

## Bottom Ash Data

2019 Week 37

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The following analytical report was sent to the Ministry of Environment and Climate Change Strategy on September 26, 2019. The data represents bottom ash composite results for week 37 of 2019 (September 8, 2019 to September 14, 2019).

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



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Date Received: 17-SEP-19  
Report Date: 24-SEP-19 17:24 (MT)  
Version: FINAL

Client Phone: 604-521-1025

## Certificate of Analysis

Lab Work Order #: L2349137  
Project P.O. #: VANCO-0000048466  
Job Reference:  
C of C Numbers:  
Legal Site Desc:

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Brent Mack, B.Sc.  
Account Manager

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## ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L2349137-1 Soil 11-SEP-19 09:00 BA1937-A-1	L2349137-2 Soil 11-SEP-19 09:00 BA1937-A-2	L2349137-3 Soil 11-SEP-19 09:00 BA1937-A-3	L2349137-4 Soil 11-SEP-19 09:00 BA1937-A-4	L2349137-5 Soil 11-SEP-19 09:00 BA1937-A-5	
Grouping	Analyte					
<b>SOIL</b>						
<b>Physical Tests</b>	Moisture (%)	19.5	19.9	20.4	19.8	20.6
	pH (1:2 soil:water) (pH)	10.01	10.19	10.26	10.47	10.39
<b>Metals</b>	Aluminum (Al) (mg/kg)	30800	42900	38300	32700	34900
	Antimony (Sb) (mg/kg)	97.6	117	110	144	109
	Arsenic (As) (mg/kg)	28.4	37.5	35.5	39.8	36.3
	Barium (Ba) (mg/kg)	482	558	550	540	548
	Beryllium (Be) (mg/kg)	0.33	0.39	0.37	0.38	0.40
	Bismuth (Bi) (mg/kg)	5.54	67.4	6.61	7.80	10.5
	Boron (B) (mg/kg)	236	232	259	252	219
	Cadmium (Cd) (mg/kg)	8.59	20.6	11.4	14.6	12.0
	Calcium (Ca) (mg/kg)	112000	132000	131000	132000	136000
	Chromium (Cr) (mg/kg)	144	188	163	511	2430
	Cobalt (Co) (mg/kg)	28.5	35.1	51.2	43.9	59.5
	Copper (Cu) (mg/kg)	3310	12600	3350	3960	1820
	Iron (Fe) (mg/kg)	72100	71500	81300	62100	56300
	Lead (Pb) (mg/kg)	283	679	527	797	3300
	Lithium (Li) (mg/kg)	14.4	21.9	17.3	21.1	20.3
	Magnesium (Mg) (mg/kg)	9070	9850	10000	10400	10900
	Manganese (Mn) (mg/kg)	868	989	882	1080	993
	Mercury (Hg) (mg/kg)	<0.050	<0.050	<0.050	0.099	<0.050
	Molybdenum (Mo) (mg/kg)	31.4	31.3	57.9	49.1	69.1
	Nickel (Ni) (mg/kg)	250	177	512	339	1620
	Phosphorus (P) (mg/kg)	8630	12200	10900	12500	12200
	Potassium (K) (mg/kg)	4420	6170	5820	6360	6310
	Selenium (Se) (mg/kg)	0.29	0.48	0.35	0.40	0.31
	Silver (Ag) (mg/kg)	5.06	9.24	5.12	11.5	10.7
	Sodium (Na) (mg/kg)	13700	15000	15500	16100	16000
	Strontium (Sr) (mg/kg)	259	287	316	313	306
	Sulfur (S) (mg/kg)	10900	15400	13600	14900	14100
	Thallium (Tl) (mg/kg)	<0.050	0.054	0.050	0.142	0.068
	Tin (Sn) (mg/kg)	129	121	105	154	146
	Titanium (Ti) (mg/kg)	431	917	555	513	560
	Tungsten (W) (mg/kg)	7.70	8.66	9.25	15.1	12.4
	Uranium (U) (mg/kg)	3.92	5.44	5.48	5.91	5.46
	Vanadium (V) (mg/kg)	47.5	47.1	47.0	53.1	55.2
	Zinc (Zn) (mg/kg)	3390	4610	4140	12000	5800
	Zirconium (Zr) (mg/kg)	1.4	2.3	2.5	2.0	2.4

\* Please refer to the Reference Information section for an explanation of any qualifiers detected.

## ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L2349137-6 Soil 11-SEP-19 09:00 BA1937-A-6	L2349137-7 Soil 11-SEP-19 09:00 BA1937-A-7	L2349137-8 Soil 11-SEP-19 09:00 BA1937-A-8	L2349137-9 Soil 11-SEP-19 09:00 BA1937-A-9	L2349137-10 Soil 11-SEP-19 09:00 BA1937-A-10	
Grouping	Analyte					
<b>SOIL</b>						
<b>Physical Tests</b>	Moisture (%)	21.3	20.1	19.7	21.7	20.5
	pH (1:2 soil:water) (pH)	10.37	10.32	10.26	10.27	10.35
<b>Metals</b>	Aluminum (Al) (mg/kg)	33000	31200	29600	37500	36300
	Antimony (Sb) (mg/kg)	107	114	121	113	113
	Arsenic (As) (mg/kg)	31.7	39.6	39.2	33.0	34.2
	Barium (Ba) (mg/kg)	494	485	455	506	538
	Beryllium (Be) (mg/kg)	0.35	0.35	0.38	0.36	0.37
	Bismuth (Bi) (mg/kg)	5.70	6.57	6.33	6.21	5.52
	Boron (B) (mg/kg)	217	222	266	306	228
	Cadmium (Cd) (mg/kg)	12.2	12.0	15.1	11.7	12.4
	Calcium (Ca) (mg/kg)	123000	128000	122000	125000	116000
	Chromium (Cr) (mg/kg)	170	189	162	240	142
	Cobalt (Co) (mg/kg)	44.0	42.4	57.1	165	24.7
	Copper (Cu) (mg/kg)	3410	4950	1570	1810	21300
	Iron (Fe) (mg/kg)	57000	59100	89400	63700	70100
	Lead (Pb) (mg/kg)	1230	410	1310	604	1010
	Lithium (Li) (mg/kg)	18.6	19.1	20.0	108	18.4
	Magnesium (Mg) (mg/kg)	9620	12700	10500	9990	9550
	Manganese (Mn) (mg/kg)	817	953	1060	761	920
	Mercury (Hg) (mg/kg)	<0.050	<0.050	0.061	0.061	0.050
	Molybdenum (Mo) (mg/kg)	42.8	126	42.3	34.0	37.9
	Nickel (Ni) (mg/kg)	285	181	168	128	181
	Phosphorus (P) (mg/kg)	11800	12100	12000	11600	10600
	Potassium (K) (mg/kg)	5940	5830	6490	6130	5520
	Selenium (Se) (mg/kg)	0.42	0.36	0.37	0.45	0.39
	Silver (Ag) (mg/kg)	5.31	6.69	5.45	5.39	8.44
	Sodium (Na) (mg/kg)	15000	14700	15100	15400	14000
	Strontium (Sr) (mg/kg)	696	329	281	298	284
	Sulfur (S) (mg/kg)	14300	13800	14800	13300	13200
	Thallium (Tl) (mg/kg)	0.061	<0.050	0.051	0.053	0.065
	Tin (Sn) (mg/kg)	106	110	113	118	140
	Titanium (Ti) (mg/kg)	386	389	376	638	821
	Tungsten (W) (mg/kg)	22.2	7.75	9.16	10.5	12.1
	Uranium (U) (mg/kg)	5.22	5.97	5.53	5.38	4.97
	Vanadium (V) (mg/kg)	46.5	45.4	46.2	46.3	44.8
	Zinc (Zn) (mg/kg)	6010	5280	4840	4280	13000
	Zirconium (Zr) (mg/kg)	2.6	2.6	2.4	2.0	1.5

\* Please refer to the Reference Information section for an explanation of any qualifiers detected.

## ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2349137-11	L2349137-12		
		Description	Soil	Soil		
		Sampled Date	11-SEP-19	11-SEP-19		
		Sampled Time	09:00	09:00		
		Client ID	BA1937-A-11	BA1937-A-12		
Grouping	Analyte					
<b>SOIL</b>						
<b>Physical Tests</b>	Moisture (%)	20.9	20.9			
	pH (1:2 soil:water) (pH)	10.30	10.46			
<b>Metals</b>	Aluminum (Al) (mg/kg)	30300	33100			
	Antimony (Sb) (mg/kg)	105	163			
	Arsenic (As) (mg/kg)	32.6	30.8			
	Barium (Ba) (mg/kg)	501	546			
	Beryllium (Be) (mg/kg)	0.33	0.40			
	Bismuth (Bi) (mg/kg)	8.70	5.58			
	Boron (B) (mg/kg)	238	284			
	Cadmium (Cd) (mg/kg)	11.8	10.1			
	Calcium (Ca) (mg/kg)	106000	122000			
	Chromium (Cr) (mg/kg)	173	172			
	Cobalt (Co) (mg/kg)	31.7	66.8			
	Copper (Cu) (mg/kg)	5870	1940			
	Iron (Fe) (mg/kg)	61400	67000			
	Lead (Pb) (mg/kg)	1370	280			
	Lithium (Li) (mg/kg)	13.9	50.6			
	Magnesium (Mg) (mg/kg)	10500	10900			
	Manganese (Mn) (mg/kg)	754	705			
	Mercury (Hg) (mg/kg)	<0.050	<0.050			
	Molybdenum (Mo) (mg/kg)	49.8	30.2			
	Nickel (Ni) (mg/kg)	300	148			
	Phosphorus (P) (mg/kg)	10000	11000			
	Potassium (K) (mg/kg)	5130	5890			
	Selenium (Se) (mg/kg)	0.29	0.32			
	Silver (Ag) (mg/kg)	23.2	4.91			
	Sodium (Na) (mg/kg)	13200	15400			
	Strontium (Sr) (mg/kg)	263	280			
	Sulfur (S) (mg/kg)	12100	12900			
	Thallium (Tl) (mg/kg)	<0.050	0.053			
	Tin (Sn) (mg/kg)	779	129			
	Titanium (Ti) (mg/kg)	542	664			
	Tungsten (W) (mg/kg)	11.4	9.14			
	Uranium (U) (mg/kg)	4.45	4.91			
Vanadium (V) (mg/kg)	39.7	43.5				
Zinc (Zn) (mg/kg)	3630	3580				
Zirconium (Zr) (mg/kg)	1.4	1.5				

\* Please refer to the Reference Information section for an explanation of any qualifiers detected.

## ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2349137-1	L2349137-2	L2349137-3	L2349137-4	L2349137-5
		Description	Soil	Soil	Soil	Soil	Soil
		Sampled Date	11-SEP-19	11-SEP-19	11-SEP-19	11-SEP-19	11-SEP-19
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1937-A-1	BA1937-A-2	BA1937-A-3	BA1937-A-4	BA1937-A-5
Grouping	Analyte						
<b>SOIL</b>							
<b>TCLP Metals</b>	1st Preliminary pH (pH)		11.14	11.20	11.21	11.30	11.25
	2nd Preliminary pH (pH)		8.79	8.76	8.77	8.82	8.91
	Final pH (pH)		6.12	6.30	6.24	6.32	6.24
	Extraction Solution Initial pH (pH)		2.88	2.88	2.88	2.88	2.88
	Antimony (Sb)-Leachable (mg/L)		2.0	<1.0	<1.0	<1.0	<1.0
	Arsenic (As)-Leachable (mg/L)		<1.0	<1.0	<1.0	<1.0	<1.0
	Barium (Ba)-Leachable (mg/L)		<2.5	<2.5	<2.5	<2.5	<2.5
	Beryllium (Be)-Leachable (mg/L)		<0.025	<0.025	<0.025	<0.025	<0.025
	Boron (B)-Leachable (mg/L)		2.72	2.64	2.68	2.78	2.87
	Cadmium (Cd)-Leachable (mg/L)		0.217	0.184	0.210	0.382	0.214
	Calcium (Ca)-Leachable (mg/L)		1920	1930	1960	1920	1950
	Chromium (Cr)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Cobalt (Co)-Leachable (mg/L)		0.486	0.880	0.768	0.778	1.77
	Copper (Cu)-Leachable (mg/L)		1.05	0.493	1.03	1.20	0.962
	Iron (Fe)-Leachable (mg/L)		<5.0	<5.0	<5.0	<5.0	<5.0
	Lead (Pb)-Leachable (mg/L)		2.11	<0.25	<0.25	<0.25	<0.25
	Magnesium (Mg)-Leachable (mg/L)		124	123	119	127	133
	Mercury (Hg)-Leachable (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Nickel (Ni)-Leachable (mg/L)		1.68	0.45	0.64	0.49	0.53
	Selenium (Se)-Leachable (mg/L)		<0.10	<0.10	<0.10	<0.10	<0.10
	Silver (Ag)-Leachable (mg/L)		<0.050	<0.050	<0.050	<0.050	<0.050
	Thallium (Tl)-Leachable (mg/L)		<1.0	<1.0	<1.0	<1.0	<1.0
	Vanadium (V)-Leachable (mg/L)		<0.15	<0.15	<0.15	<0.15	<0.15
	Zinc (Zn)-Leachable (mg/L)		46.3	40.8	49.1	53.4	44.9

