

Bottom Ash Data

2020 Week 15

The following analytical report was sent to the Ministry of Environment and Climate Change Strategy on April 20, 2020. The data represents bottom ash composite results for week 15 of 2020 (April 5, 2020 to April 11, 2020).

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



CERTIFICATE OF ANALYSIS

Work Order : **VA20A4745**
Client : **Covanta Burnaby Renewable Energy, ULC**
Contact : Steve McKinney
Address : 5150 Riverbend Drive
Burnaby BC Canada V3N 4V3
Telephone : 604 521 1025
Project : Weekly Bottom Ash-Suite
PO : VANCO 0000049378
C-O-C number : ----
Sampler : ----
Site : ----
Quote number : Standing Offer
No. of samples received : 12
No. of samples analysed : 12

Page : 1 of 11
Laboratory : Vancouver - Environmental
Account Manager : Brent Mack
Address : 8081 Lougheed Highway
Burnaby BC Canada V5A 1W9
Telephone : +1 604 253 4188
Date Samples Received : 14-Apr-2020 10:50
Date Analysis Commenced : 14-Apr-2020
Issue Date : 20-Apr-2020 15:19

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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Brieanna Allen	Department Manager - Organics	Organics, Burnaby, British Columbia
Cristina Alexandre	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Evan Ben-Oliel	Metal Analyst	Metals, Burnaby, British Columbia
Jon Fisher	Department Manager - Inorganics	Metals, Waterloo, Ontario
Kinny Wu	Laboratory Analyst	Metals, 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).

<i>Unit</i>	<i>Description</i>
%	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

Client sample ID

(Matrix: Soil/Solid)

					BA2015-A-1	BA2015-A-2	BA2015-A-3	BA2015-A-4	BA2015-A-5
Client sampling date / time					08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A4745-001	VA20A4745-002	VA20A4745-003	VA20A4745-004	VA20A4745-005
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	21.5	20.5	20.4	21.2	22.0
pH (1:2 soil:water)	----	E108	0.10	pH units	12.1	12.1	12.0	12.0	11.9
Metals									
aluminum	7429-90-5	E440	50	mg/kg	30600	32100	32900	33000	30900
antimony	7440-36-0	E440	0.10	mg/kg	179	194	208	190	180
arsenic	7440-38-2	E440	0.10	mg/kg	32.9	36.1	34.1	33.4	32.4
barium	7440-39-3	E440	0.50	mg/kg	533	541	559	489	488
beryllium	7440-41-7	E440	0.10	mg/kg	0.34	0.39	0.34	0.43	0.38
bismuth	7440-69-9	E440	0.20	mg/kg	8.20	10.6	9.80	8.43	41.4
boron	7440-42-8	E440	5.0	mg/kg	184	194	210	174	214
cadmium	7440-43-9	E440	0.020	mg/kg	33.9	25.6	24.5	29.0	23.8
calcium	7440-70-2	E440	50	mg/kg	139000	147000	145000	136000	130000
chromium	7440-47-3	E440	0.50	mg/kg	148	164	152	121	142
cobalt	7440-48-4	E440	0.10	mg/kg	29.6	38.4	47.4	64.8	323
copper	7440-50-8	E440	0.50	mg/kg	2000	1850	2000	2330	2880
iron	7439-89-6	E440	50	mg/kg	54300	46600	51100	48100	75600
lead	7439-92-1	E440	0.50	mg/kg	634	692	595	430	493
lithium	7439-93-2	E440	2.0	mg/kg	18.1	19.9	17.1	17.2	112
magnesium	7439-95-4	E440	20	mg/kg	9790	10200	9700	9880	10400
manganese	7439-96-5	E440	1.0	mg/kg	686	824	730	597	759
mercury	7439-97-6	E510	0.0500	mg/kg	0.0914	0.0742	0.0804	0.0904	0.0816
molybdenum	7439-98-7	E440	0.10	mg/kg	36.5	31.6	37.4	38.0	31.3
nickel	7440-02-0	E440	0.50	mg/kg	101	312	225	1370	227
phosphorus	7723-14-0	E440	50	mg/kg	8460	9970	9130	10400	8300
potassium	7440-09-7	E440	100	mg/kg	6040	6050	6060	6020	6150
selenium	7782-49-2	E440	0.20	mg/kg	0.53	0.64	0.62	0.57	0.50
silver	7440-22-4	E440	0.10	mg/kg	9.61	12.9	13.0	17.8	7.81
sodium	7440-23-5	E440	50	mg/kg	14400	14500	14000	13900	13400
strontium	7440-24-6	E440	0.50	mg/kg	316	335	876	349	278
sulfur	7704-34-9	E440	1000	mg/kg	13600	14900	13900	13000	12700



Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil/Solid)					BA2015-A-1	BA2015-A-2	BA2015-A-3	BA2015-A-4	BA2015-A-5
Client sampling date / time					08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A4745-001	VA20A4745-002	VA20A4745-003	VA20A4745-004	VA20A4745-005
					Result	Result	Result	Result	Result
Metals									
thallium	7440-28-0	E440	0.050	mg/kg	0.171	0.079	0.070	0.063	0.068
tin	7440-31-5	E440	2.0	mg/kg	209	323	373	410	1100
titanium	7440-32-6	E440	1.0	mg/kg	765	944	1150	444	438
tungsten	7440-33-7	E440	0.50	mg/kg	21.7	31.7	26.9	16.4	18.3
uranium	7440-61-1	E440	0.050	mg/kg	4.58	4.59	4.70	4.66	4.31
vanadium	7440-62-2	E440	0.20	mg/kg	41.0	41.9	40.4	37.0	40.4
zinc	7440-66-6	E440	2.0	mg/kg	21900	5380	4990	5180	5550
zirconium	7440-67-7	E440	1.0	mg/kg	1.5	1.5	1.7	1.5	1.2
Speciated Metals									
chromium, hexavalent [Cr VI]	18540-29-9	E532-H	0.20	mg/kg	1.23	----	----	----	----
TCLP Metals									
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	11.8	11.8	11.8	11.8	11.7
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	9.00	9.22	9.19	9.11	9.27
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	2.87	2.87	2.87	2.87	2.87
pH, TCLP final	----	EPP444	0.010	pH units	6.52	6.96	7.01	6.65	7.09
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	2.96	2.64	2.68	2.93	2.74
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.374	0.262	0.256	0.336	0.248
calcium, TCLP	7440-70-2	E444	2.0	mg/L	2520	2290	2310	2460	2220
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	0.622	0.310	0.482	1.03	0.570
copper, TCLP	7440-50-8	E444	0.050	mg/L	0.747	0.583	0.468	0.587	0.545
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	142	121	124	142	125
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	0.59	0.44	0.49	0.61	0.41
selenium, TCLP	7782-49-2	E444	1.00	mg/L	<1.00	<1.00	<1.00	<1.00	<1.00



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BA2015-A-1	BA2015-A-2	BA2015-A-3	BA2015-A-4	BA2015-A-5
Client sampling date / time					08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A4745-001	VA20A4745-002	VA20A4745-003	VA20A4745-004	VA20A4745-005	
					Result	Result	Result	Result	Result	
TCLP Metals										
silver, TCLP	7440-22-4	E444	0.050	mg/L	<0.050	<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	<1.0
vanadium, TCLP	7440-62-2	E444	0.15	mg/L	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
zinc, TCLP	7440-66-6	E444	0.50	mg/L	37.1	13.0	10.8	41.4	13.0	

