

## Bottom Ash Data

2019 Week 50

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The following analytical report was sent to the Ministry of Environment and Climate Change Strategy on January 6, 2020. The data represents bottom ash composite results for week 50 of 2019 (December 8, 2019 to December 14, 2019).

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



CERTIFICATE OF ANALYSIS

Work Order : **VA19A0675**  
Client : **Covanta Burnaby R.E., ULC**  
Contact : Steve McKinney  
Address : 5150 Riverbend Drive  
Burnaby BC Canada V3N 4V3  
Telephone : 604 521 1025  
Project : Weekly Bottom Ash - Suite  
PO : VANCO-0000048466  
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 : 17-Dec-2019 11:55  
Date Analysis Commenced : 17-Dec-2019  
Issue Date : 24-Dec-2019 12:34

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>
Cristina Alexandre	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kinny Wu	Laboratory Analyst	Metals, Burnaby, British Columbia
Mae Soropia	Lab Analyst	Metals, Burnaby, British Columbia
Ophelia Chiu	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	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	BA1950-A-1	BA1950-A-2	BA1950-A-3	BA1950-A-4	BA1950-A-5
(Matrix: Soil)					Client sampling date / time	11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00
Analyte	CAS Number	Method	LOR	Unit	VA19A0675-001	VA19A0675-002	VA19A0675-003	VA19A0675-004	VA19A0675-005	
					Result	Result	Result	Result	Result	
<b>Physical Tests</b>										
moisture	----	E144	0.25	%	20.0	22.1	24.4	22.7	22.3	
pH (1:2 soil:water)	----	E108	0.10	pH units	10.7	10.9	10.7	10.7	10.6	
<b>Metals</b>										
aluminum	7429-90-5	E440	50	mg/kg	38100	55500	39300	33200	30100	
antimony	7440-36-0	E440	0.10	mg/kg	110	96.9	99.4	133	104	
arsenic	7440-38-2	E440	0.10	mg/kg	24.8	20.3	22.7	25.4	23.7	
barium	7440-39-3	E440	0.50	mg/kg	528	523	527	465	482	
beryllium	7440-41-7	E440	0.10	mg/kg	0.42	0.36	0.33	0.36	0.38	
bismuth	7440-69-9	E440	0.20	mg/kg	7.89	8.08	5.53	6.10	5.43	
boron	7440-42-8	E440	5.0	mg/kg	188	196	195	227	190	
cadmium	7440-43-9	E440	0.020	mg/kg	12.4	41.6	11.1	12.4	11.2	
calcium	7440-70-2	E440	50	mg/kg	121000	109000	104000	117000	114000	
chromium	7440-47-3	E440	0.50	mg/kg	165	184	156	164	164	
cobalt	7440-48-4	E440	0.10	mg/kg	58.6	83.2	27.1	24.0	18.4	
copper	7440-50-8	E440	0.50	mg/kg	2470	2550	2900	9080	3790	
iron	7439-89-6	E440	50	mg/kg	68900	68800	73600	67000	54300	
lead	7439-92-1	E440	0.50	mg/kg	1270	429	376	654	802	
lithium	7439-93-2	E440	2.0	mg/kg	19.5	17.3	17.2	17.5	14.7	
magnesium	7439-95-4	E440	20	mg/kg	11600	10200	10600	10100	11200	
manganese	7439-96-5	E440	1.0	mg/kg	858	778	862	1160	810	
mercury	7439-97-6	E510	0.0500	mg/kg	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	
molybdenum	7439-98-7	E440	0.10	mg/kg	40.0	36.0	45.7	38.7	34.4	
nickel	7440-02-0	E440	0.50	mg/kg	162	368	176	110	115	
phosphorus	7723-14-0	E440	50	mg/kg	11400	9600	10700	10400	11500	
potassium	7440-09-7	E440	100	mg/kg	5530	5130	5030	5190	5510	
selenium	7782-49-2	E440	0.20	mg/kg	0.28	0.28	0.28	0.33	0.40	
silver	7440-22-4	E440	0.10	mg/kg	8.29	6.13	6.30	7.36	5.19	
sodium	7440-23-5	E440	50	mg/kg	16700	14800	14600	13800	15100	
strontium	7440-24-6	E440	0.50	mg/kg	357	255	247	281	250	
sulfur	7704-34-9	E440	1000	mg/kg	12100	12200	12600	14100	12500	



