09/08/2009 1255	09/09/2009 1810
360-24499-7	OC-SB-466-30/32-XXX	Solid	09/08/2009 1550	09/09/2009 1810
360-24499-8	OC-TBK-015	Solid	09/09/2009 1400	09/09/2009 1810
360-24499-9	OC-SB-466-30/32-XXX	Solid	09/08/2009 1550	09/09/2009 1810
360-24499-10	OC-SB-466-6.0/8.0-XXX	Solid	09/08/2009 1350	09/09/2009 1810
360-24499-11	OC-SB-469-0.0/1.0-XXX	Solid	09/08/2009 1715	09/09/2009 1810
360-24499-12	OC-SB-469-28/30-XXX	Solid	09/09/2009 1040	09/09/2009 1810
360-24499-13	OC-SB-469-7.0/9.0-XXX	Solid	09/09/2009 0750	09/09/2009 1810
360-24499-14	OC-SB-417-0.0/1.0-XXX	Solid	09/10/2009 1040	09/10/2009 1820
360-24499-15	OC-SB-417-20/22-XXX	Solid	09/10/2009 1205	09/10/2009 1820
360-24499-16	OC-SB-417-8.0/10-XXX	Solid	09/10/2009 1050	09/10/2009 1820
360-24499-17	OC-SB-434-0.0/1.0-XXX	Solid	09/10/2009 0750	09/10/2009 1820
360-24499-18	OC-SB-434-15/16-XXX	Solid	09/10/2009 0935	09/10/2009 1820
360-24499-19	OC-SB-434-7.0-/9.0-XXX	Solid	09/10/2009 0815	09/10/2009 1820
360-24499-20	OC-SB-450-0.0/1.0-XXX	Solid	09/09/2009 1340	09/10/2009 1820
360-24499-21	OC-SB-450-33/35-XXX	Solid	09/09/2009 1655	09/10/2009 1820
360-24499-22	OC-SB-450-8.0/10-XXX	Solid	09/09/2009 1355	09/10/2009 1820
360-24499-23	OC-TBK-016	Solid	09/10/2009 1330	09/10/2009 1820

ICS OK

✓ ICV/CCV OK

✓ Serial dilution OK

✓ CCQL STD Tin (Cl3)

✓ ICB/CCB Se, Tl, Ag

✓ MB 488997

Ba 0.0685 0.3425 >

Ca 10.3 51.5 >

Cr 0.161 0.805 >

Fe 1.28 6.45 >

Pb 0.131 0.655 >

Mg 2.95 14.75 >

Ag 0.0960 0.48 <

Sn 0.544 2.72 <

✓ EQB

		AL	
~~Be~~ Cu	31	~~1.55~~ ~~7.75~~	1.55 >
~~Cr~~ Pb	3.2	~~0.8~~	0.16 >
Se	3	~~0.75~~	0.15 ND
Ag	1.8	~~0.45~~	0.09 >
Tl	4.8	~~1.2~~	0.24 >
Zn	15	~~3.75~~	0.75 >

Form I's updated

4/12/10

✓ ICS OK

Client: Olin Corporation

Job Number: 360-24499-1
Sdg Number: OCRI-13

Client Sample ID: **OC-SB-466-6.0/8.0-XXX**

Lab Sample ID: 360-24499-1
Client Matrix: Solid
% Moisture: 7.5

Date Sampled: 09/08/2009 1350
Date Received: 09/09/2009 1810

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48937		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48897		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.54 g
Date Analyzed:	09/14/2009 1356			Final Weight/Volume:	100 mL
Date Prepared:	09/14/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3900		0.91	3.5
Antimony		ND J		0.25	0.70
Arsenic		2.3		0.13	1.4
Barium		32	~~B~~	0.091	0.70
Beryllium		0.12	J	0.035	0.28
Cadmium		0.067	J	0.0098	0.28
Calcium		1300	~~B~~	3.5	28
Chromium		10	~~B~~	0.093	0.70
Cobalt		1.6		0.091	0.70
Copper		2.8		0.091	1.4
Iron		5100	~~B~~	1.1	7.0
Lead		2.7	~~B~~	0.080	0.70
Magnesium		870	~~B~~	0.70	14
Manganese		47		0.094	1.4
Nickel		3.3		0.091	1.4
Potassium		1200		44	280
Selenium		ND		0.33	0.70
Silver		0.15 u	~~J,B~~	0.071	0.70
Sodium		220		18	140
Thallium		ND		0.10	1.4
Vanadium		6.1		0.091	1.4
Zinc		11		0.83	3.5
Tin		3.5 J	~~J,B~~	0.45	7.0

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48923		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48910		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	09/14/2009 1219			Final Weight/Volume:	50 mL
Date Prepared:	09/14/2009 1002				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.033	0.18

4/12/10

Analytical Data

Client: Olin Corporation

Job Number: 360-24499-1
Sdg Number: OCRI-13

Client Sample ID: **OC-SB-469-0.0/1.0-XXX**

Lab Sample ID: 360-24499-2
Client Matrix: Solid
% Moisture: 5.2

Date Sampled: 09/08/2009 1715
Date Received: 09/09/2009 1810

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48937		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48897		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.83 g
Date Analyzed:	09/14/2009 1405			Final Weight/Volume:	100 mL
Date Prepared:	09/14/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5800		0.75	2.9
Antimony		ND J		0.21	0.58
Arsenic		4.0		0.11	1.2
Barium		8.1	~~B~~	0.075	0.58
Beryllium		0.19	J	0.029	0.23
Cadmium		0.27		0.0081	0.23
Calcium		950	~~B~~	2.9	23
Chromium		25	~~B~~	0.077	0.58
Cobalt		2.5		0.075	0.58
Copper		4.0		0.075	1.2
Iron		6200	~~B~~	0.92	5.8
Lead		3.9	~~B~~	0.066	0.58
Magnesium		1500	~~B~~	0.58	12
Manganese		62		0.077	1.2
Nickel		6.7		0.075	1.2
Potassium		810		36	230
Selenium		ND		0.27	0.58
Silver		0.26 U	J ~~B~~	0.058	0.58
Sodium		ND		15	120
Thallium		ND		0.083	1.2
Vanadium		8.6		0.075	1.2
Zinc		22		0.68	2.9
Tin		9.4 J	~~B~~	0.37	5.8

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48923		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48910		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/14/2009 1226			Final Weight/Volume:	50 mL
Date Prepared:	09/14/2009 1002				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.029	0.16

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Client: Olin Corporation

Job Number: 360-24499-1
Sdg Number: OCRI-13

Client Sample ID: **OC-SB-469-36/37-XXX**

Lab Sample ID: 360-24499-4
Client Matrix: Solid
% Moisture: 8.0

Date Sampled: 09/09/2009 1145
Date Received: 09/09/2009 1810

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48937		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48897		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.69 g
Date Analyzed:	09/14/2009 1408			Final Weight/Volume:	100 mL
Date Prepared:	09/14/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7400		0.84	3.2
Antimony		ND J		0.23	0.64
Arsenic		1.6		0.12	1.3
Barium		32	~~B~~	0.084	0.64
Beryllium		0.16	J	0.032	0.26
Cadmium		0.17	J	0.0090	0.26
Calcium		3000	~~B~~	3.2	26
Chromium		240	~~B~~	0.086	0.64
Cobalt		5.8		0.084	0.64
Copper		14		0.084	1.3
Iron		13000	~~B~~	1.0	6.4
Lead		2.4	~~B~~	0.073	0.64
Magnesium		4200	~~B~~	0.64	13
Manganese		110		0.086	1.3
Nickel		9.1		0.084	1.3
Potassium		2900		40	260
Selenium		ND		0.30	0.64
Silver		3.9	~~B~~	0.065	0.64
Sodium		330		17	130
Thallium		ND		0.093	1.3
Vanadium		25		0.084	1.3
Zinc		18		0.76	3.2
Tin		97 J	~~B~~	0.41	6.4

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48923		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48910		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	09/14/2009 1228			Final Weight/Volume:	50 mL
Date Prepared:	09/14/2009 1002				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.037	0.20

4/12/10

Client: Olin Corporation

Job Number: 360-24499-1
Sdg Number: OCRI-13

Client Sample ID: **OC-SB-469-7.0/9.0-XXX**

Lab Sample ID: 360-24499-5
Client Matrix: Solid
% Moisture: 4.3

Date Sampled: 09/09/2009 0750
Date Received: 09/09/2009 1810

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48937		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48897		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.70 g
Date Analyzed:	09/14/2009 1411			Final Weight/Volume:	100 mL
Date Prepared:	09/14/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10000		0.80	3.1
Antimony		ND J		0.22	0.61
Arsenic		16		0.11	1.2
Barium		61	~~B~~	0.080	0.61
Beryllium		0.28		0.031	0.25
Cadmium		0.20	J	0.0086	0.25
Calcium		1900	~~B~~	3.1	25
Chromium		13	~~B~~	0.082	0.61
Cobalt		6.1		0.080	0.61
Copper		9.2		0.080	1.2
Iron		16000	~~B~~	0.98	6.1
Lead		3.2	~~B~~	0.070	0.61
Magnesium		4000	~~B~~	0.61	12
Manganese		120		0.082	1.2
Nickel		9.5		0.080	1.2
Potassium		2700		38	250
Selenium		ND		0.29	0.61
Silver		0.15 U	~~J B~~	0.062	0.61
Sodium		170		16	120
Thallium		ND		0.089	1.2
Vanadium		23		0.080	1.2
Zinc		20		0.72	3.1
Tin		3.8	J ~~B~~	0.39	6.1

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48923		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48910		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/14/2009 1230			Final Weight/Volume:	50 mL
Date Prepared:	09/14/2009 1002				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.028	0.15

4/12/10

Client: Olin Corporation

Job Number: 360-24499-1
Sdg Number: OCRI-13

Client Sample ID: **OC-SB-466-0.0/1.0-XXX**

Lab Sample ID: 360-24499-6
Client Matrix: Solid
% Moisture: 3.1

Date Sampled: 09/08/2009 1255
Date Received: 09/09/2009 1810

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48937		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48897		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.70 g
Date Analyzed:	09/14/2009 1414			Final Weight/Volume:	100 mL
Date Prepared:	09/14/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3700		0.79	3.0
Antimony		ND J		0.22	0.61
Arsenic		3.7		0.11	1.2
Barium		7.5	~~B~~	0.079	0.61
Beryllium		0.14	J	0.030	0.24
Cadmium		0.17	J	0.0085	0.24
Calcium		700	~~B~~	3.0	24
Chromium		7.4	~~B~~	0.081	0.61
Cobalt		1.5		0.079	0.61
Copper		3.3		0.079	1.2
Iron		5400	~~B~~	0.97	6.1
Lead		4.1	~~B~~	0.069	0.61
Magnesium		830	~~B~~	0.61	12
Manganese		41		0.081	1.2
Nickel		4.4		0.079	1.2
Potassium		480		38	240
Selenium		ND		0.28	0.61
Silver		0.16 J	~~J,B~~	0.061	0.61
Sodium		ND		16	120
Thallium		ND		0.088	1.2
Vanadium		5.8		0.079	1.2
Zinc		130		0.71	3.0
Tin		2.5	J ~~B~~	0.39	6.1

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48923		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48910		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/14/2009 1232			Final Weight/Volume:	50 mL
Date Prepared:	09/14/2009 1002				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.031	0.17

4/12/10

Client: Olin Corporation

Job Number: 360-24499-1
Sdg Number: OCRI-13

Client Sample ID: **OC-SB-466-30/32-XXX**

Lab Sample ID: 360-24499-7
Client Matrix: Solid
% Moisture: 8.1

Date Sampled: 09/08/2009 1550
Date Received: 09/09/2009 1810

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48944		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48897		Lab File ID:	N/A
Dilution:	5.0			Initial Weight/Volume:	1.55 g
Date Analyzed:	09/14/2009 1519			Final Weight/Volume:	100 mL
Date Prepared:	09/14/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		21000		4.6	18
Antimony		ND J		1.3	3.5
Arsenic		2.0	J	0.64	7.0
Barium		110	~~B~~	0.46	3.5
Beryllium		0.30	J	0.18	1.4
Cadmium		0.40	J	0.049	1.4
Calcium		4700	~~B~~	18	140
Chromium		250	~~B~~	0.47	3.5
Cobalt		14		0.46	3.5
Copper		66		0.46	7.0
Iron		32000	~~B~~	5.6	35
Lead		1.5	J ~~B~~	0.40	3.5
Magnesium		14000	~~B~~	3.5	70
Manganese		340		0.47	7.0
Nickel		27		0.46	7.0
Potassium		12000		220	1400
Selenium		ND		1.6	3.5
Silver		3.8	~~B~~	0.35	3.5
Sodium		520	J	91	700
Thallium		0.54	J	0.51	7.0
Vanadium		45		0.46	7.0
Zinc		46		4.1	18
Tin		99 J	~~B~~	2.2	35

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48923		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48910		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/14/2009 1238			Final Weight/Volume:	50 mL
Date Prepared:	09/14/2009 1002				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.030	0.16

4/12/10

Client: Olin Corporation

Job Number: 360-24499-1
Sdg Number: OCRI-13

Client Sample ID: **OC-SB-417-0.0/1.0-XXX**

Lab Sample ID: 360-24499-14
Client Matrix: Solid
% Moisture: 1.6

Date Sampled: 09/10/2009 1040
Date Received: 09/10/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48937		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48897		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.51 g
Date Analyzed:	09/14/2009 1419			Final Weight/Volume:	100 mL
Date Prepared:	09/14/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4600		0.87	3.4
Antimony		ND J		0.24	0.67
Arsenic		3.4		0.12	1.3
Barium		13	~~B~~	0.087	0.67
Beryllium		0.15	J	0.034	0.27
Cadmium		0.13	J	0.0094	0.27
Calcium		1400	~~B~~	3.4	27
Chromium		7.9	~~B~~	0.089	0.67
Cobalt		3.8		0.087	0.67
Copper		5.5		0.087	1.3
Iron		7500	~~B~~	1.1	6.7
Lead		3.3	~~B~~	0.077	0.67
Magnesium		1700	~~B~~	0.67	13
Manganese		68		0.090	1.3
Nickel		6.6		0.087	1.3
Potassium		700		42	270
Selenium		ND		0.31	0.67
Silver		0.18 U	~~J B~~	0.068	0.67
Sodium		ND		17	130
Thallium		ND		0.097	1.3
Vanadium		9.9		0.087	1.3
Zinc		19		0.79	3.4
Tin		2.5 U	J ~~B~~	0.43	6.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48923		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48910		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	09/14/2009 1240			Final Weight/Volume:	50 mL
Date Prepared:	09/14/2009 1002				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.031	0.17

4/12/10

Client: Olin Corporation

Job Number: 360-24499-1
Sdg Number: OCRI-13

Client Sample ID: **OC-SB-417-8.0/10-XXX**

Lab Sample ID: 360-24499-16
Client Matrix: Solid
% Moisture: 2.5

Date Sampled: 09/10/2009 1050
Date Received: 09/10/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48937		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48897		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.66 g
Date Analyzed:	09/14/2009 1422			Final Weight/Volume:	100 mL
Date Prepared:	09/14/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		2500		0.80	3.1
Antimony		ND 3		0.22	0.62
Arsenic		3.4		0.11	1.2
Barium		8.6	~~B~~	0.080	0.62
Beryllium		0.12	J	0.031	0.25
Cadmium		0.061	J	0.0087	0.25
Calcium		480	~~B~~	3.1	25
Chromium		5.4	~~B~~	0.082	0.62
Cobalt		1.7		0.080	0.62
Copper		2.8		0.080	1.2
Iron		4500	~~B~~	0.99	6.2
Lead		1.4	~~B~~	0.071	0.62
Magnesium		930	~~B~~	0.62	12
Manganese		50		0.083	1.2
Nickel		5.1		0.080	1.2
Potassium		570		39	250
Selenium		ND		0.29	0.62
Silver		0.089 u	~~J B~~	0.062	0.62
Sodium		35	J	16	120
Thallium		ND		0.089	1.2
Vanadium		5.2		0.080	1.2
Zinc		8.3		0.73	3.1
Tin		1.7 u	J ~~B~~	0.40	6.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48923		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48910		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/14/2009 1242			Final Weight/Volume:	50 mL
Date Prepared:	09/14/2009 1002				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.028	0.15

4/12/10

Client: Olin Corporation

Job Number: 360-24499-1
Sdg Number: OCRI-13

Client Sample ID: **OC-SB-434-0.0/1.0-XXX**

Lab Sample ID: 360-24499-17
Client Matrix: Solid
% Moisture: 5.7

Date Sampled: 09/10/2009 0750
Date Received: 09/10/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48937		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48897		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.96 g
Date Analyzed:	09/14/2009 1425			Final Weight/Volume:	100 mL
Date Prepared:	09/14/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9000		0.70	2.7
Antimony		ND J		0.20	0.54
Arsenic		7.1		0.099	1.1
Barium		36	~~B~~	0.070	0.54
Beryllium		0.54		0.027	0.22
Cadmium		0.32		0.0076	0.22
Calcium		2200	~~B~~	2.7	22
Chromium		30	~~B~~	0.072	0.54
Cobalt		6.4		0.070	0.54
Copper		14		0.070	1.1
Iron		17000	~~B~~	0.86	5.4
Lead		10	~~B~~	0.062	0.54
Magnesium		3600	~~B~~	0.54	11
Manganese		410		0.072	1.1
Nickel		26		0.070	1.1
Potassium		1900		34	220
Selenium		ND		0.25	0.54
Silver		ND		0.054	0.54
Sodium		22	J	14	110
Thallium		0.38 U	~~J~~	0.078	1.1
Vanadium		74		0.070	1.1
Zinc		41		0.64	2.7
Tin		11 J	~~B~~	0.35	5.4

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48923		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48910		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.26 g
Date Analyzed:	09/14/2009 1244			Final Weight/Volume:	50 mL
Date Prepared:	09/14/2009 1002				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.12	J	0.028	0.15

4/12/10

Client: Olin Corporation

Job Number: 360-24499-1
Sdg Number: OCRI-13

Client Sample ID: **OC-SB-434-7.0-/9.0-XXX**

Lab Sample ID: 360-24499-19
Client Matrix: Solid
% Moisture: 6.8

Date Sampled: 09/10/2009 0815
Date Received: 09/10/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48937		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48897		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.86 g
Date Analyzed:	09/14/2009 1428			Final Weight/Volume:	100 mL
Date Prepared:	09/14/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4000		0.75	2.9
Antimony		ND J		0.21	0.58
Arsenic		4.0		0.11	1.2
Barium		7.1	~~B~~	0.075	0.58
Beryllium		0.14	J	0.029	0.23
Cadmium		0.091	J	0.0081	0.23
Calcium		440	~~B~~	2.9	23
Chromium		6.6	~~B~~	0.077	0.58
Cobalt		1.9		0.075	0.58
Copper		3.2		0.075	1.2
Iron		6000	~~B~~	0.92	5.8
Lead		1.5	~~B~~	0.066	0.58
Magnesium		950	~~B~~	0.58	12
Manganese		43		0.077	1.2
Nickel		5.5		0.075	1.2
Potassium		670		36	230
Selenium		ND		0.27	0.58
Silver		0.15 U	~~J B~~	0.058	0.58
Sodium		33	J	15	120
Thallium		ND		0.083	1.2
Vanadium		9.3		0.075	1.2
Zinc		8.3		0.68	2.9
Tin		2.1 U	J ~~B~~	0.37	5.8

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48923		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48910		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	09/14/2009 1247			Final Weight/Volume:	50 mL
Date Prepared:	09/14/2009 1002				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.033	0.18

4/12/10

Client: Olin Corporation

Job Number: 360-24499-1
Sdg Number: OCRI-13

Client Sample ID: **OC-SB-450-0.0/1.0-XXX**

Lab Sample ID: 360-24499-20
Client Matrix: Solid
% Moisture: 5.7

Date Sampled: 09/09/2009 1340
Date Received: 09/10/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48937		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48897		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.69 g
Date Analyzed:	09/14/2009 1431			Final Weight/Volume:	100 mL
Date Prepared:	09/14/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7800		0.82	3.1
Antimony		ND J		0.23	0.63
Arsenic		5.3		0.11	1.3
Barium		42	~~B~~	0.082	0.63
Beryllium		0.33		0.031	0.25
Cadmium		0.42		0.0088	0.25
Calcium		3400	~~B~~	3.1	25
Chromium		21	~~B~~	0.083	0.63
Cobalt		6.9		0.082	0.63
Copper		18		0.082	1.3
Iron		15000	~~B~~	1.0	6.3
Lead		30	~~B~~	0.072	0.63
Magnesium		3100	~~B~~	0.63	13
Manganese		180		0.084	1.3
Nickel		14		0.082	1.3
Potassium		2400		39	250
Selenium		ND		0.29	0.63
Silver		0.13 U	~~J B~~	0.063	0.63
Sodium		36	J	16	130
Thallium		ND		0.091	1.3
Vanadium		24		0.082	1.3
Zinc		100		0.74	3.1
Tin		7.2 J	~~B~~ ^	0.40	6.3

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48923		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48910		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.24 g
Date Analyzed:	09/14/2009 1249			Final Weight/Volume:	50 mL
Date Prepared:	09/14/2009 1002				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.25		0.030	0.16

4/12/10

Client: Olin Corporation

Job Number: 360-24499-1
Sdg Number: OCRI-13

Client Sample ID: **OC-SB-450-8.0/10-XXX**

Lab Sample ID: 360-24499-22
Client Matrix: Solid
% Moisture: 12.9

Date Sampled: 09/09/2009 1355
Date Received: 09/10/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48937		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48897		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.78 g
Date Analyzed:	09/14/2009 1440			Final Weight/Volume:	100 mL
Date Prepared:	09/14/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4000		0.84	3.2
Antimony		ND J		0.23	0.65
Arsenic		4.1		0.12	1.3
Barium		4.9	~~B~~	0.084	0.65
Beryllium		0.12	J	0.032	0.26
Cadmium		0.064	J	0.0090	0.26
Calcium		300	~~B~~	3.2	26
Chromium		13	~~B~~	0.086	0.65
Cobalt		2.0		0.084	0.65
Copper		2.7		0.084	1.3
Iron		5000	~~B~~	1.0	6.5
Lead		1.6	~~B~~	0.074	0.65
Magnesium		860	~~B~~	0.65	13
Manganese		36		0.086	1.3
Nickel		4.2		0.084	1.3
Potassium		510		40	260
Selenium		ND		0.30	0.65
Silver		0.20 U	~~J B~~	0.065	0.65
Sodium		ND		17	130
Thallium		ND		0.093	1.3
Vanadium		6.4		0.084	1.3
Zinc		8.5		0.76	3.2
Tin		4.7	J ~~B~~	0.41	6.5

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-48923		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-48910		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/14/2009 1245			Final Weight/Volume:	50 mL
Date Prepared:	09/14/2009 1002				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.034	0.18

4/12/10

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24499-1

SDG No.: OCRI-13

Concentration Units: ug/L

Analyte	RL	CCB 360-48937/40 09/14/2009 14:02		CCB 360-48937/52 09/14/2009 14:37		CCB 360-48937/58 09/14/2009 14:55			
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	1.99	J	2.08	J	1.99	J		
Al	100	ND		ND		ND			
As	10	ND		ND		ND			
Ba	10	ND		ND		ND			
Be	1.0	ND		ND		ND			
Ca	400	ND		ND		ND			
Cd	1.0	ND		ND		ND			
Co	10	ND		ND		ND			
Cr	5.0	ND		ND		ND			
Cu	10	ND		ND		ND			
Fe	100	ND		ND		ND			
K	4000	ND		ND		ND			
Mg	400	ND		ND		ND			
Mn	10	ND		ND		ND			
Na	2000	ND		ND		ND			
Ni	10	ND		ND		ND			
Pb	5.0	ND		ND		ND			
Sb	10	ND		ND		ND			
Se	10	4.90	J	4.04	J	ND			
Sn	50	ND		ND		ND			
Tl	10	1.74	J	ND		3.23	J		
V	10	ND		ND		ND			
Zn	50	ND		ND		ND			

AL

Se 4.9 ug/L = 1.225 mg/kg ND

Tl 1.88 ug/L = 0.47 mg/kg <

Ag 2.19 ug/L = 0.5475 mg/kg >

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24499-1

SDG No.: OCRI-13

Concentration Units: ug/L

Analyte	RL	ICB 360-48937/7 09/14/2009 11:13		CCB 360-48937/14 09/14/2009 11:32		CCB 360-48937/21 09/14/2009 12:09		CCB 360-48937/28 09/14/2009 13:27	
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND		ND		2.19	J
Al	100	ND		ND		ND		ND	
As	10	ND		ND		ND		ND	
Ba	10	ND		ND		ND		ND	
Be	1.0	ND		ND		ND		ND	
Ca	400	ND		ND		ND		ND	
Cd	1.0	ND		ND		ND		ND	
Co	10	ND		ND		ND		ND	
Cr	5.0	ND		ND		ND		ND	
Cu	10	ND		ND		ND		ND	
Fe	100	ND		ND		ND		ND	
K	4000	ND		ND		ND		ND	
Mg	400	ND		ND		ND		ND	
Mn	10	ND		ND		ND		ND	
Na	2000	ND		ND		ND		ND	
Ni	10	ND		ND		ND		ND	
Pb	5.0	ND		ND		ND		ND	
Sb	10	ND		ND		ND		ND	
Se	10	3.19	J	4.74	J	4.28	J	3.43	J
Sn	50	ND		ND		ND		ND	
Tl	10	2.16	J	3.61	J	2.95	J	1.88	J
V	10	ND		ND		ND		ND	
Zn	50	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24499-1

SDG No.: OCRI-13

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/14/2009 10:56 End Date: 09/14/2009 14:55

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
ZZZZZZ			10:56																				
ZZZZZZ			10:59																				
ZZZZZZ			11:02																				
ZZZZZZ			11:05																				
ZZZZZZ			11:08																				
ICV 360-48937/6	1		11:10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-48937/7	1		11:13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-48937/8	1		11:16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-48937/9	1		11:19	X		X	X	X		X		X							X	X	X	X	
ICSA 360-48937/10	1		11:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-48937/11	1		11:24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			11:27																				
CCV 360-48937/13	1		11:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48937/14	1		11:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-48937/15			11:35																				
ICV 360-48937/16			11:38																				
ICV 360-48937/17			11:41																				
ICV 360-48937/18			11:45																				
CRI 360-48937/19			11:48																				
CCV 360-48937/20	1		12:06	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48937/21	1		12:09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MB 360-48897/1-A	1	T	13:10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 360-48897/2-A	1	T	13:13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCSD 360-48897/3-A	1	T	13:16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			13:19																				
ZZZZZZ			13:21																				
CCV 360-48937/27	1		13:24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48937/28	1		13:27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			13:30																				
ZZZZZZ			13:33																				
ZZZZZZ			13:36																				
ZZZZZZ			13:39																				
ZZZZZZ			13:42																				
ZZZZZZ			13:45																				
ZZZZZZ			13:47																				
ZZZZZZ			13:50																				
ZZZZZZ			13:53																				
360-24499-1	1	T	13:56	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-48937/39	1		13:59	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48937/40	1		14:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24499-2	1	T	14:05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24499-4	1	T	14:08	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24499-1

SDG No.: OCRI-13

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/14/2009 10:56 End Date: 09/14/2009 14:55

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
360-24499-5	1	T	14:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24499-6	1	T	14:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			14:16																				
360-24499-14	1	T	14:19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24499-16	1	T	14:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24499-17	1	T	14:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24499-19	1	T	14:28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24499-20	1	T	14:31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-48937/51	1		14:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48937/52	1		14:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24499-22	1	T	14:40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			14:43																				
ICSA 360-48937/55	1		14:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-48937/56	1		14:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-48937/57	1		14:52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48937/58	1		14:55	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24499-1

SDG No.: OCRI-13

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/14/2009 10:56 End Date: 09/14/2009 14:55

Lab Sample ID	D/F	Type	Time	Analytes																			
				Tl	V	Zn																	
ZZZZZZ			10:56																				
ZZZZZZ			10:59																				
ZZZZZZ			11:02																				
ZZZZZZ			11:05																				
ZZZZZZ			11:08																				
ICV 360-48937/6	1		11:10	X	X	X																	
ICB 360-48937/7	1		11:13	X	X	X																	
CRI 360-48937/8	1		11:16	X	X	X																	
CRI 360-48937/9	1		11:19	X	X	X																	
ICSA 360-48937/10	1		11:22	X	X	X																	
ICSAB 360-48937/11	1		11:24	X	X	X																	
ZZZZZZ			11:27																				
CCV 360-48937/13	1		11:30	X	X	X																	
CCB 360-48937/14	1		11:32	X	X	X																	
ICB 360-48937/15			11:35																				
ICV 360-48937/16			11:38																				
ICV 360-48937/17			11:41																				
ICV 360-48937/18			11:45																				
CRI 360-48937/19			11:48																				
CCV 360-48937/20	1		12:06	X	X	X																	
CCB 360-48937/21	1		12:09	X	X	X																	
MB 360-48897/1-A	1	T	13:10	X	X	X																	
LCS 360-48897/2-A	1	T	13:13	X	X	X																	
LCSD 360-48897/3-A	1	T	13:16	X	X	X																	
ZZZZZZ			13:19																				
ZZZZZZ			13:21																				
CCV 360-48937/27	1		13:24	X	X	X																	
CCB 360-48937/28	1		13:27	X	X	X																	
ZZZZZZ			13:30																				
ZZZZZZ			13:33																				
ZZZZZZ			13:36																				
ZZZZZZ			13:39																				
ZZZZZZ			13:42																				
ZZZZZZ			13:45																				
ZZZZZZ			13:47																				
ZZZZZZ			13:50																				
ZZZZZZ			13:53																				
360-24499-1	1	T	13:56	X	X	X																	
CCV 360-48937/39	1		13:59	X	X	X																	
CCB 360-48937/40	1		14:02	X	X	X																	
360-24499-2	1	T	14:05	X	X	X																	
360-24499-4	1	T	14:08	X	X	X																	

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24499-1

SDG No.: OCRI-13

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/14/2009 10:56 End Date: 09/14/2009 14:55

Lab Sample ID	D/F	Type	Time	Analytes																			
				Tl	V	Zn																	
360-24499-5	1	T	14:11	X	X	X																	
360-24499-6	1	T	14:14	X	X	X																	
ZZZZZZ			14:16																				
360-24499-14	1	T	14:19	X	X	X																	
360-24499-16	1	T	14:22	X	X	X																	
360-24499-17	1	T	14:25	X	X	X																	
360-24499-19	1	T	14:28	X	X	X																	
360-24499-20	1	T	14:31	X	X	X																	
CCV 360-48937/51	1		14:34	X	X	X																	
CCB 360-48937/52	1		14:37	X	X	X																	
360-24499-22	1	T	14:40	X	X	X																	
ZZZZZZ			14:43																				
ICSA 360-48937/55	1		14:46	X	X	X																	
ICSAB 360-48937/56	1		14:49	X	X	X																	
CCV 360-48937/57	1		14:52	X	X	X																	
CCB 360-48937/58	1		14:55	X	X	X																	

