Bottom Ash Data

2020 Week 7

The following analytical report was sent to the Ministry of Environment and Climate Change Strategy on March 3, 2020. The data represents bottom ash composite results for week 7 of 2020 (February 9, 2020 to February 15, 2020).

The bottom ash meets the requirements of Metro Vancouver's Bottom Ash Management Plan and is suitable for disposal.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **VA20A1925**	Page	: 1 of 11
Amendment	: **1**		
Client	: **Covanta Burnaby Renewable Energy, ULC**	Laboratory	: Vancouver - Environmental
Contact	: Steve McKinney	Account Manager	: Brent Mack
Address	: 5150 Riverbend Drive Burnaby BC Canada V3N 4V3	Address	: 8081 Lougheed Highway Burnaby BC Canada V5A 1W9
Telephone	: 604 521 1025	Telephone	: +1 604 253 4188
Project	: Weekly Bottom Ash - Suite	Date Samples Received	: 18-Feb-2020 11:30
PO	: VANCO 0000049378	Date Analysis Commenced	: 19-Feb-2020
C-O-C number	: ----	Issue Date	: 02-Mar-2020 11:15
Sampler	: ----		
Site	: ----		
Quote number	: Standing Offer		
No. of samples received	: 16		
No. of samples analysed	: 16		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Aaron Yu	Laboratory Analyst	Metals, Burnaby, British Columbia
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Brieanna Allen	Department Manager - Organics	Organics, Burnaby, British Columbia
Evan Ben-Oliel	Metal Analyst	Metals, Burnaby, British Columbia
Ophelia Chiu	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Organics, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
%	percent
mg/kg	milligrams per kilogram
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in reports identified as "Preliminary Report" are considered authorized for use.

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	BA2007-A-1	BA2007-A-2	BA2007-A-3	BA2007-A-4	BA2007-A-5
					Client sampling date / time	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00
						VA20A1925-001	VA20A1925-002	VA20A1925-003	VA20A1925-004	VA20A1925-005
						Result	Result	Result	Result	Result
Physical Tests										
moisture	----	E144	0.25	%		25.8	23.7	24.8	26.0	25.4
pH (1:2 soil:water)	----	E108	0.10	pH units		11.4	11.4	11.4	11.6	11.6
Metals										
aluminum	7429-90-5	E440	50	mg/kg		36500	31400	44400	29800	26700
antimony	7440-36-0	E440	0.10	mg/kg		209	524	119	237	136
arsenic	7440-38-2	E440	0.10	mg/kg		46.4	19.0	24.0	20.4	29.9
barium	7440-39-3	E440	0.50	mg/kg		555	596	558	556	521
beryllium	7440-41-7	E440	0.10	mg/kg		0.40	0.37	0.40	0.38	0.31
bismuth	7440-69-9	E440	0.20	mg/kg		8.49	8.53	14.2	18.8	9.39
boron	7440-42-8	E440	5.0	mg/kg		197	198	190	198	173
cadmium	7440-43-9	E440	0.020	mg/kg		12.6	10.5	20.1	11.9	10.1
calcium	7440-70-2	E440	50	mg/kg		129000	125000	138000	132000	120000
chromium	7440-47-3	E440	0.50	mg/kg		167	159	182	170	159
cobalt	7440-48-4	E440	0.10	mg/kg		125	568	32.9	35.3	47.9
copper	7440-50-8	E440	0.50	mg/kg		2440	10400	3240	37500	79700
iron	7439-89-6	E440	50	mg/kg		74700	80500	65600	79800	57900
lead	7439-92-1	E440	0.50	mg/kg		3020	537	506	372	1360
lithium	7439-93-2	E440	2.0	mg/kg		16.8	48.1	16.2	13.9	17.3
magnesium	7439-95-4	E440	20	mg/kg		11100	12200	11500	10700	12100
manganese	7439-96-5	E440	1.0	mg/kg		889	811	791	948	775
mercury	7439-97-6	E510	0.0500	mg/kg		0.0638	0.0576	0.0528	0.0550	<0.0500
molybdenum	7439-98-7	E440	0.10	mg/kg		46.5	62.4	120	57.5	60.1
nickel	7440-02-0	E440	0.50	mg/kg		120	662	87.9	135	742
phosphorus	7723-14-0	E440	50	mg/kg		9210	8840	10100	8850	7920
potassium	7440-09-7	E440	100	mg/kg		5000	4590	5390	4730	4110
selenium	7782-49-2	E440	0.20	mg/kg		0.42	0.58	0.39	0.39	0.62
silver	7440-22-4	E440.Ag	0.10	mg/kg		----	----	----	----	86.8
silver	7440-22-4	E440	0.10	mg/kg		5.63	6.25	6.73	5.94	----
sodium	7440-23-5	E440	50	mg/kg		13800	12800	16400	12900	11300
strontium	7440-24-6	E440	0.50	mg/kg		313	283	383	598	276