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



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BA2015-A-6	BA2015-A-7	BA2015-A-8	BA2015-A-9	BA2015-A-10
Client sampling date / time					08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00	
Analyte	CAS Number	Method	LOR	Unit	VA20A4745-006	VA20A4745-007	VA20A4745-008	VA20A4745-009	VA20A4745-010	
					Result	Result	Result	Result	Result	
Physical Tests										
moisture	----	E144	0.25	%	20.7	21.2	21.3	20.2	21.1	
pH (1:2 soil:water)	----	E108	0.10	pH units	12.0	12.0	12.2	12.0	12.0	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	31800	30200	30700	36000	42200	
antimony	7440-36-0	E440	0.10	mg/kg	198	182	189	181	196	
arsenic	7440-38-2	E440	0.10	mg/kg	31.4	33.3	31.3	33.0	32.9	
barium	7440-39-3	E440	0.50	mg/kg	513	548	570	527	610	
beryllium	7440-41-7	E440	0.10	mg/kg	0.33	0.36	0.38	0.34	0.36	
bismuth	7440-69-9	E440	0.20	mg/kg	9.73	9.30	9.62	21.5	11.6	
boron	7440-42-8	E440	5.0	mg/kg	188	199	230	206	195	
cadmium	7440-43-9	E440	0.020	mg/kg	25.4	25.7	24.2	23.4	23.5	
calcium	7440-70-2	E440	50	mg/kg	143000	130000	139000	127000	147000	
chromium	7440-47-3	E440	0.50	mg/kg	156	130	1080	149	131	
cobalt	7440-48-4	E440	0.10	mg/kg	18.7	99.8	93.1	41.8	25.2	
copper	7440-50-8	E440	0.50	mg/kg	1810	4030	2480	4690	2340	
iron	7439-89-6	E440	50	mg/kg	54600	49400	48400	53000	56200	
lead	7439-92-1	E440	0.50	mg/kg	1550	608	521	530	482	
lithium	7439-93-2	E440	2.0	mg/kg	18.5	16.9	20.7	16.7	16.6	
magnesium	7439-95-4	E440	20	mg/kg	10000	10300	9880	9670	10400	
manganese	7439-96-5	E440	1.0	mg/kg	684	605	743	2460	723	
mercury	7439-97-6	E510	0.0500	mg/kg	0.169	0.0825	0.0832	0.0856	0.0802	
molybdenum	7439-98-7	E440	0.10	mg/kg	36.3	41.7	39.4	35.2	45.5	
nickel	7440-02-0	E440	0.50	mg/kg	197	130	159	140	110	
phosphorus	7723-14-0	E440	50	mg/kg	8780	7930	8540	8370	10300	
potassium	7440-09-7	E440	100	mg/kg	6080	6570	6050	6200	6520	
selenium	7782-49-2	E440	0.20	mg/kg	0.54	0.60	0.54	0.60	0.59	
silver	7440-22-4	E440	0.10	mg/kg	9.26	8.40	8.79	13.4	7.28	
sodium	7440-23-5	E440	50	mg/kg	14000	15800	14400	13200	15600	
strontium	7440-24-6	E440	0.50	mg/kg	301	311	320	287	331	
sulfur	7704-34-9	E440	1000	mg/kg	13300	12300	13000	13300	13600	
thallium	7440-28-0	E440	0.050	mg/kg	0.066	0.069	0.065	0.074	0.078	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BA2015-A-6	BA2015-A-7	BA2015-A-8	BA2015-A-9	BA2015-A-10
Client sampling date / time					08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A4745-006	VA20A4745-007	VA20A4745-008	VA20A4745-009	VA20A4745-010	
					Result	Result	Result	Result	Result	
Metals										
tin	7440-31-5	E440	2.0	mg/kg	206	230	169	260	162	
titanium	7440-32-6	E440	1.0	mg/kg	380	717	505	1130	1060	
tungsten	7440-33-7	E440	0.50	mg/kg	21.4	16.6	20.6	32.2	16.4	
uranium	7440-61-1	E440	0.050	mg/kg	4.53	4.30	4.70	4.66	4.78	
vanadium	7440-62-2	E440	0.20	mg/kg	40.0	44.7	50.8	43.6	45.5	
zinc	7440-66-6	E440	2.0	mg/kg	7700	6350	5130	5970	14200	
zirconium	7440-67-7	E440	1.0	mg/kg	1.3	<1.0	<1.0	2.0	1.5	
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	11.8	11.8	11.9	11.8	11.9	
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	9.59	9.75	10.2	10.3	10.4	
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	2.87	2.87	2.87	2.87	2.87	
pH, TCLP final	----	EPP444	0.010	pH units	6.96	6.98	6.84	6.94	6.83	
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	2.58	2.75	2.67	2.70	2.80	
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.277	0.349	0.248	0.260	0.405	
calcium, TCLP	7440-70-2	E444	2.0	mg/L	2290	2340	2340	2360	2320	
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	0.479	2.00	0.384	1.02	0.319	
copper, TCLP	7440-50-8	E444	0.050	mg/L	0.440	0.588	0.484	1.05	0.459	
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	129	127	123	124	128	
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	0.48	0.42	0.37	0.44	0.41	
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	
vanadium, TCLP	7440-62-2	E444	0.15	mg/L	<0.15	<0.15	<0.15	<0.15	<0.15	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BA2015-A-6	BA2015-A-7	BA2015-A-8	BA2015-A-9	BA2015-A-10
Client sampling date / time					08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00	08-Apr-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A4745-006	VA20A4745-007	VA20A4745-008	VA20A4745-009	VA20A4745-010	
TCLP Metals					Result	Result	Result	Result	Result	
zinc, TCLP	7440-66-6	E444	0.50	mg/L	18.5	19.5	10.0	12.4	11.1	