Prep Types
T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24499-1

SDG No.: OCRI-13

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/14/2009 10:56 End Date: 09/14/2009 17:06

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
ZZZZZZ			10:56																				
ZZZZZZ			10:59																				
ZZZZZZ			11:02																				
ZZZZZZ			11:05																				
ZZZZZZ			11:08																				
ICV 360-48944/6			11:10																				
ICB 360-48944/7			11:13																				
CRI 360-48944/8			11:16																				
CRI 360-48944/9			11:19																				
ICSA 360-48944/10			11:22																				
ICSAB 360-48944/11			11:24																				
ZZZZZZ			11:27																				
CCV 360-48944/13			11:30																				
CCB 360-48944/14			11:32																				
ICB 360-48944/15			11:35																				
ICV 360-48944/16			11:38																				
ICV 360-48944/17			11:41																				
ICV 360-48944/18			11:45																				
CRI 360-48944/19			11:48																				
CCV 360-48944/20	1		14:52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48944/21	1		14:55	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			15:02																				
ZZZZZZ			15:04																				
ZZZZZZ			15:07																				
ZZZZZZ			15:10																				
ZZZZZZ			15:13																				
ZZZZZZ			15:16																				
360-24499-7	5	T	15:19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			15:24																				
ZZZZZZ			15:27																				
ZZZZZZ			15:30																				
CCV 360-48944/32	1		15:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48944/33	1		15:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			15:39																				
ZZZZZZ			15:42																				
ZZZZZZ			15:44																				
ZZZZZZ			15:47																				
ZZZZZZ			15:50																				
ZZZZZZ			15:53																				
ZZZZZZ			15:56																				
ZZZZZZ			15:59																				
ZZZZZZ			16:02																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24499-1

SDG No.: OCRI-13

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/14/2009 10:56 End Date: 09/14/2009 17:06

Lab Sample ID	D/F	Type	Time	Analytes																			
				Tl	V	Zn																	
ZZZZZZ			10:56																				
ZZZZZZ			10:59																				
ZZZZZZ			11:02																				
ZZZZZZ			11:05																				
ZZZZZZ			11:08																				
ICV 360-48944/6			11:10																				
ICB 360-48944/7			11:13																				
CRI 360-48944/8			11:16																				
CRI 360-48944/9			11:19																				
ICSA 360-48944/10			11:22																				
ICSAB 360-48944/11			11:24																				
ZZZZZZ			11:27																				
CCV 360-48944/13			11:30																				
CCB 360-48944/14			11:32																				
ICB 360-48944/15			11:35																				
ICV 360-48944/16			11:38																				
ICV 360-48944/17			11:41																				
ICV 360-48944/18			11:45																				
CRI 360-48944/19			11:48																				
CCV 360-48944/20	1		14:52	X	X	X																	
CCB 360-48944/21	1		14:55	X	X	X																	
ZZZZZZ			15:02																				
ZZZZZZ			15:04																				
ZZZZZZ			15:07																				
ZZZZZZ			15:10																				
ZZZZZZ			15:13																				
ZZZZZZ			15:16																				
360-24499-7	5	T	15:19	X	X	X																	
ZZZZZZ			15:24																				
ZZZZZZ			15:27																				
ZZZZZZ			15:30																				
CCV 360-48944/32	1		15:33	X	X	X																	
CCB 360-48944/33	1		15:36	X	X	X																	
ZZZZZZ			15:39																				
ZZZZZZ			15:42																				
ZZZZZZ			15:44																				
ZZZZZZ			15:47																				
ZZZZZZ			15:50																				
ZZZZZZ			15:53																				
ZZZZZZ			15:56																				
ZZZZZZ			15:59																				
ZZZZZZ			16:02																				

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24499-2
Sdg Number: OCRI-13A

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24499-3	OC-SB-469-28/30-XXX	Solid	09/09/2009 1040	09/09/2009 1810
360-24499-15	OC-SB-417-20/22-XXX	Solid	09/10/2009 1205	09/10/2009 1820
360-24499-18	OC-SB-434-15/16-XXX	Solid	09/10/2009 0935	09/10/2009 1820
360-24499-21	OC-SB-450-33/35-XXX	Solid	09/09/2009 1655	09/10/2009 1820

√ ICV/CCV OK

√ CRQL

Sn (60)

√ ICB/CCB

Se, Tl, Sb

√ MB 49675

Ca	6.54	32.7	>
Cr	0.0755	0.3775	>
Fe	0.867	4.335	>
Mg	1.66	8.3	>
Sn	0.468	2.34	>

√ ICS OK

MS OUT see attached

Lab Dup Out see attached

√ LCS OK

√ serial dilution OK.

Form I's [illegible]

4/12/10

[illegible]

Client: Olin Corporation

Job Number: 360-24499-2
Sdg Number: OCRI-13A

Client Sample ID: **OC-SB-469-28/30-XXX**

Lab Sample ID: 360-24499-3
Client Matrix: Solid
% Moisture: 9.6

Date Sampled: 09/09/2009 1040
Date Received: 09/09/2009 1810

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49723		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49675		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.91 g
Date Analyzed:	09/30/2009 1517			Final Weight/Volume:	100 mL
Date Prepared:	09/30/2009 1004				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		1400 J		0.75	2.9
Antimony		ND J		0.21	0.58
Arsenic		2.2 J		0.11	1.2
Barium		11		0.075	0.58
Beryllium		0.046	J	0.029	0.23
Cadmium		0.38 J		0.0081	0.23
Calcium		1200 J	~~B~~	2.9	12
Chromium		33 J	~~B~~	0.077	0.58
Cobalt		2.6 J		0.075	0.58
Copper		28 J		0.075	1.2
Iron		21000 J	~~B~~	0.92	5.8
Lead		1.1 J		0.066	0.58
Magnesium		280	~~B~~	0.58	12
Manganese		190 J		0.077	1.2
Nickel		19 J		0.075	1.2
Potassium		320		36	230
Selenium		ND		0.27	0.58
Silver		0.15	J	0.058	0.58
Sodium		150		15	120
Thallium		0.13	J	0.084	1.2
Vanadium		2.8		0.075	1.2
Zinc		4.4		0.68	2.9
Tin		14 J	~~B~~	0.37	5.8

4/12/10

Client: Olin Corporation

Job Number: 360-24499-2
Sdg Number: OCRI-13A

Client Sample ID: **OC-SB-417-20/22-XXX**

Lab Sample ID: 360-24499-15
Client Matrix: Solid
% Moisture: 18.2

Date Sampled: 09/10/2009 1205
Date Received: 09/10/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49723		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49675		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.66 g
Date Analyzed:	09/30/2009 1537			Final Weight/Volume:	100 mL
Date Prepared:	09/30/2009 1004				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8000 J		0.96	3.7
Antimony		ND J		0.27	0.74
Arsenic		2.4 J		0.13	1.5
Barium		51		0.096	0.74
Beryllium		0.17	J	0.037	0.29
Cadmium		0.38 J		0.010	0.29
Calcium		4900 J	~~B~~	3.7	15
Chromium		27 J	~~B~~	0.098	0.74
Cobalt		10 J		0.096	0.74
Copper		27 J		0.096	1.5
Iron		21000 J	~~B~~	1.2	7.4
Lead		0.52 J	J	0.084	0.74
Magnesium		5400	~~B~~	0.74	15
Manganese		130 J		0.098	1.5
Nickel		12 J		0.096	1.5
Potassium		2000		46	290
Selenium		ND		0.34	0.74
Silver		ND		0.074	0.74
Sodium		130	J	19	150
Thallium		0.14 U	~~J~~	0.11	1.5
Vanadium		31		0.096	1.5
Zinc		20		0.87	3.7
Tin		9.7 J	~~B~~	0.47	7.4

4/12/10

Client: Olin Corporation

Job Number: 360-24499-2
Sdg Number: OCRI-13A

Client Sample ID: **OC-SB-434-15/16-XXX**

Lab Sample ID: 360-24499-18
Client Matrix: Solid
% Moisture: 13.1

Date Sampled: 09/10/2009 0935
Date Received: 09/10/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49723		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49675		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.68 g
Date Analyzed:	09/30/2009 1540			Final Weight/Volume:	100 mL
Date Prepared:	09/30/2009 1004				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		11000 J		0.89	3.4
Antimony		ND J		0.25	0.68
Arsenic		5.8 J		0.12	1.4
Barium		39		0.089	0.68
Beryllium		0.31 ~~B~~		0.034	0.27
Cadmium		0.41 J		0.0096	0.27
Calcium		4400 J	~~B~~	3.4	14
Chromium		40 J	~~B~~	0.091	0.68
Cobalt		11 J		0.089	0.68
Copper		31 J		0.089	1.4
Iron		22000 J	~~B~~	1.1	6.8
Lead		2.4 J		0.078	0.68
Magnesium		5400	~~B~~	0.68	14
Manganese		200 J		0.091	1.4
Nickel		18 J		0.089	1.4
Potassium		2000		43	270
Selenium		ND		0.32	0.68
Silver		0.13	J	0.069	0.68
Sodium		320		18	140
Thallium		0.12 U	~~J~~	0.099	1.4
Vanadium		37		0.089	1.4
Zinc		32		0.81	3.4
Tin		15 J	~~B~~	0.44	6.8

4/12/10

Analytical Data

Client: Olin Corporation

Job Number: 360-24499-2
Sdg Number: OCRI-13A

Client Sample ID: **OC-SB-450-33/35-XXX**

Lab Sample ID: 360-24499-21
Client Matrix: Solid
% Moisture: 9.0

Date Sampled: 09/09/2009 1655
Date Received: 09/10/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49723		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49675		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.72 g
Date Analyzed:	09/30/2009 1543			Final Weight/Volume:	100 mL
Date Prepared:	09/30/2009 1004				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7900 J		0.83	3.2
Antimony		ND J		0.23	0.64
Arsenic		4.5 J		0.12	1.3
Barium		24		0.083	0.64
Beryllium		0.23	J	0.032	0.26
Cadmium		0.23	J	0.0089	0.26
Calcium		2600 J	~~B~~	3.2	13
Chromium		18 J	~~B~~	0.085	0.64
Cobalt		6.6 J		0.083	0.64
Copper		20 J		0.083	1.3
Iron		13000 J	~~B~~	1.0	6.4
Lead		1.7 J		0.073	0.64
Magnesium		4000	~~B~~	0.64	13
Manganese		100 J		0.085	1.3
Nickel		13 J		0.083	1.3
Potassium		1500		40	260
Selenium		ND		0.30	0.64
Silver		ND		0.064	0.64
Sodium		150		17	130
Thallium		ND		0.092	1.3
Vanadium		21		0.083	1.3
Zinc		21		0.75	3.2
Tin		6.5 J	~~B~~	0.41	6.4

4/12/10

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24499-2

SDG No.: OCRI-13A

Concentration Units: ug/L

Analyte	RL	ICB 360-49723/7 09/30/2009 12:01		CCB 360-49723/14 09/30/2009 12:21		CCB 360-49723/22 09/30/2009 14:50		CCB 360-49723/30 09/30/2009 15:29	
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND		ND		ND	
Al	100	ND		ND		ND		ND	
As	10	ND		ND		ND		ND	
Ba	10	ND		ND		ND		ND	
Be	1.0	ND		ND		ND		ND	
Ca	400	ND		ND		ND		ND	
Cd	1.0	ND		ND		ND		ND	
Co	10	ND		ND		ND		ND	
Cr	5.0	ND		ND		ND		ND	
Cu	10	ND		ND		ND		ND	
Fe	100	ND		ND		ND		ND	
K	4000	ND		ND		ND		ND	
Mg	400	ND		ND		ND		ND	
Mn	10	ND		ND		ND		ND	
Na	2000	ND		ND		ND		ND	
Ni	10	ND		ND		ND		ND	
Pb	5.0	ND		ND		ND		ND	
Sb	10	ND		ND		ND		4.67	J
Se	10	ND		ND		ND		2.74	J
Sn	50	ND		ND		ND		ND	
Tl	10	2.40	J	1.83	J	1.99	J	2.63	J
V	10	ND		ND		ND		ND	
Zn	50	ND		ND		ND		ND	

Sb 4.67 ND

Se 3.07 ND

Tl 2.63 AL = 0.0175 <

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24499-2

SDG No.: OCRI-13A

Concentration Units: ug/L

Analyte	RL	CCB 360-49723/42 09/30/2009 16:03		CCB 360-49723/57 09/30/2009 16:46					
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND					
Al	100	ND		ND					
As	10	ND		ND					
Ba	10	ND		ND					
Be	1.0	ND		ND					
Ca	400	ND		ND					
Cd	1.0	ND		0.208	J				
Co	10	ND		ND					
Cr	5.0	ND		ND					
Cu	10	ND		ND					
Fe	100	ND		ND					
K	4000	ND		ND					
Mg	400	ND		ND					
Mn	10	ND		ND					
Na	2000	ND		ND					
Ni	10	ND		ND					
Pb	5.0	ND		ND					
Sb	10	ND		ND					
Se	10	3.07	J	ND					
Sn	50	ND		ND					
Tl	10	2.14	J	ND					
V	10	ND		ND					
Zn	50	ND		ND					

Italicized analytes were not requested for this sequence.

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24499-2

SDG No.: OCRI-13A

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/30/2009 11:44 End Date: 09/30/2009 16:55

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
ZZZZZZ			11:44																				
ZZZZZZ			11:47																				
ZZZZZZ			11:49																				
ZZZZZZ			11:52																				
ZZZZZZ			11:55																				
ICV 360-49723/6	1		11:58	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-49723/7	1		12:01	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-49723/8	1		12:04	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-49723/9	1		12:07	X		X	X	X		X		X							X	X	X	X	
ICSA 360-49723/10	1		12:10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-49723/11	1		12:13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			12:16																				
CCV 360-49723/13	1		12:18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49723/14	1		12:21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-49723/15			12:24																				
ICV 360-49723/16			12:27																				
ICV 360-49723/17			12:30																				
CRI 360-49723/18			12:41																				
CCV 360-49723/19			13:01																				
CCB 360-49723/20			13:04																				
CCV 360-49723/21	1		14:47	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49723/22	1		14:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MB 360-49675/1-A	1	T	15:09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 360-49675/2-A	1	T	15:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCSD 360-49675/3-A	1	T	15:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24499-3	1	T	15:17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24499-3 DU	1	T	15:20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24499-3 MS	1	T	15:23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-49723/29	1		15:26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49723/30	1		15:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24499-3 SD	5	T	15:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24499-3 PDS	1	T	15:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24499-15	1	T	15:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24499-18	1	T	15:40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24499-21	1	T	15:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			15:46																				
ZZZZZZ			15:49																				
ZZZZZZ			15:52																				
ZZZZZZ			15:55																				
ZZZZZZ			15:57																				
CCV 360-49723/41	1		16:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49723/42	1		16:03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24499-2

SDG No.: OCRI-13A

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/30/2009 11:44 End Date: 09/30/2009 16:55

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
ZZZZZZ			16:06																				
ZZZZZZ			16:09																				
ZZZZZZ			16:12																				
ZZZZZZ			16:15																				
ZZZZZZ			16:18																				
ZZZZZZ			16:20																				
ZZZZZZ			16:23																				
ZZZZZZ			16:26																				
ZZZZZZ			16:29																				
ZZZZZZ			16:32																				
CCV 360-49723/53			16:35																				
CCB 360-49723/54			16:38																				
ZZZZZZ			16:41																				
CCV 360-49723/56	1		16:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49723/57	1		16:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 360-49723/58	1		16:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-49723/59	1		16:52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:55																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24499-2

SDG No.: OCRI-13A

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/30/2009 11:44 End Date: 09/30/2009 16:55

Lab Sample ID	D/F	Type	Time	Analytes																			
				Tl	V	Zn																	
ZZZZZZ			11:44																				
ZZZZZZ			11:47																				
ZZZZZZ			11:49																				
ZZZZZZ			11:52																				
ZZZZZZ			11:55																				
ICV 360-49723/6	1		11:58	X	X	X																	
ICB 360-49723/7	1		12:01	X	X	X																	
CRI 360-49723/8	1		12:04	X	X	X																	
CRI 360-49723/9	1		12:07	X	X	X																	
ICSA 360-49723/10	1		12:10	X	X	X																	
ICSAB 360-49723/11	1		12:13	X	X	X																	
ZZZZZZ			12:16																				
CCV 360-49723/13	1		12:18	X	X	X																	
CCB 360-49723/14	1		12:21	X	X	X																	
ICB 360-49723/15			12:24																				
ICV 360-49723/16			12:27																				
ICV 360-49723/17			12:30																				
CRI 360-49723/18			12:41																				
CCV 360-49723/19			13:01																				
CCB 360-49723/20			13:04																				
CCV 360-49723/21	1		14:47	X	X	X																	
CCB 360-49723/22	1		14:50	X	X	X																	
MB 360-49675/1-A	1	T	15:09	X	X	X																	
LCS 360-49675/2-A	1	T	15:11	X	X	X																	
LCSD 360-49675/3-A	1	T	15:14	X	X	X																	
360-24499-3	1	T	15:17	X	X	X																	
360-24499-3 DU	1	T	15:20	X	X	X																	
360-24499-3 MS	1	T	15:23	X	X	X																	
CCV 360-49723/29	1		15:26	X	X	X																	
CCB 360-49723/30	1		15:29	X	X	X																	
360-24499-3 SD	5	T	15:32	X	X	X																	
360-24499-3 PDS	1	T	15:34	X	X	X																	
360-24499-15	1	T	15:37	X	X	X																	
360-24499-18	1	T	15:40	X	X	X																	
360-24499-21	1	T	15:43	X	X	X																	
ZZZZZZ			15:46																				
ZZZZZZ			15:49																				
ZZZZZZ			15:52																				
ZZZZZZ			15:55																				
ZZZZZZ			15:57																				
CCV 360-49723/41	1		16:00	X	X	X																	
CCB 360-49723/42	1		16:03	X	X	X																	

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24499-2

SDG No.: OCRI-13A

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/30/2009 11:44 End Date: 09/30/2009 16:55

Lab Sample ID	D/F	Type	Time	Analytes																			
				Tl	V	Zn																	
ZZZZZZ			16:06																				
ZZZZZZ			16:09																				
ZZZZZZ			16:12																				
ZZZZZZ			16:15																				
ZZZZZZ			16:18																				
ZZZZZZ			16:20																				
ZZZZZZ			16:23																				
ZZZZZZ			16:26																				
ZZZZZZ			16:29																				
ZZZZZZ			16:32																				
CCV 360-49723/53			16:35																				
CCB 360-49723/54			16:38																				
ZZZZZZ			16:41																				
CCV 360-49723/56	1		16:43	X	X	X																	
CCB 360-49723/57	1		16:46	X	X	X																	
ICSA 360-49723/58	1		16:49	X	X	X																	
ICSAB 360-49723/59	1		16:52	X	X	X																	
ZZZZZZ			16:55																				

Prep Types
T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24499-2

SDG No.: OCRI-13A

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/30/2009 11:44 End Date: 09/30/2009 16:55

Lab Sample ID	D/F	Type	Time	Analytes																			
				Tl	V	Zn																	
ZZZZZZ			16:06																				
ZZZZZZ			16:09																				
ZZZZZZ			16:12																				
ZZZZZZ			16:15																				
ZZZZZZ			16:18																				
ZZZZZZ			16:20																				
ZZZZZZ			16:23																				
ZZZZZZ			16:26																				
ZZZZZZ			16:29																				
ZZZZZZ			16:32																				
CCV 360-49723/53			16:35																				
CCB 360-49723/54			16:38																				
ZZZZZZ			16:41																				
CCV 360-49723/56	1		16:43	X	X	X																	
CCB 360-49723/57	1		16:46	X	X	X																	
ICSA 360-49723/58	1		16:49	X	X	X																	
ICSAB 360-49723/59	1		16:52	X	X	X																	
ZZZZZZ			16:55																				

Prep Types
T = Total/NA

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-SB-469-28/30-XXX MS

Lab ID: 360-24499-3 MS

Lab Name: TestAmerica Westfield

Job No.: 360-24499-2

SDG No.: OCRI-13A

Matrix: Solid

Concentration Units: mg/Kg

% Solids: 90.4

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	1500		1400		286	51	75-125	4	6010B
Antimony	34.9		ND		57.3	61	75-125	F	6010B
Arsenic	51.8		2.2		57.3	87	75-125		6010B
Barium	65.1		11		57.3	94	75-125		6010B
Beryllium	51.3		0.046	J	57.3	89	75-125		6010B
Cadmium	50.6		0.38		57.3	88	75-125		6010B
Calcium	1580		1200		1150	31	75-125	F	6010B
Chromium	63.2		33		57.3	52	75-125	F	6010B
Cobalt	52.0		2.6		57.3	86	75-125		6010B
Copper	54.2		28		57.3	46	75-125	F	6010B
Iron	2530		21000		286	-6410	75-125	4	6010B
Lead	51.4		1.1		57.3	88	75-125		6010B
Magnesium	1360		280		1150	94	75-125		6010B
Manganese	77.1		190		57.3	-196	75-125	F	6010B
Nickel	52.2		19		57.3	58	75-125	F	6010B
Potassium	1430		320		1150	96	75-125		6010B
Selenium	50.0		ND		57.3	87	75-125		6010B
Silver	50.5		0.15	J	57.3	88	75-125		6010B
Sodium	1120		150		1150	85	75-125		6010B
Thallium	48.9		0.13	J	57.3	85	75-125		6010B
Vanadium	55.1		2.8		57.3	91	75-125		6010B
Zinc	54.0		4.4		57.3	87	75-125		6010B
Tin	54.6		14		57.3	71	75-125	F	6010B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-SB-469-28/30-XXX PDS
Lab ID: 360-24499-3 PDS
Lab Name: TestAmerica Westfield
Job No.: 360-24499-2
SDG No.: OCRI-13A
Matrix: Solid
Concentration Units: mg/Kg

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	1580		1400		289	79	75-125		6010B
Antimony	52.7		ND		57.9	91	75-125		6010B
Arsenic	55.8		2.2		57.9	93	75-125		6010B
Barium	64.3		11		57.9	91	75-125		6010B
Beryllium	53.1		0.046	J	57.9	92	75-125		6010B
Cadmium	52.8		0.38		57.9	91	75-125		6010B
Calcium	2270		1200		1160	91	75-125		6010B
Chromium	85.3		33		57.9	90	75-125		6010B
Cobalt	55.2		2.6		57.9	91	75-125		6010B
Copper	81.5		28		57.9	92	75-125		6010B
Iron	20000		21000		289	NC	75-125		6010B
Lead	52.5		1.1		57.9	89	75-125		6010B
Magnesium	1290		280		1160	87	75-125		6010B
Manganese	229		190		57.9	68	75-125	W	6010B
Nickel	70.6		19		57.9	89	75-125		6010B
Potassium	1310		320		1160	85	75-125		6010B
Selenium	51.0		ND		57.9	88	75-125		6010B
Silver	53.6		0.15	J	57.9	92	75-125		6010B
Sodium	1100		150		1160	82	75-125		6010B
Thallium	50.4		0.13	J	57.9	87	75-125		6010B
Vanadium	56.8		2.8		57.9	93	75-125		6010B
Zinc	56.1		4.4		57.9	89	75-125		6010B
Tin	65.5		14		57.9	89	75-125		6010B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VB - IN

6-IN
DUPLICATES
METALS

Client ID: OC-SB-469-28/30-XXX DU

Lab ID: 360-24499-3 DU

Lab Name: TestAmerica Westfield

Job No.: 360-24499-2

SDG No.: OCRI-13A

% Solids for Sample: 90.4

% Solids for Duplicate: 90.4

Matrix: Solid

Concentration Units: mg/Kg

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Aluminum	2.9	1400		758		56	F	6010B
Antimony	0.57	ND		ND		NC		6010B
Arsenic	1.1	2.2		0.920	J	84	F	6010B
Barium	0.57	11		13.3		16		6010B
Beryllium	0.23	0.046	J	0.0391	J	16		6010B
Cadmium	0.23	0.38		0.0448	J	158	F	6010B
Calcium	11	1200		416		98	F	6010B
Chromium	0.57	33		10.2		106	F	6010B
Cobalt	0.57	2.6		0.748		111	F	6010B
Copper	1.1	28		2.30		170	F	6010B
Iron	5.7	21000		1790		168	F	6010B
Lead	0.57	1.1		1.72		42	F	6010B
Magnesium	11	280		219		25		6010B
Manganese	1.1	190		17.9		166	F	6010B
Nickel	1.1	19		1.21		176	F	6010B
Potassium	230	320		286		12		6010B
Selenium	0.57	ND		ND		NC		6010B
Silver	0.57	0.15	J	ND		NC		6010B
Sodium	110	150		118		23		6010B
Thallium	1.1	0.13	J	ND		NC		6010B
Vanadium	1.1	2.8		2.25		23		6010B
Zinc	2.9	4.4		3.22		31		6010B
Tin	5.7	14		4.32	J	105	F	6010B

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

FORM VI-IN

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

SITE: **Olin Chemical** Project #: 6107/0000/6,12 SDG #: OCRI-14/14A

LAB # : TAL 360-24563-1/2

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) III (circle one)

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☐ ☒ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☑ ☐ ☐ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	See below. Post-digestion spikes %R limits = 75% - 125%

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Laboratory Control Samples (LCS) ☑ ☐ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate ☐ ☒ ☐ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☐ ☒ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	See below.
Field Duplicate ☐ ☒ ☐ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☐ ☐ ☑ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	See below.
Serial Dilution ☐ ☑ ☐ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☑ ☐ Are results of the diluted samples > the original sample results	

Validator's Signature: [signature]

Date: 4/12/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

QL Standard:

The percent recovery of tin (63, 64 and 61) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J/UJ).

Blanks:

Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Copper, lead, selenium, silver, thallium, and zinc were reported in the equipment blank associated with OCRI-14 and 14A. Reported detections of copper, lead, silver, and zinc were significantly greater than equipment blank results, the data was not qualified. Associated sample results for selenium were non detect, no further action required. Associated sample detections for thallium were qualified (EB) to indicate potential blank contamination associated with the equipment blank.

Barium (0.0754 mg/kg), calcium (11.2 mg/kg), chromium (0.0872 mg/kg), iron (1.95 mg/kg), magnesium (2.63 mg/kg), manganese (0.109 mg/kg), sodium (14.9 mg/kg), and tin (0.481 mg/kg) were reported in the method blank (M360-48949) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. With the exception of sodium and tin, sample results were greater than the action levels, no further action required. Sample results for sodium and tin that were less than the action level were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Cadmium (0.00782 mg/kg), calcium (6.72 mg/kg), iron (2.71 mg/kg), lead (0.132 mg/kg), magnesium (1.76 mg/kg), and tin (0.417 mg/kg) were reported in the method blank (M360-50202) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Associated sample results were greater than the action levels, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Selenium and thallium were reported in the continuing calibration blanks (CCB) associated with all samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for selenium and thallium were non detect, no further action required.

Matrix Spikes:

Sample OC-SB-427-8.0/10-XXX was submitted for MS analysis. The MS percent recovery of aluminum (131), antimony (67), and iron (152) were outside of the QC limits. The unspiked sample results for aluminum and iron were greater than four times the spiking concentration, no further action required.

Post digestion spike recovery for antimony was within QC limits, indicating a matrix effect for antimony. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

Sample OC-SB-456-7.0/9.0-XXX was submitted for MS analysis. The MS percent recovery of antimony (60), chromium (74), iron (-322), and potassium (71) were outside of the QC limits. The unspiked sample result for iron was greater than four times the spiking concentration, no further action required. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

SDG	Lab Sample ID	Field Sample ID	Antimony MS Recovery (%)
OCRI-03	360-24223-9	OC-SB-426-5.0/7.0-XXX	61
OCRI-04	360-24244-1	OC-SB-432-0.0/1.0-XXX	27
OCRI-04A	360-24244-5	OC-SB-443-18/20-XXX	32
OCRI-05	360-24251-19	OC-SB-446-5.0/7.0-XXX	80
OCRI-05	360-24251-4	OC-SB-433-5.0/7.0-XXX	70
OCRI-06	360-24309-23	OC-SB-430-8.0/10-XXX	44
OCRI-07	360-24327-12	OC-SB-410-6.0/8.0-XXX	65
OCRI-08	360-24343-10	OC-SB-451-2.5/4.5-XXX	62
OCRI-08	360-24343-17	OC-SB-455-6.0/8.0-XXX	46
OCRI-09	360-24365-4	OC-SB-442-8.0/10-XXX	50
OCRI-10	360-24417-10	OC-SB-465-8.0/10-XXX	63
OCRI-10A	360-24417-2	OC-SB-463-28/30-XXX	38
OCRI-11	360-24444-2	OC-SB-459-6.0/8.0-XXX	64
OCRI-11	360-24444-9	OC-SB-467-6.0/8.0-XXX	68
OCRI-12	360-24454-3	OC-SB-461-5.0/7.0-XXX	65
OCRI-13A	360-24499-3	OC-SB-469-28/30-XXX	61
OCRI-14	360-24563-14	OC-SB-456-7.0/9.0-XXX	60
OCRI-14	360-24563-5	OC-SB-427-8.0/10-XXX	67
OCRI-15	360-24582-22	OC-SS-416-0.0/1.0-XXX	56
OCRI-16	360-24634-1	OC-SS-417-0.0/1.0-XXX	61
OCRI-17	360-24665-1	OC-SS-434-0.0/1.0-XXX	29
OCRI-18	360-24686-1	OC-SB-400-17/19-XXX	67

Associated sample results for chromium and potassium were qualified estimated (J).

Laboratory Duplicate:

The laboratory performed a duplicate analysis of sample OC-SB-427-8.0/10-XXX (OCRI-14). The RPD for beryllium (113) exceeded the QC limit of 35. Associated SDG sample results for beryllium were

qualified estimated (J).

Field Duplicate:

The RPD for copper (95) exceeded the QC limit of 50. The results for copper in associated samples were qualified estimated (J).