## Analytical Results

Sub-Matrix: Soil (Matrix: Soil)					Client sample ID	BA1950-A-1	BA1950-A-2	BA1950-A-3	BA1950-A-4	BA1950-A-5
Client sampling date / time					11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00
Analyte	CAS Number	Method	LOR	Unit	VA19A0675-001	VA19A0675-002	VA19A0675-003	VA19A0675-004	VA19A0675-005	
					Result	Result	Result	Result	Result	
<b>Metals</b>										
thallium	7440-28-0	E440	0.050	mg/kg	0.053	0.052	<0.050	0.060	0.077	
tin	7440-31-5	E440	2.0	mg/kg	131	256	103	148	118	
titanium	7440-32-6	E440	1.0	mg/kg	376	1240	779	695	402	
tungsten	7440-33-7	E440	0.50	mg/kg	13.9	23.7	30.7	16.2	15.7	
uranium	7440-61-1	E440	0.050	mg/kg	4.73	4.67	4.64	5.41	4.87	
vanadium	7440-62-2	E440	0.20	mg/kg	43.7	42.5	43.3	46.5	51.4	
zinc	7440-66-6	E440	2.0	mg/kg	3700	3040	4180	5550	6070	
zirconium	7440-67-7	E440	1.0	mg/kg	1.8	5.3	2.9	1.7	1.5	
<b>TCLP Metals</b>										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	11.6	11.7	11.9	11.6	11.7	
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	8.97	9.01	8.93	9.03	9.43	
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	6.15	6.28	6.28	6.27	6.21	

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



## Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil)					BA1950-A-6	BA1950-A-7	BA1950-A-8	BA1950-A-9	BA1950-A-10
Client sampling date / time					11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00
Analyte	CAS Number	Method	LOR	Unit	VA19A0675-006	VA19A0675-007	VA19A0675-008	VA19A0675-009	VA19A0675-010
					Result	Result	Result	Result	Result
<b>Physical Tests</b>									
moisture	----	E144	0.25	%	21.7	20.8	20.5	22.6	21.3
pH (1:2 soil:water)	----	E108	0.10	pH units	10.5	11.1	10.5	10.5	10.5
<b>Metals</b>									
aluminum	7429-90-5	E440	50	mg/kg	34700	34700	41200	29600	30200
antimony	7440-36-0	E440	0.10	mg/kg	105	171	100	192	124
arsenic	7440-38-2	E440	0.10	mg/kg	21.5	24.0	26.6	27.8	22.4
barium	7440-39-3	E440	0.50	mg/kg	393	476	426	461	403
beryllium	7440-41-7	E440	0.10	mg/kg	0.36	0.40	0.37	0.34	0.31
bismuth	7440-69-9	E440	0.20	mg/kg	9.76	5.80	5.94	6.32	8.25
boron	7440-42-8	E440	5.0	mg/kg	179	177	240	185	234
cadmium	7440-43-9	E440	0.020	mg/kg	13.3	15.2	36.1	120	12.0
calcium	7440-70-2	E440	50	mg/kg	112000	124000	110000	117000	114000
chromium	7440-47-3	E440	0.50	mg/kg	131	129	297	142	218
cobalt	7440-48-4	E440	0.10	mg/kg	34.8	49.0	407	33.1	28.2
copper	7440-50-8	E440	0.50	mg/kg	2060	18000	10500	29800	10000
iron	7439-89-6	E440	50	mg/kg	55200	55500	54600	74200	51600
lead	7439-92-1	E440	0.50	mg/kg	1170	390	409	399	514
lithium	7439-93-2	E440	2.0	mg/kg	20.5	17.5	26.3	16.2	16.9
magnesium	7439-95-4	E440	20	mg/kg	10100	10400	9280	10800	10000
manganese	7439-96-5	E440	1.0	mg/kg	858	756	680	887	910
mercury	7439-97-6	E510	0.0500	mg/kg	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
molybdenum	7439-98-7	E440	0.10	mg/kg	33.2	37.5	33.0	33.8	54.7
nickel	7440-02-0	E440	0.50	mg/kg	118	335	172	134	170
phosphorus	7723-14-0	E440	50	mg/kg	9990	11500	10200	11000	10400
potassium	7440-09-7	E440	100	mg/kg	5350	5050	5440	4850	4780
selenium	7782-49-2	E440	0.20	mg/kg	0.35	0.32	0.30	0.32	0.30
silver	7440-22-4	E440.Ag	0.10	mg/kg	----	5.65	----	----	----
silver	7440-22-4	E440	0.10	mg/kg	5.98	----	4.90	17.8	9.16
sodium	7440-23-5	E440	50	mg/kg	15000	13500	14600	13400	13300
strontium	7440-24-6	E440	0.50	mg/kg	246	266	303	374	274
sulfur	7704-34-9	E440	1000	mg/kg	12300	12900	12000	13200	12400



