Bottom Ash Data

2019 Week 39

The following analytical report was sent to the Ministry of Environment and Climate Change Strategy on October 9, 2019. The data represents bottom ash composite results for week 39 of 2019 (September 22, 2019 to September 28, 2019).

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

Covanta Burnaby R.E., ULC
ATTN: Steve McKinney
5150 Riverbend Drive
Burnaby BC V3N 4V3

Date Received: 01-OCT-19
Report Date: 08-OCT-19 15:48 (MT)
Version: FINAL

Client Phone: 604-521-1025

Certificate of Analysis

Lab Work Order #: L2357662

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

Brent Mack, B.Sc.
Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L2357662-1	L2357662-2	L2357662-3	L2357662-4	L2357662-5
Description	soil	soil	soil	soil	soil
Sampled Date	25-SEP-19	25-SEP-19	25-SEP-19	25-SEP-19	25-SEP-19
Sampled Time	09:00	09:00	09:00	09:00	09:00
Client ID	BA1939-A-1	BA1939-A-2	BA1939-A-3	BA1939-A-4	BA1939-A-5
Grouping / **Analyte**					
SOIL					
Physical Tests Moisture (%)	21.4	25.0	24.1	24.4	23.5
pH (1:2 soil:water) (pH)	10.65	10.65	10.64	10.54	10.55
Metals Aluminum (Al) (mg/kg)	42500	34000	37900	44500	37900
Antimony (Sb) (mg/kg)	130	134	134	123	161
Arsenic (As) (mg/kg)	33.8	28.5	27.1	25.9	30.1
Barium (Ba) (mg/kg)	685	609	630	630	609
Beryllium (Be) (mg/kg)	0.45	0.38	0.39	0.38	0.39
Bismuth (Bi) (mg/kg)	13.5	11.2	10.7	9.15	11.0
Boron (B) (mg/kg)	205	243	204	219	291
Cadmium (Cd) (mg/kg)	16.9	16.1	14.2	16.2	14.3
Calcium (Ca) (mg/kg)	128000	125000	121000	119000	121000
Chromium (Cr) (mg/kg)	232	443	200	154	172
Cobalt (Co) (mg/kg)	25.2	50.8	46.1	124	34.6
Copper (Cu) (mg/kg)	5120	4500	4690	1710	3450
Iron (Fe) (mg/kg)	89000	77700	67700	73200	99800
Lead (Pb) (mg/kg)	1310	1600	686	498	1380
Lithium (Li) (mg/kg)	17.3	15.3	23.2	15.4	16.6
Magnesium (Mg) (mg/kg)	10900	11300	10500	11500	11200
Manganese (Mn) (mg/kg)	966	10300	780	783	967
Mercury (Hg) (mg/kg)	<0.050	<0.050	<0.050	0.082	<0.050
Molybdenum (Mo) (mg/kg)	133	71.8	99.3	71.8	96.6
Nickel (Ni) (mg/kg)	326	279	148	350	153
Phosphorus (P) (mg/kg)	11400	10800	11400	10600	11300
Potassium (K) (mg/kg)	5690	5710	5970	5560	6160
Selenium (Se) (mg/kg)	0.44	0.77	0.55	0.41	0.64
Silver (Ag) (mg/kg)	4.42	4.84	5.44	5.55	5.38
Sodium (Na) (mg/kg)	15300	14800	15900	15600	16400
Strontium (Sr) (mg/kg)	395	341	632	326	372
Sulfur (S) (mg/kg)	12100	12800	13200	12700	13200
Thallium (Tl) (mg/kg)	<0.050	0.051	<0.050	<0.050	<0.050
Tin (Sn) (mg/kg)	198	159	200	198	178
Titanium (Ti) (mg/kg)	797	527	857	1320	883
Tungsten (W) (mg/kg)	11.7	12.6	7.95	7.90	13.0
Uranium (U) (mg/kg)	4.60	4.56	4.70	4.88	4.72
Vanadium (V) (mg/kg)	61.5	73.8	53.8	54.2	59.7
Zinc (Zn) (mg/kg)	3650	5350	5700	3810	4010
Zirconium (Zr) (mg/kg)	1.7	1.7	1.4	2.4	1.8

