

Bottom Ash Data

2019 Week 33

The following analytical report was sent to the Ministry of Environment and Climate Change Strategy on August 29, 2019. The data represents bottom ash composite results for week 33 of 2019 (August 11, 2019 to August 17, 2019).

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



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Date Received: 20-AUG-19
Report Date: 27-AUG-19 17:49 (MT)
Version: FINAL

Client Phone: 604-521-1025

Certificate of Analysis

Lab Work Order #: L2332067
Project P.O. #: VANCO-0000048466
Job Reference:
C of C Numbers:
Legal Site Desc: WEEKLY BOTTOM ASH - SUITE

Brent Mack, B.Sc.
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L2332067-1 SOIL 14-AUG-19 09:00 BA1933-A-1	L2332067-2 SOIL 14-AUG-19 09:00 BA1933-A-2	L2332067-3 SOIL 14-AUG-19 09:00 BA1933-A-3	L2332067-4 SOIL 14-AUG-19 09:00 BA1933-A-4	L2332067-5 SOIL 14-AUG-19 09:00 BA1933-A-5
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	17.7	17.9	19.7	19.5	18.6
	pH (1:2 soil:water) (pH)	10.72	11.02	10.92	10.76	10.75
Metals	Aluminum (Al) (mg/kg)	27400	46300	30000	29300	28200
	Antimony (Sb) (mg/kg)	123	160	134	142	150
	Arsenic (As) (mg/kg)	30.8	43.6	38.0	40.3	40.4
	Barium (Ba) (mg/kg)	455	475	485	442	472
	Beryllium (Be) (mg/kg)	0.30	0.36	0.37	0.36	0.30
	Bismuth (Bi) (mg/kg)	7.44	7.31	7.62	8.22	6.57
	Boron (B) (mg/kg)	206	201	242	197	145
	Cadmium (Cd) (mg/kg)	11.4	14.6	14.0	14.4	13.8
	Calcium (Ca) (mg/kg)	97300	124000	106000	114000	103000
	Chromium (Cr) (mg/kg)	118	135	195	175	703
	Cobalt (Co) (mg/kg)	16.5	22.5	22.9	27.7	25.8
	Copper (Cu) (mg/kg)	2700	1320	1120	3100	6260
	Iron (Fe) (mg/kg)	49100	42500	62800	61900	58700
	Lead (Pb) (mg/kg)	269	359	2570	575	631
	Lithium (Li) (mg/kg)	15.8	16.9	15.2	15.6	15.4
	Magnesium (Mg) (mg/kg)	8540	11000	9070	10700	9250
	Manganese (Mn) (mg/kg)	628	2270	693	749	732
	Mercury (Hg) (mg/kg)	0.057	<0.050	<0.050	<0.050	<0.050
	Molybdenum (Mo) (mg/kg)	24.6	31.0	46.2	29.7	28.1
	Nickel (Ni) (mg/kg)	229	137	174	148	1650
	Phosphorus (P) (mg/kg)	7470	11600	9250	8900	9110
	Potassium (K) (mg/kg)	4510	5570	5470	5390	4760
	Selenium (Se) (mg/kg)	0.33	0.46	0.47	0.49	0.41
	Silver (Ag) (mg/kg)	5.06	6.68	8.18	6.71	4.44
	Sodium (Na) (mg/kg)	11800	13800	13700	13200	12100
	Strontium (Sr) (mg/kg)	265	358	294	426	261
	Sulfur (S) (mg/kg)	10200	13900	12900	12200	10700
	Thallium (Tl) (mg/kg)	0.115	0.082	0.073	0.066	0.079
	Tin (Sn) (mg/kg)	143	135	114	157	108
	Titanium (Ti) (mg/kg)	454	698	469	530	921
	Tungsten (W) (mg/kg)	9.63	11.1	11.8	11.2	12.5
	Uranium (U) (mg/kg)	4.26	5.47	5.02	4.95	4.43
	Vanadium (V) (mg/kg)	40.7	50.7	54.3	47.4	46.0
	Zinc (Zn) (mg/kg)	6650	4520	3860	4110	6340
	Zirconium (Zr) (mg/kg)	1.0	1.9	1.1	1.4	1.3