\* Please refer to the Reference Information section for an explanation of any qualifiers detected.

## ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2349137-6	L2349137-7	L2349137-8	L2349137-9	L2349137-10
		Description	Soil	Soil	Soil	Soil	Soil
		Sampled Date	11-SEP-19	11-SEP-19	11-SEP-19	11-SEP-19	11-SEP-19
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1937-A-6	BA1937-A-7	BA1937-A-8	BA1937-A-9	BA1937-A-10
Grouping	Analyte						
<b>SOIL</b>							
<b>TCLP Metals</b>	1st Preliminary pH (pH)		11.22	11.22	11.25	11.25	11.25
	2nd Preliminary pH (pH)		8.74	8.75	8.81	8.83	8.74
	Final pH (pH)		6.16	6.34	6.22	6.16	6.29
	Extraction Solution Initial pH (pH)		2.88	2.88	2.88	2.88	2.88
	Antimony (Sb)-Leachable (mg/L)		<1.0	<1.0	<1.0	<1.0	<1.0
	Arsenic (As)-Leachable (mg/L)		<1.0	<1.0	<1.0	<1.0	<1.0
	Barium (Ba)-Leachable (mg/L)		<2.5	<2.5	<2.5	<2.5	<2.5
	Beryllium (Be)-Leachable (mg/L)		<0.025	<0.025	<0.025	<0.025	<0.025
	Boron (B)-Leachable (mg/L)		3.04	2.81	2.97	3.23	2.69
	Cadmium (Cd)-Leachable (mg/L)		0.187	0.214	0.190	0.287	0.196
	Calcium (Ca)-Leachable (mg/L)		2000	1960	1820	2040	1950
	Chromium (Cr)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Cobalt (Co)-Leachable (mg/L)		0.757	1.12	1.28	0.911	0.493
	Copper (Cu)-Leachable (mg/L)		0.144	0.652	1.23	0.725	0.803
	Iron (Fe)-Leachable (mg/L)		<5.0	<5.0	<5.0	<5.0	<5.0
	Lead (Pb)-Leachable (mg/L)		<0.25	<0.25	<0.25	0.72	<0.25
	Magnesium (Mg)-Leachable (mg/L)		135	131	122	141	125
	Mercury (Hg)-Leachable (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Nickel (Ni)-Leachable (mg/L)		1.79	0.59	0.50	0.54	0.43
	Selenium (Se)-Leachable (mg/L)		<0.10	<0.10	<0.10	<0.10	<0.10
	Silver (Ag)-Leachable (mg/L)		<0.050	<0.050	<0.050	<0.050	<0.050
	Thallium (Tl)-Leachable (mg/L)		<1.0	<1.0	<1.0	<1.0	<1.0
	Vanadium (V)-Leachable (mg/L)		<0.15	<0.15	<0.15	<0.15	<0.15
	Zinc (Zn)-Leachable (mg/L)		70.7	44.9	42.9	72.5	59.7