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L2357662-6	L2357662-7	L2357662-8	L2357662-9	L2357662-10
Description	soil	soil	soil	soil	soil
Sampled Date	25-SEP-19	25-SEP-19	25-SEP-19	25-SEP-19	25-SEP-19
Sampled Time	09:00	09:00	09:00	09:00	09:00
Client ID	BA1939-A-6	BA1939-A-7	BA1939-A-8	BA1939-A-9	BA1939-A-10
Grouping / **Analyte**					
SOIL					
Physical Tests Moisture (%)	20.1	23.8	22.8	24.1	24.5
pH (1:2 soil:water) (pH)	10.22	10.23	10.42	10.33	10.37
Metals Aluminum (Al) (mg/kg)	31900	35800	32700	33900	40600
Antimony (Sb) (mg/kg)	131	173	148	762	138
Arsenic (As) (mg/kg)	24.0	31.0	29.9	34.2	27.5
Barium (Ba) (mg/kg)	455	570	518	493	480
Beryllium (Be) (mg/kg)	0.35	0.56	0.42	0.36	0.36
Bismuth (Bi) (mg/kg)	9.54	9.66	12.9	20.3	8.40
Boron (B) (mg/kg)	268	261	232	201	267
Cadmium (Cd) (mg/kg)	14.9	13.7	17.8	16.6	13.5
Calcium (Ca) (mg/kg)	110000	128000	140000	120000	128000
Chromium (Cr) (mg/kg)	160	321	294	153	367
Cobalt (Co) (mg/kg)	28.4	134	76.4	62.5	47.9
Copper (Cu) (mg/kg)	3950	3970	6220	2400	2180
Iron (Fe) (mg/kg)	56400	85800	79300	65300	58800
Lead (Pb) (mg/kg)	1770	951	640	3000	461
Lithium (Li) (mg/kg)	16.9	18.3	24.0	17.0	16.6
Magnesium (Mg) (mg/kg)	9790	10500	10900	10700	9970
Manganese (Mn) (mg/kg)	716	1050	1160	757	830
Mercury (Hg) (mg/kg)	<0.050	0.072	<0.050	0.051	<0.050
Molybdenum (Mo) (mg/kg)	103	93.2	117	117	87.8
Nickel (Ni) (mg/kg)	762	611	408	220	363
Phosphorus (P) (mg/kg)	9500	11000	10800	10400	11800
Potassium (K) (mg/kg)	5320	5120	5710	5150	5920
Selenium (Se) (mg/kg)	0.50	0.50	0.57	0.54	0.51
Silver (Ag) (mg/kg)	4.12	7.10	23.1	5.79	10.5
Sodium (Na) (mg/kg)	14200	14400	14700	13800	17000
Strontium (Sr) (mg/kg)	315	453	404	302	281
Sulfur (S) (mg/kg)	11400	13000	13600	12400	13100
Thallium (Tl) (mg/kg)	0.052	0.056	0.057	0.053	0.051
Tin (Sn) (mg/kg)	157	518	240	179	164
Titanium (Ti) (mg/kg)	443	835	626	551	684
Tungsten (W) (mg/kg)	6.97	7.44	7.26	5.77	8.66
Uranium (U) (mg/kg)	4.27	4.51	5.42	4.72	4.79
Vanadium (V) (mg/kg)	50.1	57.7	58.4	51.5	54.3
Zinc (Zn) (mg/kg)	5690	6440	4220	3860	3680
Zirconium (Zr) (mg/kg)	2.0	1.9	2.0	2.0	2.6

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2357662-11	L2357662-12			
	Description	soil	soil			
	Sampled Date	25-SEP-19	25-SEP-19			
	Sampled Time	09:00	09:00			
	Client ID	BA1939-A-11	BA1939-A-12			
Grouping	**Analyte**					
SOIL						
Physical Tests	Moisture (%)	21.4	24.3			
	pH (1:2 soil:water) (pH)	10.44	10.42			
Metals	Aluminum (Al) (mg/kg)	39100	32800			
	Antimony (Sb) (mg/kg)	124	214			
	Arsenic (As) (mg/kg)	24.9	27.4			
	Barium (Ba) (mg/kg)	535	492			
	Beryllium (Be) (mg/kg)	0.40	0.38			
	Bismuth (Bi) (mg/kg)	10.9	12.9			
	Boron (B) (mg/kg)	279	224			
	Cadmium (Cd) (mg/kg)	13.2	16.2			
	Calcium (Ca) (mg/kg)	118000	121000			
	Chromium (Cr) (mg/kg)	160	219			
	Cobalt (Co) (mg/kg)	28.6	96.6			
	Copper (Cu) (mg/kg)	1220	4770			
	Iron (Fe) (mg/kg)	64200	69000			
	Lead (Pb) (mg/kg)	1240	494			
	Lithium (Li) (mg/kg)	18.3	17.2			
	Magnesium (Mg) (mg/kg)	9950	10000			
	Manganese (Mn) (mg/kg)	1120	919			
	Mercury (Hg) (mg/kg)	<0.050	0.108			
	Molybdenum (Mo) (mg/kg)	67.0	101			
	Nickel (Ni) (mg/kg)	193	233			
	Phosphorus (P) (mg/kg)	10100	10000			
	Potassium (K) (mg/kg)	6030	5330			
	Selenium (Se) (mg/kg)	0.41	0.41			
	Silver (Ag) (mg/kg)	5.32	14.5			
	Sodium (Na) (mg/kg)	15100	13800			
	Strontium (Sr) (mg/kg)	285	453			
	Sulfur (S) (mg/kg)	11900	13200			
	Thallium (Tl) (mg/kg)	0.052	<0.050			
	Tin (Sn) (mg/kg)	108	351			
	Titanium (Ti) (mg/kg)	605	511			
	Tungsten (W) (mg/kg)	6.50	8.61			
	Uranium (U) (mg/kg)	4.54	4.51			
	Vanadium (V) (mg/kg)	54.0	53.4			
	Zinc (Zn) (mg/kg)	4240	4890			
	Zirconium (Zr) (mg/kg)	1.9	1.7			