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	BA2007-A-1	BA2007-A-2	BA2007-A-3	BA2007-A-4	BA2007-A-5
					Client sampling date / time	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00
						VA20A1925-001	VA20A1925-002	VA20A1925-003	VA20A1925-004	VA20A1925-005
						Result	Result	Result	Result	Result
Metals										
sulfur	7704-34-9	E440	1000	mg/kg		12200	11900	13900	11300	10700
thallium	7440-28-0	E440	0.050	mg/kg		0.084	0.082	0.080	0.084	0.092
tin	7440-31-5	E440	2.0	mg/kg		121	548	142	118	1650
titanium	7440-32-6	E440	1.0	mg/kg		859	973	676	582	508
tungsten	7440-33-7	E440	0.50	mg/kg		14.2	12.6	11.9	16.4	12.7
uranium	7440-61-1	E440	0.050	mg/kg		4.92	5.83	4.85	4.62	4.36
vanadium	7440-62-2	E440	0.20	mg/kg		46.0	42.9	44.1	41.6	36.7
zinc	7440-66-6	E440	2.0	mg/kg		4660	3480	3820	4730	13800
zirconium	7440-67-7	E440	1.0	mg/kg		1.8	1.9	2.8	1.7	1.6
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units		11.8	11.8	11.7	11.8	11.8
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units		7.89	7.56	7.33	9.57	8.52
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units		2.88	2.88	2.88	2.88	2.88
pH, TCLP final	----	EPP444	0.010	pH units		6.08	6.34	6.26	6.42	6.17
antimony, TCLP	7440-36-0	E444	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
arsenic, TCLP	7440-38-2	E444	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
barium, TCLP	7440-39-3	E444	2.5	mg/L		<2.5	<2.5	<2.5	<2.5	<2.5
beryllium, TCLP	7440-41-7	E444	0.025	mg/L		<0.025	<0.025	<0.025	<0.025	<0.025
boron, TCLP	7440-42-8	E444	0.50	mg/L		2.93	2.29	2.27	2.37	2.27
cadmium, TCLP	7440-43-9	E444	0.050	mg/L		0.226	0.142	0.228	0.243	2.19
calcium, TCLP	7440-70-2	E444	2.0	mg/L		1840	1830	1730	1830	1870
chromium, TCLP	7440-47-3	E444	0.25	mg/L		<0.25	<0.25	<0.25	<0.25	<0.25
cobalt, TCLP	7440-48-4	E444	0.050	mg/L		0.743	0.542	0.618	0.869	0.554
copper, TCLP	7440-50-8	E444	0.050	mg/L		0.760	1.10	0.633	0.597	0.508
iron, TCLP	7439-89-6	E444	5.0	mg/L		<5.0	<5.0	<5.0	<5.0	<5.0
lead, TCLP	7439-92-1	E444	0.25	mg/L		<0.25	<0.25	<0.25	<0.25	<0.25
magnesium, TCLP	7439-95-4	E444	0.50	mg/L		133	132	129	126	135
mercury, TCLP	7439-97-6	E512	0.0100	mg/L		<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
nickel, TCLP	7440-02-0	E444	0.25	mg/L		0.71	0.37	0.49	0.32	0.49
selenium, TCLP	7782-49-2	E444	1.00	mg/L		<1.00	<1.00	<1.00	<1.00	<1.00
silver, TCLP	7440-22-4	E444	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050