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



Analytical Results

Sub-Matrix: Soil					Client sample ID	BA2015-A-11	BA2015-A-12	----	----	----
(Matrix: Soil/Solid)										
Client sampling date / time						08-Apr-2020 09:00	08-Apr-2020 09:00	---	---	---
Analyte	CAS Number	Method	LOR	Unit	VA20A4745-011	VA20A4745-012	-----	-----	-----	-----
					Result	Result	---	---	---	---
Physical Tests										
moisture	----	E144	0.25	%	19.8	21.3	----	----	----	----
pH (1:2 soil:water)	----	E108	0.10	pH units	12.1	12.0	----	----	----	----
Metals										
aluminum	7429-90-5	E440	50	mg/kg	30000	34800	----	----	----	----
antimony	7440-36-0	E440	0.10	mg/kg	172	193	----	----	----	----
arsenic	7440-38-2	E440	0.10	mg/kg	42.9	32.2	----	----	----	----
barium	7440-39-3	E440	0.50	mg/kg	552	490	----	----	----	----
beryllium	7440-41-7	E440	0.10	mg/kg	0.44	0.39	----	----	----	----
bismuth	7440-69-9	E440	0.20	mg/kg	7.79	8.71	----	----	----	----
boron	7440-42-8	E440	5.0	mg/kg	198	198	----	----	----	----
cadmium	7440-43-9	E440	0.020	mg/kg	20.0	22.8	----	----	----	----
calcium	7440-70-2	E440	50	mg/kg	136000	143000	----	----	----	----
chromium	7440-47-3	E440	0.50	mg/kg	145	126	----	----	----	----
cobalt	7440-48-4	E440	0.10	mg/kg	37.6	669	----	----	----	----
copper	7440-50-8	E440	0.50	mg/kg	7060	1770	----	----	----	----
iron	7439-89-6	E440	50	mg/kg	52100	47900	----	----	----	----
lead	7439-92-1	E440	0.50	mg/kg	428	504	----	----	----	----
lithium	7439-93-2	E440	2.0	mg/kg	45.7	73.5	----	----	----	----
magnesium	7439-95-4	E440	20	mg/kg	10600	10600	----	----	----	----
manganese	7439-96-5	E440	1.0	mg/kg	1060	747	----	----	----	----
mercury	7439-97-6	E510	0.0500	mg/kg	0.0843	0.0923	----	----	----	----
molybdenum	7439-98-7	E440	0.10	mg/kg	38.1	43.5	----	----	----	----
nickel	7440-02-0	E440	0.50	mg/kg	105	160	----	----	----	----
phosphorus	7723-14-0	E440	50	mg/kg	9170	8170	----	----	----	----
potassium	7440-09-7	E440	100	mg/kg	5560	6090	----	----	----	----
selenium	7782-49-2	E440	0.20	mg/kg	0.56	0.47	----	----	----	----
silver	7440-22-4	E440	0.10	mg/kg	10.0	15.0	----	----	----	----
sodium	7440-23-5	E440	50	mg/kg	13900	15200	----	----	----	----
strontium	7440-24-6	E440	0.50	mg/kg	288	329	----	----	----	----
sulfur	7704-34-9	E440	1000	mg/kg	12500	12800	----	----	----	----
thallium	7440-28-0	E440	0.050	mg/kg	0.061	0.064	----	----	----	----