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24563-1
Sdg Number: OCRI-14

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24563-1	OC-SB-427-0.0/1.0-XXX	Solid	09/10/2009 1340	09/11/2009 1820
360-24563-2	OC-SB-427-12/14-XXX	Solid	09/10/2009 1435	09/11/2009 1820
360-24563-3	OC-SB-427-17/19-XXX	Solid	09/10/2009 1505	09/11/2009 1820
360-24563-4	OC-SB-427-8.0/10-DUP	Solid	09/10/2009 1400	09/11/2009 1820
360-24563-5	OC-SB-427-8.0/10-XXX	Solid	09/10/2009 1400	09/11/2009 1820
360-24563-5MS	OC-SB-427-8.0/10-XMS	Solid	09/10/2009 1400	09/11/2009 1820
360-24563-5MSD	OC-SB-427-8.0/10-MSD	Solid	09/10/2009 1400	09/11/2009 1820
360-24563-6	OC-SB-428-0.0/1.0-XXX	Solid	09/10/2009 1600	09/11/2009 1820
360-24563-7	OC-SB-428-23/25-XXX	Solid	09/10/2009 1740	09/11/2009 1820
360-24563-8	OC-SB-428-8.0/10-DUP	Solid	09/10/2009 1620	09/11/2009 1820
360-24563-9	OC-SB-428-8.0/10-XXX	Solid	09/10/2009 1620	09/11/2009 1820
360-24563-9MS	OC-SB-428-8.0/10-XMS	Solid	09/10/2009 1620	09/11/2009 1820
360-24563-9MSD	OC-SB-428-8.0/10-MSD	Solid	09/10/2009 1620	09/11/2009 1820
360-24563-10	OC-TBK-017	Solid	09/11/2009 1000	09/11/2009 1820
360-24563-11	OC-SB-456-0.0/1.0-XXX	Solid	09/11/2009 0830	09/11/2009 1820
360-24563-12	OC-SB-456-16/18-XXX	Solid	09/11/2009 1040	09/11/2009 1820
360-24563-13	OC-SB-456-7.0/9.0-DUP	Solid	09/11/2009 0900	09/11/2009 1820
360-24563-14	OC-SB-456-7.0/9.0-XXX	Solid	09/11/2009 0900	09/11/2009 1820
360-24563-14MS	OC-SB-456-7.0/9.0-XMS	Solid	09/11/2009 0900	09/11/2009 1820
360-24563-14MSD	OC-SB-456-7.0/9.0-MSD	Solid	09/11/2009 0900	09/11/2009 1820
360-24563-15	OC-SB-457-0.0/1.0-XXX	Solid	09/11/2009 1310	09/11/2009 1820
360-24563-16	OC-SB-457-8.0/10-XXX	Solid	09/11/2009 1320	09/11/2009 1820
360-24563-17	OC-SB-456-0.0/1.0-XXX	Solid	09/11/2009 0830	09/11/2009 1820
360-24563-18	OC-SB-456-16/18-XXX	Solid	09/11/2009 1040	09/11/2009 1820
360-24563-19	OC-SB-456-7.0/9.0-DUP	Solid	09/11/2009 0900	09/11/2009 1820
360-24563-20	OC-SB-456-7.0/9.0-XXX	Solid	09/11/2009 0900	09/11/2009 1820
360-24563-20MS	OC-SB-456-7.0/9.0-XMS	Solid	09/11/2009 0900	09/11/2009 1820
360-24563-21	OC-SB-457-0.0/1.0-XXX	Solid	09/11/2009 1310	09/11/2009 1820
360-24563-22	OC-SB-457-8.0/10-XXX	Solid	09/11/2009 1320	09/11/2009 1820
360-24563-23	OC-EBK-009	Water	09/10/2009 1850	09/11/2009 1820

~~Table~~
Form I's updated
[illegible] 4/12/10

Client: Olin Corporation

Job Number: 360-24563-1
Sdg Number: OCRI-14

Client Sample ID: **OC-SB-427-0.0/1.0-XXX**

Lab Sample ID: 360-24563-1
Client Matrix: Solid
% Moisture: 7.1

Date Sampled: 09/10/2009 1340
Date Received: 09/11/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.83 g
Date Analyzed:	09/15/2009 1357			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5300		0.76	2.9
Antimony		ND J		0.21	0.59
Arsenic		5.1		0.11	1.2
Barium		9.3	~~B~~	0.076	0.59
Beryllium		0.17	J	0.029	0.24
Cadmium		0.11	J	0.0082	0.24
Calcium		770	~~B~~	2.9	24
Chromium		12 J	~~B~~	0.078	0.59
Cobalt		2.3		0.076	0.59
Copper		7.9 J		0.076	1.2
Iron		6600	~~B~~	0.94	5.9
Lead		8.7		0.067	0.59
Magnesium		1400	~~B~~	0.59	12
Manganese		40	~~B~~	0.079	1.2
Nickel		6.8		0.076	1.2
Potassium		580 J		37	240
Selenium		ND		0.28	0.59
Silver		ND		0.059	0.59
Sodium		ND		15	120
Thallium		ND		0.085	1.2
Vanadium		19		0.076	1.2
Zinc		14		0.69	2.9
Tin		4.3	J ~~B~~	0.38	5.9

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49092		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/18/2009 1142			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1034				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.035	0.19

4/12/10

Client: Olin Corporation

Job Number: 360-24563-1
Sdg Number: OCRI-14

Client Sample ID: **OC-SB-427-12/14-XXX**

Lab Sample ID: 360-24563-2
Client Matrix: Solid
% Moisture: 10.2

Date Sampled: 09/10/2009 1435
Date Received: 09/11/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.60 g
Date Analyzed:	09/15/2009 1400			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4300		0.91	3.5
Antimony		ND J		0.25	0.70
Arsenic		3.8		0.13	1.4
Barium		11	B	0.091	0.70
Beryllium		0.20	J	0.035	0.28
Cadmium		0.092	J	0.0097	0.28
Calcium		610	B	3.5	28
Chromium		8.7 J	B	0.093	0.70
Cobalt		2.9		0.091	0.70
Copper		4.6 J		0.091	1.4
Iron		5700	B	1.1	7.0
Lead		1.9		0.080	0.70
Magnesium		1400	B	0.70	14
Manganese		48	B	0.093	1.4
Nickel		8.2		0.091	1.4
Potassium		750 J		44	280
Selenium		ND		0.33	0.70
Silver		ND		0.070	0.70
Sodium		36 u	~~J B~~	18	140
Thallium		ND		0.10	1.4
Vanadium		8.1		0.091	1.4
Zinc		13		0.82	3.5
Tin		3.1	J B	0.45	7.0

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49092		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.29 g
Date Analyzed:	09/18/2009 1144			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1034				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.026	0.14

4/12/10

Client: Olin Corporation

Job Number: 360-24563-1
Sdg Number: OCRI-14

Client Sample ID: **OC-SB-427-8.0/10-DUP**

Lab Sample ID: 360-24563-4
Client Matrix: Solid
% Moisture: 4.3

Date Sampled: 09/10/2009 1400
Date Received: 09/11/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.65 g
Date Analyzed:	09/15/2009 1408			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		2900		0.82	3.2
Antimony		ND J		0.23	0.63
Arsenic		3.9		0.12	1.3
Barium		7.5	B	0.082	0.63
Beryllium		0.11	J	0.032	0.25
Cadmium		0.062	J	0.0089	0.25
Calcium		440	B	3.2	25
Chromium		5.5 J	B	0.084	0.63
Cobalt		1.8		0.082	0.63
Copper		3.2 J		0.082	1.3
Iron		4100	B	1.0	6.3
Lead		1.3		0.072	0.63
Magnesium		900	B	0.63	13
Manganese		32	B	0.085	1.3
Nickel		5.0		0.082	1.3
Potassium		490 J		40	250
Selenium		ND		0.30	0.63
Silver		ND		0.064	0.63
Sodium		26 u	J-B	16	130
Thallium		ND		0.092	1.3
Vanadium		5.2		0.082	1.3
Zinc		9.1		0.74	3.2
Tin		1.9 u	J B	0.41	6.3

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49092		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/18/2009 1146			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1034				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.029	J	0.028	0.15

4/12/10

Client: Olin Corporation

Job Number: 360-24563-1
Sdg Number: OCRI-14

Client Sample ID: **OC-SB-427-8.0/10-XXX**

Lab Sample ID: 360-24563-5
Client Matrix: Solid
% Moisture: 4.1

Date Sampled: 09/10/2009 1400
Date Received: 09/11/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.58 g
Date Analyzed:	09/15/2009 1342			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3000		0.86	3.3
Antimony		0.67 J		0.24	0.66
Arsenic		4.1		0.12	1.3
Barium		7.3	~~B~~	0.086	0.66
Beryllium		0.12	J	0.033	0.26
Cadmium		0.061	J	0.0092	0.26
Calcium		450	~~B~~	3.3	26
Chromium		5.3 J	~~B~~	0.088	0.66
Cobalt		1.8		0.086	0.66
Copper		3.1 J		0.086	1.3
Iron		4100	~~B~~	1.1	6.6
Lead		1.4		0.075	0.66
Magnesium		880	~~B~~	0.66	13
Manganese		32	~~B~~	0.088	1.3
Nickel		5.0		0.086	1.3
Potassium		530 J		41	260
Selenium		ND		0.31	0.66
Silver		ND		0.066	0.66
Sodium		27 U	~~J B~~	17	130
Thallium		ND		0.095	1.3
Vanadium		5.4		0.086	1.3
Zinc		9.1		0.78	3.3
Tin		1.8 U	J ~~B~~	0.42	6.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49092		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/18/2009 1137			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1034				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.028	0.15

4/12/10

Client: Olin Corporation

Job Number: 360-24563-1
Sdg Number: OCRI-14

Client Sample ID: **OC-SB-428-0.0/1.0-XXX**

Lab Sample ID: 360-24563-6
Client Matrix: Solid
% Moisture: 5.4

Date Sampled: 09/10/2009 1600
Date Received: 09/11/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.50 g
Date Analyzed:	09/15/2009 1411			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8700		0.92	3.5
Antimony		ND J		0.26	0.70
Arsenic		2.9		0.13	1.4
Barium		19	B	0.092	0.70
Beryllium		0.24	J	0.035	0.28
Cadmium		0.23	J	0.0099	0.28
Calcium		4600	B	3.5	28
Chromium		20 J	B	0.094	0.70
Cobalt		7.9		0.092	0.70
Copper		15 J		0.092	1.4
Iron		16000	B	1.1	7.0
Lead		7.1		0.080	0.70
Magnesium		4500	B	0.70	14
Manganese		170	B	0.094	1.4
Nickel		14		0.092	1.4
Potassium		820 J		44	280
Selenium		ND		0.33	0.70
Silver		ND		0.071	0.70
Sodium		47 U	J B	18	140
Thallium		ND		0.10	1.4
Vanadium		34		0.092	1.4
Zinc		27		0.83	3.5
Tin		6.8	J B	0.45	7.0

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49092		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.28 g
Date Analyzed:	09/18/2009 1148			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1034				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.026	0.14

4/12/10

Client: Olin Corporation

Job Number: 360-24563-1
Sdg Number: OCRI-14

Client Sample ID: **OC-SB-428-8.0/10-XXX**

Lab Sample ID: 360-24563-9
Client Matrix: Solid
% Moisture: 6.1

Date Sampled: 09/10/2009 1620
Date Received: 09/11/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.77 g
Date Analyzed:	09/15/2009 1414			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		2300		0.78	3.0
Antimony		ND J		0.22	0.60
Arsenic		5.2		0.11	1.2
Barium		8.2	~~B~~	0.078	0.60
Beryllium		0.11	J	0.030	0.24
Cadmium		0.067	J	0.0084	0.24
Calcium		490	~~B~~	3.0	24
Chromium		6.5 J	~~B~~	0.080	0.60
Cobalt		1.3		0.078	0.60
Copper		2.8 J		0.078	1.2
Iron		5100	~~B~~	0.96	6.0
Lead		1.5		0.069	0.60
Magnesium		900	~~B~~	0.60	12
Manganese		39	~~B~~	0.080	1.2
Nickel		4.4		0.078	1.2
Potassium		530 J		38	240
Selenium		ND		0.28	0.60
Silver		ND		0.061	0.60
Sodium		53 u	~~J B~~	16	120
Thallium		ND		0.087	1.2
Vanadium		5.5		0.078	1.2
Zinc		9.0		0.71	3.0
Tin		2.2 u	J ~~B~~	0.38	6.0

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49092		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/18/2009 1153			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1034				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.031	0.17

4/12/10

Client: Olin Corporation

Job Number: 360-24563-1
Sdg Number: OCRI-14

Client Sample ID: **OC-SB-456-0.0/1.0-XXX**

Lab Sample ID: 360-24563-11
Client Matrix: Solid
% Moisture: 2.5

Date Sampled: 09/11/2009 0830
Date Received: 09/11/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.60 g
Date Analyzed:	09/15/2009 1417			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4400		0.83	3.2
Antimony		ND J		0.23	0.64
Arsenic		3.7		0.12	1.3
Barium		9.2	~~B~~	0.083	0.64
Beryllium		0.17	J	0.032	0.26
Cadmium		0.072	J	0.0090	0.26
Calcium		500	~~B~~	3.2	26
Chromium		33 J	~~B~~	0.085	0.64
Cobalt		2.0		0.083	0.64
Copper		3.3 J		0.083	1.3
Iron		5300	~~B~~	1.0	6.4
Lead		2.6		0.073	0.64
Magnesium		1200	~~B~~	0.64	13
Manganese		48	~~B~~	0.086	1.3
Nickel		6.0		0.083	1.3
Potassium		520 J		40	260
Selenium		ND		0.30	0.64
Silver		0.35	J	0.064	0.64
Sodium		48 u	~~J-B~~	17	130
Thallium		ND		0.093	1.3
Vanadium		7.6		0.083	1.3
Zinc		10		0.75	3.2
Tin		13 J	~~B~~	0.41	6.4

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49092		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	09/18/2009 1155			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1034				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.032	0.17

4/12/10

Client: Olin Corporation

Job Number: 360-24563-1
Sdg Number: OCRI-14

Client Sample ID: **OC-SB-456-16/18-XXX**

Lab Sample ID: 360-24563-12
Client Matrix: Solid
% Moisture: 9.7

Date Sampled: 09/11/2009 1040
Date Received: 09/11/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.78 g
Date Analyzed:	09/15/2009 1420			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		11000		0.81	3.1
Antimony		ND J		0.23	0.62
Arsenic		3.5		0.11	1.2
Barium		52	B	0.081	0.62
Beryllium		0.24	J	0.031	0.25
Cadmium		0.28		0.0087	0.25
Calcium		3400	B	3.1	25
Chromium		280 J	B	0.083	0.62
Cobalt		8.9		0.081	0.62
Copper		35 J		0.081	1.2
Iron		20000	B	0.99	6.2
Lead		3.6		0.071	0.62
Magnesium		6000	B	0.62	12
Manganese		210	B	0.083	1.2
Nickel		13		0.081	1.2
Potassium		2600 J		39	250
Selenium		ND		0.29	0.62
Silver		4.4		0.063	0.62
Sodium		140	B	16	120
Thallium		0.25	J6B	0.090	1.2
Vanadium		39		0.081	1.2
Zinc		36		0.73	3.1
Tin		110 J	B	0.40	6.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49092		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	09/18/2009 1157			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1034				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.028	0.15

4/12/10

Client: Olin Corporation

Job Number: 360-24563-1
Sdg Number: OCRI-14

Client Sample ID: **OC-SB-456-7.0/9.0-DUP**

Lab Sample ID: 360-24563-13
Client Matrix: Solid
% Moisture: 7.4

Date Sampled: 09/11/2009 0900
Date Received: 09/11/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.81 g
Date Analyzed:	09/15/2009 1423			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		2500		0.78	3.0
Antimony		ND J		0.22	0.60
Arsenic		6.2		0.11	1.2
Barium		12	B	0.078	0.60
Beryllium		0.10	J	0.030	0.24
Cadmium		0.10	J	0.0083	0.24
Calcium		360	B	3.0	24
Chromium		100 J	B	0.079	0.60
Cobalt		1.7		0.078	0.60
Copper		11 J		0.078	1.2
Iron		8200	B	0.95	6.0
Lead		1.7		0.068	0.60
Magnesium		1000	B	0.60	12
Manganese		38	B	0.080	1.2
Nickel		4.0		0.078	1.2
Potassium		760 J		37	240
Selenium		ND		0.28	0.60
Silver		1.6		0.060	0.60
Sodium		39 U	J B	16	120
Thallium		ND		0.086	1.2
Vanadium		25		0.078	1.2
Zinc		9.4		0.70	3.0
Tin		42 J	B	0.38	6.0

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49092		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	09/18/2009 1159			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1034				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.037	0.20

4/12/10

Client: Olin Corporation

Job Number: 360-24563-1
Sdg Number: OCRI-14

Client Sample ID: **OC-SB-456-7.0/9.0-XXX**

Lab Sample ID: 360-24563-14
Client Matrix: Solid
% Moisture: 7.2

Date Sampled: 09/11/2009 0900
Date Received: 09/11/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.68 g
Date Analyzed:	09/15/2009 1426			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		2600		0.83	3.2
Antimony		ND J		0.23	0.64
Arsenic		6.9		0.12	1.3
Barium		13	B	0.083	0.64
Beryllium		0.097	J	0.032	0.26
Cadmium		0.095	J	0.0090	0.26
Calcium		410	B	3.2	26
Chromium		100 J	B	0.085	0.64
Cobalt		1.6		0.083	0.64
Copper		3.9 J		0.083	1.3
Iron		7600	B	1.0	6.4
Lead		1.8		0.073	0.64
Magnesium		970	B	0.64	13
Manganese		39	B	0.086	1.3
Nickel		4.0		0.083	1.3
Potassium		880 J		40	260
Selenium		ND		0.30	0.64
Silver		1.6		0.065	0.64
Sodium		39 u	J B	17	130
Thallium		ND		0.093	1.3
Vanadium		24		0.083	1.3
Zinc		8.9		0.75	3.2
Tin		42 J	B	0.41	6.4

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49092		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/18/2009 1201			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1034				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.035	0.19

4/12/10

Client: Olin Corporation

Job Number: 360-24563-1
Sdg Number: OCRI-14

Client Sample ID: **OC-SB-457-0.0/1.0-XXX**

Lab Sample ID: 360-24563-15
Client Matrix: Solid
% Moisture: 4.8

Date Sampled: 09/11/2009 1310
Date Received: 09/11/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.69 g
Date Analyzed:	09/15/2009 1431			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5300		0.81	3.1
Antimony		ND J		0.22	0.62
Arsenic		3.7		0.11	1.2
Barium		7.6	B	0.081	0.62
Beryllium		0.19	J	0.031	0.25
Cadmium		0.069	J	0.0087	0.25
Calcium		380	B	3.1	25
Chromium		64 J	B	0.083	0.62
Cobalt		1.5		0.081	0.62
Copper		2.5 J		0.081	1.2
Iron		5000	B	0.99	6.2
Lead		3.5		0.071	0.62
Magnesium		730	B	0.62	12
Manganese		32	B	0.083	1.2
Nickel		4.5		0.081	1.2
Potassium		320 J		39	250
Selenium		ND		0.29	0.62
Silver		0.96		0.063	0.62
Sodium		2200	B	16	120
Thallium		ND		0.090	1.2
Vanadium		6.6		0.081	1.2
Zinc		9.7		0.73	3.1
Tin		26 J	B	0.40	6.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49092		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/18/2009 1205			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1034				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.12	J	0.029	0.16

4/12/10

Client: Olin Corporation

Job Number: 360-24563-1
Sdg Number: OCRI-14

Client Sample ID: **OC-SB-457-8.0/10-XXX**

Lab Sample ID: 360-24563-16
Client Matrix: Solid
% Moisture: 9.2

Date Sampled: 09/11/2009 1320
Date Received: 09/11/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48984		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-48949		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.84 g
Date Analyzed:	09/15/2009 1434			Final Weight/Volume:	100 mL
Date Prepared:	09/15/2009 0908				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3600		0.78	3.0
Antimony		ND J		0.22	0.60
Arsenic		1.9		0.11	1.2
Barium		14	~~B~~	0.078	0.60
Beryllium		0.076	J	0.030	0.24
Cadmium		0.082	J	0.0084	0.24
Calcium		1400	~~B~~	3.0	24
Chromium		64 J	~~B~~	0.080	0.60
Cobalt		2.3		0.078	0.60
Copper		3.4 J		0.078	1.2
Iron		6100	~~B~~	0.95	6.0
Lead		1.3		0.068	0.60
Magnesium		1200	~~B~~	0.60	12
Manganese		49	~~B~~	0.080	1.2
Nickel		4.1		0.078	1.2
Potassium		960 J		37	240
Selenium		ND		0.28	0.60
Silver		0.98		0.060	0.60
Sodium		17000	~~B~~	16	120
Thallium		ND		0.087	1.2
Vanadium		8.6		0.078	1.2
Zinc		11		0.70	3.0
Tin		26 J	~~B~~	0.38	6.0

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49092		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	09/18/2009 1207			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1034				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.16	J	0.034	0.19

4/12/10

Client: Olin Corporation

Job Number: 360-24563-1
Sdg Number: OCRI-14

Client Sample ID: **OC-EBK-009**

Lab Sample ID: 360-24563-23
Client Matrix: Water

Date Sampled: 09/10/2009 1850
Date Received: 09/11/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48957		Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-48890		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	09/14/2009 1628			Final Weight/Volume:	50 mL
Date Prepared:	09/14/2009 0728				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	ND		39	100
Antimony	ND		2.9	6.0
Barium	3.2	J	2.0	10
Arsenic	ND		2.3	10
Beryllium	ND		0.20	1.0
Cadmium	ND		0.20	1.0
Calcium	500		59	400
Chromium	ND		1.3	5.0
Cobalt	ND		2.0	10
Copper	31		1.7	10
Iron	94	J	34	100
Lead	3.2	J	1.3	5.0
Magnesium	120	J	50	400
Manganese	1.9	J	1.3	10
Nickel	ND		1.5	10
Potassium	ND		500	4000
Selenium	3.0	J	2.7	10
Silver	1.8	J,B	1.8	5.0
Sodium	ND		250	2000
Tin	ND		7.0	50
Vanadium	ND		1.5	10
Thallium	4.8	J	1.4	10
Zinc	15	J	10	50

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 360-48953		Instrument ID:	Hg Analyzer
Preparation:	7470A	Prep Batch: 360-48894		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	09/15/2009 0905			Final Weight/Volume:	10 mL
Date Prepared:	09/14/2009 0756				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	ND		0.065	0.20

4/12/10

OCR I-14 (24563)

✓ EQBLK

Cu	31	1.55	>
Pb	3.2	0.16	>
Se	3	0.15	ND
Ag	1.8	0.09	>
Tl	4.8	0.24	<
Zn	15	0.75	>

✓ ICV/CCV OK

✓ CRQL

Sn (43, 44)

✓ ICB/CCB see attached

✓ MB 4P949 AL

Ba	0.0754	0.377	>
Ca	11.2	56	>
Cr	0.0872	0.436	>
Fe	1.95	0.975	>
Mg	2.63	13.15	>
Mn	0.109	0.545	>
Na	14.9	74.5	<
Sn	0.481	2.405	<

✓ ICS OK

MS
LABDUP } see attached

✓ LCS OK ✓ serial dilution OK

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24563-1

SDG No.: OCRI-14

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/14/2009 10:56 End Date: 09/14/2009 17:06

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
ZZZZZZ			10:56																				
ZZZZZZ			10:59																				
ZZZZZZ			11:02																				
ZZZZZZ			11:05																				
ZZZZZZ			11:08																				
ICV 360-48957/6	1		11:10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-48957/7	1		11:13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-48957/8	1		11:16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-48957/9	1		11:19	X		X	X	X		X		X							X	X	X	X	
ICSA 360-48957/10	1		11:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-48957/11	1		11:24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			11:27																				
CCV 360-48957/13	1		11:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48957/14	1		11:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-48957/15			11:35																				
ICV 360-48957/16			11:38																				
ICV 360-48957/17			11:41																				
ICV 360-48957/18			11:45																				
CRI 360-48957/19			11:48																				
CCV 360-48957/20	1		16:08	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X/4.42	X
CCB 360-48957/21	1		16:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MB 360-48890/1-A	1	T	16:19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 360-48890/2-A	1	T	16:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCSD 360-48890/3-A	1	T	16:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-23	1	T	16:28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-23 DU	1	T	16:31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-23 MS	1	T	16:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-23 SD	5	T	16:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X/4.57	X
ZZZZZZ			16:39																				
CCV 360-48957/30	1		16:42	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48957/31	1		16:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:48																				
ZZZZZZ			16:51																				
ZZZZZZ			16:54																				
CCV 360-48957/35	1		16:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48957/36	1		17:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 360-48957/37	1		17:03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-48957/38	1		17:06	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

1.66 / TL

2.56 / TL

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24563-1

SDG No.: OCRI-14

Concentration Units: ug/L

Analyte	RL	ICB 360-48957/7 09/14/2009 11:13		CCB 360-48957/14 09/14/2009 11:32		CCB 360-48957/21 09/14/2009 16:11		CCB 360-48957/31 09/14/2009 16:45	
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND		2.18	J	2.13	J
Al	100	ND		ND		ND		ND	
As	10	ND		ND		ND		ND	
Ba	10	ND		ND		ND		ND	
Be	1.0	ND		ND		ND		ND	
Ca	400	ND		ND		ND		ND	
Cd	1.0	ND		ND		ND		ND	
Co	10	ND		ND		ND		ND	
Cr	5.0	ND		ND		ND		ND	
Cu	10	ND		ND		ND		ND	
Fe	100	ND		ND		ND		ND	
K	4000	ND		ND		ND		ND	
Mg	400	ND		ND		ND		ND	
Mn	10	ND		ND		ND		ND	
Na	2000	ND		ND		ND		ND	
Ni	10	ND		ND		ND		ND	
Pb	5.0	ND		ND		ND		ND	
Sb	6.0	ND		ND		ND		ND	
Se	10	3.19	J	4.74	J	4.42	J	4.57	J
Sn	50	ND		ND		ND		ND	
Tl	10	2.16	J	3.61	J	1.66	J	2.56	J
V	10	ND		ND		ND		ND	
Zn	50	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24563-1

SDG No.: OCRI-14

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/15/2009 10:35 End Date: 09/15/2009 15:21

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
ZZZZZZ			10:35																				
ZZZZZZ			10:38																				
ZZZZZZ			10:41																				
ZZZZZZ			10:44																				
ZZZZZZ			10:47																				
ICV 360-48984/6	1		10:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-48984/7	1		10:53	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-48984/8	1		10:55	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-48984/9	1		10:58	X		X	X	X		X		X							X	X	X	X	
ICSA 360-48984/10	1		11:01	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-48984/11	1		11:04	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			11:07																				
CCV 360-48984/13	1		11:10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48984/14	1		11:13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-48984/15	1		11:16				X																
ICV 360-48984/16			11:19																				
ICV 360-48984/17			11:22																				
CRI 360-48984/18			11:31																				
CRI 360-48984/19	1		11:34																				
CCV 360-48984/20	1		13:28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48984/21	1		13:31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MB 360-48949/1-A	1	T	13:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 360-48949/2-A	1	T	13:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCSD 360-48949/3-A	1	T	13:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-5	1	T	13:42	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-5 DU	1	T	13:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-5 MS	1	T	13:48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-5 SD	5	T	13:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-5 PDS	1	T	13:54	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-1	1	T	13:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-2	1	T	14:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-48984/32	1		14:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48984/33	1		14:05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-4	1	T	14:08	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-6	1	T	14:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-9	1	T	14:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-11	1	T	14:17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-12	1	T	14:20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-13	1	T	14:23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-14	1	T	14:26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-14 MS	1	T	14:28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24563-15	1	T	14:31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

4.03

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24563-1

SDG No.: OCRI-14

Concentration Units: ug/L

Analyte	RL	ICB 360-48984/7 09/15/2009 10:53		CCB 360-48984/14 09/15/2009 11:13		ICB 360-48984/15 09/15/2009 11:16		CCB 360-48984/21 09/15/2009 13:31	
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND				ND	
Al	100	ND		ND				ND	
As	10	ND		ND				ND	
Be	1.0	ND		ND				ND	
Ca	400	ND		ND				ND	
Cd	1.0	ND		ND				ND	
Co	10	ND		ND				ND	
Cr	5.0	ND		ND				ND	
Cu	10	ND		ND				ND	
Fe	100	ND		ND				ND	
K	4000	ND		ND				ND	
Mg	400	ND		ND				ND	
Mn	10	ND		ND				ND	
Na	2000	ND		ND				ND	
Ni	10	ND		ND				ND	
Pb	5.0	ND		ND				ND	
Sb	10	ND		ND				ND	
Se	10	ND		3.48	J			4.03	J
Sn	50	ND		ND				ND	
Tl	10	ND		ND				ND	
V	10	ND		ND				ND	
Zn	50	ND		ND				ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24563-1

SDG No.: OCRI-14

Concentration Units: ug/L

Analyte	RL	CCB 360-48984/33 09/15/2009 14:05		CCB 360-48984/45 09/15/2009 14:40		CCB 360-48984/54 09/15/2009 15:07			
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND		ND			
Al	100	ND		ND		ND			
As	10	ND		ND		ND			
Be	1.0	ND		ND		ND			
Ca	400	ND		ND		ND			
Cd	1.0	ND		ND		ND			
Co	10	ND		ND		ND			
Cr	5.0	ND		ND		ND			
Cu	10	ND		ND		ND			
Fe	100	ND		ND		ND			
K	4000	ND		ND		ND			
Mg	400	ND		ND		ND			
Mn	10	ND		ND		ND			
Na	2000	ND		ND		ND			
Ni	10	ND		ND		ND			
Pb	5.0	ND		ND		ND			
Sb	10	ND		ND		ND			
Se	10	ND		ND		ND			
Sn	50	ND		ND		ND			
Tl	10	ND		ND		ND			
V	10	ND		ND		ND			
Zn	50	ND		ND		ND			

Italicized analytes were not requested for this sequence.