Analytical Results

Sub-Matrix: Soil (Matrix: Soil)					Client sample ID	BA2007-A-1	BA2007-A-2	BA2007-A-3	BA2007-A-4	BA2007-A-5
					Client sampling date / time	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00
Analyte	CAS Number	Method	LOR	Unit		VA20A1925-001	VA20A1925-002	VA20A1925-003	VA20A1925-004	VA20A1925-005
						Result	Result	Result	Result	Result
TCLP Metals										
thallium, TCLP	7440-28-0	E444	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
vanadium, TCLP	7440-62-2	E444	0.15	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15
zinc, TCLP	7440-66-6	E444	0.50	mg/L		41.6	31.4	25.0	17.8	31.3

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	BA2007-A-6	BA2007-A-7	BA2007-A-8	BA2007-A-9	BA2007-A-10
					Client sampling date / time	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00
						VA20A1925-006	VA20A1925-007	VA20A1925-008	VA20A1925-009	VA20A1925-010
						Result	Result	Result	Result	Result
Physical Tests										
moisture	----	E144	0.25	%		24.0	24.7	25.2	22.2	24.9
pH (1:2 soil:water)	----	E108	0.10	pH units		11.4	11.2	11.0	11.2	11.2
Metals										
aluminum	7429-90-5	E440	50	mg/kg		39000	28900	42600	50000	36500
antimony	7440-36-0	E440	0.10	mg/kg		131	166	115	136	129
arsenic	7440-38-2	E440	0.10	mg/kg		22.9	19.8	32.9	26.1	24.1
barium	7440-39-3	E440	0.50	mg/kg		524	442	518	550	590
beryllium	7440-41-7	E440	0.10	mg/kg		0.42	0.36	0.39	0.39	0.39
bismuth	7440-69-9	E440	0.20	mg/kg		8.25	23.2	12.3	9.70	10.1
boron	7440-42-8	E440	5.0	mg/kg		235	361	206	225	205
cadmium	7440-43-9	E440	0.020	mg/kg		12.3	10.9	11.9	11.8	13.5
calcium	7440-70-2	E440	50	mg/kg		147000	147000	151000	137000	142000
chromium	7440-47-3	E440	0.50	mg/kg		214	183	200	192	146
cobalt	7440-48-4	E440	0.10	mg/kg		33.0	23.1	48.4	65.0	94.8
copper	7440-50-8	E440	0.50	mg/kg		1800	26900	7810	6460	5700
iron	7439-89-6	E440	50	mg/kg		73600	44000	62200	66900	46800
lead	7439-92-1	E440	0.50	mg/kg		2760	397	445	383	460
lithium	7439-93-2	E440	2.0	mg/kg		16.8	17.0	16.2	15.6	16.2
magnesium	7439-95-4	E440	20	mg/kg		12000	12200	11800	12800	12800
manganese	7439-96-5	E440	1.0	mg/kg		1030	668	816	836	686
mercury	7439-97-6	E510	0.0500	mg/kg		0.114	0.0510	0.0627	0.0530	0.0607
molybdenum	7439-98-7	E440	0.10	mg/kg		81.1	51.5	62.4	66.4	72.4
nickel	7440-02-0	E440	0.50	mg/kg		139	408	256	211	420
phosphorus	7723-14-0	E440	50	mg/kg		10600	11500	11600	10300	11200
potassium	7440-09-7	E440	100	mg/kg		5380	5150	5050	5100	5620
selenium	7782-49-2	E440	0.20	mg/kg		0.45	0.41	0.42	0.47	0.52
silver	7440-22-4	E440.Ag	0.10	mg/kg		----	----	4.81	----	----
silver	7440-22-4	E440	0.10	mg/kg		10.1	12.6	----	14.4	7.51
sodium	7440-23-5	E440	50	mg/kg		14400	14300	13300	14500	16300
strontium	7440-24-6	E440	0.50	mg/kg		332	334	360	350	340
sulfur	7704-34-9	E440	1000	mg/kg		13500	12800	13700	14600	14000