\* Please refer to the Reference Information section for an explanation of any qualifiers detected.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L2349137-11 Soil 11-SEP-19 09:00 BA1937-A-11	L2349137-12 Soil 11-SEP-19 09:00 BA1937-A-12		
Grouping	Analyte				
<b>SOIL</b>					
<b>TCLP Metals</b>	1st Preliminary pH (pH)	11.20	11.19		
	2nd Preliminary pH (pH)	8.68	8.69		
	Final pH (pH)	6.26	6.13		
	Extraction Solution Initial pH (pH)	2.88	2.88		
	Antimony (Sb)-Leachable (mg/L)	<1.0	<1.0		
	Arsenic (As)-Leachable (mg/L)	<1.0	<1.0		
	Barium (Ba)-Leachable (mg/L)	<2.5	<2.5		
	Beryllium (Be)-Leachable (mg/L)	<0.025	<0.025		
	Boron (B)-Leachable (mg/L)	2.66	3.10		
	Cadmium (Cd)-Leachable (mg/L)	0.230	0.908		
	Calcium (Ca)-Leachable (mg/L)	1870	2130		
	Chromium (Cr)-Leachable (mg/L)	<0.25	<0.25		
	Cobalt (Co)-Leachable (mg/L)	0.410	0.450		
	Copper (Cu)-Leachable (mg/L)	1.37	1.68		
	Iron (Fe)-Leachable (mg/L)	<5.0	<5.0		
	Lead (Pb)-Leachable (mg/L)	<0.25	<0.25		
	Magnesium (Mg)-Leachable (mg/L)	124	141		
	Mercury (Hg)-Leachable (mg/L)	<0.0010	<0.0010		
	Nickel (Ni)-Leachable (mg/L)	0.55	0.59		
	Selenium (Se)-Leachable (mg/L)	<0.10	<0.10		
	Silver (Ag)-Leachable (mg/L)	<0.050	<0.050		
	Thallium (Tl)-Leachable (mg/L)	<1.0	<1.0		
	Vanadium (V)-Leachable (mg/L)	<0.15	<0.15		
	Zinc (Zn)-Leachable (mg/L)	44.7	49.8		

\* Please refer to the Reference Information section for an explanation of any qualifiers detected.



## Reference Information

### QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Bismuth (Bi)	DUP-H	L2349137-11, -12
Duplicate	Cobalt (Co)	DUP-H	L2349137-11, -12
Duplicate	Copper (Cu)	DUP-H	L2349137-11, -12
Duplicate	Lead (Pb)	DUP-H	L2349137-11, -12
Duplicate	Lithium (Li)	DUP-H	L2349137-11, -12
Duplicate	Manganese (Mn)	DUP-H	L2349137-11, -12
Duplicate	Molybdenum (Mo)	DUP-H	L2349137-11, -12
Duplicate	Nickel (Ni)	DUP-H	L2349137-11, -12
Duplicate	Silver (Ag)	DUP-H	L2349137-11, -12
Duplicate	Tin (Sn)	DUP-H	L2349137-11, -12
Duplicate	Tungsten (W)	DUP-H	L2349137-11, -12
Matrix Spike	Calcium (Ca)-Leachable	MS-B	L2349137-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9

### Qualifiers for Individual Parameters Listed:

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

### Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
<b>HG-200.2-CVAF-VA</b>	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)
Soil samples are digested with hot nitric and hydrochloric acids, followed by CVAAS analysis. This method is fully compliant with the BC SALM strong acid leachable metals digestion method.			
<b>HG-TCLP-CVAFS-VA</b>	Soil	Mercury by CVAAS (TCLP)	EPA 1311/245.7
This analysis is carried out in accordance with the extraction procedure outlined in "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods Volume 1C" SW-846 EPA Method 1311, published by the United States Environmental Protection Agency (EPA). In summary, the sample is extracted at a 20:1 liquid to solids ratio for 16 to 20 hours using either extraction fluid #1 (glacial acetic acid, water and sodium hydroxide) or extraction fluid #2 (glacial acetic acid), depending on the pH of the original sample. The extract is then filtered through a 0.6 to 0.8 micron glass fibre filter and analysed using atomic absorption spectrophotometry (EPA 245.7).			
<b>MET-200.2-CCMS-VA</b>	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)
Soil/sediment is dried, disaggregated, and sieved (2 mm). Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.			
Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H <sub>2</sub> S) may be excluded if lost during sampling, storage, or digestion.			
<b>MET-TCLP-CCMS-VA</b>	Soil	Metals by ICPMS (TCLP)	EPA 1311/6020A
This analysis is carried out in accordance with the extraction procedure outlined in "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods Volume 1C" SW-846 EPA Method 1311, published by the United States Environmental Protection Agency (EPA). In summary, the sample is extracted at a 20:1 liquid to solids ratio for 16 to 20 hours using either extraction fluid #1 (glacial acetic acid, water and sodium hydroxide) or extraction fluid #2 (glacial acetic acid), depending on the pH of the original sample. The extract is then filtered through a 0.6 to 0.8 micron glass fibre filter. Instrumental analysis of the digested extract is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).			
<b>MOISTURE-VA</b>	Soil	Moisture content	CCME PHC in Soil - Tier 1 (mod)
This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of two hours.			
<b>PH-1:2-VA</b>	Soil	pH in Soil (1:2 Soil:Water Extraction)	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL
This analysis is carried out in accordance with procedures described in "pH, Electrometric in Soil and Sediment - Prescriptive Method", Rev. 2005, Section B Physical, Inorganic and Misc. Constituents, BC Environmental Laboratory Manual. The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water. The pH of the solution is then measured using a standard pH probe.			

