

## Bottom Ash Data

2020 Week 4

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The following analytical report was sent to the Ministry of Environment and Climate Change Strategy on February 5, 2020. The data represents bottom ash composite results for week 4 of 2020 (January 19, 2020 to January 25, 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 : **VA20A0891**  
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 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 : 28-Jan-2020 11:05  
Date Analysis Commenced : 28-Jan-2020  
Issue Date : 04-Feb-2020 16:49

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>
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



## 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	BA2004-A-1	BA2004-A-2	BA2004-A-3	BA2004-A-4	BA2004-A-5
(Matrix: Soil)					Client sampling date / time	22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A0891-001	VA20A0891-002	VA20A0891-003	VA20A0891-004	VA20A0891-005	
					Result	Result	Result	Result	Result	
<b>Physical Tests</b>										
moisture	----	E144	0.25	%	24.9	24.5	27.3	23.4	27.7	
pH (1:2 soil:water)	----	E108	0.10	pH units	10.8	10.7	10.8	10.8	10.7	
<b>Metals</b>										
aluminum	7429-90-5	E440	50	mg/kg	37900	37000	44100	42100	48600	
antimony	7440-36-0	E440	0.10	mg/kg	145	116	151	127	114	
arsenic	7440-38-2	E440	0.10	mg/kg	18.7	14.6	18.7	17.4	23.8	
barium	7440-39-3	E440	0.50	mg/kg	649	597	553	623	685	
beryllium	7440-41-7	E440	0.10	mg/kg	0.45	0.45	0.48	0.43	0.43	
bismuth	7440-69-9	E440	0.20	mg/kg	7.73	5.16	6.68	5.75	7.56	
boron	7440-42-8	E440	5.0	mg/kg	166	235	166	192	215	
cadmium	7440-43-9	E440	0.020	mg/kg	19.1	14.0	16.1	12.9	11.8	
calcium	7440-70-2	E440	50	mg/kg	151000	133000	144000	140000	139000	
chromium	7440-47-3	E440	0.50	mg/kg	167	106	133	184	160	
cobalt	7440-48-4	E440	0.10	mg/kg	94.8	1140	44.2	224	34.7	
copper	7440-50-8	E440	0.50	mg/kg	16100	2060	2710	4660	3600	
iron	7439-89-6	E440	50	mg/kg	61200	45000	46600	74500	72200	
lead	7439-92-1	E440	0.50	mg/kg	625	722	613	550	534	
lithium	7439-93-2	E440	2.0	mg/kg	40.2	74.5	34.2	33.1	31.6	
magnesium	7439-95-4	E440	20	mg/kg	12800	12700	12200	14700	11400	
manganese	7439-96-5	E440	1.0	mg/kg	984	731	840	1100	976	
mercury	7439-97-6	E510	0.0500	mg/kg	0.0505	<0.0500	<0.0500	<0.0500	<0.0500	
molybdenum	7439-98-7	E440	0.10	mg/kg	38.4	170	38.3	39.8	36.3	
nickel	7440-02-0	E440	0.50	mg/kg	250	130	109	289	202	
phosphorus	7723-14-0	E440	50	mg/kg	13900	12900	14800	14400	13100	
potassium	7440-09-7	E440	100	mg/kg	6320	6250	6320	6210	5650	
selenium	7782-49-2	E440	0.20	mg/kg	0.85	0.44	0.54	0.43	0.45	
silver	7440-22-4	E440	0.10	mg/kg	5.04	3.39	5.70	4.15	3.68	
sodium	7440-23-5	E440	50	mg/kg	16900	17300	17500	17500	16400	
strontium	7440-24-6	E440	0.50	mg/kg	480	295	335	327	318	
sulfur	7704-34-9	E440	1000	mg/kg	15700	12900	15300	13500	12800	