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	BA2007-A-6	BA2007-A-7	BA2007-A-8	BA2007-A-9	BA2007-A-10
					Client sampling date / time	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00
						VA20A1925-006	VA20A1925-007	VA20A1925-008	VA20A1925-009	VA20A1925-010
						Result	Result	Result	Result	Result
Metals										
thallium	7440-28-0	E440	0.050	mg/kg		0.085	0.085	0.091	0.089	0.088
tin	7440-31-5	E440	2.0	mg/kg		140	362	4040	107	109
titanium	7440-32-6	E440	1.0	mg/kg		508	304	539	1200	925
tungsten	7440-33-7	E440	0.50	mg/kg		16.9	16.7	13.3	14.9	18.6
uranium	7440-61-1	E440	0.050	mg/kg		5.14	5.00	5.10	5.36	5.42
vanadium	7440-62-2	E440	0.20	mg/kg		50.8	44.6	47.0	45.3	45.3
zinc	7440-66-6	E440	2.0	mg/kg		3810	3770	5750	3620	4960
zirconium	7440-67-7	E440	1.0	mg/kg		2.6	2.5	3.3	5.0	2.1
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units		11.9	11.8	11.9	11.8	11.7
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units		8.65	8.40	8.72	7.94	8.36
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units		2.88	2.88	2.88	2.88	2.88
pH, TCLP final	----	EPP444	0.010	pH units		6.34	6.32	6.04	5.89	6.03
antimony, TCLP	7440-36-0	E444	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
arsenic, TCLP	7440-38-2	E444	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
barium, TCLP	7440-39-3	E444	2.5	mg/L		<2.5	<2.5	<2.5	<2.5	<2.5
beryllium, TCLP	7440-41-7	E444	0.025	mg/L		<0.025	<0.025	<0.025	<0.025	<0.025
boron, TCLP	7440-42-8	E444	0.50	mg/L		2.48	2.37	2.77	2.29	2.43
cadmium, TCLP	7440-43-9	E444	0.050	mg/L		0.146	0.133	0.187	0.163	0.174
calcium, TCLP	7440-70-2	E444	2.0	mg/L		1910	1860	2020	1900	1940
chromium, TCLP	7440-47-3	E444	0.25	mg/L		<0.25	<0.25	<0.25	<0.25	<0.25
cobalt, TCLP	7440-48-4	E444	0.050	mg/L		0.698	0.891	0.878	0.701	0.938
copper, TCLP	7440-50-8	E444	0.050	mg/L		0.787	0.465	0.725	0.494	0.575
iron, TCLP	7439-89-6	E444	5.0	mg/L		<5.0	<5.0	<5.0	<5.0	<5.0
lead, TCLP	7439-92-1	E444	0.25	mg/L		<0.25	<0.25	<0.25	<0.25	<0.25
magnesium, TCLP	7439-95-4	E444	0.50	mg/L		133	128	139	135	138
mercury, TCLP	7439-97-6	E512	0.0100	mg/L		<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
nickel, TCLP	7440-02-0	E444	0.25	mg/L		0.38	0.40	0.39	0.49	0.40
selenium, TCLP	7782-49-2	E444	1.00	mg/L		<1.00	<1.00	<1.00	<1.00	<1.00
silver, TCLP	7440-22-4	E444	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
thallium, TCLP	7440-28-0	E444	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: Soil (Matrix: Soil)					Client sample ID	BA2007-A-6	BA2007-A-7	BA2007-A-8	BA2007-A-9	BA2007-A-10
					Client sampling date / time	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00	12-Feb-2020 09:00
Analyte	CAS Number	Method	LOR	Unit		VA20A1925-006	VA20A1925-007	VA20A1925-008	VA20A1925-009	VA20A1925-010
						Result	Result	Result	Result	Result
TCLP Metals										
vanadium, TCLP	7440-62-2	E444	0.15	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15
zinc, TCLP	7440-66-6	E444	0.50	mg/L		25.6	23.5	34.6	29.6	38.2