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24563-1

SDG No.: OCRI-14

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/15/2009 10:35 End Date: 09/15/2009 15:21

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
360-24563-16	1	T	14:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-48984/44	1		14:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48984/45	1		14:40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			14:43																				
ZZZZZZ			14:46																				
ZZZZZZ			14:49																				
ZZZZZZ			14:52																				
ZZZZZZ			14:55																				
ZZZZZZ			14:58																				
ZZZZZZ			15:01																				
CCV 360-48984/53	1		15:04	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-48984/54	1		15:07	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 360-48984/55	1		15:18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-48984/56	1		15:21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-SB-427-8.0/10-XXX MS

Lab ID: 360-24563-5 MS

Lab Name: TestAmerica Westfield

Job No.: 360-24563-1

SDG No.: OCRI-14

Matrix: Solid

Concentration Units: mg/Kg

% Solids: 95.9

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	3410		3000		330	131	75-125	4	6010B
Antimony	44.6		0.67		66.0	67	75-125	F	6010B
Arsenic	64.6		4.1		66.0	92	75-125		6010B
Barium	68.2		7.3		66.0	92	75-125		6010B
Beryllium	61.0		0.12	J	66.0	92	75-125		6010B
Cadmium	59.7		0.061	J	66.0	90	75-125		6010B
Calcium	1750		450		1320	99	75-125		6010B
Chromium	66.6		5.3		66.0	93	75-125		6010B
Cobalt	62.2		1.8		66.0	92	75-125		6010B
Copper	65.2		3.1		66.0	94	75-125		6010B
Iron	4630		4100		330	152	75-125	4	6010B
Lead	60.4		1.4		66.0	89	75-125		6010B
Magnesium	2080		880		1320	91	75-125		6010B
Manganese	95.5		32		66.0	96	75-125		6010B
Nickel	64.9		5.0		66.0	91	75-125		6010B
Potassium	1680		530		1320	87	75-125		6010B
Selenium	59.2		ND		66.0	90	75-125		6010B
Silver	59.6		ND		66.0	90	75-125		6010B
Sodium	1200		27	J	1320	89	75-125		6010B
Thallium	57.4		ND		66.0	87	75-125		6010B
Vanadium	66.8		5.4		66.0	93	75-125		6010B
Zinc	69.1		9.1		66.0	91	75-125		6010B
Tin	60.3		1.8	J	66.0	89	75-125		6010B
Mercury	1.13		ND		1.09	104	75-125		7471A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-SB-427-8.0/10-XXX PDS
Lab ID: 360-24563-5 PDS
Lab Name: TestAmerica Westfield
Job No.: 360-24563-1
SDG No.: OCRI-14
Matrix: Solid
Concentration Units: mg/Kg

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	3190		3000		330	63	75-125	W	6010B
Antimony	63.0		0.67		66.0	94	75-125		6010B
Arsenic	68.3		4.1		66.0	97	75-125		6010B
Barium	71.6		7.3		66.0	97	75-125		6010B
Beryllium	64.5		0.12	J	66.0	98	75-125		6010B
Cadmium	63.2		0.061	J	66.0	96	75-125		6010B
Calcium	1760		450		1320	100	75-125		6010B
Chromium	70.0		5.3		66.0	98	75-125		6010B
Cobalt	65.8		1.8		66.0	97	75-125		6010B
Copper	68.9		3.1		66.0	100	75-125		6010B
Iron	4220		4100		330	NC	75-125		6010B
Lead	63.8		1.4		66.0	95	75-125		6010B
Magnesium	2110		880		1320	93	75-125		6010B
Manganese	95.2		32		66.0	95	75-125		6010B
Nickel	68.1		5.0		66.0	96	75-125		6010B
Potassium	1720		530		1320	90	75-125		6010B
Selenium	63.3		ND		66.0	96	75-125		6010B
Silver	63.1		ND		66.0	96	75-125		6010B
Sodium	1280		27	J	1320	95	75-125		6010B
Vanadium	70.5		5.4		66.0	99	75-125		6010B
Thallium	61.4		ND		66.0	93	75-125		6010B
Tin	64.1		1.8	J	66.0	94	75-125		6010B
Zinc	71.5		9.1		66.0	95	75-125		6010B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VB - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-SB-456-7.0/9.0-XXX MS
Lab ID: 360-24563-14 MS
Lab Name: TestAmerica Westfield
Job No.: 360-24563-1
SDG No.: OCRI-14
Matrix: Solid
Concentration Units: mg/Kg
% Solids: 92.8

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	2840		2600		323	90	75-125	4	6010B
Antimony	38.7		ND		64.5	60	75-125	F	6010B
Arsenic	63.9		6.9		64.5	88	75-125		6010B
Barium	70.9		13		64.5	89	75-125		6010B
Beryllium	59.3		0.097	J	64.5	92	75-125		6010B
Cadmium	57.9		0.095	J	64.5	90	75-125		6010B
Calcium	1580		410		1290	91	75-125		6010B
Chromium	149		100		64.5	74	75-125	F	6010B
Cobalt	60.2		1.6		64.5	91	75-125		6010B
Copper	63.6		3.9		64.5	93	75-125		6010B
Iron	6540		7600		323	-322	75-125	4	6010B
Lead	58.5		1.8		64.5	88	75-125		6010B
Magnesium	2060		970		1290	85	75-125		6010B
Manganese	95.9		39		64.5	88	75-125		6010B
Nickel	62.1		4.0		64.5	90	75-125		6010B
Potassium	1800		880		1290	71	75-125	F	6010B
Selenium	57.6		ND		64.5	89	75-125		6010B
Silver	59.1		1.6		64.5	89	75-125		6010B
Sodium	1150		39	J	1290	86	75-125		6010B
Thallium	55.3		ND		64.5	86	75-125		6010B
Vanadium	80.5		24		64.5	87	75-125		6010B
Zinc	65.1		8.9		64.5	87	75-125		6010B
Tin	94.2		42		64.5	81	75-125		6010B
Mercury	1.21		ND		1.22	99	75-125		7471A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

6-IN
DUPLICATES
METALS

Client ID: OC-SB-427-8.0/10-XXX DU

Lab ID: 360-24563-5 DU

Lab Name: TestAmerica Westfield

Job No.: 360-24563-1

SDG No.: OCRI-14

% Solids for Sample: 95.9

% Solids for Duplicate: 95.9

Matrix: Solid

Concentration Units: mg/Kg

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Aluminum	3.3	3000		2940		2		6010B
Antimony	0.66	0.67		ND		NC		6010B
Arsenic	1.3	4.1		3.72		9		6010B
Barium	0.66	7.3		8.00		10		6010B
Beryllium	0.26	0.12	J	0.434		113	F	6010B
Cadmium	0.26	0.061	J	0.0684	J	11		6010B
Calcium	26	450		430		4		6010B
Chromium	0.66	5.3		5.62		6		6010B
Cobalt	0.66	1.8		1.76		4		6010B
Copper	1.3	3.1		3.18		2		6010B
Iron	6.6	4100		4150		1		6010B
Lead	0.66	1.4		1.27		7		6010B
Magnesium	13	880		886		0		6010B
Manganese	1.3	32		31.9		2		6010B
Nickel	1.3	5.0		5.00		1		6010B
Potassium	260	530		504		5		6010B
Selenium	0.66	ND		ND		NC		6010B
Silver	0.66	ND		ND		NC		6010B
Sodium	130	27	J	28.5	J	7		6010B
Vanadium	1.3	5.4		5.32		1		6010B
Thallium	1.3	ND		ND		NC		6010B
Tin	6.6	1.8	J	1.89	J	5		6010B
Zinc	3.3	9.1		9.45		4		6010B
Mercury	0.16	ND		ND		NC		7471A

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

FORM VI-IN

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24563-2
Sdg Number: OCRI-14A

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24563-3	OC-SB-427-17/19-XXX	Solid	09/10/2009 1505	09/11/2009 1820
360-24563-7	OC-SB-428-23/25-XXX	Solid	09/10/2009 1740	09/11/2009 1820

✓ ICV/CCV ok

✓ CRQL
Tin (41)

✓ ICB/CCB
Se 3.49 > ND
Tl 2.08

✓ MB 50202

Cd	0.0782	0.0391 >
Ca	6.72	33.6 >
Fe	2.71	13.55 >
Pb	0.132	0.66 >
Mg	1.76	8.8 >
Sn	0.417	2.085 >

✓ ICS ok

✓ LCS ok

Form I's updated 4/12/10 WPC

Client: Olin Corporation

Job Number: 360-24563-2
Sdg Number: OCRI-14A

Client Sample ID: **OC-SB-427-17/19-XXX**

Lab Sample ID: 360-24563-3
Client Matrix: Solid
% Moisture: 8.9

Date Sampled: 09/10/2009 1505
Date Received: 09/11/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-50268		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-50202		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.50 g
Date Analyzed:	10/13/2009 1613			Final Weight/Volume:	100 mL
Date Prepared:	10/13/2009 0957				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3500		0.95	3.7
Antimony		ND 3		0.27	0.73
Arsenic		2.0		0.13	1.5
Barium		8.9		0.095	0.73
Beryllium		0.22	J	0.037	0.29
Cadmium		0.28	J B	0.010	0.29
Calcium		750	B	3.7	15
Chromium		7.6		0.097	0.73
Cobalt		3.0		0.095	0.73
Copper		6.9		0.095	1.5
Iron		5000	B	1.2	7.3
Lead		1.6	B	0.084	0.73
Magnesium		1200	B	0.73	15
Manganese		45		0.098	1.5
Nickel		6.5		0.095	1.5
Potassium		710		46	290
Selenium		ND		0.34	0.73
Silver		ND		0.074	0.73
Sodium		ND		19	150
Thallium		ND		0.11	1.5
Vanadium		5.8		0.095	1.5
Zinc		24		0.86	3.7
Tin		2.8	J ^-B-	0.47	7.3

4/12/10

Client: Olin Corporation

Job Number: 360-24563-2
Sdg Number: OCRI-14A

Client Sample ID: **OC-SB-428-23/25-XXX**

Lab Sample ID: 360-24563-7
Client Matrix: Solid
% Moisture: 11.9

Date Sampled: 09/10/2009 1740
Date Received: 09/11/2009 1820

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-50268		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-50202		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.92 g
Date Analyzed:	10/13/2009 1616			Final Weight/Volume:	100 mL
Date Prepared:	10/13/2009 0957				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5500		0.77	3.0
Antimony		ND 3		0.21	0.59
Arsenic		4.9		0.11	1.2
Barium		18		0.077	0.59
Beryllium		0.20	J	0.030	0.24
Cadmium		0.26	~~B~~	0.0083	0.24
Calcium		2100	~~B~~	3.0	12
Chromium		21		0.079	0.59
Cobalt		7.1		0.077	0.59
Copper		29		0.077	1.2
Iron		12000	~~B~~	0.94	5.9
Lead		2.5	~~B~~	0.068	0.59
Magnesium		2900	~~B~~	0.59	12
Manganese		100		0.079	1.2
Nickel		10		0.077	1.2
Potassium		1100		37	240
Selenium		ND		0.28	0.59
Silver		ND		0.060	0.59
Sodium		57	J	15	120
Thallium		ND		0.086	1.2
Vanadium		19		0.077	1.2
Zinc		22		0.70	3.0
Tin		7.6 3	~~B~~	0.38	5.9

4/12/10

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

SITE: **Olin Chemical** Project #: 4107 100016.12 SDG #: OCRI-15

LAB # : TAL 360-24582-1

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☐ ☒ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☑ ☐ ☐ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	See below. Post-digestion spikes %R limits = 75% - 125%

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Laboratory Control Samples (LCS) ☑ ☐ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate ☐ ☒ ☐ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☐ ☒ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	See below.
Field Duplicate ☐ ☒ ☐ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☐ ☐ ☑ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	See below.
Serial Dilution ☐ ☑ ☐ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☑ ☐ Are results of the diluted samples > the original sample results	

Validator's Signature: [signature]

Date: 4/13/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

QL Standard:
The percent recovery of tin (64 and 63) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J).

Blanks:
Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Copper, selenium, and thallium were reported in the equipment blank associated with OCRI-15. Reported detections of copper and selenium were significantly greater than equipment blank results, the data was not qualified. Associated sample results for thallium were non detect, no further action required.

Calcium (8.34 mg/kg), iron (1.09 mg/kg), magnesium (2.07 mg/kg), selenium (0.244 mg/kg), and tin (0.443 mg/kg) were reported in the method blank (M360-49128) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. With the exception of selenium sample results were greater than the action levels, no further action required. Sample results for selenium that were less than the action level were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Selenium and thallium were reported in the continuing calibration blanks (CCB) associated with all samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for selenium were greater than the action level, no further action required. The reported detection of thallium was less than the action level and was qualified non detect (U).

Matrix Spikes:
Sample OC-SS-416-0.0/1.0-XXX was submitted for MS analysis. The MS percent recovery of aluminum (150), antimony (56), barium (65), iron (-390), lead (64), and zinc (33) were outside of the QC limits. The unspiked sample results for aluminum, iron, and zinc were greater than four times the spiking concentration, no further action required. Post digestion spike recoveries were within QC limits. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

SDG	Lab Sample ID	Field Sample ID	Antimony MS Recovery (%)
OCRI-03	360-24223-9	OC-SB-426-5.0/7.0-XXX	61
OCRI-04	360-24244-1	OC-SB-432-0.0/1.0-XXX	27
OCRI-04A	360-24244-5	OC-SB-443-18/20-XXX	32
OCRI-05	360-24251-19	OC-SB-446-5.0/7.0-XXX	80
OCRI-05	360-24251-4	OC-SB-433-5.0/7.0-XXX	70
OCRI-06	360-24309-23	OC-SB-430-8.0/10-XXX	44
OCRI-07	360-24327-12	OC-SB-410-6.0/8.0-XXX	65
OCRI-08	360-24343-10	OC-SB-451-2.5/4.5-XXX	62
OCRI-08	360-24343-17	OC-SB-455-6.0/8.0-XXX	46
OCRI-09	360-24365-4	OC-SB-442-8.0/10-XXX	50
OCRI-10	360-24417-10	OC-SB-465-8.0/10-XXX	63
OCRI-10A	360-24417-2	OC-SB-463-28/30-XXX	38
OCRI-11	360-24444-2	OC-SB-459-6.0/8.0-XXX	64
OCRI-11	360-24444-9	OC-SB-467-6.0/8.0-XXX	68
OCRI-12	360-24454-3	OC-SB-461-5.0/7.0-XXX	65
OCRI-13A	360-24499-3	OC-SB-469-28/30-XXX	61
OCRI-14	360-24563-14	OC-SB-456-7.0/9.0-XXX	60
OCRI-14	360-24563-5	OC-SB-427-8.0/10-XXX	67
OCRI-15	360-24582-22	OC-SS-416-0.0/1.0-XXX	56
OCRI-16	360-24634-1	OC-SS-417-0.0/1.0-XXX	61
OCRI-17	360-24665-1	OC-SS-434-0.0/1.0-XXX	29
OCRI-18	360-24686-1	OC-SB-400-17/19-XXX	67

Associated sample results for barium and lead were qualified estimated (J).

Laboratory Duplicate:

The laboratory performed a duplicate analysis of sample OC-SS-416-0.0/1.0-XXX (OCRI-15). The RPD for barium (57), lead (79), and mercury (112) exceeded the QC limit of 35. Associated SDG sample results for barium, lead, and mercury were qualified estimated (J/UJ).

Field Duplicate:

The RPD for barium (97), lead (67), and mercury (113) exceeded the QC limit of 50. The results for barium, lead, and mercury n associated samples were qualified estimated (J/UJ).

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24582-1	OC-SB-457-28/30-XXX	Solid	09/14/2009 1130	09/14/2009 1750
360-24582-2	OC-TBK-018	Solid	09/14/2009 1415	09/14/2009 1750
360-24582-3	OC-SB-457-28/30-XXX	Solid	09/14/2009 1130	09/14/2009 1750
360-24582-4FB	OC-EBK-010	Water	09/14/2009 1300	09/14/2009 1750
360-24582-5	OC-SS-400-0.0/1.0-XXX	Solid	09/14/2009 1440	09/15/2009 1640
360-24582-6	OC-SS-401-0.1/1.0-XXX	Solid	09/14/2009 1505	09/15/2009 1640
360-24582-7	OC-SS-402-0.0/1.0-XXX	Solid	09/14/2009 1530	09/15/2009 1640
360-24582-8	OC-SS-403-0.0/1.0-XXX	Solid	09/14/2009 1550	09/15/2009 1640
360-24582-9	OC-SS-404-0.0/1.0-XXX	Solid	09/14/2009 1610	09/15/2009 1640
360-24582-10	OC-SS-405-0.0/1.0-XXX	Solid	09/14/2009 1630	09/15/2009 1640
360-24582-11	OC-SS-406-0.0/1.0.-XXX	Solid	09/15/2009 0835	09/15/2009 1640
360-24582-12	OC-SS-407-0.0/1.0-XXX	Solid	09/15/2009 0905	09/15/2009 1640
360-24582-13	OC-SS-408-0.0/1.0-XXX	Solid	09/15/2009 0930	09/15/2009 1640
360-24582-14	OC-SS-409-0.0/1.0-XXX	Solid	09/15/2009 1000	09/15/2009 1640
360-24582-15	OC-SS-410-0.0/1.0-XXX	Solid	09/15/2009 1015	09/15/2009 1640
360-24582-16	OC-SS-411-0.0/1.0-XXX	Solid	09/15/2009 1055	09/15/2009 1640
360-24582-17	OC-SS-412-0.0/1.0-XXX	Solid	09/15/2009 1120	09/15/2009 1640
360-24582-18	OC-SS-413-0.0/1.0-XXX	Solid	09/15/2009 1130	09/15/2009 1640
360-24582-19	OC-SS-414-0.0/1.0-XXX	Solid	09/15/2009 1155	09/15/2009 1640
360-24582-20	OC-SS-415-0.0/1.0-XXX	Solid	09/15/2009 1215	09/15/2009 1640
360-24582-21	OC-SS-416-0.0/1.0-DUP	Solid	09/15/2009 1240	09/15/2009 1640
360-24582-22	OC-SS-416-0.0/1.0-XXX	Solid	09/15/2009 1240	09/15/2009 1640
360-24582-22MS	OC-SS-416-0.0/1.0-XMS	Solid	09/15/2009 1240	09/15/2009 1640
360-24582-22MSD	OC-SS-416-0.0/1.0-MSD	Solid	09/15/2009 1240	09/15/2009 1640
360-24582-23TB	OC-TBK-019	Solid	09/15/2009 1200	09/15/2009 1640
360-24582-24	OC-SS-416-0.0/1.0-DUP	Solid	09/15/2009 1240	09/15/2009 1640
360-24582-25	OC-SS-416-0.0/1.0-XXX	Solid	09/15/2009 1240	09/15/2009 1640
360-24582-25MS	OC-SS-416-0.0/1.0-XMS	Solid	09/15/2009 1240	09/15/2009 1640

EQBLK

Cu 29

Se 3.2

Tl 3

ICV/CCV OK

CRQL

Sn (64, 63)

ICB/CCB/MB see attached

ICS OK

lab dup ~~ok~~ see attached.

LCS OK

Serial dilution. OK

Form I's

completed

4/13/10

[illegible]

TestAmerica Westfield

10/13/2009

Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-SB-457-28/30-XXX**

Lab Sample ID: 360-24582-1
Client Matrix: Solid
% Moisture: 22.0

Date Sampled: 09/14/2009 1130
Date Received: 09/14/2009 1750

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.71 g
Date Analyzed:	09/18/2009 1235			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8600		0.98	3.8
Antimony		0.29 J	J	0.27	0.75
Arsenic		4.0		0.14	1.5
Barium		41 J		0.098	0.75
Beryllium		0.21	J	0.038	0.30
Cadmium		0.26	J	0.011	0.30
Calcium		2800	~~B~~	3.8	15
Chromium		180		0.10	0.75
Cobalt		7.7		0.098	0.75
Copper		25		0.098	1.5
Iron		19000	~~B~~	1.2	7.5
Lead		3.0 J		0.086	0.75
Magnesium		5200	~~B~~	0.75	15
Manganese		140		0.10	1.5
Nickel		14		0.098	1.5
Potassium		2600		47	300
Selenium		ND		0.35	0.75
Silver		2.7		0.075	0.75
Sodium		410		20	150
Thallium		ND		0.11	1.5
Vanadium		32		0.098	1.5
Zinc		23		0.88	3.8
Tin		69 J	~~B~~	0.48	7.5

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49130		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/18/2009 1233			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1601				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND J		0.042	0.23

4/13/10

Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-EBK-010**

Lab Sample ID: 360-24582-4FB
Client Matrix: Water

Date Sampled: 09/14/2009 1300
Date Received: 09/14/2009 1750

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-48971		Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-48947		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	09/15/2009 1231			Final Weight/Volume:	50 mL
Date Prepared:	09/15/2009 0835				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	ND		39	100
Antimony	ND		2.9	6.0
Barium	ND		2.0	10
Arsenic	ND		2.3	10
Beryllium	ND		0.20	1.0
Cadmium	ND		0.20	1.0
Calcium	78	J	59	400
Chromium	ND		1.3	5.0
Cobalt	ND		2.0	10
Copper	29		1.7	10
Iron	110		34	100
Lead	ND		1.3	5.0
Magnesium	ND		50	400
Manganese	ND		1.3	10
Nickel	ND		1.5	10
Potassium	ND		500	4000
Selenium	3.2	J	2.7	10
Silver	ND		1.8	5.0
Sodium	ND		250	2000
Tin	ND		7.0	50
Vanadium	ND		1.5	10
Thallium	3.0	J	1.4	10
Zinc	ND		10	50

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 360-49149		Instrument ID:	Hg Analyzer
Preparation:	7470A	Prep Batch: 360-49066		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	09/18/2009 0940			Final Weight/Volume:	10 mL
Date Prepared:	09/17/2009 0812				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	ND		0.065	0.20

Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-SS-400-0.0/1.0-XXX**

Lab Sample ID: 360-24582-5
Client Matrix: Solid
% Moisture: 24.3

Date Sampled: 09/14/2009 1440
Date Received: 09/15/2009 1640

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.53 g
Date Analyzed:	09/18/2009 1238			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3600		1.1	4.3
Antimony		ND J		0.31	0.86
Arsenic		8.9		0.16	1.7
Barium		13 J		0.11	0.86
Beryllium		0.10	J	0.043	0.35
Cadmium		0.69		0.012	0.35
Calcium		1300	~~B~~	4.3	17
Chromium		15		0.11	0.86
Cobalt		2.9		0.11	0.86
Copper		35		0.11	1.7
Iron		36000	~~B~~	1.4	8.6
Lead		53 J		0.099	0.86
Magnesium		170	~~B~~	0.86	17
Manganese		100		0.12	1.7
Nickel		11		0.11	1.7
Potassium		360		54	350
Selenium		0.41	J ~~B~~	0.40	0.86
Silver		ND		0.087	0.86
Sodium		ND		22	170
Thallium		ND		0.12	1.7
Vanadium		19		0.11	1.7
Zinc		19		1.0	4.3
Tin		5.3	J ~~B~~	0.55	8.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49130		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/18/2009 1235			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1601				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.12	J	0.043	0.23

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Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-SS-401-0.1/1.0-XXX**

Lab Sample ID: 360-24582-6
Client Matrix: Solid
% Moisture: 6.8

Date Sampled: 09/14/2009 1505
Date Received: 09/15/2009 1640

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 09/18/2009 1247
Date Prepared: 09/18/2009 0714

Analysis Batch: 360-49209
Prep Batch: 360-49128

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.76 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6600		0.79	3.0
Antimony		ND J		0.22	0.61
Arsenic		12		0.11	1.2
Barium		16 J		0.079	0.61
Beryllium		0.19	J	0.030	0.24
Cadmium		0.16	J	0.0085	0.24
Calcium		890	~~B~~	3.0	12
Chromium		11		0.081	0.61
Cobalt		2.8		0.079	0.61
Copper		12		0.079	1.2
Iron		8800	~~B~~	0.97	6.1
Lead		30 J		0.070	0.61
Magnesium		1600	~~B~~	0.61	12
Manganese		68		0.081	1.2
Nickel		8.8		0.079	1.2
Potassium		710		38	240
Selenium		ND		0.29	0.61
Silver		ND		0.061	0.61
Sodium		21	J	16	120
Thallium		ND		0.088	1.2
Vanadium		17		0.079	1.2
Zinc		19		0.72	3.0
Tin		3.6	J ~~B~~	0.39	6.1

7471A Mercury (CVAA)

Method: 7471A
Preparation: 7471A
Dilution: 1.0
Date Analyzed: 09/18/2009 1236
Date Prepared: 09/17/2009 1601

Analysis Batch: 360-49177
Prep Batch: 360-49130

Instrument ID: Hg Analyzer
Lab File ID: N/A
Initial Weight/Volume: 0.20 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND J		0.036	0.20

N Chb 4/13/10

Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-SS-402-0.0/1.0-XXX**

Lab Sample ID: 360-24582-7
Client Matrix: Solid
% Moisture: 25.0

Date Sampled: 09/14/2009 1530
Date Received: 09/15/2009 1640

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.62 g
Date Analyzed:	09/18/2009 1250			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		12000		1.1	4.1
Antimony		ND J		0.30	0.82
Arsenic		8.2		0.15	1.6
Barium		27 J		0.11	0.82
Beryllium		0.32	J	0.041	0.33
Cadmium		0.49		0.012	0.33
Calcium		1200	~~B~~	4.1	16
Chromium		15		0.11	0.82
Cobalt		3.2		0.11	0.82
Copper		20		0.11	1.6
Iron		18000	~~B~~	1.3	8.2
Lead		48 J		0.094	0.82
Magnesium		820	~~B~~	0.82	16
Manganese		60		0.11	1.6
Nickel		9.6		0.11	1.6
Potassium		370		51	330
Selenium		0.99 J4	~~B~~	0.39	0.82
Silver		0.12	J	0.083	0.82
Sodium		39	J	21	160
Thallium		ND		0.12	1.6
Vanadium		44		0.11	1.6
Zinc		32		0.97	4.1
Tin		5.0	J ~~B~~	0.53	8.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49130		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	09/18/2009 1257			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1601				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.16	J	0.045	0.25

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Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-SS-404-0.0/1.0-XXX**

Lab Sample ID: 360-24582-9
Client Matrix: Solid
% Moisture: 8.2

Date Sampled: 09/14/2009 1610
Date Received: 09/15/2009 1640

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.54 g
Date Analyzed:	09/18/2009 1252			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5100		0.92	3.5
Antimony		ND J		0.26	0.71
Arsenic		3.9		0.13	1.4
Barium		17 J		0.092	0.71
Beryllium		0.23	J	0.035	0.28
Cadmium		0.63		0.0099	0.28
Calcium		1600	~~B~~	3.5	14
Chromium		13		0.094	0.71
Cobalt		2.7		0.092	0.71
Copper		24		0.092	1.4
Iron		8600	~~B~~	1.1	7.1
Lead		27 J		0.081	0.71
Magnesium		1300	~~B~~	0.71	14
Manganese		110		0.094	1.4
Nickel		7.5		0.092	1.4
Potassium		820		44	280
Selenium		ND		0.33	0.71
Silver		ND		0.071	0.71
Sodium		ND		18	140
Thallium		ND		0.10	1.4
Vanadium		11		0.092	1.4
Zinc		200		0.83	3.5
Tin		4.7	J ~~B~~	0.45	7.1

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49130		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/18/2009 1258			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1601				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.46 J		0.032	0.18

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Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-SS-405-0.0/1.0-XXX**

Lab Sample ID: 360-24582-10
Client Matrix: Solid
% Moisture: 6.6

Date Sampled: 09/14/2009 1630
Date Received: 09/15/2009 1640

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.84 g
Date Analyzed:	09/18/2009 1255			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6000		0.76	2.9
Antimony		ND J		0.21	0.58
Arsenic		5.0		0.11	1.2
Barium		7.0 J		0.076	0.58
Beryllium		0.16	J	0.029	0.23
Cadmium		0.11	J	0.0081	0.23
Calcium		490	~~B~~	2.9	12
Chromium		8.0		0.077	0.58
Cobalt		2.3		0.076	0.58
Copper		4.9		0.076	1.2
Iron		6500	~~B~~	0.93	5.8
Lead		10 J		0.066	0.58
Magnesium		1000	~~B~~	0.58	12
Manganese		46		0.078	1.2
Nickel		6.6		0.076	1.2
Potassium		670		36	230
Selenium		ND		0.27	0.58
Silver		ND		0.059	0.58
Sodium		ND		15	120
Thallium		ND		0.084	1.2
Vanadium		10		0.076	1.2
Zinc		17		0.68	2.9
Tin		2.6	J ~~B~~	0.37	5.8

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49130		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/18/2009 1300			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1601				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND J		0.032	0.17

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Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-SS-406-0.0/1.0.-XXX**

Lab Sample ID: 360-24582-11
Client Matrix: Solid
% Moisture: 25.2

Date Sampled: 09/15/2009 0835
Date Received: 09/15/2009 1640

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.70 g
Date Analyzed:	09/18/2009 1258			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		14000		1.0	3.9
Antimony		ND J		0.28	0.79
Arsenic		6.8		0.14	1.6
Barium		17 J		0.10	0.79
Beryllium		0.27	J	0.039	0.31
Cadmium		0.23	J	0.011	0.31
Calcium		600	~~B~~	3.9	16
Chromium		14		0.10	0.79
Cobalt		2.6		0.10	0.79
Copper		12		0.10	1.6
Iron		13000	~~B~~	1.3	7.9
Lead		33 J		0.090	0.79
Magnesium		560	~~B~~	0.79	16
Manganese		23		0.11	1.6
Nickel		6.9		0.10	1.6
Potassium		450		49	310
Selenium		0.67	J ~~B~~	0.37	0.79
Silver		0.089	J	0.079	0.79
Sodium		ND		20	160
Thallium		ND		0.11	1.6
Vanadium		30		0.10	1.6
Zinc		13		0.92	3.9
Tin		4.6	J ~~B~~	0.50	7.9

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49130		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	09/18/2009 1302			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1601				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.077	J	0.045	0.25

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Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-SS-407-0.0/1.0-XXX**

Lab Sample ID: 360-24582-12
Client Matrix: Solid
% Moisture: 10.9

Date Sampled: 09/15/2009 0905
Date Received: 09/15/2009 1640

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.66 g
Date Analyzed:	09/18/2009 1301			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8300		0.88	3.4
Antimony		ND J		0.24	0.68
Arsenic		5.0		0.12	1.4
Barium		9.3 J		0.088	0.68
Beryllium		0.21	J	0.034	0.27
Cadmium		0.26	J	0.0095	0.27
Calcium		390	~~B~~	3.4	14
Chromium		32		0.090	0.68
Cobalt		1.8		0.088	0.68
Copper		5.5		0.088	1.4
Iron		7200	~~B~~	1.1	6.8
Lead		15 J		0.077	0.68
Magnesium		830	~~B~~	0.68	14
Manganese		37		0.090	1.4
Nickel		6.2		0.088	1.4
Potassium		440		42	270
Selenium		ND		0.32	0.68
Silver		0.45	J	0.068	0.68
Sodium		ND		18	140
Thallium		ND		0.098	1.4
Vanadium		12		0.088	1.4
Zinc		38		0.80	3.4
Tin		12 J	~~B~~	0.43	6.8

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49130		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	09/18/2009 1304			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1601				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND J		0.038	0.21

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Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-SS-408-0.0/1.0-XXX**

Lab Sample ID: 360-24582-13
Client Matrix: Solid
% Moisture: 15.8

Date Sampled: 09/15/2009 0930
Date Received: 09/15/2009 1640

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 09/18/2009 1304
Date Prepared: 09/18/2009 0714