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L2357662-1	L2357662-2	L2357662-3	L2357662-4	L2357662-5
Description	soil	soil	soil	soil	soil
Sampled Date	25-SEP-19	25-SEP-19	25-SEP-19	25-SEP-19	25-SEP-19
Sampled Time	09:00	09:00	09:00	09:00	09:00
Client ID	BA1939-A-1	BA1939-A-2	BA1939-A-3	BA1939-A-4	BA1939-A-5
Grouping / **Analyte**					
SOIL					
TCLP Metals					
1st Preliminary pH (pH)	11.18	11.15	11.21	11.19	11.14
2nd Preliminary pH (pH)	8.44	8.26	9.11	9.06	9.08
Final pH (pH)	5.51	5.58	5.61	5.49	5.53
Extraction Solution Initial pH (pH)	2.85	2.85	2.85	2.85	2.85
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)	3.12	2.93	2.83	2.93	2.81
Cadmium (Cd)-Leachable (mg/L)	0.329	0.304	0.328	0.272	0.265
Calcium (Ca)-Leachable (mg/L)	2110	2110	2160	1920	2020
Chromium (Cr)-Leachable (mg/L)	<0.25	<0.25	<0.25	<0.25	<0.25
Cobalt (Co)-Leachable (mg/L)	0.476	0.733	0.545	0.556	1.44
Copper (Cu)-Leachable (mg/L)	2.32	1.72	1.87	2.78	1.70
Iron (Fe)-Leachable (mg/L)	13.3	9.0	5.9	24.8	8.7
Lead (Pb)-Leachable (mg/L)	0.69	1.39	0.48	0.52	1.03
Magnesium (Mg)-Leachable (mg/L)	126	130	128	118	125
Mercury (Hg)-Leachable (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Nickel (Ni)-Leachable (mg/L)	0.62	0.70	0.67	0.65	0.60
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)	78.8	77.5	71.7	85.2	76.0

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L2357662-6 soil 25-SEP-19 09:00 BA1939-A-6	L2357662-7 soil 25-SEP-19 09:00 BA1939-A-7	L2357662-8 soil 25-SEP-19 09:00 BA1939-A-8	L2357662-9 soil 25-SEP-19 09:00 BA1939-A-9	L2357662-10 soil 25-SEP-19 09:00 BA1939-A-10
Sample ID / Description / Sampled Date / Sampled Time / Client ID						
SOIL						
TCLP Metals	1st Preliminary pH (pH)	11.29	11.31	11.16	11.30	11.42
	2nd Preliminary pH (pH)	9.07	8.96	9.06	8.91	9.24
	Final pH (pH)	5.53	5.99	5.88	6.00	5.87
	Extraction Solution Initial pH (pH)	2.85	2.85	2.85	2.85	2.85
	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)	3.44	2.75	2.58	2.64	3.14
	Cadmium (Cd)-Leachable (mg/L)	0.372	0.234	0.266	0.245	0.239
	Calcium (Ca)-Leachable (mg/L)	2230	1890	1770	1840	1870
	Chromium (Cr)-Leachable (mg/L)	<0.25	<0.25	<0.25	<0.25	<0.25
	Cobalt (Co)-Leachable (mg/L)	0.782	0.397	0.836	0.509	0.484
	Copper (Cu)-Leachable (mg/L)	1.03	1.22	1.60	0.932	0.895
	Iron (Fe)-Leachable (mg/L)	12.0	<5.0	<5.0	<5.0	<5.0
	Lead (Pb)-Leachable (mg/L)	1.38	<0.25	0.45	<0.25	<0.25
	Magnesium (Mg)-Leachable (mg/L)	138	115	108	114	120
	Mercury (Hg)-Leachable (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Nickel (Ni)-Leachable (mg/L)	0.81	0.60	0.57	0.59	0.66
	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)	80.9	59.5	56.6	62.1	60.7