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	BA2007-A-11	BA2007-A-12	BA2007-A-5 Rep 1	BA2007-A-5 Rep 2	BA2007-A-5 Rep 3
					Client sampling date / time	12-Feb-2020 09:00	12-Feb-2020 09:00	25-Feb-2020	25-Feb-2020	25-Feb-2020
						VA20A1925-011	VA20A1925-012	VA20A1925-013	VA20A1925-014	VA20A1925-015
						Result	Result	Result	Result	Result
Physical Tests										
moisture	----	E144	0.25	%		24.6	21.3	----	----	----
pH (1:2 soil:water)	----	E108	0.10	pH units		11.2	11.2	----	----	----
Metals										
aluminum	7429-90-5	E440	50	mg/kg		34000	38900	----	----	----
antimony	7440-36-0	E440	0.10	mg/kg		117	120	----	----	----
arsenic	7440-38-2	E440	0.10	mg/kg		19.6	21.5	----	----	----
barium	7440-39-3	E440	0.50	mg/kg		625	576	----	----	----
beryllium	7440-41-7	E440	0.10	mg/kg		0.37	0.36	----	----	----
bismuth	7440-69-9	E440	0.20	mg/kg		13.9	9.26	----	----	----
boron	7440-42-8	E440	5.0	mg/kg		264	185	----	----	----
cadmium	7440-43-9	E440	0.020	mg/kg		16.6	10.8	----	----	----
calcium	7440-70-2	E440	50	mg/kg		136000	137000	----	----	----
chromium	7440-47-3	E440	0.50	mg/kg		132	289	----	----	----
cobalt	7440-48-4	E440	0.10	mg/kg		43.0	81.6	----	----	----
copper	7440-50-8	E440	0.50	mg/kg		2090	2870	----	----	----
iron	7439-89-6	E440	50	mg/kg		53300	74400	----	----	----
lead	7439-92-1	E440	0.50	mg/kg		412	515	----	----	----
lithium	7439-93-2	E440	2.0	mg/kg		15.0	19.1	----	----	----
magnesium	7439-95-4	E440	20	mg/kg		14300	11400	----	----	----
manganese	7439-96-5	E440	1.0	mg/kg		832	859	----	----	----
mercury	7439-97-6	E510	0.0500	mg/kg		0.0548	<0.0500	----	----	----
molybdenum	7439-98-7	E440	0.10	mg/kg		60.4	65.0	----	----	----
nickel	7440-02-0	E440	0.50	mg/kg		102	115	----	----	----
phosphorus	7723-14-0	E440	50	mg/kg		10500	12000	----	----	----
potassium	7440-09-7	E440	100	mg/kg		4920	4840	----	----	----
selenium	7782-49-2	E440	0.20	mg/kg		0.43	0.42	----	----	----
silver	7440-22-4	E440	0.10	mg/kg		6.44	5.62	----	----	----
sodium	7440-23-5	E440	50	mg/kg		15200	14000	----	----	----
strontium	7440-24-6	E440	0.50	mg/kg		312	351	----	----	----
sulfur	7704-34-9	E440	1000	mg/kg		11900	13300	----	----	----
thallium	7440-28-0	E440	0.050	mg/kg		0.089	0.082	----	----	----