Analysis Batch: 360-49209
Prep Batch: 360-49128

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.89 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6800		0.82	3.1
Antimony		ND J		0.23	0.63
Arsenic		7.1		0.11	1.3
Barium		23 J		0.082	0.63
Beryllium		0.25	J	0.031	0.25
Cadmium		0.43		0.0088	0.25
Calcium		2100	~~B~~	3.1	13
Chromium		82		0.084	0.63
Cobalt		3.9		0.082	0.63
Copper		12		0.082	1.3
Iron		12000	~~B~~	1.0	6.3
Lead		31 J		0.072	0.63
Magnesium		2200	~~B~~	0.63	13
Manganese		96		0.084	1.3
Nickel		10		0.082	1.3
Potassium		740		39	250
Selenium		ND		0.29	0.63
Silver		1.1		0.063	0.63
Sodium		25	J	16	130
Thallium		ND		0.091	1.3
Vanadium		18		0.082	1.3
Zinc		60		0.74	3.1
Tin		31 J	~~B~~	0.40	6.3

7471A Mercury (CVAA)

Method: 7471A
Preparation: 7471A
Dilution: 1.0
Date Analyzed: 09/18/2009 1306
Date Prepared: 09/17/2009 1601

Analysis Batch: 360-49177
Prep Batch: 360-49130

Instrument ID: Hg Analyzer
Lab File ID: N/A
Initial Weight/Volume: 0.21 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.10	J	0.038	0.21

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Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-SS-409-0.0/1.0-XXX**

Lab Sample ID: 360-24582-14
Client Matrix: Solid
% Moisture: 3.7

Date Sampled: 09/15/2009 1000
Date Received: 09/15/2009 1640

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.52 g
Date Analyzed:	09/18/2009 1307			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8300		0.89	3.4
Antimony		ND J		0.25	0.68
Arsenic		5.6		0.12	1.4
Barium		29 J		0.089	0.68
Beryllium		0.24	J	0.034	0.27
Cadmium		0.41		0.0096	0.27
Calcium		3700	~~B~~	3.4	14
Chromium		21		0.091	0.68
Cobalt		6.6		0.089	0.68
Copper		19		0.089	1.4
Iron		16000	~~B~~	1.1	6.8
Lead		14 J		0.078	0.68
Magnesium		3400	~~B~~	0.68	14
Manganese		180		0.091	1.4
Nickel		15		0.089	1.4
Potassium		1200		43	270
Selenium		ND		0.32	0.68
Silver		ND		0.069	0.68
Sodium		47	J	18	140
Thallium		ND		0.099	1.4
Vanadium		44		0.089	1.4
Zinc		120		0.80	3.4
Tin		6.9 J	~~BK~~	0.44	6.8

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49130		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	09/18/2009 1308			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1601				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.068	J	0.035	0.19

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Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-SS-411-0.0/1.0-XXX**

Lab Sample ID: 360-24582-16
Client Matrix: Solid
% Moisture: 58.9

Date Sampled: 09/15/2009 1055
Date Received: 09/15/2009 1640

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.57 g
Date Analyzed:	09/18/2009 1310			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		12000		2.0	7.7
Antimony		ND J		0.56	1.5
Arsenic		2.8	J	0.28	3.1
Barium		81 J		0.20	1.5
Beryllium		0.90		0.077	0.62
Cadmium		0.50	J	0.022	0.62
Calcium		1100	~~B~~	7.7	31
Chromium		22		0.21	1.5
Cobalt		3.5		0.20	1.5
Copper		25		0.20	3.1
Iron		6900	~~B~~	2.5	15
Lead		25 J		0.18	1.5
Magnesium		110	~~B~~	1.5	31
Manganese		13		0.21	3.1
Nickel		12		0.20	3.1
Potassium		ND		97	620
Selenium		1.9	~~B~~	0.73	1.5
Silver		ND		0.16	1.5
Sodium		ND		40	310
Thallium		ND		0.22	3.1
Vanadium		18		0.20	3.1
Zinc		82		1.8	7.7
Tin		7.9 J	J ~~B~~	0.99	15

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49130		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/18/2009 1309			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1601				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND J		0.079	0.43

4/13/10

Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-SS-412-0.0/1.0-XXX**

Lab Sample ID: 360-24582-17
Client Matrix: Solid
% Moisture: 8.2

Date Sampled: 09/15/2009 1120
Date Received: 09/15/2009 1640

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.57 g
Date Analyzed:	09/18/2009 1313			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9500		0.90	3.5
Antimony		ND J		0.25	0.69
Arsenic		8.0		0.13	1.4
Barium		46 J		0.090	0.69
Beryllium		0.31		0.035	0.28
Cadmium		0.27	J	0.0097	0.28
Calcium		1800	~~B~~	3.5	14
Chromium		59		0.092	0.69
Cobalt		6.4		0.090	0.69
Copper		12		0.090	1.4
Iron		15000	~~B~~	1.1	6.9
Lead		11 J		0.079	0.69
Magnesium		5100	~~B~~	0.69	14
Manganese		180		0.093	1.4
Nickel		23		0.090	1.4
Potassium		3400		43	280
Selenium		ND		0.32	0.69
Silver		0.55	J	0.070	0.69
Sodium		33	J	18	140
Thallium		0.16 ~~J~~ U	~~J~~	0.10	1.4
Vanadium		33		0.090	1.4
Zinc		53		0.82	3.5
Tin		21 J	~~B~~	0.44	6.9

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49130		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/18/2009 1311			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1601				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND J		0.035	0.19

4/13/10

Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-SS-414-0.0/1.0-XXX**

Lab Sample ID: 360-24582-19
Client Matrix: Solid
% Moisture: 6.9

Date Sampled: 09/15/2009 1155
Date Received: 09/15/2009 1640

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.68 g
Date Analyzed:	09/18/2009 1321			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6400		0.83	3.2
Antimony		ND J		0.23	0.64
Arsenic		7.8		0.12	1.3
Barium		17 J		0.083	0.64
Beryllium		0.22	J	0.032	0.26
Cadmium		0.19	J	0.0090	0.26
Calcium		2000	~~B~~	3.2	13
Chromium		14		0.085	0.64
Cobalt		5.9		0.083	0.64
Copper		22		0.083	1.3
Iron		12000	~~B~~	1.0	6.4
Lead		8.1 J		0.073	0.64
Magnesium		2700	~~B~~	0.64	13
Manganese		130		0.085	1.3
Nickel		11		0.083	1.3
Potassium		930		40	260
Selenium		ND		0.30	0.64
Silver		ND		0.064	0.64
Sodium		75	J	17	130
Thallium		ND		0.092	1.3
Vanadium		18		0.083	1.3
Zinc		21		0.75	3.2
Tin		4.5	J ~~B~~	0.41	6.4

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49130		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	09/18/2009 1314			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1601				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND J		0.037	0.20

4/13/10

Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-SS-415-0.0/1.0-XXX**

Lab Sample ID: 360-24582-20
Client Matrix: Solid
% Moisture: 57.4

Date Sampled: 09/15/2009 1215
Date Received: 09/15/2009 1640

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.68 g
Date Analyzed:	09/18/2009 1324			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4000		1.8	7.0
Antimony		ND J		0.51	1.4
Arsenic		2.0	J	0.25	2.8
Barium		56 J		0.18	1.4
Beryllium		0.19	J	0.070	0.56
Cadmium		1.1		0.020	0.56
Calcium		13000	~~B~~	7.0	28
Chromium		84		0.19	1.4
Cobalt		5.9		0.18	1.4
Copper		26		0.18	2.8
Iron		6800	~~B~~	2.2	14
Lead		80 J		0.16	1.4
Magnesium		1100	~~B~~	1.4	28
Manganese		93		0.19	2.8
Nickel		9.9		0.18	2.8
Potassium		380	J	87	560
Selenium		0.65 U	~~J B~~	0.65	1.4
Silver		1.3	J	0.14	1.4
Sodium		88	J	36	280
Thallium		ND		0.20	2.8
Vanadium		14		0.18	2.8
Zinc		59		1.6	7.0
Tin		34 J	~~B~~	0.89	14

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49130		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/18/2009 1320			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1601				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND J		0.076	0.41

N. Clarke 4/13/10

Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-SS-416-0.0/1.0-DUP**

Lab Sample ID: 360-24582-21
Client Matrix: Solid
% Moisture: 8.5

Date Sampled: 09/15/2009 1240
Date Received: 09/15/2009 1640

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.64 g
Date Analyzed:	09/18/2009 1327			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5300 J		0.87	3.3
Antimony		ND		0.24	0.67
Arsenic		4.1		0.12	1.3
Barium		9.4 J		0.087	0.67
Beryllium		0.14	J	0.033	0.27
Cadmium		0.55		0.0093	0.27
Calcium		580	~~B~~	3.3	13
Chromium		56		0.089	0.67
Cobalt		2.1		0.087	0.67
Copper		31		0.087	1.3
Iron		7300	~~B~~	1.1	6.7
Lead		13 J		0.076	0.67
Magnesium		980	~~B~~	0.67	13
Manganese		48		0.089	1.3
Nickel		6.2		0.087	1.3
Potassium		430		42	270
Selenium		ND		0.31	0.67
Silver		0.94		0.067	0.67
Sodium		ND		17	130
Thallium		ND		0.096	1.3
Vanadium		10		0.087	1.3
Zinc		250		0.78	3.3
Tin		22 J	~~B~~	0.43	6.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49130		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	09/18/2009 1322			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1601				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.047	J	0.028	0.15

4/13/10

Client: Olin Corporation

Job Number: 360-24582-1
Sdg Number: OCRI-15

Client Sample ID: **OC-SS-416-0.0/1.0-XXX**

Lab Sample ID: 360-24582-22
Client Matrix: Solid
% Moisture: 8.8

Date Sampled: 09/15/2009 1240
Date Received: 09/15/2009 1640

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49209		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49128		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.77 g
Date Analyzed:	09/18/2009 1221			Final Weight/Volume:	100 mL
Date Prepared:	09/18/2009 0714				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5200		0.81	3.1
Antimony		0.81 J		0.22	0.62
Arsenic		4.2		0.11	1.2
Barium		27 J		0.081	0.62
Beryllium		0.16	J	0.031	0.25
Cadmium		0.68		0.0087	0.25
Calcium		590	~~B~~	3.1	12
Chromium		57		0.082	0.62
Cobalt		2.0		0.081	0.62
Copper		32		0.081	1.2
Iron		8800	~~B~~	0.99	6.2
Lead		26 J		0.071	0.62
Magnesium		910	~~B~~	0.62	12
Manganese		53		0.083	1.2
Nickel		7.3		0.081	1.2
Potassium		440		39	250
Selenium		ND		0.29	0.62
Silver		0.88		0.062	0.62
Sodium		ND		16	120
Thallium		ND		0.090	1.2
Vanadium		9.9		0.081	1.2
Zinc		280		0.73	3.1
Tin		22 J	~~B~~	0.40	6.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49130		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/18/2009 1227			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1601				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.17	J	0.032	0.18

4/13/10

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-SS-416-0.0/1.0-XXX MS
Lab ID: 360-24582-22 MS
Lab Name: TestAmerica Westfield
Job No.: 360-24582-1
SDG No.: OCRI-15
Matrix: Solid
Concentration Units: mg/Kg
% Solids: 91.2

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	5630		5200		311	150	75-125	4	6010B
Antimony	35.7		0.81		62.3	56	75-125	F	6010B
Arsenic	61.3		4.2		62.3	92	75-125		6010B
Barium	67.4		27		62.3	65	75-125	F	6010B
Beryllium	58.0		0.16	J	62.3	93	75-125		6010B
Cadmium	56.6		0.68		62.3	90	75-125		6010B
Calcium	1790		590		1250	97	75-125		6010B
Chromium	106		57		62.3	79	75-125		6010B
Cobalt	59.2		2.0		62.3	92	75-125		6010B
Copper	89.9		32		62.3	93	75-125		6010B
Iron	7560		8800		311	-390	75-125	4	6010B
Lead	66.2		26		62.3	64	75-125	F	6010B
Magnesium	2070		910		1250	93	75-125		6010B
Manganese	106		53		62.3	86	75-125		6010B
Nickel	63.0		7.3		62.3	90	75-125		6010B
Potassium	1590		440		1250	93	75-125		6010B
Selenium	56.6		ND		62.3	91	75-125		6010B
Silver	57.9		0.88		62.3	91	75-125		6010B
Sodium	1070		ND		1250	86	75-125		6010B
Thallium	53.7		ND		62.3	86	75-125		6010B
Vanadium	68.1		9.9		62.3	93	75-125		6010B
Zinc	302		280		62.3	33	75-125	4	6010B
Tin	75.0		22		62.3	85	75-125		6010B
Mercury	1.37		0.17	J	1.25	96	75-125		7471A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: OC-SS-416-0.0/1.0-XXX PDS
Lab ID: 360-24582-22 PDS
Lab Name: TestAmerica Westfield
Job No.: 360-24582-1
SDG No.: OCRI-15
Matrix: Solid
Concentration Units: mg/Kg

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	5300		5200		310	NC	75-125		6010B
Antimony	57.1		0.81		61.9	91	75-125		6010B
Arsenic	65.2		4.2		61.9	98	75-125		6010B
Barium	86.8		27		61.9	97	75-125		6010B
Beryllium	60.9		0.16	J	61.9	98	75-125		6010B
Cadmium	60.1		0.68		61.9	96	75-125		6010B
Calcium	1810		590		1240	99	75-125		6010B
Chromium	114		57		61.9	92	75-125		6010B
Cobalt	62.4		2.0		61.9	97	75-125		6010B
Copper	93.6		32		61.9	100	75-125		6010B
Iron	8630		8800		310	NC	75-125		6010B
Lead	82.8		26		61.9	91	75-125		6010B
Magnesium	2060		910		1240	93	75-125		6010B
Manganese	108		53		61.9	89	75-125		6010B
Nickel	66.8		7.3		61.9	96	75-125		6010B
Potassium	1590		440		1240	93	75-125		6010B
Selenium	60.0		ND		61.9	97	75-125		6010B
Silver	61.8		0.88		61.9	98	75-125		6010B
Sodium	1130		ND		1240	91	75-125		6010B
Vanadium	71.2		9.9		61.9	99	75-125		6010B
Thallium	57.2		ND		61.9	92	75-125		6010B
Tin	79.2		22		61.9	92	75-125		6010B
Zinc	328		280		61.9	74	75-125	W	6010B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VB - IN

6-IN
DUPLICATES
METALS

Client ID: OC-SS-416-0.0/1.0-XXX DU

Lab ID: 360-24582-22 DU

Lab Name: TestAmerica Westfield

Job No.: 360-24582-1

SDG No.: OCRI-15

% Solids for Sample: 91.2

% Solids for Duplicate: 91.2

Matrix: Solid

Concentration Units: mg/Kg

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Aluminum	3.1	5200		5060		2		6010B
Antimony	0.61	0.81		ND		NC		6010B
Arsenic	1.2	4.2		4.46		6		6010B
Barium	0.61	27		14.9		57	F	6010B
Beryllium	0.24	0.16	J	0.144	J	8		6010B
Cadmium	0.24	0.68		0.605		11		6010B
Calcium	12	590		653		10		6010B
Chromium	0.61	57		48.1		17		6010B
Cobalt	0.61	2.0		2.54		22		6010B
Copper	1.2	32		29.7		7		6010B
Iron	6.1	8800		12000		31		6010B
Lead	0.61	26		11.4		79	F	6010B
Magnesium	12	910		1040		13		6010B
Manganese	1.2	53		64.8		20		6010B
Nickel	1.2	7.3		6.79		7		6010B
Potassium	240	440		601		32		6010B
Selenium	0.61	ND		ND		NC		6010B
Silver	0.61	0.88		0.654		29		6010B
Sodium	120	ND		ND		NC		6010B
Vanadium	1.2	9.9		12.0		19		6010B
Thallium	1.2	ND		ND		NC		6010B
Tin	6.1	22		18.3		20		6010B
Zinc	3.1	280		243		15		6010B
Mercury	0.18	0.17	J	0.0491	J	112		7471A

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

FORM VI-IN

CCB 4897126, 32 Clean

2375 – 2382

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24582-1

SDG No.: OCRI-15

Concentration Units: mg/Kg Lab Sample ID: MB 360-49128/1-A

Instrument Code: Varian ICP Batch No.: 49209

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	ND			6010B
7440-36-0	Antimony	ND			6010B
7440-38-2	Arsenic	ND			6010B
7440-39-3	Barium	ND			6010B
7440-41-7	Beryllium	ND			6010B
7440-43-9	Cadmium	ND		AL	6010B
7440-70-2	Calcium	8.34	J	41.7	6010B >
7440-47-3	Chromium	ND			6010B
7440-48-4	Cobalt	ND			6010B
7440-50-8	Copper	ND			6010B
7439-89-6	Iron	1.09	J	5.45	6010B >
7439-92-1	Lead	ND			6010B
7439-95-4	Magnesium	2.07	J	10.35	6010B >
7439-96-5	Manganese	ND			6010B
7440-02-0	Nickel	ND			6010B
7440-09-7	Potassium	ND			6010B
7782-49-2	Selenium	0.244	J	1.22	6010B <
7440-22-4	Silver	ND			6010B
7440-23-5	Sodium	ND			6010B
7440-62-2	Vanadium	ND			6010B
7440-28-0	Thallium	ND			6010B
7440-31-5	Tin	0.443	J	2.215	6010B >
7440-66-6	Zinc	ND			6010B

FORM III-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24582-1

SDG No.: OCRI-15

Concentration Units: ug/L

Analyte	RL	CCB 360-49209/50 09/18/2009 13:18		CCB 360-49209/59 09/18/2009 14:12		CCB 360-49209/61 09/18/2009 15:56			
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND		ND			
Al	100	ND		ND		ND			
As	10	ND		ND		ND			
Ba	10	ND		ND		ND			
Be	1.0	ND		ND		ND			
Ca	400	ND		ND		ND			
Cd	1.0	ND		ND		ND			
Co	10	ND		ND		ND			
Cr	5.0	ND		ND		ND			
Cu	10	ND		ND		ND			
Fe	100	ND		ND		ND			
K	4000	ND		ND		ND			
Mg	400	ND		ND		ND			
Mn	10	ND		ND		ND			
Na	2000	ND		ND		ND			
Ni	10	ND		ND		ND			
Pb	5.0	ND		ND		ND			
Sb	10	ND		ND		ND			
Se	10	5.25	J	3.63	J	4.34	J		
Sn	50	ND		ND		ND			
Tl	10	1.56	J	2.71	J	ND			
V	10	ND		ND		ND			
Zn	50	ND		ND		ND			

AL

Se 5.25 ug/L = 1.31 ug/L

Tl 1.56 ug/L = 0.39

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24582-1

SDG No.: OCRI-15

Concentration Units: ug/L

Analyte	RL	ICB 360-49209/7 09/18/2009 10:26		CCB 360-49209/14 09/18/2009 10:46		CCB 360-49209/26 09/18/2009 11:52		CCB 360-49209/38 09/18/2009 12:44	
		Found	C	Found	C	Found	C	Found	C
Ag	5.0	ND		ND		ND		ND	
Al	100	ND		ND		ND		ND	
As	10	ND		ND		ND		ND	
Ba	10	ND		ND		ND		ND	
Be	1.0	ND		ND		ND		ND	
Ca	400	ND		ND		ND		ND	
Cd	1.0	ND		ND		ND		ND	
Co	10	ND		ND		ND		ND	
Cr	5.0	ND		ND		ND		ND	
Cu	10	ND		ND		ND		ND	
Fe	100	ND		ND		ND		ND	
K	4000	ND		ND		ND		ND	
Mg	400	ND		ND		ND		ND	
Mn	10	ND		ND		ND		ND	
Na	2000	ND		ND		ND		ND	
Ni	10	ND		ND		ND		ND	
Pb	5.0	ND		ND		ND		ND	
Sb	10	4.59	J	ND		ND		ND	
Se	10	5.54	J	4.29	J	4.00	J	2.83	J
Sn	50	ND		ND		ND		ND	
Tl	10	ND		ND		ND		ND	
V	10	ND		ND		ND		ND	
Zn	50	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24582-1

SDG No.: OCRI-15

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/18/2009 10:08 End Date: 09/18/2009 16:05

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
ZZZZZZ			10:08																				
ZZZZZZ			10:11																				
ZZZZZZ			10:14																				
ZZZZZZ			10:17																				
ZZZZZZ			10:20																				
ICV 360-49209/6	1		10:23	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
ICB 360-49209/7	1		10:26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 360-49209/8	1		10:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
CRI 360-49209/9	1		10:31	X		X	X	X		X		X							X	X		X	
ICSA 360-49209/10	1		10:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-49209/11	1		10:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			10:40																				
CCV 360-49209/13	1		10:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49209/14	1		10:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 360-49209/15			10:49																				
ICV 360-49209/16	1		10:52												X								
ICV 360-49209/17			10:55																				
CRI 360-49209/18	1		11:06																			X	
CRI 360-49209/19	1		11:09																				
CRI 360-49209/20	1		11:29																		X		
ZZZZZZ			11:38																				
ZZZZZZ			11:41																				
ZZZZZZ			11:44																				
ZZZZZZ			11:47																				
CCV 360-49209/25	1		11:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49209/26	1		11:52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MB 360-49128/1-A	1	T	12:12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 360-49128/2-A	1	T	12:15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCSD 360-49128/3-A	1	T	12:18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-22	1	T	12:21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-22 DU	1	T	12:24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-22 MS	1	T	12:26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-22 SD	5	T	12:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-22 PDS	1	T	12:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-1	1	T	12:35	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-5	1	T	12:38	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-49209/37	1		12:41	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49209/38	1		12:44	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-6	1	T	12:47	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-7	1	T	12:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-9	1	T	12:52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-10	1	T	12:55	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

4.0

2.83

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24582-1

SDG No.: OCRI-15

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/18/2009 10:08 End Date: 09/18/2009 16:05

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Sn
360-24582-11	1	T	12:58	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-12	1	T	13:01	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-13	1	T	13:04	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-14	1	T	13:07	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-16	1	T	13:10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-17	1	T	13:13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-49209/49	1		13:16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49209/50	1		13:18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-19	1	T	13:21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-20	1	T	13:24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360-24582-21	1	T	13:27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			13:30																				
ZZZZZZ			13:33																				
ZZZZZZ			13:36																				
ZZZZZZ			13:39																				
CCV 360-49209/58	1		14:09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49209/59	1		14:12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 360-49209/60	1		15:53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 360-49209/61	1		15:56	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 360-49209/62	1		15:59	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 360-49209/63	1		16:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:05																				

5.25
TL=1.75

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24582-1

SDG No.: OCRI-15

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/18/2009 10:08 End Date: 09/18/2009 16:05

Lab Sample ID	D/F	Type	Time	Analytes																			
				Tl	V	Zn																	
ZZZZZZ			10:08																				
ZZZZZZ			10:11																				
ZZZZZZ			10:14																				
ZZZZZZ			10:17																				
ZZZZZZ			10:20																				
ICV 360-49209/6	1		10:23	X	X	X																	
ICB 360-49209/7	1		10:26	X	X	X																	
CRI 360-49209/8	1		10:29	X	X	X																	
CRI 360-49209/9	1		10:31		X	X																	
ICSA 360-49209/10	1		10:34	X	X	X																	
ICSAB 360-49209/11	1		10:37	X	X	X																	
ZZZZZZ			10:40																				
CCV 360-49209/13	1		10:43	X	X	X																	
CCB 360-49209/14	1		10:46	X	X	X																	
ICB 360-49209/15			10:49																				
ICV 360-49209/16	1		10:52																				
ICV 360-49209/17			10:55																				
CRI 360-49209/18	1		11:06																				
CRI 360-49209/19	1		11:09	X																			
CRI 360-49209/20	1		11:29																				
ZZZZZZ			11:38																				
ZZZZZZ			11:41																				
ZZZZZZ			11:44																				
ZZZZZZ			11:47																				
CCV 360-49209/25	1		11:49	X	X	X																	
CCB 360-49209/26	1		11:52	X	X	X																	
MB 360-49128/1-A	1	T	12:12	X	X	X																	
LCS 360-49128/2-A	1	T	12:15	X	X	X																	
LCSD 360-49128/3-A	1	T	12:18	X	X	X																	
360-24582-22	1	T	12:21	X	X	X																	
360-24582-22 DU	1	T	12:24	X	X	X																	
360-24582-22 MS	1	T	12:26	X	X	X																	
360-24582-22 SD	5	T	12:29	X	X	X																	
360-24582-22 PDS	1	T	12:32	X	X	X																	
360-24582-1	1	T	12:35	X	X	X																	
360-24582-5	1	T	12:38	X	X	X																	
CCV 360-49209/37	1		12:41	X	X	X																	
CCB 360-49209/38	1		12:44	X	X	X																	
360-24582-6	1	T	12:47	X	X	X																	
360-24582-7	1	T	12:50	X	X	X																	
360-24582-9	1	T	12:52	X	X	X																	
360-24582-10	1	T	12:55	X	X	X																	

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Westfield Job No.: 360-24582-1

SDG No.: OCRI-15

Instrument ID: Varian ICP Method: 6010B

Start Date: 09/18/2009 10:08 End Date: 09/18/2009 16:05

Lab Sample ID	D/F	Type	Time	Analytes																			
				Tl	V	Zn																	
360-24582-11	1	T	12:58	X	X	X																	
360-24582-12	1	T	13:01	X	X	X																	
360-24582-13	1	T	13:04	X	X	X																	
360-24582-14	1	T	13:07	X	X	X																	
360-24582-16	1	T	13:10	X	X	X																	
360-24582-17	1	T	13:13	X	X	X																	
CCV 360-49209/49	1		13:16	X	X	X																	
CCB 360-49209/50	1		13:18	X	X	X																	
360-24582-19	1	T	13:21	X	X	X																	
360-24582-20	1	T	13:24	X	X	X																	
360-24582-21	1	T	13:27	X	X	X																	
ZZZZZZ			13:30																				
ZZZZZZ			13:33																				
ZZZZZZ			13:36																				
ZZZZZZ			13:39																				
CCV 360-49209/58	1		14:09	X	X	X																	
CCB 360-49209/59	1		14:12	X	X	X																	
CCV 360-49209/60	1		15:53	X	X	X																	
CCB 360-49209/61	1		15:56	X	X	X																	
ICSA 360-49209/62	1		15:59	X	X	X																	
ICSAB 360-49209/63	1		16:02	X	X	X																	
ZZZZZZ			16:05																				

Prep Types
T = Total/NA

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

SITE: **Olin Chemical** Project #: 6/07/000/6.12 SDG #: OCRI-16

LAB # : TAL 360-24634-1

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) III (circle one)

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☐ ☒ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☑ ☐ ☐ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	See below. Post-digestion spikes %R limits = 75% - 125%

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

Laboratory Control Samples (LCS) ☑ ☐ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate ☑ ☐ ☐ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☑ ☐ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	
Field Duplicate ☐ ☐ ☑ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☐ ☐ ☑ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution ☐ ☑ ☐ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☑ ☐ Are results of the diluted samples > the original sample results	

Validator's Signature: [signature]

Date: 4/13/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

QL Standard:

The percent recovery of tin (63, 59, 62, and 58) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J).

Blanks:

Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Copper, lead, selenium, and thallium were reported in the equipment blank associated with OCRI-16. Reported detections of lead were significantly greater than equipment blank results, the data was not qualified. Associated sample results for selenium and thallium were non detect, no further action required. Associated sample detections for copper that were less than the action level were qualified (EB) to indicate potential blank contamination associated with the equipment blank.

Calcium (9.78 mg/kg), chromium (0.0794), iron (0.995 mg/kg), magnesium (1.04 mg/kg), and tin (0.409 mg/kg) were reported in the method blank (M360-49208) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. With the exception of tin sample results were greater than the action levels, no further action required. Sample results for tin that were less than the action level were qualified non detect (U). The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Arsenic, chromium, selenium, and thallium were reported in the continuing calibration blanks (CCB) associated with all samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for selenium were non detect, no further action required. The reported detections of arsenic and thallium that were less than the action levels were qualified non detect (U).

Matrix Spikes:

Sample OC-SS-417-0.0/1.0-XXX was submitted for MS analysis. The MS percent recovery of aluminum (296), antimony (61), and iron (350) were outside of the QC limits. The unspiked sample results for aluminum and iron were greater than four times the spiking concentration, no further action required. Post digestion spike recoveries were within QC limits. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for

program matrix spike recovery summary for antimony.