* 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	L2332067-6 SOIL 14-AUG-19 09:00 BA1933-A-6	L2332067-7 SOIL 14-AUG-19 09:00 BA1933-A-7	L2332067-8 SOIL 14-AUG-19 09:00 BA1933-A-8	L2332067-9 SOIL 14-AUG-19 09:00 BA1933-A-9	L2332067-10 SOIL 14-AUG-19 09:00 BA1933-A-10	
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	18.4	20.0	18.3	19.1	18.5
	pH (1:2 soil:water) (pH)	10.80	10.84	11.00	11.03	10.97
Metals	Aluminum (Al) (mg/kg)	28900	30100	33600	31300	39600
	Antimony (Sb) (mg/kg)	159	297	136	154	159
	Arsenic (As) (mg/kg)	51.1	49.4	45.6	46.8	38.9
	Barium (Ba) (mg/kg)	511	503	500	528	530
	Beryllium (Be) (mg/kg)	0.36	0.39	0.39	0.40	0.44
	Bismuth (Bi) (mg/kg)	9.76	8.91	10.3	8.49	11.9
	Boron (B) (mg/kg)	211	183	225	198	196
	Cadmium (Cd) (mg/kg)	15.5	14.9	13.6	15.7	15.0
	Calcium (Ca) (mg/kg)	121000	119000	120000	122000	120000
	Chromium (Cr) (mg/kg)	210	168	152	715	179
	Cobalt (Co) (mg/kg)	24.6	19.0	424	167	248
	Copper (Cu) (mg/kg)	4170	27400	1150	2590	13400
	Iron (Fe) (mg/kg)	56300	46700	58100	69800	51700
	Lead (Pb) (mg/kg)	590	384	519	2190	393
	Lithium (Li) (mg/kg)	15.4	15.6	51.6	26.9	24.1
	Magnesium (Mg) (mg/kg)	9410	8230	8570	9850	9370
	Manganese (Mn) (mg/kg)	1010	1230	704	973	951
	Mercury (Hg) (mg/kg)	0.127	<0.050	<0.050	<0.050	<0.050
	Molybdenum (Mo) (mg/kg)	54.5	28.3	35.9	47.3	37.7
	Nickel (Ni) (mg/kg)	216	112	136	594	172
	Phosphorus (P) (mg/kg)	9650	9390	8860	10300	10100
	Potassium (K) (mg/kg)	5530	5570	5280	5700	5580
	Selenium (Se) (mg/kg)	0.59	0.46	0.50	0.41	0.41
	Silver (Ag) (mg/kg)	6.78	7.50	6.34	6.68	12.6
	Sodium (Na) (mg/kg)	14200	13400	13600	14400	14500
	Strontium (Sr) (mg/kg)	351	320	329	373	347
	Sulfur (S) (mg/kg)	13100	13700	12500	13200	12600
	Thallium (Tl) (mg/kg)	0.078	0.088	0.085	0.080	0.083
	Tin (Sn) (mg/kg)	132	168	114	145	884
	Titanium (Ti) (mg/kg)	720	858	795	668	677
	Tungsten (W) (mg/kg)	15.3	10.4	11.1	17.2	11.5
	Uranium (U) (mg/kg)	5.73	5.72	5.73	5.77	5.65
	Vanadium (V) (mg/kg)	58.4	50.1	48.0	57.9	51.9
	Zinc (Zn) (mg/kg)	5490	3720	4980	5170	6060
	Zirconium (Zr) (mg/kg)	1.2	2.1	1.3	1.3	1.6