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	BA2007-A-11	BA2007-A-12	BA2007-A-5 Rep 1	BA2007-A-5 Rep 2	BA2007-A-5 Rep 3
					Client sampling date / time	12-Feb-2020 09:00	12-Feb-2020 09:00	25-Feb-2020	25-Feb-2020	25-Feb-2020
						VA20A1925-011	VA20A1925-012	VA20A1925-013	VA20A1925-014	VA20A1925-015
						Result	Result	Result	Result	Result
Metals										
tin	7440-31-5	E440	2.0	mg/kg		103	149	----	----	----
titanium	7440-32-6	E440	1.0	mg/kg		794	432	----	----	----
tungsten	7440-33-7	E440	0.50	mg/kg		14.1	11.2	----	----	----
uranium	7440-61-1	E440	0.050	mg/kg		4.80	5.01	----	----	----
vanadium	7440-62-2	E440	0.20	mg/kg		43.0	45.8	----	----	----
zinc	7440-66-6	E440	2.0	mg/kg		4040	3920	----	----	----
zirconium	7440-67-7	E440	1.0	mg/kg		1.8	2.8	----	----	----
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units		11.7	11.7	11.8	11.8	11.8
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units		8.92	7.82	8.52	8.52	8.52
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units		2.88	2.88	2.89	2.89	2.89
pH, TCLP final	----	EPP444	0.010	pH units		5.69	5.68	5.95	5.89	5.87
antimony, TCLP	7440-36-0	E444	1.0	mg/L		<1.0	<1.0	----	----	----
arsenic, TCLP	7440-38-2	E444	1.0	mg/L		<1.0	<1.0	----	----	----
barium, TCLP	7440-39-3	E444	2.5	mg/L		<2.5	<2.5	----	----	----
beryllium, TCLP	7440-41-7	E444	0.025	mg/L		<0.025	<0.025	----	----	----
boron, TCLP	7440-42-8	E444	0.50	mg/L		3.01	2.62	----	----	----
cadmium, TCLP	7440-43-9	E444	0.050	mg/L		0.217	0.202	0.158	0.189	0.179
calcium, TCLP	7440-70-2	E444	2.0	mg/L		2380	2100	----	----	----
chromium, TCLP	7440-47-3	E444	0.25	mg/L		<0.25	<0.25	----	----	----
cobalt, TCLP	7440-48-4	E444	0.050	mg/L		1.12	1.32	----	----	----
copper, TCLP	7440-50-8	E444	0.050	mg/L		0.631	0.687	----	----	----
iron, TCLP	7439-89-6	E444	5.0	mg/L		<5.0	<5.0	----	----	----
lead, TCLP	7439-92-1	E444	0.25	mg/L		0.48	<0.25	----	----	----
magnesium, TCLP	7439-95-4	E444	0.50	mg/L		172	150	----	----	----
mercury, TCLP	7439-97-6	E512	0.0100	mg/L		<0.0100	<0.0100	----	----	----
nickel, TCLP	7440-02-0	E444	0.25	mg/L		1.00	0.50	----	----	----
selenium, TCLP	7782-49-2	E444	1.00	mg/L		<1.00	<1.00	----	----	----
silver, TCLP	7440-22-4	E444	0.050	mg/L		<0.050	<0.050	----	----	----
thallium, TCLP	7440-28-0	E444	1.0	mg/L		<1.0	<1.0	----	----	----
vanadium, TCLP	7440-62-2	E444	0.15	mg/L		<0.15	<0.15	----	----	----

Analytical Results

Sub-Matrix: Soil (Matrix: Soil)					Client sample ID	BA2007-A-11	BA2007-A-12	BA2007-A-5 Rep 1	BA2007-A-5 Rep 2	BA2007-A-5 Rep 3
					Client sampling date / time	12-Feb-2020 09:00	12-Feb-2020 09:00	25-Feb-2020	25-Feb-2020	25-Feb-2020
Analyte	CAS Number	Method	LOR	Unit		VA20A1925-011	VA20A1925-012	VA20A1925-013	VA20A1925-014	VA20A1925-015
						Result	Result	Result	Result	Result
TCLP Metals										
zinc, TCLP	7440-66-6	E444	0.50	mg/L		51.2	88.7	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: Soil (Matrix: Soil)					Client sample ID	BA2007-A-5 Rep 4	----	----	----	----
					Client sampling date / time	25-Feb-2020	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit		VA20A1925-016	--------	--------	--------	--------
						Result	----	----	----	----
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units		11.8	----	----	----	----
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units		8.52	----	----	----	----
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units		2.89	----	----	----	----
pH, TCLP final	----	EPP444	0.010	pH units		5.91	----	----	----	----
cadmium, TCLP	7440-43-9	E444	0.050	mg/L		0.151	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.