Analytical Results

Sub-Matrix: Soil					Client sample ID	BA2015-A-11	BA2015-A-12	----	----	----
(Matrix: Soil/Solid)										
Client sampling date / time					08-Apr-2020 09:00	08-Apr-2020 09:00	---	---	---	---
Analyte	CAS Number	Method	LOR	Unit	VA20A4745-011	VA20A4745-012	-----	-----	-----	-----
					Result	Result	---	---	---	---
Metals										
tin	7440-31-5	E440	2.0	mg/kg	166	262	----	----	----	----
titanium	7440-32-6	E440	1.0	mg/kg	1070	663	----	----	----	----
tungsten	7440-33-7	E440	0.50	mg/kg	20.7	18.5	----	----	----	----
uranium	7440-61-1	E440	0.050	mg/kg	4.19	4.58	----	----	----	----
vanadium	7440-62-2	E440	0.20	mg/kg	43.3	40.5	----	----	----	----
zinc	7440-66-6	E440	2.0	mg/kg	5480	7710	----	----	----	----
zirconium	7440-67-7	E440	1.0	mg/kg	2.1	1.3	----	----	----	----
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	11.8	11.8	----	----	----	----
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	10.0	10.3	----	----	----	----
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	2.87	2.87	----	----	----	----
pH, TCLP final	----	EPP444	0.010	pH units	6.64	7.14	----	----	----	----
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	2.69	2.67	----	----	----	----
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.236	0.258	----	----	----	----
calcium, TCLP	7440-70-2	E444	2.0	mg/L	2340	2340	----	----	----	----
chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	<0.25	----	----	----	----
cobalt, TCLP	7440-48-4	E444	0.050	mg/L	0.299	0.682	----	----	----	----
copper, TCLP	7440-50-8	E444	0.050	mg/L	0.476	0.535	----	----	----	----
iron, TCLP	7439-89-6	E444	5.0	mg/L	<5.0	<5.0	----	----	----	----
lead, TCLP	7439-92-1	E444	0.25	mg/L	<0.25	<0.25	----	----	----	----
magnesium, TCLP	7439-95-4	E444	0.50	mg/L	124	126	----	----	----	----
mercury, TCLP	7439-97-6	E512	0.0100	mg/L	<0.0100	<0.0100	----	----	----	----
nickel, TCLP	7440-02-0	E444	0.25	mg/L	0.41	0.45	----	----	----	----
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/Solid)					Client sample ID	BA2015-A-11	BA2015-A-12	----	----	----
Client sampling date / time					08-Apr-2020 09:00	08-Apr-2020 09:00	---	---	---	
Analyte	CAS Number	Method	LOR	Unit	VA20A4745-011	VA20A4745-012	-----	-----	-----	
TCLP Metals					Result	Result	---	---	---	
zinc, TCLP	7440-66-6	E444	0.50	mg/L	10.8	8.35	----	----	----	

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