## Analytical Results

Sub-Matrix: Soil (Matrix: Soil)					Client sample ID	BA1950-A-6	BA1950-A-7	BA1950-A-8	BA1950-A-9	BA1950-A-10
Client sampling date / time					11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00
Analyte	CAS Number	Method	LOR	Unit	VA19A0675-006	VA19A0675-007	VA19A0675-008	VA19A0675-009	VA19A0675-010	
					Result	Result	Result	Result	Result	
<b>Metals</b>										
thallium	7440-28-0	E440	0.050	mg/kg	0.067	0.052	0.066	0.065	<0.050	
tin	7440-31-5	E440	2.0	mg/kg	185	140	104	156	103	
titanium	7440-32-6	E440	1.0	mg/kg	353	480	464	335	297	
tungsten	7440-33-7	E440	0.50	mg/kg	15.8	37.2	25.2	25.5	15.4	
uranium	7440-61-1	E440	0.050	mg/kg	4.87	5.15	4.89	4.98	4.57	
vanadium	7440-62-2	E440	0.20	mg/kg	42.0	48.3	41.9	42.5	43.2	
zinc	7440-66-6	E440	2.0	mg/kg	3640	5020	4370	6000	9240	
zirconium	7440-67-7	E440	1.0	mg/kg	2.1	1.7	2.3	1.8	1.8	
<b>TCLP Metals</b>										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	11.7	11.8	11.7	11.8	11.8	
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	9.25	9.55	9.25	9.14	9.50	
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	6.25	6.46	5.99	6.35	6.40	

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



**Analytical Results**

Sub-Matrix: Soil					Client sample ID	BA1950-A-11	BA1950-A-12	----	----	----
(Matrix: Soil)										
Client sampling date / time					11-Dec-2019 09:00	11-Dec-2019 09:00	---	---	---	---
Analyte	CAS Number	Method	LOR	Unit	VA19A0675-011	VA19A0675-012	-----	-----	-----	-----
					Result	Result	---	---	---	---
<b>Physical Tests</b>										
moisture	---	E144	0.25	%	22.7	21.8	---	---	---	---
pH (1:2 soil:water)	---	E108	0.10	pH units	10.6	10.5	---	---	---	---
<b>Metals</b>										
aluminum	7429-90-5	E440	50	mg/kg	30800	36800	---	---	---	---
antimony	7440-36-0	E440	0.10	mg/kg	117	108	---	---	---	---
arsenic	7440-38-2	E440	0.10	mg/kg	24.4	39.4	---	---	---	---
barium	7440-39-3	E440	0.50	mg/kg	444	496	---	---	---	---
beryllium	7440-41-7	E440	0.10	mg/kg	0.37	0.34	---	---	---	---
bismuth	7440-69-9	E440	0.20	mg/kg	5.54	7.35	---	---	---	---
boron	7440-42-8	E440	5.0	mg/kg	250	190	---	---	---	---
cadmium	7440-43-9	E440	0.020	mg/kg	12.1	12.8	---	---	---	---
calcium	7440-70-2	E440	50	mg/kg	113000	109000	---	---	---	---
chromium	7440-47-3	E440	0.50	mg/kg	151	132	---	---	---	---
cobalt	7440-48-4	E440	0.10	mg/kg	33.7	55.4	---	---	---	---
copper	7440-50-8	E440	0.50	mg/kg	2460	1580	---	---	---	---
iron	7439-89-6	E440	50	mg/kg	75800	66200	---	---	---	---
lead	7439-92-1	E440	0.50	mg/kg	431	396	---	---	---	---
lithium	7439-93-2	E440	2.0	mg/kg	16.6	16.8	---	---	---	---
magnesium	7439-95-4	E440	20	mg/kg	9710	9530	---	---	---	---
manganese	7439-96-5	E440	1.0	mg/kg	906	1060	---	---	---	---
mercury	7439-97-6	E510	0.0500	mg/kg	<0.0500	<0.0500	---	---	---	---
molybdenum	7439-98-7	E440	0.10	mg/kg	34.0	31.7	---	---	---	---
nickel	7440-02-0	E440	0.50	mg/kg	113	189	---	---	---	---
phosphorus	7723-14-0	E440	50	mg/kg	9580	9560	---	---	---	---
potassium	7440-09-7	E440	100	mg/kg	5160	5190	---	---	---	---
selenium	7782-49-2	E440	0.20	mg/kg	0.28	0.28	---	---	---	---
silver	7440-22-4	E440	0.10	mg/kg	5.55	7.24	---	---	---	---
sodium	7440-23-5	E440	50	mg/kg	14300	13600	---	---	---	---
strontium	7440-24-6	E440	0.50	mg/kg	283	236	---	---	---	---
sulfur	7704-34-9	E440	1000	mg/kg	12600	11900	---	---	---	---
thallium	7440-28-0	E440	0.050	mg/kg	<0.050	0.062	---	---	---	---