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2332067-11	L2332067-12		
		Description	SOIL	SOIL		
		Sampled Date	14-AUG-19	14-AUG-19		
		Sampled Time	09:00	09:00		
		Client ID	BA1933-A-11	BA1933-A-12		
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	18.2	20.2			
	pH (1:2 soil:water) (pH)	10.95	10.95			
Metals	Aluminum (Al) (mg/kg)	36100	30700			
	Antimony (Sb) (mg/kg)	148	153			
	Arsenic (As) (mg/kg)	42.2	49.7			
	Barium (Ba) (mg/kg)	545	447			
	Beryllium (Be) (mg/kg)	0.43	0.40			
	Bismuth (Bi) (mg/kg)	8.90	7.09			
	Boron (B) (mg/kg)	263	296			
	Cadmium (Cd) (mg/kg)	15.7	13.4			
	Calcium (Ca) (mg/kg)	134000	118000			
	Chromium (Cr) (mg/kg)	157	146			
	Cobalt (Co) (mg/kg)	20.1	188			
	Copper (Cu) (mg/kg)	1050	5230			
	Iron (Fe) (mg/kg)	47100	52700			
	Lead (Pb) (mg/kg)	446	432			
	Lithium (Li) (mg/kg)	19.5	34.1			
	Magnesium (Mg) (mg/kg)	11300	8980			
	Manganese (Mn) (mg/kg)	676	668			
	Mercury (Hg) (mg/kg)	0.081	0.051			
	Molybdenum (Mo) (mg/kg)	37.5	28.6			
	Nickel (Ni) (mg/kg)	139	412			
	Phosphorus (P) (mg/kg)	10600	9440			
	Potassium (K) (mg/kg)	6430	5240			
	Selenium (Se) (mg/kg)	0.42	0.44			
	Silver (Ag) (mg/kg)	5.15	6.64			
	Sodium (Na) (mg/kg)	15700	14100			
	Strontium (Sr) (mg/kg)	366	310			
	Sulfur (S) (mg/kg)	13300	11800			
	Thallium (Tl) (mg/kg)	0.078	0.079			
	Tin (Sn) (mg/kg)	140	129			
	Titanium (Ti) (mg/kg)	828	474			
	Tungsten (W) (mg/kg)	15.4	17.5			
	Uranium (U) (mg/kg)	6.07	5.63			
Vanadium (V) (mg/kg)	54.9	50.2				
Zinc (Zn) (mg/kg)	3540	4740				
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	L2332067-1	L2332067-2	L2332067-3	L2332067-4	L2332067-5
		Description	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled Date	14-AUG-19	14-AUG-19	14-AUG-19	14-AUG-19	14-AUG-19
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1933-A-1	BA1933-A-2	BA1933-A-3	BA1933-A-4	BA1933-A-5
Grouping	Analyte						
SOIL							
TCLP Metals	1st Preliminary pH (pH)		11.61	11.71	11.65	11.53	11.48
	2nd Preliminary pH (pH)		9.50	9.68	10.34	10.17	10.17
	Final pH (pH)		6.28	6.32	6.27	6.33	6.36
	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)		2.90	2.73	2.88	2.64	2.66
	Cadmium (Cd)-Leachable (mg/L)		0.216	0.211	0.233	0.215	0.203
	Calcium (Ca)-Leachable (mg/L)		1910	1940	1950	1900	1920
	Chromium (Cr)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Cobalt (Co)-Leachable (mg/L)		0.584	0.350	4.97	0.537	1.86
	Copper (Cu)-Leachable (mg/L)		1.19	0.878	0.777	0.980	0.468
	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	<0.25	<0.25
	Magnesium (Mg)-Leachable (mg/L)		127	130	135	129	129
	Mercury (Hg)-Leachable (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Nickel (Ni)-Leachable (mg/L)		0.50	0.47	0.49	0.45	0.50
	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)		40.4	29.6	47.7	30.2	32.7

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2332067-6	L2332067-7	L2332067-8	L2332067-9	L2332067-10
		Description	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled Date	14-AUG-19	14-AUG-19	14-AUG-19	14-AUG-19	14-AUG-19
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1933-A-6	BA1933-A-7	BA1933-A-8	BA1933-A-9	BA1933-A-10
Grouping	Analyte						
SOIL							
TCLP Metals	1st Preliminary pH (pH)		11.66	11.68	11.77	11.59	11.58
	2nd Preliminary pH (pH)		10.29	10.27	10.62	10.31	10.46
	Final pH (pH)		6.35	6.24	6.31	6.38	6.32
	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)		2.77	3.01	2.60	2.92	2.79
	Cadmium (Cd)-Leachable (mg/L)		0.212	0.644	0.264	0.203	0.311
	Calcium (Ca)-Leachable (mg/L)		1960	1860	1930	1940	1900
	Chromium (Cr)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Cobalt (Co)-Leachable (mg/L)		0.639	0.774	0.478	1.01	0.669
	Copper (Cu)-Leachable (mg/L)		0.795	0.729	0.579	0.613	1.17
	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	<0.25	<0.25
	Magnesium (Mg)-Leachable (mg/L)		134	125	134	139	132
	Mercury (Hg)-Leachable (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Nickel (Ni)-Leachable (mg/L)		0.49	0.43	0.59	0.45	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)		36.0	37.2	33.1	40.1	45.1