SDG	Lab Sample ID	Field Sample ID	Antimony MS Recovery (%)
OCRI-03	360-24223-9	OC-SB-426-5.0/7.0-XXX	61
OCRI-04	360-24244-1	OC-SB-432-0.0/1.0-XXX	27
OCRI-04A	360-24244-5	OC-SB-443-18/20-XXX	32
OCRI-05	360-24251-19	OC-SB-446-5.0/7.0-XXX	80
OCRI-05	360-24251-4	OC-SB-433-5.0/7.0-XXX	70
OCRI-06	360-24309-23	OC-SB-430-8.0/10-XXX	44
OCRI-07	360-24327-12	OC-SB-410-6.0/8.0-XXX	65
OCRI-08	360-24343-10	OC-SB-451-2.5/4.5-XXX	62
OCRI-08	360-24343-17	OC-SB-455-6.0/8.0-XXX	46
OCRI-09	360-24365-4	OC-SB-442-8.0/10-XXX	50
OCRI-10	360-24417-10	OC-SB-465-8.0/10-XXX	63
OCRI-10A	360-24417-2	OC-SB-463-28/30-XXX	38
OCRI-11	360-24444-2	OC-SB-459-6.0/8.0-XXX	64
OCRI-11	360-24444-9	OC-SB-467-6.0/8.0-XXX	68
OCRI-12	360-24454-3	OC-SB-461-5.0/7.0-XXX	65
OCRI-13A	360-24499-3	OC-SB-469-28/30-XXX	61
OCRI-14	360-24563-14	OC-SB-456-7.0/9.0-XXX	60
OCRI-14	360-24563-5	OC-SB-427-8.0/10-XXX	67
OCRI-15	360-24582-22	OC-SS-416-0.0/1.0-XXX	56
OCRI-16	360-24634-1	OC-SS-417-0.0/1.0-XXX	61
OCRI-17	360-24665-1	OC-SS-434-0.0/1.0-XXX	29
OCRI-18	360-24686-1	OC-SB-400-17/19-XXX	67

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24634-1	OC-SS-417-0.0/1.0-XXX	Solid	09/15/2009 1420	09/16/2009 1620
360-24634-2	OC-SS-418-0.0/1.0-XXX	Solid	09/15/2009 1440	09/16/2009 1620
360-24634-3	OC-SS-419-0.0/1.0-XXX	Solid	09/15/2009 1505	09/16/2009 1620
360-24634-4	OC-SS-420-0.0/1.0-XXX	Solid	09/15/2009 1525	09/16/2009 1620
360-24634-5	OC-SS-421-0.0/1.0-XXX	Solid	09/15/2009 1555	09/16/2009 1620
360-24634-6	OC-SS-422-0.0/1.0-XXX	Solid	09/15/2009 1630	09/16/2009 1620
360-24634-7	OC-SS-423-0.0/1.0-XXX	Solid	09/15/2009 1655	09/16/2009 1620
360-24634-8	OC-SS-424-0.0/1.0-XXX	Solid	09/15/2009 1720	09/16/2009 1620
360-24634-9	OC-SS-425-0.0/1.0-XXX	Solid	09/15/2009 1740	09/16/2009 1620
360-24634-10	OC-SS-426-0.0/1.0-XXX	Solid	09/16/2009 0915	09/16/2009 1620
360-24634-11	OC-SS-427-0.0/1.0-XXX	Solid	09/16/2009 0940	09/16/2009 1620
360-24634-12	OC-SS-428-0.0/1.0-XXX	Solid	09/16/2009 1005	09/16/2009 1620
360-24634-13	OC-SS-429-0.0/1.0-XXX	Solid	09/16/2009 1025	09/16/2009 1620
360-24634-14	OC-SS-430-0.0/1.0-XXX	Solid	09/16/2009 1050	09/16/2009 1620
360-24634-15	OC-SS-431-0.0/1.0-XXX	Solid	09/16/2009 1135	09/16/2009 1620
360-24634-16	OC-SS-432-0.0/1.0-XXX	Solid	09/16/2009 1155	09/16/2009 1620
360-24634-17	OC-TBK-020	Solid	09/16/2009 1320	09/16/2009 1620
360-24634-18	OC-EBK-011	Water	09/16/2009 0835	09/16/2009 1620

EQB

	AL	
Cu 68	3.4	<
Pb 3.6	0.18	>
Se 4.6	0.23	ND
Tl 4.6	0.23	ND

✓ICV/CCV OK

✓CRQL
Sn (63, 59, 62, 58)

✓ICB/CCB
Se 5.0
Tl 1.83
ILS OK

✓MB 49208

	AL	
Ca 9.74	48.7	>
Cr 0.0794	0.397	>
Fe 0.995	4.975	>
Mg 1.04	5.2	>
Sn 0.409	2.045	≤

✓MS OC-SS-417-0.0/1.0-XXX
Al 296 (4x)
Sb 61
Fe 350 (4x)

PDS OK

✓LAB DUP OK
LCS OK
✓Serial dilution OK

Form I6 updated
4/13/10
W. Chihi

Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-SS-417-0.0/1.0-XXX**

Lab Sample ID: 360-24634-1
Client Matrix: Solid
% Moisture: 4.1

Date Sampled: 09/15/2009 1420
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49256		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.52 g
Date Analyzed:	09/21/2009 1625			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		2300		0.89	3.4
Antimony		0.28	J	0.25	0.69
Arsenic		2.0		0.13	1.4
Barium		19		0.089	0.69
Beryllium		0.10	J	0.034	0.27
Cadmium		0.30		0.0096	0.27
Calcium		950		3.4	14
Chromium		10		0.091	0.69
Cobalt		1.9		0.089	0.69
Copper		7.4		0.089	1.4
Iron		5600		1.1	6.9
Lead		9.0		0.078	0.69
Magnesium		570		0.69	14
Manganese		32		0.092	1.4
Nickel		5.0		0.089	1.4
Potassium		330		43	270
Selenium		ND		0.32	0.69
Silver		ND		0.069	0.69
Sodium		55	J	18	140
Thallium		0.16 u	~~J~~	0.099	1.4
Vanadium		7.0		0.089	1.4
Zinc		48		0.81	3.4
Tin		3.9	J	0.44	6.9

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49131		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	09/18/2009 1410			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1603				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.035	0.19

N Ellis 4/13/10

Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-SS-418-0.0/1.0-XXX**

Lab Sample ID: 360-24634-2
Client Matrix: Solid
% Moisture: 9.5

Date Sampled: 09/15/2009 1440
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49256		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.73 g
Date Analyzed:	09/21/2009 1640			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		640		0.83	3.2
Antimony		ND UJ		0.23	0.64
Arsenic		0.84 U	UL	0.12	1.3
Barium		3.4		0.083	0.64
Beryllium		ND		0.032	0.26
Cadmium		0.026	J	0.0089	0.26
Calcium		68	B	3.2	13
Chromium		1.1	B	0.085	0.64
Cobalt		0.16	J	0.083	0.64
Copper		0.94	J UB	0.083	1.3
Iron		300	B	1.0	6.4
Lead		3.7		0.073	0.64
Magnesium		24	B	0.64	13
Manganese		2.8		0.085	1.3
Nickel		0.66	J	0.083	1.3
Potassium		250	J	40	260
Selenium		ND		0.30	0.64
Silver		ND		0.064	0.64
Sodium		32	J	17	130
Thallium		0.20 U	UL	0.092	1.3
Vanadium		4.1		0.083	1.3
Zinc		1.2	J	0.75	3.2
Tin		0.46 U J	UJ B	0.41	6.4

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49131		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/18/2009 1416			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1603				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.034	J	0.033	0.18

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Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-SS-419-0.0/1.0-XXX**

Lab Sample ID: 360-24634-3
Client Matrix: Solid
% Moisture: 9.9

Date Sampled: 09/15/2009 1505
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49256		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.78 g
Date Analyzed:	09/21/2009 1642			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7200		0.81	3.1
Antimony		ND J		0.23	0.62
Arsenic		13		0.11	1.2
Barium		18		0.081	0.62
Beryllium		0.30		0.031	0.25
Cadmium		0.30		0.0087	0.25
Calcium		1400	~~B~~	3.1	12
Chromium		59	~~B~~	0.083	0.62
Cobalt		3.3		0.081	0.62
Copper		9.2		0.081	1.2
Iron		12000	~~B~~	0.99	6.2
Lead		11		0.071	0.62
Magnesium		2100	~~B~~	0.62	12
Manganese		120		0.083	1.2
Nickel		8.7		0.081	1.2
Potassium		750		39	250
Selenium		ND		0.29	0.62
Silver		0.65		0.063	0.62
Sodium		18	J	16	120
Thallium		ND		0.090	1.2
Vanadium		15		0.081	1.2
Zinc		20		0.73	3.1
Tin		24 J	^B	0.40	6.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49131		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.24 g
Date Analyzed:	09/18/2009 1417			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1603				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.053	J	0.031	0.17

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Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-SS-420-0.0/1.0-XXX**

Lab Sample ID: 360-24634-4
Client Matrix: Solid
% Moisture: 11.6

Date Sampled: 09/15/2009 1525
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49256		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.97 g
Date Analyzed:	09/21/2009 1645			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6600		0.75	2.9
Antimony		ND J		0.21	0.57
Arsenic		9.5		0.10	1.1
Barium		43		0.075	0.57
Beryllium		0.24		0.029	0.23
Cadmium		0.33		0.0080	0.23
Calcium		12000	B	2.9	11
Chromium		48	B	0.076	0.57
Cobalt		3.5		0.075	0.57
Copper		7.7		0.075	1.1
Iron		9300	B	0.92	5.7
Lead		5.8		0.066	0.57
Magnesium		2200	B	0.57	11
Manganese		110		0.077	1.1
Nickel		7.9		0.075	1.1
Potassium		1900		36	230
Selenium		ND		0.27	0.57
Silver		0.42	J	0.058	0.57
Sodium		79	J	15	110
Thallium		ND		0.083	1.1
Vanadium		12		0.075	1.1
Zinc		18		0.68	2.9
Tin		18 J	AB	0.37	5.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49131		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.30 g
Date Analyzed:	09/18/2009 1423			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1603				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.026	0.14

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Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-SS-421-0.0/1.0-XXX**

Lab Sample ID: 360-24634-5
Client Matrix: Solid
% Moisture: 21.5

Date Sampled: 09/15/2009 1555
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49256		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.86 g
Date Analyzed:	09/21/2009 1648			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6800		0.89	3.4
Antimony		ND J		0.25	0.69
Arsenic		8.4		0.12	1.4
Barium		52		0.089	0.69
Beryllium		0.25	J	0.034	0.27
Cadmium		0.34		0.0096	0.27
Chromium		52	~~B~~	0.091	0.69
Cobalt		3.5		0.089	0.69
Copper		7.7		0.089	1.4
Iron		9000	~~B~~	1.1	6.9
Lead		5.3		0.078	0.69
Magnesium		2400	~~B~~	0.69	14
Manganese		110		0.092	1.4
Nickel		8.0		0.089	1.4
Potassium		1400		43	270
Selenium		ND		0.32	0.69
Silver		0.61	J	0.069	0.69
Sodium		200		18	140
Thallium		ND		0.099	1.4
Vanadium		13		0.089	1.4
Zinc		18		0.81	3.4
Tin		20 J	~~B~~	0.44	6.9

Method:	6010B	Analysis Batch: 360-49330		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	2.0			Initial Weight/Volume:	1.86 g
Date Analyzed:	09/22/2009 1658			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Calcium		29000		6.9	27

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49131		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.24 g
Date Analyzed:	09/18/2009 1425			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1603				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.036	0.20

N Ollu 4/13/10

Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-SS-422-0.0/1.0-XXX**

Lab Sample ID: 360-24634-6
Client Matrix: Solid
% Moisture: 15.9

Date Sampled: 09/15/2009 1630
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49256		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.54 g
Date Analyzed:	09/21/2009 1657			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7400		1.0	3.9
Antimony		ND J		0.28	0.77
Arsenic		5.6		0.14	1.5
Barium		81		0.10	0.77
Beryllium		0.27	J	0.039	0.31
Cadmium		0.26	J	0.011	0.31
Chromium		36	B	0.10	0.77
Cobalt		3.5		0.10	0.77
Copper		7.8		0.10	1.5
Iron		8800	B	1.2	7.7
Lead		6.0		0.088	0.77
Magnesium		2600	B	0.77	15
Manganese		120		0.10	1.5
Nickel		7.9		0.10	1.5
Potassium		1500		48	310
Selenium		ND		0.36	0.77
Silver		0.35	J	0.078	0.77
Sodium		440		20	150
Thallium		ND		0.11	1.5
Vanadium		12		0.10	1.5
Zinc		17		0.91	3.9
Tin		14 J	B	0.49	7.7

Method:	6010B	Analysis Batch: 360-49330		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	2.0			Initial Weight/Volume:	1.54 g
Date Analyzed:	09/22/2009 1700			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Calcium		33000		7.7	31

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49131		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	09/18/2009 1427			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1603				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.030	0.16

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Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-SS-423-0.0/1.0-XXX**

Lab Sample ID: 360-24634-7
Client Matrix: Solid
% Moisture: 16.0

Date Sampled: 09/15/2009 1655
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49256		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.61 g
Date Analyzed:	09/21/2009 1700			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7800		0.96	3.7
Antimony		ND J		0.27	0.74
Arsenic		12		0.13	1.5
Barium		42		0.096	0.74
Beryllium		0.29	J	0.037	0.30
Cadmium		0.51		0.010	0.30
Calcium		12000	B	3.7	15
Chromium		60	B	0.098	0.74
Cobalt		4.6		0.096	0.74
Copper		8.2		0.096	1.5
Iron		13000	B	1.2	7.4
Lead		5.7		0.084	0.74
Magnesium		2700	B	0.74	15
Manganese		160		0.099	1.5
Nickel		9.6		0.096	1.5
Potassium		1100		46	300
Selenium		ND		0.35	0.74
Silver		0.63	J	0.074	0.74
Sodium		46	J	19	150
Thallium		ND		0.11	1.5
Vanadium		15		0.096	1.5
Zinc		19		0.87	3.7
Tin		24 J	B	0.47	7.4

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49131		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/18/2009 1428			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1603				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.039	0.21

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Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-SS-424-0:0/1.0-XXX**

Lab Sample ID: 360-24634-8
Client Matrix: Solid
% Moisture: 12.9

Date Sampled: 09/15/2009 1720
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49256		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.78 g
Date Analyzed:	09/21/2009 1703			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6200		0.84	3.2
Antimony		ND J		0.23	0.65
Arsenic		7.5		0.12	1.3
Barium		34		0.084	0.65
Beryllium		0.33		0.032	0.26
Cadmium		0.26		0.0090	0.26
Calcium		14000	~~B~~	3.2	13
Chromium		55	~~B~~	0.086	0.65
Cobalt		3.8		0.084	0.65
Copper		7.9		0.084	1.3
Iron		9100	~~B~~	1.0	6.5
Lead		6.3		0.074	0.65
Magnesium		1900	~~B~~	0.65	13
Manganese		100		0.086	1.3
Nickel		10		0.084	1.3
Potassium		1100		40	260
Selenium		ND		0.30	0.65
Silver		0.76		0.065	0.65
Sodium		62	J	17	130
Thallium		ND		0.093	1.3
Vanadium		12		0.084	1.3
Zinc		20		0.76	3.2
Tin		22 J	~~B~~	0.41	6.5

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49131		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	09/18/2009 1430			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1603				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.039	0.21

N. Ohio 4/13/10

Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-SS-425-0.0/1.0-XXX**

Lab Sample ID: 360-24634-9
Client Matrix: Solid
% Moisture: 17.2

Date Sampled: 09/15/2009 1740
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49256		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.69 g
Date Analyzed:	09/21/2009 1706			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7500		0.93	3.6
Antimony		ND J		0.26	0.71
Arsenic		8.4		0.13	1.4
Barium		51		0.093	0.71
Beryllium		0.29		0.036	0.29
Cadmium		0.42		0.010	0.29
Chromium		75	B	0.095	0.71
Cobalt		4.1		0.093	0.71
Copper		8.3		0.093	1.4
Iron		10000	B	1.1	7.1
Lead		6.3		0.082	0.71
Magnesium		2500	B	0.71	14
Manganese		140		0.095	1.4
Nickel		8.7		0.093	1.4
Potassium		1400		45	290
Selenium		ND		0.33	0.71
Silver		1.0		0.072	0.71
Sodium		96	J	19	140
Thallium		0.12 U	J	0.10	1.4
Vanadium		15		0.093	1.4
Zinc		20		0.84	3.6
Tin		30 J	B	0.46	7.1

Method:	6010B	Analysis Batch: 360-49330		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	5.0			Initial Weight/Volume:	1.69 g
Date Analyzed:	09/22/2009 1703			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Calcium		35000		18	71

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49131		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.29 g
Date Analyzed:	09/18/2009 1432			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1603				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.028	0.15

4/13/10

Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-SS-426-0.0/1.0-XXX**

Lab Sample ID: 360-24634-10
Client Matrix: Solid
% Moisture: 8.5

Date Sampled: 09/16/2009 0915
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49256		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.85 g
Date Analyzed:	09/21/2009 1709			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7100		0.77	3.0
Antimony		ND J		0.21	0.59
Arsenic		3.8		0.11	1.2
Barium		29		0.077	0.59
Beryllium		0.29		0.030	0.24
Cadmium		0.41		0.0083	0.24
Calcium		12000	B	3.0	12
Chromium		28	B	0.079	0.59
Cobalt		5.3		0.077	0.59
Copper		7.4		0.077	1.2
Iron		13000	B	0.94	5.9
Lead		4.5		0.067	0.59
Magnesium		3900	B	0.59	12
Manganese		250		0.079	1.2
Nickel		7.5		0.077	1.2
Potassium		1600		37	240
Selenium		ND		0.28	0.59
Silver		0.13	J	0.059	0.59
Sodium		74	J	15	120
Thallium		ND		0.085	1.2
Vanadium		18		0.077	1.2
Zinc		23		0.69	3.0
Tin		10 J	B	0.38	5.9

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49131		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/18/2009 1434			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1603				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.032	0.18

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Analytical Data

Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-SS-427-0.0/1.0-XXX**

Lab Sample ID: 360-24634-11
Client Matrix: Solid
% Moisture: 17.6

Date Sampled: 09/16/2009 0940
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49256		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.61 g
Date Analyzed:	09/21/2009 1711			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		13000		0.98	3.8
Antimony		ND		0.27	0.75
Arsenic		3.7		0.14	1.5
Barium		9.2		0.098	0.75
Beryllium		0.30	J	0.038	0.30
Cadmium		0.14	J	0.011	0.30
Calcium		310	B	3.8	15
Chromium		6.3	B	0.10	0.75
Cobalt		1.3		0.098	0.75
Copper		2.4	B	0.098	1.5
Iron		6200	B	1.2	7.5
Lead		8.4		0.086	0.75
Magnesium		280	B	0.75	15
Manganese		19		0.10	1.5
Nickel		3.6		0.098	1.5
Potassium		340		47	300
Selenium		ND		0.35	0.75
Silver		ND		0.076	0.75
Sodium		ND		20	150
Thallium		ND		0.11	1.5
Vanadium		11		0.098	1.5
Zinc		9.3		0.89	3.8
Tin		2.3	J B	0.48	7.5

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49131		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/18/2009 1436			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1603				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.042	J	0.036	0.20

4/13/10

Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-SS-428-0.0/1.0-XXX**

Lab Sample ID: 360-24634-12
Client Matrix: Solid
% Moisture: 15.8

Date Sampled: 09/16/2009 1005
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49256		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.94 g
Date Analyzed:	09/21/2009 1714			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6200		0.80	3.1
Antimony		ND J		0.22	0.61
Arsenic		21		0.11	1.2
Barium		17		0.080	0.61
Beryllium		0.29		0.031	0.24
Cadmium		0.29		0.0086	0.24
Calcium		2200	B	3.1	12
Chromium		25	B	0.081	0.61
Cobalt		3.1		0.080	0.61
Copper		6.3		0.080	1.2
Iron		12000	B	0.98	6.1
Lead		7.7		0.070	0.61
Magnesium		1300	B	0.61	12
Manganese		77		0.082	1.2
Nickel		7.0		0.080	1.2
Potassium		630		38	240
Selenium		ND		0.29	0.61
Silver		0.11	J	0.062	0.61
Sodium		ND		16	120
Thallium		ND		0.089	1.2
Vanadium		12		0.080	1.2
Zinc		14		0.72	3.1
Tin		9.3 J	B	0.39	6.1

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49131		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.24 g
Date Analyzed:	09/18/2009 1438			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1603				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.034	0.18

N. Clark 4/13/10

Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-SS-429-0.0/1.0-XXX**

Lab Sample ID: 360-24634-13
Client Matrix: Solid
% Moisture: 17.5

Date Sampled: 09/16/2009 1025
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49256		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.57 g
Date Analyzed:	09/21/2009 1717			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8000		1.0	3.9
Antimony		ND J		0.28	0.77
Arsenic		8.5		0.14	1.5
Barium		80		0.10	0.77
Beryllium		0.28	J	0.039	0.31
Cadmium		0.41		0.011	0.31
Chromium		87	~~B~~	0.10	0.77
Cobalt		4.1		0.10	0.77
Copper		8.4		0.10	1.5
Iron		10000	~~B~~	1.2	7.7
Lead		5.4		0.088	0.77
Magnesium		2700	~~B~~	0.77	15
Manganese		130		0.10	1.5
Nickel		8.8		0.10	1.5
Potassium		1500		48	310
Selenium		ND		0.36	0.77
Silver		1.2		0.078	0.77
Sodium		250		20	150
Thallium		ND		0.11	1.5
Vanadium		14		0.10	1.5
Zinc		18		0.91	3.9
Tin		36 J	~~B~~	0.49	7.7

Method:	6010B	Analysis Batch: 360-49330		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	2.0			Initial Weight/Volume:	1.57 g
Date Analyzed:	09/22/2009 1712			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Calcium		33000		7.7	31

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49131		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/18/2009 1440			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1603				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.039	0.21

W. Clk 4/13/10

Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-SS-430-0.0/1.0-XXX**

Lab Sample ID: 360-24634-14
Client Matrix: Solid
% Moisture: 24.2

Date Sampled: 09/16/2009 1050
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49256		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.53 g
Date Analyzed:	09/21/2009 1720			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8000		1.1	4.3
Antimony		ND		0.31	0.86
Arsenic		23		0.16	1.7
Barium		56		0.11	0.86
Beryllium		0.31	J	0.043	0.35
Cadmium		0.92		0.012	0.35
Calcium		15000	B	4.3	17
Chromium		66	B	0.11	0.86
Cobalt		5.6		0.11	0.86
Copper		8.4		0.11	1.7
Iron		20000	B	1.4	8.6
Lead		8.2		0.099	0.86
Magnesium		2100	B	0.86	17
Manganese		370		0.12	1.7
Nickel		9.8		0.11	1.7
Potassium		1000		54	350
Selenium		ND		0.40	0.86
Silver		0.67	J	0.087	0.86
Sodium		77	J	22	170
Thallium		ND		0.12	1.7
Vanadium		17		0.11	1.7
Zinc		19		1.0	4.3
Tin		26	B	0.55	8.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49131		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/18/2009 1446			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1603				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.039	0.21

N. Calhoun 4/13/10

Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-SS-431-0.0/1.0-XXX**

Lab Sample ID: 360-24634-15
Client Matrix: Solid
% Moisture: 12.8

Date Sampled: 09/16/2009 1135
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49256		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.77 g
Date Analyzed:	09/21/2009 1723			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7800		0.84	3.2
Antimony		ND J		0.23	0.65
Arsenic		8.4		0.12	1.3
Barium		42		0.084	0.65
Beryllium		0.29		0.032	0.26
Cadmium		0.79		0.0091	0.26
Calcium		13000	B	3.2	13
Chromium		59	B	0.086	0.65
Cobalt		4.2		0.084	0.65
Copper		9.3		0.084	1.3
Iron		10000	B	1.0	6.5
Lead		7.1		0.074	0.65
Magnesium		2700	B	0.65	13
Manganese		140		0.087	1.3
Nickel		10		0.084	1.3
Potassium		1100		41	260
Selenium		ND		0.30	0.65
Silver		0.70		0.065	0.65
Sodium		63	J	17	130
Thallium		ND		0.094	1.3
Vanadium		14		0.084	1.3
Zinc		21		0.76	3.2
Tin		24 J	B	0.41	6.5

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49131		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.29 g
Date Analyzed:	09/18/2009 1449			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1603				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.031	J	0.027	0.15

N. Clark 4/13/10

Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-SS-432-0.0/1.0-XXX**

Lab Sample ID: 360-24634-16
Client Matrix: Solid
% Moisture: 15.5

Date Sampled: 09/16/2009 1155
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49256		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49208		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.78 g
Date Analyzed:	09/21/2009 1732			Final Weight/Volume:	100 mL
Date Prepared:	09/21/2009 0802				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6800		0.86	3.3
Antimony		ND J		0.24	0.66
Arsenic		8.3		0.12	1.3
Barium		26		0.086	0.66
Beryllium		0.27		0.033	0.27
Cadmium		0.30		0.0093	0.27
Calcium		2400	B	3.3	13
Chromium		30	B	0.088	0.66
Cobalt		3.8		0.086	0.66
Copper		13		0.086	1.3
Iron		9500	B	1.1	6.6
Lead		15		0.076	0.66
Magnesium		2000	B	0.66	13
Manganese		250		0.089	1.3
Nickel		7.7		0.086	1.3
Potassium		980		42	270
Selenium		ND		0.31	0.66
Silver		0.21	J	0.067	0.66
Sodium		ND		17	130
Thallium		ND		0.096	1.3
Vanadium		14		0.086	1.3
Zinc		30		0.78	3.3
Tin		12 J	AB	0.43	6.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49177		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49131		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.24 g
Date Analyzed:	09/18/2009 1452			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 1603				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.099	J	0.034	0.18

N.C. 4/13/10

Client: Olin Corporation

Job Number: 360-24634-1
Sdg Number: OCRI-16

Client Sample ID: **OC-EBK-011**

Lab Sample ID: 360-24634-18
Client Matrix: Water

Date Sampled: 09/16/2009 0835
Date Received: 09/16/2009 1620

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49109		Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-49064		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	09/17/2009 1232			Final Weight/Volume:	50 mL
Date Prepared:	09/17/2009 0752				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	ND		39	100
Antimony	ND		2.9	6.0
Barium	ND		2.0	10
Arsenic	ND		2.3	10
Beryllium	ND		0.20	1.0
Cadmium	ND		0.20	1.0
Calcium	ND		59	400
Chromium	ND		1.3	5.0
Cobalt	ND		2.0	10
Copper	68		1.7	10
Iron	ND		34	100
Lead	3.6	J	1.3	5.0
Magnesium	ND		50	400
Manganese	ND		1.3	10
Nickel	ND		1.5	10
Potassium	ND		500	4000
Selenium	4.6	J	2.7	10
Silver	ND		1.8	5.0
Sodium	ND		250	2000
Tin	ND		7.0	50
Vanadium	ND		1.5	10
Thallium	4.6	J	1.4	10
Zinc	ND		10	50

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 360-49149		Instrument ID:	Hg Analyzer
Preparation:	7470A	Prep Batch: 360-49066		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	09/18/2009 1009			Final Weight/Volume:	10 mL
Date Prepared:	09/17/2009 0812				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	ND		0.065	0.20

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

SITE: **Olin Chemical** Project #: 6/07/000/6.12 SDG #: OCRI-17/17A

LAB # : TAL 360-24665-1/2/3

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☐ ☒ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☑ ☐ ☐ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	See below. Post-digestion spikes %R limits = 75% - 125%

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Laboratory Control Samples (LCS) ☑ ☐ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate ☑ ☐ ☐ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☑ ☐ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	
Field Duplicate ☐ ☐ ☑ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☐ ☐ ☑ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution ☐ ☑ ☐ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☑ ☐ Are results of the diluted samples > the original sample results	

Validator's Signature: [signature]

Date: 4/15/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

QL Standard:
The percent recovery of tin (62 and 63) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J/UJ).

Blanks:
Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Copper and thallium were reported in the equipment blank associated with OCRI-17, 17A, and 17B. Reported detections of copper were significantly greater than equipment blank results, the data was not qualified. Associated sample results for thallium were non detect, no further action required.

Calcium (7.37 mg/kg), iron (1.56 mg/kg), magnesium (1.99 mg/kg), and tin (0.44 mg/kg) were reported in the method blank (M360-49480) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Sample results were greater than the action levels, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Selenium was reported in the continuing calibration blanks (CCB) associated with all samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for selenium were non detect, no further action required.