## Analytical Results

Sub-Matrix: Soil					Client sample ID	BA1950-A-11	BA1950-A-12	----	----	----
(Matrix: Soil)					Client sampling date / time	11-Dec-2019 09:00	11-Dec-2019 09:00	---	---	---
Analyte	CAS Number	Method	LOR	Unit	VA19A0675-011	VA19A0675-012	-----	-----	-----	
					Result	Result	---	---	---	
<b>Metals</b>										
tin	7440-31-5	E440	2.0	mg/kg	110	104	----	----	----	
titanium	7440-32-6	E440	1.0	mg/kg	522	1170	----	----	----	
tungsten	7440-33-7	E440	0.50	mg/kg	13.1	19.0	----	----	----	
uranium	7440-61-1	E440	0.050	mg/kg	4.52	5.00	----	----	----	
vanadium	7440-62-2	E440	0.20	mg/kg	51.1	42.0	----	----	----	
zinc	7440-66-6	E440	2.0	mg/kg	2760	11400	----	----	----	
zirconium	7440-67-7	E440	1.0	mg/kg	1.5	2.0	----	----	----	
<b>TCLP Metals</b>										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	11.7	11.7	----	----	----	
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	9.25	9.13	----	----	----	
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	2.88	2.88	----	----	----	
pH, TCLP final	----	EPP444	0.010	pH units	6.18	6.22	----	----	----	

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



## Analytical Results

Sub-Matrix: TCLP Leachate

Client sample ID

(Matrix: Soil)

					BA1950-A-1	BA1950-A-2	BA1950-A-3	BA1950-A-4	BA1950-A-5
Client sampling date / time					11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00
Analyte	CAS Number	Method	LOR	Unit	VA19A0675-001	VA19A0675-002	VA19A0675-003	VA19A0675-004	VA19A0675-005
					Result	Result	Result	Result	Result
<b>TCLP Metals</b>									
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	3.02	3.18	3.10	3.05	3.48
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.237	0.368	0.223	0.206	0.234
calcium, TCLP	7440-70-2	E444	2.0	mg/L	2160	2160	2090	2160	2010
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	0.486	0.507	0.610	0.397	1.13
copper, TCLP	7440-50-8	E444	0.050	mg/L	1.17	0.640	1.08	1.14	0.874
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	130	135	137	138	130
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	0.76	1.01	0.48	0.48	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
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	70.8	49.4	61.0	45.5	76.2

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



## Analytical Results

Sub-Matrix: TCLP Leachate

Client sample ID

(Matrix: Soil)

					BA1950-A-6	BA1950-A-7	BA1950-A-8	BA1950-A-9	BA1950-A-10
Client sampling date / time					11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00	11-Dec-2019 09:00
Analyte	CAS Number	Method	LOR	Unit	VA19A0675-006	VA19A0675-007	VA19A0675-008	VA19A0675-009	VA19A0675-010
					Result	Result	Result	Result	Result
<b>TCLP Metals</b>									
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	3.05	3.83	2.96	3.09	3.20
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.201	0.500	0.342	0.250	0.208
calcium, TCLP	7440-70-2	E444	2.0	mg/L	2010	2150	1940	2100	2060
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	0.360	0.975	0.552	0.302	0.356
copper, TCLP	7440-50-8	E444	0.050	mg/L	1.07	0.825	1.23	0.834	1.07
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	0.26	<0.25
magnesium, TCLP	7439-95-4	E444	0.50	mg/L	133	140	126	133	130
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	0.50	0.40	0.45	0.44	0.59
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
zinc, TCLP	7440-66-6	E444	0.50	mg/L	51.8	37.0	45.3	48.2	42.4

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



**Analytical Results**

Sub-Matrix: TCLP Leachate

Client sample ID

(Matrix: Soil)

					BA1950-A-11	BA1950-A-12	----	----	----
					11-Dec-2019 09:00	11-Dec-2019 09:00	---	---	---
Analyte	CAS Number	Method	LOR	Unit	VA19A0675-011	VA19A0675-012	-----	-----	-----
					Result	Result	---	---	---
<b>TCLP Metals</b>									
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	3.03	3.34	----	----	----
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.215	0.235	----	----	----
calcium, TCLP	7440-70-2	E444	2.0	mg/L	1960	2080	----	----	----
chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	<0.25	----	----	----
cobalt, TCLP	7440-48-4	E444	0.050	mg/L	0.555	5.28	----	----	----
copper, TCLP	7440-50-8	E444	0.050	mg/L	1.01	1.48	----	----	----
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	134	138	----	----	----
mercury, TCLP	7439-97-6	E512	0.0100	mg/L	<0.0100	<0.0100	----	----	----
nickel, TCLP	7440-02-0	E444	0.25	mg/L	0.56	0.59	----	----	----
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	----	----	----
zinc, TCLP	7440-66-6	E444	0.50	mg/L	37.4	45.5	----	----	----

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