* 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	L2332067-11 SOIL 14-AUG-19 09:00 BA1933-A-11	L2332067-12 SOIL 14-AUG-19 09:00 BA1933-A-12		
Grouping	Analyte				
SOIL					
TCLP Metals	1st Preliminary pH (pH)	11.66	11.61		
	2nd Preliminary pH (pH)	10.38	10.04		
	Final pH (pH)	6.31	6.34		
	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)	2.59	3.40		
	Cadmium (Cd)-Leachable (mg/L)	0.179	0.221		
	Calcium (Ca)-Leachable (mg/L)	1900	1850		
	Chromium (Cr)-Leachable (mg/L)	<0.25	<0.25		
	Cobalt (Co)-Leachable (mg/L)	0.940	0.465		
	Copper (Cu)-Leachable (mg/L)	0.300	0.901		
	Iron (Fe)-Leachable (mg/L)	<5.0	<5.0		
	Lead (Pb)-Leachable (mg/L)	<0.25	<0.25		
	Magnesium (Mg)-Leachable (mg/L)	136	129		
	Mercury (Hg)-Leachable (mg/L)	<0.0010	<0.0010		
	Nickel (Ni)-Leachable (mg/L)	0.54	0.47		
	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)	32.2	31.2		

* 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	Calcium (Ca)	DUP-H	L2332067-1, -2, -3, -4, -5, -6, -7, -8
Duplicate	Chromium (Cr)	DUP-H	L2332067-10, -11, -12, -9
Duplicate	Cobalt (Co)	DUP-H	L2332067-10, -11, -12, -9
Duplicate	Copper (Cu)	DUP-H	L2332067-10, -11, -12, -9
Duplicate	Lead (Pb)	DUP-H	L2332067-1, -2, -3, -4, -5, -6, -7, -8
Duplicate	Lead (Pb)	DUP-H	L2332067-10, -11, -12, -9
Duplicate	Nickel (Ni)	DUP-H	L2332067-10, -11, -12, -9
Duplicate	Silver (Ag)	DUP-H	L2332067-10, -11, -12, -9
Matrix Spike	Calcium (Ca)-Leachable	MS-B	L2332067-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Cobalt (Co)-Leachable	MS-B	L2332067-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Zinc (Zn)-Leachable	MS-B	L2332067-1, -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, H ₂ S) 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 (modified 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.



Chain



L2332067-COFC

COC #

Page ___ of ___

Report To		Report For		Requested (Rush for routine analysis subject to availability)									
Company: Covanta Energy		<input type="checkbox"/> Standard <input checked="" type="radio"/> Regular (Standard Turnaround Times - Business Days)											
Contact: Steve McKinney / Dan Skrypnik		<input checked="" type="checkbox"/> PDF <input type="checkbox"/> Excel <input type="checkbox"/> Digital <input type="checkbox"/> Fax		<input type="radio"/> Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT									
Address: 5150 Riverbend Drive Burnaby BC		Email 1: smckinney@covanta.com		<input type="radio"/> Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT									
Phone: 604-521-1025 Fax: <input type="checkbox"/> Yes <input type="checkbox"/> No		Email 2: rjohnson4@covanta.com		<input type="radio"/> Same Day or Weekend Emergency - Contact ALS to Confirm TAT									
		Email 3: ds Krypnik@covanta.com		Analysis Request									
		brent.kirkpatrick@metrovancover.org											
		Sarah.Wellman@metrovancover.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? <input type="checkbox"/> Yes <input type="checkbox"/> No		Job #:											
Company:		PO / AFE: PO# 46693 Weekly Bottom Ash - Suite											
Contact:		LSD: (includes 2:1 pH)											
Address:		Quote #:											
Phone: Fax:		ALS Contact:		Sampler:									
Lab Work Order # (lab use only)													
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
	BA1933-A-1	14-Aug-19	9:00	Soil	X	X		X					1
	BA1933-A-2	14-Aug-19	9:00	Soil	X	X		X					1
	BA1933-A-3	14-Aug-19	9:00	Soil	X	X		X					1
	BA1933-A-4	14-Aug-19	9:00	Soil	X	X		X					1
	BA1933-A-5	14-Aug-19	9:00	Soil	X	X		X					1
	BA1933-A-6	14-Aug-19	9:00	Soil	X	X		X					1
	BA1933-A-7	14-Aug-19	9:00	Soil	X	X		X					1
	BA1933-A-8	14-Aug-19	9:00	Soil	X	X		X					1
	BA1933-A-9	14-Aug-19	9:00	Soil	X	X		X					1
	BA1933-A-10	14-Aug-19	9:00	Soil	X	X		X					1
	BA1933-A-11	14-Aug-19	9:00	Soil	X	X		X					1
	BA1933-A-12	14-Aug-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:			
	20-Aug-19	0800	HA	8/20	11:50am	22 °C				Yes / No ?			
										If Yes add SIF			
GENF 20.00 Front													