## Analytical Results

Sub-Matrix: Soil					Client sample ID	BA2004-A-1	BA2004-A-2	BA2004-A-3	BA2004-A-4	BA2004-A-5
(Matrix: Soil)										
Client sampling date / time						22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A0891-001	VA20A0891-002	VA20A0891-003	VA20A0891-004	VA20A0891-005	
					Result	Result	Result	Result	Result	
<b>Metals</b>										
thallium	7440-28-0	E440	0.050	mg/kg	0.085	0.066	0.074	0.073	0.069	
tin	7440-31-5	E440	2.0	mg/kg	155	109	134	134	132	
titanium	7440-32-6	E440	1.0	mg/kg	723	426	782	848	1430	
tungsten	7440-33-7	E440	0.50	mg/kg	5.63	3.26	6.04	13.7	4.62	
uranium	7440-61-1	E440	0.050	mg/kg	5.71	4.44	5.23	4.92	4.69	
vanadium	7440-62-2	E440	0.20	mg/kg	48.8	40.0	45.4	42.4	42.8	
zinc	7440-66-6	E440	2.0	mg/kg	8430	3880	4000	5320	5480	
zirconium	7440-67-7	E440	1.0	mg/kg	3.1	3.4	4.3	4.1	4.8	
<b>TCLP Metals</b>										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	11.5	11.5	11.5	11.4	11.5	
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	8.85	8.86	8.17	8.49	8.98	
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	6.21	6.36	6.38	6.40	6.42	
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	2.00	1.90	2.27	2.17	2.06	
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.178	0.195	0.158	0.195	0.162	
calcium, TCLP	7440-70-2	E444	2.0	mg/L	2110	1970	2060	2030	2110	
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	0.946	1.04	0.512	1.10	0.406	
copper, TCLP	7440-50-8	E444	0.050	mg/L	1.06	1.12	1.09	1.34	1.00	
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	0.30	0.48	<0.25	
magnesium, TCLP	7439-95-4	E444	0.50	mg/L	144	136	134	133	137	
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	0.37	0.42	0.38	0.65	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	BA2004-A-1	BA2004-A-2	BA2004-A-3	BA2004-A-4	BA2004-A-5
Client sampling date / time					22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A0891-001	VA20A0891-002	VA20A0891-003	VA20A0891-004	VA20A0891-005	
					Result	Result	Result	Result	Result	
<b>TCLP Metals</b>										
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	37.5	39.9	36.7	41.6	37.7	

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



## Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil)					BA2004-A-6	BA2004-A-7	BA2004-A-8	BA2004-A-9	BA2004-A-10
Client sampling date / time					22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A0891-006	VA20A0891-007	VA20A0891-008	VA20A0891-009	VA20A0891-010
					Result	Result	Result	Result	Result
<b>Physical Tests</b>									
moisture	----	E144	0.25	%	28.8	28.7	28.1	28.3	29.0
pH (1:2 soil:water)	----	E108	0.10	pH units	11.0	10.8	11.0	10.9	10.9
<b>Metals</b>									
aluminum	7429-90-5	E440	50	mg/kg	37100	43200	40000	35300	36400
antimony	7440-36-0	E440	0.10	mg/kg	125	107	122	128	140
arsenic	7440-38-2	E440	0.10	mg/kg	17.8	15.2	15.5	17.8	14.5
barium	7440-39-3	E440	0.50	mg/kg	607	709	579	574	509
beryllium	7440-41-7	E440	0.10	mg/kg	0.43	0.39	0.37	0.39	0.40
bismuth	7440-69-9	E440	0.20	mg/kg	6.19	6.20	5.29	5.47	8.91
boron	7440-42-8	E440	5.0	mg/kg	218	172	205	188	152
cadmium	7440-43-9	E440	0.020	mg/kg	11.6	13.5	13.6	12.4	12.9
calcium	7440-70-2	E440	50	mg/kg	134000	127000	136000	132000	138000
chromium	7440-47-3	E440	0.50	mg/kg	114	144	143	160	116
cobalt	7440-48-4	E440	0.10	mg/kg	45.3	34.4	586	43.1	562
copper	7440-50-8	E440	0.50	mg/kg	2820	2220	8460	3280	5080
iron	7439-89-6	E440	50	mg/kg	52200	70700	61500	47400	44000
lead	7439-92-1	E440	0.50	mg/kg	835	374	567	526	1290
lithium	7439-93-2	E440	2.0	mg/kg	46.4	31.6	56.5	26.6	26.6
magnesium	7439-95-4	E440	20	mg/kg	10900	10100	11900	11800	11200
manganese	7439-96-5	E440	1.0	mg/kg	760	1010	1750	841	804
mercury	7439-97-6	E510	0.0500	mg/kg	<0.0500	0.127	<0.0500	<0.0500	<0.0500
molybdenum	7439-98-7	E440	0.10	mg/kg	34.6	32.6	42.4	100	48.7
nickel	7440-02-0	E440	0.50	mg/kg	118	145	152	117	75.8
phosphorus	7723-14-0	E440	50	mg/kg	12800	12300	12600	12400	12300
potassium	7440-09-7	E440	100	mg/kg	5780	5630	5380	5490	5550
selenium	7782-49-2	E440	0.20	mg/kg	0.44	0.45	0.38	0.34	0.39
silver	7440-22-4	E440	0.10	mg/kg	6.70	3.72	8.12	4.52	3.41
sodium	7440-23-5	E440	50	mg/kg	16200	16100	15700	16400	15800
strontium	7440-24-6	E440	0.50	mg/kg	293	272	279	290	281
sulfur	7704-34-9	E440	1000	mg/kg	12300	11800	11800	11900	11600
thallium	7440-28-0	E440	0.050	mg/kg	0.078	0.075	0.065	0.066	0.069