Matrix Spikes:
Sample OC-SS-434-0.0/1.0-XXX was submitted for MS analysis. The MS percent recovery of aluminum (328), antimony (29), and iron (177) were outside of the QC limits. The unspiked sample results for aluminum and iron were greater than four times the spiking concentration, no further action required. Post digestion spike recovery for antimony was within QC limits, indicating a matrix effect for antimony. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

SDG	Lab Sample ID	Field Sample ID	Antimony MS Recovery (%)

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) III (circle one)

OCRI-03	360-24223-9	OC-SB-426-5.0/7.0-XXX	61
OCRI-04	360-24244-1	OC-SB-432-0.0/1.0-XXX	27
OCRI-04A	360-24244-5	OC-SB-443-18/20-XXX	32
OCRI-05	360-24251-19	OC-SB-446-5.0/7.0-XXX	80
OCRI-05	360-24251-4	OC-SB-433-5.0/7.0-XXX	70
OCRI-06	360-24309-23	OC-SB-430-8.0/10-XXX	44
OCRI-07	360-24327-12	OC-SB-410-6.0/8.0-XXX	65
OCRI-08	360-24343-10	OC-SB-451-2.5/4.5-XXX	62
OCRI-08	360-24343-17	OC-SB-455-6.0/8.0-XXX	46
OCRI-09	360-24365-4	OC-SB-442-8.0/10-XXX	50
OCRI-10	360-24417-10	OC-SB-465-8.0/10-XXX	63
OCRI-10A	360-24417-2	OC-SB-463-28/30-XXX	38
OCRI-11	360-24444-2	OC-SB-459-6.0/8.0-XXX	64
OCRI-11	360-24444-9	OC-SB-467-6.0/8.0-XXX	68
OCRI-12	360-24454-3	OC-SB-461-5.0/7.0-XXX	65
OCRI-13A	360-24499-3	OC-SB-469-28/30-XXX	61
OCRI-14	360-24563-14	OC-SB-456-7.0/9.0-XXX	60
OCRI-14	360-24563-5	OC-SB-427-8.0/10-XXX	67
OCRI-15	360-24582-22	OC-SS-416-0.0/1.0-XXX	56
OCRI-16	360-24634-1	OC-SS-417-0.0/1.0-XXX	61
OCRI-17	360-24665-1	OC-SS-434-0.0/1.0-XXX	29
OCRI-18	360-24686-1	OC-SB-400-17/19-XXX	67

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24665-1	OC-SS-434-0.0/1.0-XXX	Solid	09/16/2009 1615	09/17/2009 1630
360-24665-2	OC-SS-435-0.0/1.0-XXX	Solid	09/16/2009 1540	09/17/2009 1630
360-24665-3	OC-SS-436-0.0/1.0-XXX	Solid	09/16/2009 1430	09/17/2009 1630
360-24665-4	OC-SS-437-0.0/1.0-XXX	Solid	09/16/2009 1410	09/17/2009 1630
360-24665-5	OC-SS-440-0.0/1.0-XXX	Solid	09/16/2009 1345	09/17/2009 1630
360-24665-6	OC-SS-442-0.0/1.0-XXX	Solid	09/16/2009 1325	09/17/2009 1630
360-24665-7	OC-SS-449-0.0/1.0-XXX	Solid	09/16/2009 1640	09/17/2009 1630
360-24665-8	OC-SS-450-0.0/1.0-XXX	Solid	09/16/2009 1555	09/17/2009 1630
360-24665-9	OC-SS-451-0.0/1.0-XXX	Solid	09/16/2009 1520	09/17/2009 1630
360-24665-10	OC-SS-454-0.0/1.0-XXX	Solid	09/17/2009 0755	09/17/2009 1630
360-24665-11	OC-SS-455-0.0/1.0-XXX	Solid	09/16/2009 1750	09/17/2009 1630
360-24665-12	OC-SS-460-0.0/1.0-XXX	Solid	09/16/2009 1730	09/17/2009 1630
360-24665-13	OC-SB-406-0.0/1.0-XXX	Solid	09/17/2009 1125	09/17/2009 1630
360-24665-14	OC-SB-406-13/15-XXX	Solid	09/17/2009 1200	09/17/2009 1630
360-24665-15	OC-SB-406-8.0/10-XXX	Solid	09/17/2009 1145	09/17/2009 1630
360-24665-16	OC-SB-413-0.0/1.0-XXX	Solid	09/17/2009 1110	09/17/2009 1630
360-24665-17	OC-SB-413-1.0/5.0-XXX	Solid	09/17/2009 1020	09/17/2009 1630
360-24665-18	OC-SB-413-10/12-XXX	Solid	09/17/2009 1050	09/17/2009 1630
360-24665-19	OC-TBK-021	Solid	09/17/2009 1315	09/17/2009 1630
360-24665-20	OC-SS-436-0.0/1.0-XXX	Solid	09/17/2009 1430	09/17/2009 1630
360-24665-21	OC-SS-437-0.0/1.0-XXX	Solid	09/17/2009 1410	09/17/2009 1630

Form I's updated
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Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Client Sample ID: **OC-SS-434-0.0/1.0-XXX**

Lab Sample ID: 360-24665-1
Client Matrix: Solid
% Moisture: 17.2

Date Sampled: 09/16/2009 1615
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.62 g
Date Analyzed:	09/25/2009 1345			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		13000		0.97	3.7
Antimony		ND	J	0.27	0.75
Arsenic		4.7		0.14	1.5
Barium		12		0.097	0.75
Beryllium		0.30		0.037	0.30
Cadmium		0.22	J	0.010	0.30
Calcium		480	~~B~~	3.7	15
Chromium		8.8		0.099	0.75
Cobalt		2.3		0.097	0.75
Copper		3.6		0.097	1.5
Iron		10000	~~B~~	1.2	7.5
Lead		9.8		0.085	0.75
Magnesium		520	~~B~~	0.75	15
Manganese		32		0.10	1.5
Nickel		5.8		0.097	1.5
Potassium		400		47	300
Selenium		0.39	J	0.35	0.75
Silver		ND		0.075	0.75
Sodium		ND		19	150
Thallium		ND		0.11	1.5
Vanadium		15		0.097	1.5
Zinc		13		0.88	3.7
Tin		3.2	J ~~J^B~~	0.48	7.5

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49277		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	09/23/2009 0917			Final Weight/Volume:	50 mL
Date Prepared:	09/22/2009 0905				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.074	J	0.037	0.20

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Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Client Sample ID: **OC-SS-435-0.0/1.0-XXX**

Lab Sample ID: 360-24665-2
Client Matrix: Solid
% Moisture: 17.6

Date Sampled: 09/16/2009 1540
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.62 g
Date Analyzed:	09/25/2009 1359			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		11000		0.97	3.7
Antimony		ND		0.27	0.75
Arsenic		6.8		0.14	1.5
Barium		15		0.097	0.75
Beryllium		0.29	J	0.037	0.30
Cadmium		0.26	J	0.010	0.30
Calcium		590	~~B~~	3.7	15
Chromium		9.1		0.10	0.75
Cobalt		2.3		0.097	0.75
Copper		5.8		0.097	1.5
Iron		12000	~~B~~	1.2	7.5
Lead		14		0.085	0.75
Magnesium		600	~~B~~	0.75	15
Manganese		69		0.10	1.5
Nickel		5.8		0.097	1.5
Potassium		440		47	300
Selenium		0.60	J	0.35	0.75
Silver		ND		0.075	0.75
Sodium		ND		19	150
Thallium		ND		0.11	1.5
Vanadium		21		0.097	1.5
Zinc		14		0.88	3.7
Tin		3.2	J ~~B~~	0.48	7.5

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49277		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	09/23/2009 0923			Final Weight/Volume:	50 mL
Date Prepared:	09/22/2009 0905				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.11	J	0.037	0.20

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Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Client Sample ID: **OC-SS-436-0.0/1.0-XXX**

Lab Sample ID: 360-24665-3
Client Matrix: Solid
% Moisture: 25.1

Date Sampled: 09/16/2009 1430
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.76 g
Date Analyzed:	09/25/2009 1402			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3100		0.99	3.8
Antimony		ND	J	0.27	0.76
Arsenic		2.4		0.14	1.5
Barium		5.9		0.099	0.76
Beryllium		0.067	J	0.038	0.30
Cadmium		0.073	J	0.011	0.30
Calcium		130	~~B~~	3.8	15
Chromium		2.9		0.10	0.76
Cobalt		0.38	J	0.099	0.76
Copper		2.0		0.099	1.5
Iron		2300	~~B~~	1.2	7.6
Lead		8.4		0.087	0.76
Magnesium		68	~~B~~	0.76	15
Manganese		4.1		0.10	1.5
Nickel		1.4	J	0.099	1.5
Potassium		200	J	47	300
Selenium		ND		0.36	0.76
Silver		ND		0.076	0.76
Sodium		23	J	20	150
Thallium		ND		0.11	1.5
Vanadium		8.5		0.099	1.5
Zinc		2.4	J	0.89	3.8
Tin		1.1	J ~~B~~	0.49	7.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49277		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.28 g
Date Analyzed:	09/23/2009 0925			Final Weight/Volume:	50 mL
Date Prepared:	09/22/2009 0905				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.032	0.18

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Analytical Data

Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Client Sample ID: **OC-SS-437-0.0/1.0-XXX**

Lab Sample ID: 360-24665-4
Client Matrix: Solid
% Moisture: 26.9

Date Sampled: 09/16/2009 1410
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.88 g
Date Analyzed:	09/25/2009 1405			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3800		0.95	3.6
Antimony		ND J		0.26	0.73
Arsenic		2.6		0.13	1.5
Barium		15		0.095	0.73
Beryllium		0.21	J	0.036	0.29
Cadmium		0.11	J	0.010	0.29
Calcium		330	~~B~~	3.6	15
Chromium		70		0.097	0.73
Cobalt		3.9		0.095	0.73
Copper		6.3		0.095	1.5
Iron		3200	~~B~~	1.2	7.3
Lead		15		0.083	0.73
Magnesium		230	~~B~~	0.73	15
Manganese		21		0.097	1.5
Nickel		7.5		0.095	1.5
Potassium		580		46	290
Selenium		ND		0.34	0.73
Silver		0.98		0.073	0.73
Sodium		36	J	19	150
Thallium		ND		0.11	1.5
Vanadium		6.7		0.095	1.5
Zinc		5.9		0.86	3.6
Tin		31	J ~~B~~	0.47	7.3

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49277		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/23/2009 0927			Final Weight/Volume:	50 mL
Date Prepared:	09/22/2009 0905				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.037	0.20

4/10/10

Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Client Sample ID: **OC-SS-440-0.0/1.0-XXX**

Lab Sample ID: 360-24665-5
Client Matrix: Solid
% Moisture: 45.0

Date Sampled: 09/16/2009 1345
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 09/25/2009 1414
Date Prepared: 09/25/2009 0824

Analysis Batch: 360-49515
Prep Batch: 360-49480

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.64 g
Final Weight/Volume: 100 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3900		1.4	5.5
Antimony		ND J		0.40	1.1
Arsenic		14		0.20	2.2
Barium		12		0.14	1.1
Beryllium		0.16	J	0.055	0.44
Cadmium		0.17	J	0.016	0.44
Calcium		670	~~B~~	5.5	22
Chromium		81		0.15	1.1
Cobalt		1.4		0.14	1.1
Copper		4.5		0.14	2.2
Iron		8000	~~B~~	1.8	11
Lead		24		0.13	1.1
Magnesium		510	~~B~~	1.1	22
Manganese		20		0.15	2.2
Nickel		4.2		0.14	2.2
Potassium		650		69	440
Selenium		ND		0.52	1.1
Silver		0.99	J	0.11	1.1
Sodium		ND		29	220
Thallium		ND		0.16	2.2
Vanadium		23		0.14	2.2
Zinc		6.0		1.3	5.5
Tin		35	J ~~B~~	0.71	11

7471A Mercury (CVAA)

Method: 7471A
Preparation: 7471A
Dilution: 1.0
Date Analyzed: 09/23/2009 0929
Date Prepared: 09/22/2009 0905

Analysis Batch: 360-49362
Prep Batch: 360-49277

Instrument ID: Hg Analyzer
Lab File ID: N/A
Initial Weight/Volume: 0.21 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.059	0.32

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Analytical Data

Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Client Sample ID: **OC-SS-442-0.0/1.0-XXX**

Lab Sample ID: 360-24665-6
Client Matrix: Solid
% Moisture: 47.0

Date Sampled: 09/16/2009 1325
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.95 g
Date Analyzed:	09/25/2009 1417			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3600		1.3	4.8
Antimony		ND		0.35	0.97
Arsenic		7.5		0.18	1.9
Barium		23		0.13	0.97
Beryllium		0.13	J	0.048	0.39
Cadmium		0.16	J	0.014	0.39
Calcium		610	~~B~~	4.8	19
Chromium		8.8		0.13	0.97
Cobalt		1.9		0.13	0.97
Copper		6.2		0.13	1.9
Iron		4200	~~B~~	1.5	9.7
Lead		41		0.11	0.97
Magnesium		170	~~B~~	0.97	19
Manganese		11		0.13	1.9
Nickel		3.7		0.13	1.9
Potassium		380	J	60	390
Selenium		ND		0.45	0.97
Silver		ND		0.097	0.97
Sodium		42	J	25	190
Thallium		ND		0.14	1.9
Vanadium		15		0.13	1.9
Zinc		5.5		1.1	4.8
Tin		3.8	J ~~B~~	0.62	9.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49277		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	09/23/2009 0937			Final Weight/Volume:	50 mL
Date Prepared:	09/22/2009 0905				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.067	J	0.064	0.35

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Analytical Data

Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Client Sample ID: **OC-SS-449-0.0/1.0-XXX**

Lab Sample ID: 360-24665-7
Client Matrix: Solid
% Moisture: 30.2

Date Sampled: 09/16/2009 1640
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.60 g
Date Analyzed:	09/25/2009 1420			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		1900		1.2	4.5
Antimony		ND		0.32	0.90
Arsenic		1.4	J	0.16	1.8
Barium		3.5		0.12	0.90
Beryllium		0.087	J	0.045	0.36
Cadmium		0.053	J	0.013	0.36
Calcium		86	~~B~~	4.5	18
Chromium		1.5		0.12	0.90
Cobalt		0.56	J	0.12	0.90
Copper		3.1		0.12	1.8
Iron		610	~~B~~	1.4	9.0
Lead		18		0.10	0.90
Magnesium		33	~~B~~	0.90	18
Manganese		3.8		0.12	1.8
Nickel		1.5	J	0.12	1.8
Potassium		210	J	56	360
Selenium		ND		0.42	0.90
Silver		ND		0.090	0.90
Sodium		39	J	23	180
Thallium		ND		0.13	1.8
Vanadium		5.0		0.12	1.8
Zinc		1.9	J	1.1	4.5
Tin		0.71	J ~~B~~	0.57	9.0

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49277		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/23/2009 0938			Final Weight/Volume:	50 mL
Date Prepared:	09/22/2009 0905				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.039	0.21

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Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Client Sample ID: **OC-SS-450-0.0/1.0-XXX**

Lab Sample ID: 360-24665-8
Client Matrix: Solid
% Moisture: 34.7

Date Sampled: 09/16/2009 1555
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.79 g
Date Analyzed:	09/25/2009 1423			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5800		1.1	4.3
Antimony		ND J		0.31	0.86
Arsenic		5.8		0.16	1.7
Barium		13		0.11	0.86
Beryllium		0.18	J	0.043	0.34
Cadmium		0.12	J	0.012	0.34
Calcium		330	~~B~~	4.3	17
Chromium		6.0		0.11	0.86
Cobalt		2.0		0.11	0.86
Copper		4.1		0.11	1.7
Iron		5200	~~B~~	1.4	8.6
Lead		26		0.098	0.86
Magnesium		740	~~B~~	0.86	17
Manganese		25		0.11	1.7
Nickel		3.9		0.11	1.7
Potassium		430		54	340
Selenium		ND		0.40	0.86
Silver		ND		0.086	0.86
Sodium		48	J	22	170
Thallium		ND		0.12	1.7
Vanadium		13		0.11	1.7
Zinc		6.1		1.0	4.3
Tin		2.2	J ~~B~~	0.55	8.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49277		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/23/2009 0940			Final Weight/Volume:	50 mL
Date Prepared:	09/22/2009 0905				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.048	J	0.045	0.25

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Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Client Sample ID: **OC-SS-451-0.0/1.0-XXX**

Lab Sample ID: 360-24665-9
Client Matrix: Solid
% Moisture: 23.1

Date Sampled: 09/16/2009 1520
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.55 g
Date Analyzed:	09/25/2009 1426			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		1400		1.1	4.2
Antimony		ND		0.30	0.84
Arsenic		1.6	J	0.15	1.7
Barium		5.5		0.11	0.84
Beryllium		0.042	J	0.042	0.34
Cadmium		0.037	J	0.012	0.34
Calcium		180	~~B~~	4.2	17
Chromium		1.7		0.11	0.84
Cobalt		0.45	J	0.11	0.84
Copper		1.7	J	0.11	1.7
Iron		760	~~B~~	1.3	8.4
Lead		12		0.096	0.84
Magnesium		48	~~B~~	0.84	17
Manganese		7.5		0.11	1.7
Nickel		1.3	J	0.11	1.7
Potassium		210	J	52	340
Selenium		ND		0.39	0.84
Silver		ND		0.084	0.84
Sodium		37	J	22	170
Thallium		ND		0.12	1.7
Vanadium		3.6		0.11	1.7
Zinc		2.2	J	0.99	4.2
Tin		0.78	J ~~B~~	0.54	8.4

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49277		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.26 g
Date Analyzed:	09/23/2009 0942			Final Weight/Volume:	50 mL
Date Prepared:	09/22/2009 0905				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.055	J	0.034	0.19

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Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Client Sample ID: **OC-SS-454-0.0/1.0-XXX**

Lab Sample ID: 360-24665-10
Client Matrix: Solid
% Moisture: 13.5

Date Sampled: 09/17/2009 0755
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.91 g
Date Analyzed:	09/25/2009 1428			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		11000		0.79	3.0
Antimony		ND J		0.22	0.61
Arsenic		9.5		0.11	1.2
Barium		12		0.079	0.61
Beryllium		0.32		0.030	0.24
Cadmium		0.22	J	0.0085	0.24
Calcium		480	~~B~~	3.0	12
Chromium		10		0.080	0.61
Cobalt		2.9		0.079	0.61
Copper		5.3		0.079	1.2
Iron		10000	B	0.96	6.1
Lead		22		0.069	0.61
Magnesium		1100	~~B~~	0.61	12
Manganese		60		0.081	1.2
Nickel		7.3		0.079	1.2
Potassium		520		38	240
Selenium		ND		0.28	0.61
Silver		ND		0.061	0.61
Sodium		ND		16	120
Thallium		ND		0.088	1.2
Vanadium		16		0.079	1.2
Zinc		18		0.71	3.0
Tin		3.5	J ~~B~~	0.39	6.1

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49277		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/23/2009 0944			Final Weight/Volume:	50 mL
Date Prepared:	09/22/2009 0905				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.064	J	0.034	0.19

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Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Client Sample ID: **OC-SS-455-0.0/1.0-XXX**

Lab Sample ID: 360-24665-11
Client Matrix: Solid
% Moisture: 15.1

Date Sampled: 09/16/2009 1750
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.80 g
Date Analyzed:	09/25/2009 1431			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		12000		0.85	3.3
Antimony		ND J		0.24	0.65
Arsenic		10		0.12	1.3
Barium		8.5		0.085	0.65
Beryllium		0.28		0.033	0.26
Cadmium		0.23	J	0.0092	0.26
Calcium		390	~~B~~	3.3	13
Chromium		9.7		0.087	0.65
Cobalt		2.1		0.085	0.65
Copper		4.0		0.085	1.3
Iron		11000	~~B~~	1.0	6.5
Lead		11		0.075	0.65
Magnesium		780	~~B~~	0.65	13
Manganese		38		0.087	1.3
Nickel		5.8		0.085	1.3
Potassium		580		41	260
Selenium		ND		0.31	0.65
Silver		ND		0.066	0.65
Sodium		ND		17	130
Thallium		ND		0.095	1.3
Vanadium		19		0.085	1.3
Zinc		11		0.77	3.3
Tin		3.4	J ~~B~~	0.42	6.5

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49277		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	09/23/2009 0946			Final Weight/Volume:	50 mL
Date Prepared:	09/22/2009 0905				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.048	J	0.040	0.22

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Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Client Sample ID: **OC-SS-460-0.0/1.0-XXX**

Lab Sample ID: 360-24665-12
Client Matrix: Solid
% Moisture: 15.6

Date Sampled: 09/16/2009 1730
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.69 g
Date Analyzed:	09/25/2009 1434			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3200		0.91	3.5
Antimony		ND J		0.25	0.70
Arsenic		0.64	J	0.13	1.4
Barium		13		0.091	0.70
Beryllium		0.19	J	0.035	0.28
Cadmium		0.057	J	0.0098	0.28
Calcium		460	~~B~~	3.5	14
Chromium		4.0		0.093	0.70
Cobalt		0.51	J	0.091	0.70
Copper		5.6		0.091	1.4
Iron		660	~~B~~	1.1	7.0
Lead		7.8		0.080	0.70
Magnesium		24	~~B~~	0.70	14
Manganese		3.4		0.094	1.4
Nickel		1.7		0.091	1.4
Potassium		51	J	44	280
Selenium		ND		0.33	0.70
Silver		ND		0.071	0.70
Sodium		33	J	18	140
Thallium		ND		0.10	1.4
Vanadium		3.8		0.091	1.4
Zinc		5.0		0.82	3.5
Tin		1.7	J ~~AB~~	0.45	7.0

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49277		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/23/2009 0948			Final Weight/Volume:	50 mL
Date Prepared:	09/22/2009 0905				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.038	0.21

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Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Client Sample ID: **OC-SB-406-0.0/1.0-XXX**

Lab Sample ID: 360-24665-13
Client Matrix: Solid
% Moisture: 56.8

Date Sampled: 09/17/2009 1125
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.60 g
Date Analyzed:	09/25/2009 1437			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		24000		1.9	7.2
Antimony		ND J		0.52	1.4
Arsenic		15		0.26	2.9
Barium		25		0.19	1.4
Beryllium		0.63		0.072	0.58
Cadmium		0.56	J	0.020	0.58
Calcium		930	~~B~~	7.2	29
Chromium		20		0.19	1.4
Cobalt		4.3		0.19	1.4
Copper		12		0.19	2.9
Iron		23000	~~B~~	2.3	14
Lead		34		0.17	1.4
Magnesium		1500	~~B~~	1.4	29
Manganese		70		0.19	2.9
Nickel		13		0.19	2.9
Potassium		1100		90	580
Selenium		ND		0.68	1.4
Silver		ND		0.15	1.4
Sodium		ND		38	290
Thallium		ND		0.21	2.9
Vanadium		42		0.19	2.9
Zinc		24		1.7	7.2
Tin		6.9	J ~~B~~	0.93	14

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Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Client Sample ID: **OC-SB-406-8.0/10-XXX**

Lab Sample ID: 360-24665-15
Client Matrix: Solid
% Moisture: 14.9

Date Sampled: 09/17/2009 1145
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	2.00 g
Date Analyzed:	09/25/2009 1449			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5000		0.76	2.9
Antimony		ND J		0.21	0.59
Arsenic		2.5		0.11	1.2
Barium		16		0.076	0.59
Beryllium		0.18	J	0.029	0.24
Cadmium		0.10	J	0.0082	0.24
Calcium		850	~~B~~	2.9	12
Chromium		8.2		0.078	0.59
Cobalt		2.7		0.076	0.59
Copper		5.9		0.076	1.2
Iron		5200	~~B~~	0.94	5.9
Lead		2.5		0.067	0.59
Magnesium		1400	~~B~~	0.59	12
Manganese		52		0.078	1.2
Nickel		7.9		0.076	1.2
Potassium		1300		37	240
Selenium		ND		0.27	0.59
Silver		ND		0.059	0.59
Sodium		26	J	15	120
Thallium		ND		0.085	1.2
Vanadium		8.2		0.076	1.2
Zinc		13		0.69	2.9
Tin		2.8	J ~~B~~	0.38	5.9

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49277		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.28 g
Date Analyzed:	09/23/2009 0954			Final Weight/Volume:	50 mL
Date Prepared:	09/22/2009 0905				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.029	0.16

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Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Client Sample ID: **OC-SB-413-0.0/1.0-XXX**

Lab Sample ID: 360-24665-16
Client Matrix: Solid
% Moisture: 27.4

Date Sampled: 09/17/2009 1110
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	2.0			Initial Weight/Volume:	1.87 g
Date Analyzed:	09/25/2009 1513			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		17000		1.9	7.4
Antimony		ND		0.53	1.5
Arsenic		5.2		0.27	2.9
Barium		6.9		0.19	1.5
Beryllium		0.27	J	0.074	0.59
Cadmium		0.14	J	0.021	0.59
Calcium		330	~~B~~	7.4	29
Chromium		10		0.20	1.5
Cobalt		1.1	J	0.19	1.5
Copper		5.2		0.19	2.9
Iron		7200	B	2.3	15
Lead		13		0.17	1.5
Magnesium		290	B	1.5	29
Manganese		14		0.20	2.9
Nickel		3.2		0.19	2.9
Potassium		230	J	92	590
Selenium		ND		0.69	1.5
Silver		ND		0.15	1.5
Sodium		ND		38	290
Thallium		ND		0.21	2.9
Vanadium		18		0.19	2.9
Zinc		6.7	J	1.7	7.4
Tin		4.1	J ~~B~~	0.94	15

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49277		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/23/2009 0955			Final Weight/Volume:	50 mL
Date Prepared:	09/22/2009 0905				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.037	0.20

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Client: Olin Corporation

Job Number: 360-24665-1
Sdg Number: OCRI-17

Client Sample ID: **OC-SB-413-1.0/5.0-XXX**

Lab Sample ID: 360-24665-17
Client Matrix: Solid
% Moisture: 10.9

Date Sampled: 09/17/2009 1020
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.66 g
Date Analyzed:	09/25/2009 1454			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10000		0.88	3.4
Antimony		ND J		0.24	0.68
Arsenic		2.6		0.12	1.4
Barium		14		0.088	0.68
Beryllium		0.29		0.034	0.27
Cadmium		0.21	J	0.0095	0.27
Calcium		1400	~~B~~	3.4	14
Chromium		10		0.090	0.68
Cobalt		4.0		0.088	0.68
Copper		28		0.088	1.4
Iron		12000	~~B~~	1.1	6.8
Lead		2.1		0.077	0.68
Magnesium		3100	B	0.68	14
Manganese		160		0.090	1.4
Nickel		7.3		0.088	1.4
Potassium		420		42	270
Selenium		ND		0.32	0.68
Silver		ND		0.068	0.68
Sodium		33	J	18	140
Thallium		ND		0.098	1.4
Vanadium		17		0.088	1.4
Zinc		16		0.80	3.4
Tin		3.4	J ~~B~~	0.43	6.8

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49277		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.27 g
Date Analyzed:	09/23/2009 1002			Final Weight/Volume:	50 mL
Date Prepared:	09/22/2009 0905				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.028	0.15

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SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24665-2
Sdg Number: OCRI-17A

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24665-14	OC-SB-406-13/15-XXX	Solid	09/17/2009 1200	09/17/2009 1630
360-24665-18	OC-SB-413-10/12-XXX	Solid	09/17/2009 1050	09/17/2009 1630

Client: Olin Corporation

Job Number: 360-24665-2
Sdg Number: OCRI-17A

Client Sample ID: **OC-SB-406-13/15-XXX**

Lab Sample ID: 360-24665-14
Client Matrix: Solid
% Moisture: 10.8

Date Sampled: 09/17/2009 1200
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.73 g
Date Analyzed:	09/25/2009 1440			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		10000		0.84	3.2
Antimony		ND J		0.23	0.65
Arsenic		1.3	J	0.12	1.3
Barium		15		0.084	0.65
Beryllium		0.26		0.032	0.26
Cadmium		0.44		0.0091	0.26
Calcium		2400	~~B~~	3.2	13
Chromium		27		0.086	0.65
Cobalt		14		0.084	0.65
Copper		57		0.084	1.3
Iron		23000	~~B~~	1.0	6.5
Lead		2.4		0.074	0.65
Magnesium		7600	~~B~~	0.65	13
Manganese		190		0.087	1.3
Nickel		17		0.084	1.3
Potassium		910		40	260
Selenium		ND		0.30	0.65
Silver		ND		0.065	0.65
Sodium		ND		17	130
Thallium		ND		0.094	1.3
Vanadium		45		0.084	1.3
Zinc		37		0.76	3.2
Tin		9.5	J ~~B~~	0.41	6.5

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Client: Olin Corporation

Job Number: 360-24665-2
Sdg Number: OCRI-17A

Client Sample ID: **OC-SB-413-10/12-XXX**

Lab Sample ID: 360-24665-18
Client Matrix: Solid
% Moisture: 9.8

Date Sampled: 09/17/2009 1050
Date Received: 09/17/2009 1630

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49515		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49480		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.57 g
Date Analyzed:	09/25/2009 1457			Final Weight/Volume:	100 mL
Date Prepared:	09/25/2009 0824				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7500		0.92	3.5
Antimony		ND J		0.26	0.71
Arsenic		2.2		0.13	1.4
Barium		30		0.092	0.71
Beryllium		0.26	J	0.035	0.28
Cadmium		0.22	J	0.0099	0.28
Calcium		1700	~~B~~	3.5	14
Chromium		16		0.094	0.71
Cobalt		6.4		0.092	0.71
Copper		24		0.092	1.4
Iron		12000	B	1.1	7.1
Lead		1.7		0.081	0.71
Magnesium		3400	~~B~~	0.71	14
Manganese		110		0.094	1.4
Nickel		11		0.092	1.4
Potassium		850		44	280
Selenium		ND		0.33	0.71
Silver		ND		0.071	0.71
Sodium		72	J	18	140
Thallium		ND		0.10	1.4
Vanadium		20		0.092	1.4
Zinc		17		0.83	3.5
Tin		5.8	J ~~B~~	0.45	7.1

4/15/10

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

SITE: **Olin Chemical** Project #: 6107100016.12 SDG #: OCRI-18/18A

LAB # : TAL 360-2468-1/2

Sample IDs: Attached tracking sheet

This checklist is designed to be used with the USEPA Data Validation Guidelines Part IV (November 2008). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Data completeness				
☑	☐	☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑	☐	☐	Data summaries match EDD	
Holding Times and Preservation				
☑	☐	☐	Hold times met (6 months, 28 days Hg)	
☑	☐	☐	Preserved (waters HNO_3)	
Calibration				
☐	☐	☑	ICP/MS Instrument Tune.	Verify that tuning meets mass, resolution, and RSD method criteria.
☑	☐	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard Hg: at least one blank and four standards
☑	☐	☐	Correlation coefficient > 0.995 for Hg	Correlation coefficient criteria applicable to all analyses except ICP-AES.
☑	☐	☐	Calibrated daily.	
☑	☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP-AES/MS, 80-120% for Hg. See additional qualification actions in the Region 1 guidelines.
☑	☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs.
☐	☒	☐	QL Standard within limits	70-130% for QL Standard. If out low, (J) detects less then 2X QL standard and (UJ) non-detects. See additional validation actions in the Region I guidelines. See below

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) III (circle one)

Blanks Method: ☑ ☐ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value negative MB results > 5x MDL ☐ ☐ ☑ For ICP/MS verify IS responses meet method criteria	Evaluate all blanks for contamination. Highest contaminant level used for action level. 5X the highest blank contamination is the action level. See below.
Calibration Blanks: ☒ ☐ ☐ ICB/CCB results > IDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL ☑ ☐ ☐ CCB analyzed every 10 samples or 2 hrs. Equipment/Rinseate Blanks: ☒ ☐ ☐ Results >MDL ☐ ☐ ☑ Absolute value of negative ICB/CCB results > 5x MDL	See below.
Interference Check Sample ☑ ☐ ☐ ICS analyzed at proper frequency ☑ ☐ ☐ Interference present in sample at > 50% concentration in ICS ☑ ☐ ☐ ICS AB %R 80%-120% ICP-MS Internal Standard Intensities ☐ ☐ ☑ Internal standard relative intensities reported by the laboratory ☐ ☐ ☑ Internal standard relative intensities are within 60 – 125 %	An ICS must be run at the beginning and end of run or every 8 hours. If interferences (Al, Ca, Fe, Mg) are not > 50% ICS concentration in sample, do not apply. Qualify data based on Region 1 guideline
Matrix Spikes ☐ ☒ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x ☑ ☐ ☐ Were post-digestion spikes reported for unacceptable pre-digestion spike recoveries ☐ ☑ ☐ Was a field blank used for spike analysis	See below. Post-digestion spikes %R limits = 75% - 125%

INORGANICS

TAL METALS (including mercury)

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / II / III (circle one)

Laboratory Control Samples (LCS) ☑ ☐ ☐ Percent recoveries are within limits (waters and soil 80-120%) ☑ ☐ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	
Laboratory Duplicate ☐ ☑ ☐ Was a field blank used as the lab duplicate ☑ ☐ ☐ Is the RPD within water control limits of ±20% for sample values >5x RL(35% for soil) ☑ ☐ ☐ Is the control limit of ± RL met for sample values <5x RL (2x RL for soil) ☑ ☐ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	
Field Duplicate ☐ ☐ ☑ For sample values >5x RL, the RPD control limit of ± 30% (50% for soil) was met ☐ ☐ ☑ For sample values <5x RL, the control limit of ±2x RL (4x RL for soil) was met	
Serial Dilution ☐ ☑ ☐ Are any percent difference criteria > 15% (for samples with a concentration >50 times the IDL) ☐ ☑ ☐ Are results of the diluted samples > the original sample results	

Validator's Signature: _____

Date: 4/15/10

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

INORGANICS
TAL METALS (including mercury)
REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifiers: Region I Guidelines (11/08)

TIER I / (II) / III (circle one)

QL Standard:

The percent recovery of tin (59, 62, and 61) were less than the lower QC limit of 70. Associated sample results were qualified estimated (J/UJ).

Blanks:

Aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc were reported in the equipment blanks. Aluminum, calcium, iron, and manganese are common cations detected in soils. Based upon professional judgment, sample detections of aluminum, calcium, iron, and manganese were not qualified.

Sample detections of barium, copper, lead, magnesium, mercury, nickel, selenium, thallium, and zinc were evaluated against equipment blank results. Based upon professional judgment, reported detections of barium, magnesium, and nickel were not qualified. Reported detections of copper, lead, mercury, selenium, silver, thallium, and zinc were evaluated on an SDG and associated equipment blank basis.

Copper and thallium were reported in the equipment blank associated with OCRI-18 and 18A. Reported detections of copper were significantly greater than equipment blank results, the data was not qualified. Associated sample results for thallium that were non detect, no further action required.