\*\* ALS test methods may incorporate modifications from specified reference methods to improve performance.

*The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:*

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

## Reference Information

### Chain of Custody Numbers:

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#### GLOSSARY OF REPORT TERMS

*Surrogate* - A compound that is similar in behaviour 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.

*mg/kg* - milligrams per kilogram based on dry weight of sample.

*mg/kg wwt* - milligrams per kilogram based on wet weight of sample.

*mg/kg lwt* - milligrams per kilogram based on lipid-adjusted weight of sample.

*mg/L* - milligrams per litre.

*<* - Less than.

*D.L.* - The reported Detection Limit, also known as the Limit of Reporting (LOR).

*N/A* - Result not available. Refer to qualifier code and definition for explanation.

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

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



L2349137-COFC

COC # \_\_\_\_\_

Page \_\_\_\_ of \_\_\_\_

<b>Report To</b>		<b>Repo</b>		<b>Service Requested</b> (Rush for routine analysis subject to availability)	
Company:	Covanta Energy	<input type="checkbox"/> Standard	<input type="checkbox"/> Other	<input checked="" type="radio"/> Regular (Standard Turnaround Times - Business Days)	
Contact:	Steve McKinney / Dan Skrypyk	<input checked="" type="checkbox"/> PDF	<input type="checkbox"/> Excel	<input type="checkbox"/> Digital	<input type="checkbox"/> Fax
Address:	5150 Riverbend Drive Burnaby BC	Email 1:	smckinney@covanta.com		
Phone:	604-521-1025	Email 2:	rjohnson4@covanta.com		
	<input type="checkbox"/> Yes <input type="checkbox"/> No	Email 3:	dskrypyk@covanta.com		
			brent.kirkpatrick@metrovancover.org		
			Sarah.Wellman@metrovancover.org		

<b>Invoice To</b> Same as Report ?		<b>Client / Project Information</b>		<b>Analysis Request</b>	
Hardcopy of Invoice with Report?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Job #:	Please indicate below Filtered, Preserved or both (F, P, F/P)		
Company:		PO / AFE:	PO# 46693 Weekly Bottom Ash - Suite		
Contact:		LSD:	(includes 2:1 pH)		
Address:		Quote #:			
Phone:					

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	MET-TCLP-VA (all metals, Hg)	MOISTURE	Chrome 6	MET-CSR+FULL-VA (all metals)	Number of Containers
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Lab Work Order # (lab use only)		ALS Contact:	Sampler:						
BA1937-A-1		11-Sep-19	9:00	Soil	X	X		X	1
BA1937-A-2		11-Sep-19	9:00	Soil	X	X		X	1
BA1937-A-3		11-Sep-19	9:00	Soil	X	X		X	1
BA1937-A-4		11-Sep-19	9:00	Soil	X	X		X	1
BA1937-A-5		11-Sep-19	9:00	Soil	X	X		X	1
BA1937-A-6		11-Sep-19	9:00	Soil	X	X		X	1
BA1937-A-7		11-Sep-19	9:00	Soil	X	X		X	1
BA1937-A-8		11-Sep-19	9:00	Soil	X	X		X	1
BA1937-A-9		11-Sep-19	9:00	Soil	X	X		X	1
BA1937-A-10		11-Sep-19	9:00	Soil	X	X		X	1
BA1937-A-11		11-Sep-19	9:00	Soil	X	X		X	1
BA1937-A-12		11-Sep-19	9:00	Soil	X	X		X	1

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.  
 By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.  
 Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)			SHIPMENT VERIFICATION (lab use only)				
Released by:	Date (dd-mmm-yy)	Time (hh:mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
	17-Sep-19	0800	HA	9/17	11:45am	22 °C				