## Analytical Results

Sub-Matrix: Soil (Matrix: Soil)					Client sample ID	BA2004-A-6	BA2004-A-7	BA2004-A-8	BA2004-A-9	BA2004-A-10
Client sampling date / time					22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00	
Analyte	CAS Number	Method	LOR	Unit	VA20A0891-006	VA20A0891-007	VA20A0891-008	VA20A0891-009	VA20A0891-010	
					Result	Result	Result	Result	Result	
<b>Metals</b>										
tin	7440-31-5	E440	2.0	mg/kg	119	112	178	538	120	
titanium	7440-32-6	E440	1.0	mg/kg	502	1580	1030	596	479	
tungsten	7440-33-7	E440	0.50	mg/kg	6.58	4.90	17.3	3.91	3.93	
uranium	7440-61-1	E440	0.050	mg/kg	4.71	4.46	4.44	4.83	4.54	
vanadium	7440-62-2	E440	0.20	mg/kg	37.7	39.2	38.0	40.8	38.3	
zinc	7440-66-6	E440	2.0	mg/kg	4690	4670	6280	3090	4040	
zirconium	7440-67-7	E440	1.0	mg/kg	3.1	5.5	3.9	2.8	2.7	
<b>TCLP Metals</b>										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	11.5	11.4	11.4	11.4	11.4	
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	9.53	8.60	9.21	8.98	8.62	
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	6.33	6.30	6.39	6.41	6.36	
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	2.13	2.12	2.26	2.47	1.96	
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.190	0.175	0.188	0.159	0.167	
calcium, TCLP	7440-70-2	E444	2.0	mg/L	2150	2040	2120	2140	2040	
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	2.43	1.04	1.67	1.64	1.04	
copper, TCLP	7440-50-8	E444	0.050	mg/L	0.666	1.30	1.28	0.952	1.04	
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	140	138	134	140	137	
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	0.44	0.38	0.39	0.35	0.78	
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)					Client sample ID	BA2004-A-6	BA2004-A-7	BA2004-A-8	BA2004-A-9	BA2004-A-10
Client sampling date / time					22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00	22-Jan-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A0891-006	VA20A0891-007	VA20A0891-008	VA20A0891-009	VA20A0891-010	
TCLP Metals					Result	Result	Result	Result	Result	
zinc, TCLP	7440-66-6	E444	0.50	mg/L	38.5	45.1	33.8	30.0	47.4	