Calcium (6.5 mg/kg), iron (0.897 mg/kg), magnesium (1.75 mg/kg), selenium (0.237 mg/kg), and tin (0.402 mg/kg) were reported in the method blank (M360-49590) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Sample results were greater than the action levels, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Cadmium (0.00782 mg/kg), calcium (6.72 mg/kg), iron (2.71 mg/kg), lead (0.132 mg/kg), magnesium (1.76 mg/kg), and tin (0.417 mg/kg) were reported in the method blank (M360-50202) associated with a subset of samples. Action levels were established at five times the reported method blank concentrations. Sample results were greater than the action levels, no further action required. The laboratory qualified samples results associated with method blank detections with a "B". After review of the method blanks, the "B" qualifiers were removed.

Antimony, selenium, and thallium were reported in the continuing calibration blanks (CCB) associated with all samples. Action levels were established at five times the highest reported blank concentrations and the raw data was reviewed. Associated sample results for antimony and selenium that were less than the action level were qualified non detect (U).

Matrix Spikes:

Sample OC-SB-400-17/19-XXX was submitted for MS analysis. The MS percent recovery of aluminum (45), antimony (67), and iron (-75) were outside of the QC limits. The unspiked sample results for aluminum and iron were greater than four times the spiking concentration, no further action required. Post digestion spike recovery for antimony was within QC limits, indicating a matrix effect for

antimony. Matrix spike recovery for the analytical program was reviewed. Antimony percent recoveries were less than the lower QC limit for all but one sample. Results for antimony in all samples were qualified estimated (J/UJ). Refer to Table for program matrix spike recovery summary for antimony.

SDG	Lab Sample ID	Field Sample ID	Antimony MS Recovery (%)
OCRI-03	360-24223-9	OC-SB-426-5.0/7.0-XXX	61
OCRI-04	360-24244-1	OC-SB-432-0.0/1.0-XXX	27
OCRI-04A	360-24244-5	OC-SB-443-18/20-XXX	32
OCRI-05	360-24251-19	OC-SB-446-5.0/7.0-XXX	80
OCRI-05	360-24251-4	OC-SB-433-5.0/7.0-XXX	70
OCRI-06	360-24309-23	OC-SB-430-8.0/10-XXX	44
OCRI-07	360-24327-12	OC-SB-410-6.0/8.0-XXX	65
OCRI-08	360-24343-10	OC-SB-451-2.5/4.5-XXX	62
OCRI-08	360-24343-17	OC-SB-455-6.0/8.0-XXX	46
OCRI-09	360-24365-4	OC-SB-442-8.0/10-XXX	50
OCRI-10	360-24417-10	OC-SB-465-8.0/10-XXX	63
OCRI-10A	360-24417-2	OC-SB-463-28/30-XXX	38
OCRI-11	360-24444-2	OC-SB-459-6.0/8.0-XXX	64
OCRI-11	360-24444-9	OC-SB-467-6.0/8.0-XXX	68
OCRI-12	360-24454-3	OC-SB-461-5.0/7.0-XXX	65
OCRI-13A	360-24499-3	OC-SB-469-28/30-XXX	61
OCRI-14	360-24563-14	OC-SB-456-7.0/9.0-XXX	60
OCRI-14	360-24563-5	OC-SB-427-8.0/10-XXX	67
OCRI-15	360-24582-22	OC-SS-416-0.0/1.0-XXX	56
OCRI-16	360-24634-1	OC-SS-417-0.0/1.0-XXX	61
OCRI-17	360-24665-1	OC-SS-434-0.0/1.0-XXX	29
OCRI-18	360-24686-1	OC-SB-400-17/19-XXX	67

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24686-1	OC-SB-400-17/19-XXX	Solid	09/18/2009 1100	09/18/2009 1700
360-24686-2	OC-SB-435-0.0/1.0-XXX	Solid	09/17/2009 1445	09/18/2009 1700
360-24686-3	OC-SB-435-11/15-XXX	Solid	09/17/2009 1400	09/18/2009 1700
360-24686-4	OC-SB-435-6.0/10-XXX	Solid	09/17/2009 1335	09/18/2009 1700
360-24686-5	OC-SB-453-0.0/1.0-XXX	Solid	09/17/2009 1625	09/18/2009 1700
360-24686-6	OC-SB-453-1.0/6.0-XXX	Solid	09/17/2009 1600	09/18/2009 1700
360-24686-7	OC-SB-473-0.0/1.0-XXX	Solid	09/18/2009 0940	09/18/2009 1700
360-24686-8	OC-SB-473-13/15-XXX	Solid	09/18/2009 0920	09/18/2009 1700
360-24686-9	OC-SB-473-4.0/6.0-XXX	Solid	09/18/2009 0905	09/18/2009 1700
360-24686-10	OC-SS-453-0.0/1.0-XXX	Solid	09/17/2009 1740	09/18/2009 1700
360-24686-11	OC-SS-457-0.0/1.0-XXX	Solid	09/17/2009 1755	09/18/2009 1700
360-24686-12	OC-TBK-022	Solid	09/18/2009 1245	09/18/2009 1700
360-24686-13	OC-SS-456-0.0/1.0-XXX	Solid	09/18/2009 1320	09/18/2009 1700
360-24686-14	OC-SS-458-0.0/1.0-XXX	Solid	09/18/2009 1355	09/18/2009 1700
360-24686-15	OC-SS-459-0.0/1.0-XXX	Solid	09/18/2009 1345	09/18/2009 1700
360-24686-16	OC-SS-461-0.0/1.0-XXX	Solid	09/18/2009 1330	09/18/2009 1700
360-24686-17	OC-SB-473-0.0/1.0-XXX	Solid	09/18/2009 0940	09/18/2009 1700
360-24686-19	OC-SB-473-4.0/6.0-XXX	Solid	09/18/2009 0905	09/18/2009 1700
360-24686-20	OC-EBK-012	Water	09/17/2009 1715	09/18/2009 1700

Form I's updated
4/15/10

Analytical Data

Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Client Sample ID: **OC-SB-400-17/19-XXX**

Lab Sample ID: 360-24686-1
Client Matrix: Solid
% Moisture: 11.4

Date Sampled: 09/18/2009 1100
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49654		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49590		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.60 g
Date Analyzed:	09/29/2009 1323			Final Weight/Volume:	100 mL
Date Prepared:	09/29/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3300		0.92	3.5
Antimony		0.65	~~J~~ u	0.26	0.71
Arsenic		1.8		0.13	1.4
Barium		9.3		0.092	0.71
Beryllium		0.11	J	0.035	0.28
Cadmium		0.067	J	0.0099	0.28
Calcium		800	~~B~~	3.5	14
Chromium		7.5		0.094	0.71
Cobalt		1.8		0.092	0.71
Copper		4.0		0.092	1.4
Iron		4500	~~B~~	1.1	7.1
Lead		1.7		0.081	0.71
Magnesium		1200	~~B~~	0.71	14
Manganese		38		0.094	1.4
Nickel		5.2		0.092	1.4
Potassium		640		44	280
Selenium		0.45	u ~~J B~~	0.33	0.71
Silver		ND		0.071	0.71
Sodium		39	J	18	140
Thallium		ND		0.10	1.4
Vanadium		6.5		0.092	1.4
Zinc		8.5		0.83	3.5
Tin		2.9	J ~~B~~	0.45	7.1

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Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Client Sample ID: **OC-SB-435-0.0/1.0-XXX**

Lab Sample ID: 360-24686-2
Client Matrix: Solid
% Moisture: 82.4

Date Sampled: 09/17/2009 1445
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49654		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49590		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.74 g
Date Analyzed:	09/29/2009 1344			Final Weight/Volume:	100 mL
Date Prepared:	09/29/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4700		4.3	16
Antimony		ND 3		1.2	3.3
Arsenic		2.2	J	0.60	6.5
Barium		87		0.43	3.3
Beryllium		0.40	J	0.16	1.3
Cadmium		0.84	J	0.046	1.3
Calcium		6500	~~B~~	16	65
Chromium		40		0.44	3.3
Cobalt		3.8		0.43	3.3
Copper		23		0.43	6.5
Iron		5200	~~B~~	5.2	33
Lead		76		0.37	3.3
Magnesium		370	~~B~~	3.3	65
Manganese		44		0.44	6.5
Nickel		12		0.43	6.5
Potassium		340	J	200	1300
Selenium		3.6	~~B~~	1.5	3.3
Silver		ND		0.33	3.3
Sodium		160	J	85	650
Thallium		ND		0.47	6.5
Vanadium		24		0.43	6.5
Zinc		140		3.8	16
Tin		18	J ~~B~~	2.1	33

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49640		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49546		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/29/2009 1049			Final Weight/Volume:	50 mL
Date Prepared:	09/28/2009 1051				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.35	J	0.15	0.84

4/15/10

Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Client Sample ID: **OC-SB-435-11/15-XXX**

Lab Sample ID: 360-24686-3
Client Matrix: Solid
% Moisture: 8.5

Date Sampled: 09/17/2009 1400
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49654		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49590		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.52 g
Date Analyzed:	09/29/2009 1347			Final Weight/Volume:	100 mL
Date Prepared:	09/29/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5600		0.93	3.6
Antimony		ND J		0.26	0.72
Arsenic		1.5		0.13	1.4
Barium		17		0.093	0.72
Beryllium		0.19	J	0.036	0.29
Cadmium		0.17	J	0.010	0.29
Calcium		1900	~~B~~	3.6	14
Chromium		11		0.096	0.72
Cobalt		5.8		0.093	0.72
Copper		20		0.093	1.4
Iron		10000	~~B~~	1.1	7.2
Lead		2.5		0.082	0.72
Magnesium		3200	~~B~~	0.72	14
Manganese		98		0.096	1.4
Nickel		8.5		0.093	1.4
Potassium		900		45	290
Selenium		ND		0.34	0.72
Silver		ND		0.072	0.72
Sodium		62	J	19	140
Thallium		ND		0.10	1.4
Vanadium		17		0.093	1.4
Zinc		19		0.85	3.6
Tin		3.7	J ~~B~~	0.46	7.2

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49343		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/23/2009 1314			Final Weight/Volume:	50 mL
Date Prepared:	09/23/2009 1103				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.032	0.18

4/6/10

Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Client Sample ID: **OC-SB-435-6.0/10-XXX**

Lab Sample ID: 360-24686-4
Client Matrix: Solid
% Moisture: 13.1

Date Sampled: 09/17/2009 1335
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49654		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49590		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.51 g
Date Analyzed:	09/29/2009 1349			Final Weight/Volume:	100 mL
Date Prepared:	09/29/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7700		0.99	3.8
Antimony		ND J		0.28	0.76
Arsenic		2.5		0.14	1.5
Barium		38		0.099	0.76
Beryllium		0.32		0.038	0.30
Cadmium		0.18	J	0.011	0.30
Calcium		2400	~~B~~	3.8	15
Chromium		14		0.10	0.76
Cobalt		6.9		0.099	0.76
Copper		21		0.099	1.5
Iron		11000	~~B~~	1.2	7.6
Lead		3.3		0.087	0.76
Magnesium		3000	~~B~~	0.76	15
Manganese		110		0.10	1.5
Nickel		9.5		0.099	1.5
Potassium		1800		48	300
Selenium		ND		0.36	0.76
Silver		ND		0.077	0.76
Sodium		98	J	20	150
Thallium		ND		0.11	1.5
Vanadium		19		0.099	1.5
Zinc		18		0.90	3.8
Tin		4.9	J,~~B~~	0.49	7.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49343		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.30 g
Date Analyzed:	09/23/2009 1316			Final Weight/Volume:	50 mL
Date Prepared:	09/23/2009 1103				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.026	0.14

4/15/16

Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Client Sample ID: **OC-SB-453-0.0/1.0-XXX**

Lab Sample ID: 360-24686-5
Client Matrix: Solid
% Moisture: 81.3

Date Sampled: 09/17/2009 1625
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49654		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49590		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.94 g
Date Analyzed:	09/29/2009 1352			Final Weight/Volume:	100 mL
Date Prepared:	09/29/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5000		3.6	14
Antimony		ND J		1.0	2.8
Arsenic		1.7	J	0.50	5.5
Barium		55		0.36	2.8
Beryllium		0.42	J	0.14	1.1
Cadmium		0.94	J	0.039	1.1
Calcium		5400	~~B~~	14	55
Chromium		18		0.37	2.8
Cobalt		2.7	J	0.36	2.8
Copper		14		0.36	5.5
Iron		5700	~~B~~	4.4	28
Lead		42		0.32	2.8
Magnesium		350	~~B~~	2.8	55
Manganese		18		0.37	5.5
Nickel		8.5		0.36	5.5
Potassium		300	J	170	1100
Selenium		2.0	J ~~B~~	1.3	2.8
Silver		ND		0.28	2.8
Sodium		590		72	550
Thallium		ND		0.40	5.5
Vanadium		16		0.36	5.5
Zinc		100		3.2	14
Tin		8.0	J ~~B~~	1.8	28

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49343		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.26 g
Date Analyzed:	09/23/2009 1318			Final Weight/Volume:	50 mL
Date Prepared:	09/23/2009 1103				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.14	0.76

4/15/10

Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Client Sample ID: **OC-SB-453-1.0/6.0-XXX**

Lab Sample ID: 360-24686-6
Client Matrix: Solid
% Moisture: 20.6

Date Sampled: 09/17/2009 1600
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49654		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49590		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.68 g
Date Analyzed:	09/29/2009 1355			Final Weight/Volume:	100 mL
Date Prepared:	09/29/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8400		0.97	3.7
Antimony		ND		0.27	0.75
Arsenic		1.8		0.14	1.5
Barium		19		0.097	0.75
Beryllium		0.20	J	0.037	0.30
Cadmium		0.13	J	0.010	0.30
Calcium		1200	~~B~~	3.7	15
Chromium		9.9		0.10	0.75
Cobalt		2.7		0.097	0.75
Copper		9.3		0.097	1.5
Iron		6200	~~B~~	1.2	7.5
Lead		2.4		0.086	0.75
Magnesium		1700	~~B~~	0.75	15
Manganese		56		0.10	1.5
Nickel		6.7		0.097	1.5
Potassium		1000		47	300
Selenium		ND		0.35	0.75
Silver		ND		0.075	0.75
Sodium		130	J	19	150
Thallium		ND		0.11	1.5
Vanadium		14		0.097	1.5
Zinc		12		0.88	3.7
Tin		3.5	J ~~B~~	0.48	7.5

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49343		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/23/2009 1324			Final Weight/Volume:	50 mL
Date Prepared:	09/23/2009 1103				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.037	0.20

4/15/10

Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Client Sample ID: **OC-SB-473-0.0/1.0-XXX**

Lab Sample ID: 360-24686-7
Client Matrix: Solid
% Moisture: 18.4

Date Sampled: 09/18/2009 0940
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49654		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49590		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	2.00 g
Date Analyzed:	09/29/2009 1358			Final Weight/Volume:	100 mL
Date Prepared:	09/29/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		1700		0.80	3.1
Antimony		ND J		0.22	0.61
Arsenic		2.1		0.11	1.2
Barium		9.6		0.080	0.61
Beryllium		0.060	J	0.031	0.25
Cadmium		0.099	J	0.0086	0.25
Calcium		270	~~B~~	3.1	12
Chromium		2.6		0.082	0.61
Cobalt		0.41	J	0.080	0.61
Copper		1.9		0.080	1.2
Iron		1900	~~B~~	0.98	6.1
Lead		8.0		0.070	0.61
Magnesium		39	~~B~~	0.61	12
Manganese		5.1		0.082	1.2
Nickel		2.3		0.080	1.2
Potassium		290		38	250
Selenium		0.41 u	~~J B~~	0.29	0.61
Silver		ND		0.062	0.61
Sodium		23	J	16	120
Thallium		ND		0.089	1.2
Vanadium		10		0.080	1.2
Zinc		3.5		0.72	3.1
Tin		1.0	J ~~B~~	0.39	6.1

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49343		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.28 g
Date Analyzed:	09/23/2009 1326			Final Weight/Volume:	50 mL
Date Prepared:	09/23/2009 1103				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.030	0.16

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Analytical Data

Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Client Sample ID: **OC-SB-473-13/15-XXX**

Lab Sample ID: 360-24686-8
Client Matrix: Solid
% Moisture: 8.8

Date Sampled: 09/18/2009 0920
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49654		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49590		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.67 g
Date Analyzed:	09/29/2009 1401			Final Weight/Volume:	100 mL
Date Prepared:	09/29/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8400		0.85	3.3
Antimony		ND J		0.24	0.66
Arsenic		7.5		0.12	1.3
Barium		28		0.085	0.66
Beryllium		0.36		0.033	0.26
Cadmium		0.25	J	0.0092	0.26
Calcium		2000	B	3.3	13
Chromium		360		0.087	0.66
Cobalt		6.0		0.085	0.66
Copper		18		0.085	1.3
Iron		14000	B	1.0	6.6
Lead		2.5		0.075	0.66
Magnesium		3600	B	0.66	13
Manganese		140		0.088	1.3
Nickel		14		0.085	1.3
Potassium		1400		41	260
Selenium		ND		0.31	0.66
Silver		5.0		0.066	0.66
Sodium		53	J	17	130
Thallium		ND		0.095	1.3
Vanadium		20		0.085	1.3
Zinc		28		0.77	3.3
Tin		150	B	0.42	6.6

4/15/10

Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Client Sample ID: **OC-SB-473-4.0/6.0-XXX**

Lab Sample ID: 360-24686-9
Client Matrix: Solid
% Moisture: 16.2

Date Sampled: 09/18/2009 0905
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49654		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49590		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.78 g
Date Analyzed:	09/29/2009 1410			Final Weight/Volume:	100 mL
Date Prepared:	09/29/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4100		0.87	3.4
Antimony		ND J		0.24	0.67
Arsenic		2.2		0.12	1.3
Barium		6.2		0.087	0.67
Beryllium		0.10	J	0.034	0.27
Cadmium		0.062	J	0.0094	0.27
Calcium		550	~~B~~	3.4	13
Chromium		6.0		0.089	0.67
Cobalt		1.7		0.087	0.67
Copper		2.9		0.087	1.3
Iron		3900	~~B~~	1.1	6.7
Lead		1.2		0.077	0.67
Magnesium		900	~~B~~	0.67	13
Manganese		31		0.090	1.3
Nickel		4.6		0.087	1.3
Potassium		520		42	270
Selenium		ND		0.31	0.67
Silver		ND		0.067	0.67
Sodium		31	J	17	130
Thallium		ND		0.097	1.3
Vanadium		5.4		0.087	1.3
Zinc		7.1		0.79	3.4
Tin		2.1	J ~~B~~	0.43	6.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49343		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.29 g
Date Analyzed:	09/23/2009 1327			Final Weight/Volume:	50 mL
Date Prepared:	09/23/2009 1103				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.028	0.15

4/15/10

Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Client Sample ID: **OC-SS-453-0.0/1.0-XXX**

Lab Sample ID: 360-24686-10
Client Matrix: Solid
% Moisture: 28.3

Date Sampled: 09/17/2009 1740
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49654		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49590		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.69 g
Date Analyzed:	09/29/2009 1413			Final Weight/Volume:	100 mL
Date Prepared:	09/29/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7100		1.1	4.1
Antimony		ND J		0.30	0.83
Arsenic		4.3		0.15	1.7
Barium		9.2		0.11	0.83
Beryllium		0.18	J	0.041	0.33
Cadmium		0.16	J	0.012	0.33
Calcium		320	~~B~~	4.1	17
Chromium		4.7		0.11	0.83
Cobalt		0.91		0.11	0.83
Copper		4.1		0.11	1.7
Iron		6600	~~B~~	1.3	8.3
Lead		20		0.094	0.83
Magnesium		220	~~B~~	0.83	17
Manganese		13		0.11	1.7
Nickel		2.8		0.11	1.7
Potassium		320	J	52	330
Selenium		0.55 u	~~J B~~	0.39	0.83
Silver		ND		0.083	0.83
Sodium		ND		21	170
Thallium		ND		0.12	1.7
Vanadium		11		0.11	1.7
Zinc		5.6		0.97	4.1
Tin		1.6	J ~~B~~	0.53	8.3

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49343		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.20 g
Date Analyzed:	09/23/2009 1329			Final Weight/Volume:	50 mL
Date Prepared:	09/23/2009 1103				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.083	J	0.047	0.26

4/11/10

Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Client Sample ID: **OC-SS-457-0.0/1.0-XXX**

Lab Sample ID: 360-24686-11
Client Matrix: Solid
% Moisture: 10.2

Date Sampled: 09/17/2009 1755
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49654		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49590		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.69 g
Date Analyzed:	09/29/2009 1415			Final Weight/Volume:	100 mL
Date Prepared:	09/29/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		9400		0.86	3.3
Antimony		ND J		0.24	0.66
Arsenic		18		0.12	1.3
Barium		32		0.086	0.66
Beryllium		0.33		0.033	0.26
Cadmium		0.30		0.0092	0.26
Calcium		2100	~~B~~	3.3	13
Chromium		39		0.088	0.66
Cobalt		7.0		0.086	0.66
Copper		13		0.086	1.3
Iron		14000	~~B~~	1.0	6.6
Lead		12		0.075	0.66
Magnesium		3500	~~B~~	0.66	13
Manganese		210		0.088	1.3
Nickel		21		0.086	1.3
Potassium		2000		41	260
Selenium		0.33 U	~~J B~~	0.31	0.66
Silver		0.18	J	0.066	0.66
Sodium		29	J	17	130
Thallium		ND		0.095	1.3
Vanadium		24		0.086	1.3
Zinc		29		0.77	3.3
Tin		15	~~B~~	0.42	6.6

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49343		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	09/23/2009 1331			Final Weight/Volume:	50 mL
Date Prepared:	09/23/2009 1103				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.034	0.19

4/15/10

Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Client Sample ID: **OC-SS-456-0.0/1.0-XXX**

Lab Sample ID: 360-24686-13
Client Matrix: Solid
% Moisture: 16.5

Date Sampled: 09/18/2009 1320
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49654		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49590		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.78 g
Date Analyzed:	09/29/2009 1418			Final Weight/Volume:	100 mL
Date Prepared:	09/29/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6800		0.87	3.4
Antimony		ND J		0.24	0.67
Arsenic		4.1		0.12	1.3
Barium		9.3		0.087	0.67
Beryllium		0.20	J	0.034	0.27
Cadmium		0.16	J	0.0094	0.27
Calcium		620	~~B~~	3.4	13
Chromium		6.8		0.090	0.67
Cobalt		1.3		0.087	0.67
Copper		4.4		0.087	1.3
Iron		6300	~~B~~	1.1	6.7
Lead		8.2		0.077	0.67
Magnesium		490	~~B~~	0.67	13
Manganese		61		0.090	1.3
Nickel		4.0		0.087	1.3
Potassium		330		42	270
Selenium		0.49 U	~~J B~~	0.31	0.67
Silver		ND		0.068	0.67
Sodium		ND		17	130
Thallium		ND		0.097	1.3
Vanadium		9.1		0.087	1.3
Zinc		18		0.79	3.4
Tin		2.5	J ~~B~~	0.43	6.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49343		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.22 g
Date Analyzed:	09/23/2009 1333			Final Weight/Volume:	50 mL
Date Prepared:	09/23/2009 1103				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		ND		0.037	0.20

4/15/10

Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Client Sample ID: **OC-SS-458-0.0/1.0-XXX**

Lab Sample ID: 360-24686-14
Client Matrix: Solid
% Moisture: 11.3

Date Sampled: 09/18/2009 1355
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49654		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49590		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.68 g
Date Analyzed:	09/29/2009 1421			Final Weight/Volume:	100 mL
Date Prepared:	09/29/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4800		0.87	3.4
Antimony		ND J		0.24	0.67
Arsenic		9.5		0.12	1.3
Barium		19		0.087	0.67
Beryllium		0.24	J	0.034	0.27
Cadmium		0.24	J	0.0094	0.27
Calcium		800	~~B~~	3.4	13
Chromium		6.8		0.089	0.67
Cobalt		1.8		0.087	0.67
Copper		15		0.087	1.3
Iron		8100	~~B~~	1.1	6.7
Lead		31		0.077	0.67
Magnesium		580	~~B~~	0.67	13
Manganese		59		0.090	1.3
Nickel		5.3		0.087	1.3
Potassium		290		42	270
Selenium		0.40 u	~~J B~~	0.31	0.67
Silver		ND		0.068	0.67
Sodium		ND		17	130
Thallium		ND		0.097	1.3
Vanadium		14		0.087	1.3
Zinc		20		0.79	3.4
Tin		2.5	J ~~B~~	0.43	6.7

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49343		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.21 g
Date Analyzed:	09/23/2009 1334			Final Weight/Volume:	50 mL
Date Prepared:	09/23/2009 1103				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.066	J	0.037	0.20

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Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Client Sample ID: **OC-SS-459-0.0/1.0-XXX**

Lab Sample ID: 360-24686-15
Client Matrix: Solid
% Moisture: 12.9

Date Sampled: 09/18/2009 1345
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49654		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49590		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.65 g
Date Analyzed:	09/29/2009 1424			Final Weight/Volume:	100 mL
Date Prepared:	09/29/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		8400		0.90	3.5
Antimony		ND		0.25	0.70
Arsenic		8.0		0.13	1.4
Barium		23		0.090	0.70
Beryllium		0.29		0.035	0.28
Cadmium		0.36		0.0097	0.28
Calcium		1800	B	3.5	14
Chromium		14		0.093	0.70
Cobalt		3.4		0.090	0.70
Copper		20		0.090	1.4
Iron		9400	B	1.1	7.0
Lead		33		0.079	0.70
Magnesium		1300	B	0.70	14
Manganese		160		0.093	1.4
Nickel		8.2		0.090	1.4
Potassium		720		43	280
Selenium		0.35	J B	0.33	0.70
Silver		ND		0.070	0.70
Sodium		ND		18	140
Thallium		ND		0.10	1.4
Vanadium		15		0.090	1.4
Zinc		49		0.82	3.5
Tin		5.9	J B	0.45	7.0

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49343		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.23 g
Date Analyzed:	09/23/2009 1336			Final Weight/Volume:	50 mL
Date Prepared:	09/23/2009 1103				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.14	J	0.034	0.18

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Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Client Sample ID: **OC-SS-461-0.0/1.0-XXX**

Lab Sample ID: 360-24686-16
Client Matrix: Solid
% Moisture: 15.3

Date Sampled: 09/18/2009 1330
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49654		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-49590		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.59 g
Date Analyzed:	09/29/2009 1427			Final Weight/Volume:	100 mL
Date Prepared:	09/29/2009 0821				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5600		0.97	3.7
Antimony		ND J		0.27	0.74
Arsenic		5.7		0.14	1.5
Barium		19		0.097	0.74
Beryllium		0.27	J	0.037	0.30
Cadmium		0.24	J	0.010	0.30
Calcium		1500	~~B~~	3.7	15
Chromium		6.4		0.099	0.74
Cobalt		1.5		0.097	0.74
Copper		9.8		0.097	1.5
Iron		6500	~~B~~	1.2	7.4
Lead		24		0.085	0.74
Magnesium		520	~~B~~	0.74	15
Manganese		71		0.099	1.5
Nickel		6.0		0.097	1.5
Potassium		310		46	300
Selenium		ND		0.35	0.74
Silver		ND		0.075	0.74
Sodium		ND		19	150
Thallium		ND		0.11	1.5
Vanadium		12		0.097	1.5
Zinc		39		0.87	3.7
Tin		2.5	J,~~B~~	0.48	7.4

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 360-49362		Instrument ID:	Hg Analyzer
Preparation:	7471A	Prep Batch: 360-49343		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	0.25 g
Date Analyzed:	09/23/2009 1338			Final Weight/Volume:	50 mL
Date Prepared:	09/23/2009 1103				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.038	J	0.032	0.17

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Client: Olin Corporation

Job Number: 360-24686-1
Sdg Number: OCRI-18

Client Sample ID: **OC-EBK-012**

Lab Sample ID: 360-24686-20
Client Matrix: Water

Date Sampled: 09/17/2009 1715
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-49254	Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-49206	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	09/21/2009 1242		Final Weight/Volume:	50 mL
Date Prepared:	09/21/2009 0732			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	ND		39	100
Antimony	ND		2.9	6.0
Barium	ND		2.0	10
Arsenic	ND		2.3	10
Beryllium	ND		0.20	1.0
Cadmium	ND		0.20	1.0
Calcium	ND		59	400
Chromium	ND		1.3	5.0
Cobalt	ND		2.0	10
Copper	3.2	J	1.7	10
Iron	ND		34	100
Lead	ND		1.3	5.0
Magnesium	ND		50	400
Manganese	1.4	J	1.3	10
Nickel	ND		1.5	10
Potassium	ND		500	4000
Selenium	ND		2.7	10
Silver	ND		1.8	5.0
Sodium	ND		250	2000
Tin	ND		7.0	50
Vanadium	ND		1.5	10
Thallium	3.8	J	1.4	10
Zinc	ND		10	50

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 360-49746	Instrument ID:	Hg Analyzer
Preparation:	7470A	Prep Batch: 360-49670	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	10 mL
Date Analyzed:	10/01/2009 0925		Final Weight/Volume:	10 mL
Date Prepared:	09/30/2009 0902			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	ND		0.065	0.20

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-24686-2
Sdg Number: OCRI-18A

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-24686-1	OC-SB-400-17/19-XXX	Solid	09/18/2009 1100	09/18/2009 1700
360-24686-8	OC-SB-473-13/15-XXX	Solid	09/18/2009 0920	09/18/2009 1700

Client: Olin Corporation

Job Number: 360-24686-2
Sdg Number: OCRI-18A

Client Sample ID: **OC-SB-473-13/15-XXX**

Lab Sample ID: 360-24686-8
Client Matrix: Solid
% Moisture: 8.8

Date Sampled: 09/18/2009 0920
Date Received: 09/18/2009 1700

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-50268		Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 360-50202		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.71 g
Date Analyzed:	10/13/2009 1619			Final Weight/Volume:	100 mL
Date Prepared:	10/13/2009 0957				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7300		0.83	3.2
Antimony		ND		0.29	0.64
Arsenic		5.3		0.12	1.3
Barium		29		0.083	0.64
Beryllium		0.26		0.032	0.26
Cadmium		0.29	B	0.0090	0.26
Calcium		1500	B	3.2	13
Chromium		230		0.085	0.64
Cobalt		5.9		0.083	0.64
Copper		11		0.083	1.3
Iron		14000	B	1.0	6.4
Lead		2.2	B	0.073	0.64
Magnesium		3000	B	0.64	13
Manganese		170		0.086	1.3
Nickel		5.5		0.083	1.3
Potassium		1800		40	260
Selenium		ND		0.30	0.64
Silver		3.2		0.064	0.64
Sodium		25	J	17	130
Thallium		0.16	J	0.093	1.3
Vanadium		15		0.083	1.3
Zinc		27		0.75	3.2
Tin		97	^ B	0.41	6.4

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