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2357662-11	L2357662-12			
	Description	soil	soil			
	Sampled Date	25-SEP-19	25-SEP-19			
	Sampled Time	09:00	09:00			
	Client ID	BA1939-A-11	BA1939-A-12			
Grouping	**Analyte**					
SOIL						
TCLP Metals	1st Preliminary pH (pH)	11.26	11.36			
	2nd Preliminary pH (pH)	8.78	8.82			
	Final pH (pH)	5.84	5.72			
	Extraction Solution Initial pH (pH)	2.85	2.85			
	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)	2.63	2.74			
	Cadmium (Cd)-Leachable (mg/L)	0.220	0.159			
	Calcium (Ca)-Leachable (mg/L)	1860	1920			
	Chromium (Cr)-Leachable (mg/L)	<0.25	<0.25			
	Cobalt (Co)-Leachable (mg/L)	0.575	0.343			
	Copper (Cu)-Leachable (mg/L)	1.23	0.055			
	Iron (Fe)-Leachable (mg/L)	<5.0	<5.0			
	Lead (Pb)-Leachable (mg/L)	<0.25	<0.25			
	Magnesium (Mg)-Leachable (mg/L)	112	113			
	Mercury (Hg)-Leachable (mg/L)	<0.0010	<0.0010			
	Nickel (Ni)-Leachable (mg/L)	0.45	0.68			
	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)	55.4	48.5			

* 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	L2357662-6
Duplicate	Boron (B)	DUP-H	L2357662-6
Duplicate	Copper (Cu)	DUP-H	L2357662-6
Duplicate	Lead (Pb)	DUP-H	L2357662-6
Duplicate	Manganese (Mn)	DUP-H	L2357662-6
Duplicate	Nickel (Ni)	DUP-H	L2357662-6
Duplicate	Silver (Ag)	DUP-H	L2357662-6
Duplicate	Tin (Sn)	DUP-H	L2357662-6
Matrix Spike	Calcium (Ca)-Leachable	MS-B	L2357662-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Cobalt (Co)-Leachable	MS-B	L2357662-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Zinc (Zn)-Leachable	MS-B	L2357662-1, -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**
HG-200.2-CVAF-VA	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.

HG-TCLP-CVAFS-VA 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).

MET-200.2-CCMS-VA 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, H2S) may be excluded if lost during sampling, storage, or digestion.

MET-TCLP-CCMS-VA 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 (modifed from EPA Method 6020A).

MOISTURE-VA 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.

PH-1:2-VA 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

Chain of Custody Numbers:

Reference Information

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.

L2357662-COFC

Chain of Custody / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

COC #

Page ___ of ___

Report To				Report Format / Distribution				Service Requested (Rush for routine analysis subject to availability)
Company:	Covanta Energy			☐ Standard	☐ Other			◉ Regular (Standard Turnaround Times - Business Days)
Contact:	Steve Mckinney / Dan Skrypnyk			☑ PDF	☐ Excel	☐ Digital	☐ Fax	○ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT
Address:	5150 Riverbend Drive			Email 1:	smckinney@covanta.com			○ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT
	Burnaby BC			Email 2:	rjohnson4@covanta.com			○ Same Day or Weekend Emergency - Contact ALS to Confirm TAT
Phone:	604-521-1025	Fax:		Email 3:	dskrypnyk@covanta.com			Analysis Request
		☐ Yes	☐ No		brent.kirkpatrick@metrovancouver.org			
					Sarah.Wellman@metrovancouver.org			
Invoice To	Same as Report ?			Client / Project Information				Please indicate below Filtered, Preserved or both (F, P, F/P)
Hardcopy of Invoice with Report?	☐ Yes	☐ No		Job #:				
Company:				PO / AFE:	PO# 46693 Weekly Bottom Ash - Suite			
Contact:				LSD:	(includes 2:1 pH)			
Address:								
Phone:		Fax:		Quote #:				
Lab Work Order # (lab use only)				ALS Contact:		Sampler:		

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
	BA1939-A-1	25-Sep-19	9:00	Soil	X	X		X	1
	BA1939-A-2	25-Sep-19	9:00	Soil	X	X		X	1
	BA1939-A-3	25-Sep-19	9:00	Soil	X	X		X	1
	BA1939-A-4	25-Sep-19	9:00	Soil	X	X		X	1
	BA1939-A-5	25-Sep-19	9:00	Soil	X	X		X	1
	BA1939-A-6	25-Sep-19	9:00	Soil	X	X		X	1
	BA1939-A-7	25-Sep-19	9:00	Soil	X	X		X	1
	BA1939-A-8	25-Sep-19	9:00	Soil	X	X		X	1
	BA1939-A-9	25-Sep-19	9:00	Soil	X	X		X	1
	BA1939-A-10	25-Sep-19	9:00	Soil	X	X		X	1
	BA1939-A-11	25-Sep-19	9:00	Soil	X	X		X	1
	BA1939-A-12	25-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
	1-OCT-19	0900	JC	OCT - 1 2019	11:50AM	21 °C				

GENF 20.00 Front