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



## Analytical Results

Sub-Matrix: Soil					Client sample ID	BA2004-A-11	BA2004-A-12	----	----	----
(Matrix: Soil)										
Client sampling date / time					22-Jan-2020 09:00	22-Jan-2020 09:00	---	---	---	---
Analyte	CAS Number	Method	LOR	Unit	VA20A0891-011	VA20A0891-012	-----	-----	-----	-----
					Result	Result	---	---	---	---
<b>Physical Tests</b>										
moisture	---	E144	0.25	%	28.3	27.9	---	---	---	---
pH (1:2 soil:water)	---	E108	0.10	pH units	10.7	11.2	---	---	---	---
<b>Metals</b>										
aluminum	7429-90-5	E440	50	mg/kg	34500	32400	---	---	---	---
antimony	7440-36-0	E440	0.10	mg/kg	128	134	---	---	---	---
arsenic	7440-38-2	E440	0.10	mg/kg	14.3	15.6	---	---	---	---
barium	7440-39-3	E440	0.50	mg/kg	488	578	---	---	---	---
beryllium	7440-41-7	E440	0.10	mg/kg	0.38	0.40	---	---	---	---
bismuth	7440-69-9	E440	0.20	mg/kg	5.82	6.59	---	---	---	---
boron	7440-42-8	E440	5.0	mg/kg	133	213	---	---	---	---
cadmium	7440-43-9	E440	0.020	mg/kg	11.8	17.0	---	---	---	---
calcium	7440-70-2	E440	50	mg/kg	125000	139000	---	---	---	---
chromium	7440-47-3	E440	0.50	mg/kg	170	172	---	---	---	---
cobalt	7440-48-4	E440	0.10	mg/kg	116	28.3	---	---	---	---
copper	7440-50-8	E440	0.50	mg/kg	4520	3320	---	---	---	---
iron	7439-89-6	E440	50	mg/kg	64900	55500	---	---	---	---
lead	7439-92-1	E440	0.50	mg/kg	352	489	---	---	---	---
lithium	7439-93-2	E440	2.0	mg/kg	36.2	30.2	---	---	---	---
magnesium	7439-95-4	E440	20	mg/kg	10000	13500	---	---	---	---
manganese	7439-96-5	E440	1.0	mg/kg	1060	792	---	---	---	---
mercury	7439-97-6	E510	0.0500	mg/kg	<0.0500	<0.0500	---	---	---	---
molybdenum	7439-98-7	E440	0.10	mg/kg	51.4	36.6	---	---	---	---
nickel	7440-02-0	E440	0.50	mg/kg	438	150	---	---	---	---
phosphorus	7723-14-0	E440	50	mg/kg	11000	13200	---	---	---	---
potassium	7440-09-7	E440	100	mg/kg	6080	5460	---	---	---	---
selenium	7782-49-2	E440	0.20	mg/kg	0.48	0.40	---	---	---	---
silver	7440-22-4	E440	0.10	mg/kg	4.76	4.87	---	---	---	---
sodium	7440-23-5	E440	50	mg/kg	15900	15800	---	---	---	---
strontium	7440-24-6	E440	0.50	mg/kg	275	459	---	---	---	---
sulfur	7704-34-9	E440	1000	mg/kg	11900	11700	---	---	---	---
thallium	7440-28-0	E440	0.050	mg/kg	0.076	0.070	---	---	---	---



## Analytical Results

Sub-Matrix: Soil					Client sample ID	BA2004-A-11	BA2004-A-12	----	----	----
(Matrix: Soil)										
Client sampling date / time					22-Jan-2020 09:00	22-Jan-2020 09:00	---	---	---	---
Analyte	CAS Number	Method	LOR	Unit	VA20A0891-011	VA20A0891-012	-----	-----	-----	-----
					Result	Result	---	---	---	---
<b>Metals</b>										
tin	7440-31-5	E440	2.0	mg/kg	141	324	----	----	----	----
titanium	7440-32-6	E440	1.0	mg/kg	366	386	----	----	----	----
tungsten	7440-33-7	E440	0.50	mg/kg	5.32	5.14	----	----	----	----
uranium	7440-61-1	E440	0.050	mg/kg	4.16	4.62	----	----	----	----
vanadium	7440-62-2	E440	0.20	mg/kg	39.6	38.1	----	----	----	----
zinc	7440-66-6	E440	2.0	mg/kg	7160	5270	----	----	----	----
zirconium	7440-67-7	E440	1.0	mg/kg	2.8	2.7	----	----	----	----
<b>TCLP Metals</b>										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	11.3	11.4	----	----	----	----
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	9.64	8.12	----	----	----	----
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	2.88	2.88	----	----	----	----
pH, TCLP final	----	EPP444	0.010	pH units	6.40	6.31	----	----	----	----
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	2.08	2.04	----	----	----	----
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.172	0.168	----	----	----	----
calcium, TCLP	7440-70-2	E444	2.0	mg/L	2030	2020	----	----	----	----
chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	<0.25	----	----	----	----
cobalt, TCLP	7440-48-4	E444	0.050	mg/L	0.426	1.02	----	----	----	----
copper, TCLP	7440-50-8	E444	0.050	mg/L	1.38	1.08	----	----	----	----
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	135	134	----	----	----	----
mercury, TCLP	7439-97-6	E512	0.0100	mg/L	<0.0100	<0.0100	----	----	----	----
nickel, TCLP	7440-02-0	E444	0.25	mg/L	0.40	0.33	----	----	----	----
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					Client sample ID	BA2004-A-11	BA2004-A-12	----	----	----
(Matrix: Soil)					Client sampling date / time	22-Jan-2020 09:00	22-Jan-2020 09:00	---	---	---
Analyte	CAS Number	Method	LOR	Unit	VA20A0891-011	VA20A0891-012	-----	-----	-----	
TCLP Metals					Result	Result	---	---	---	
zinc, TCLP	7440-66-6	E444	0.50	mg/L	30.9	30.1	----	----	----	

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