

## Bottom Ash Data

2019 Week 4

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The following analytical report was sent to the Ministry of Environment and Climate Change Strategy on February 5, 2019. The data represents bottom ash composite results for week 4 of 2019 (January 20, 2019 to January 26, 2019).

The bottom ash meets the requirements of Metro Vancouver's Bottom Ash Management Plan and is suitable for beneficial use during Coquitlam Landfill closure works.



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Date Received: 29-JAN-19  
Report Date: 04-FEB-19 16:38 (MT)  
Version: FINAL

Client Phone: 604-521-1025

## Certificate of Analysis

Lab Work Order #: L2226145  
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	L2226145-1	L2226145-2	L2226145-3	L2226145-4	L2226145-5
		Description	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled Date	23-JAN-19	23-JAN-19	23-JAN-19	23-JAN-19	23-JAN-19
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1904-A-1	BA1904-A-2	BA1904-A-3	BA1904-A-4	BA1904-A-5
Grouping	Analyte						
<b>SOIL</b>							
<b>Physical Tests</b>	Moisture (%)		21.8	22.1	21.4	23.5	22.2
	pH (1:2 soil:water) (pH)		11.65	11.89	11.86	11.80	11.75
<b>Metals</b>	Aluminum (Al) (mg/kg)		31400	28800	31400	34100	34300
	Antimony (Sb) (mg/kg)		114	112	125	121	122
	Arsenic (As) (mg/kg)		22.0	22.6	18.4	24.0	22.3
	Barium (Ba) (mg/kg)		666	698	721	550	584
	Beryllium (Be) (mg/kg)		0.45	0.45	0.38	0.43	0.43
	Bismuth (Bi) (mg/kg)		6.07	6.47	7.02	7.73	7.94
	Boron (B) (mg/kg)		402	516	390	471	844
	Cadmium (Cd) (mg/kg)		10.0	14.4	8.11	11.8	11.2
	Calcium (Ca) (mg/kg)		134000	128000	118000	135000	137000
	Chromium (Cr) (mg/kg)		4240	154	126	159	125
	Cobalt (Co) (mg/kg)		49.3	21.1	52.3	659	271
	Copper (Cu) (mg/kg)		1420	2880	4570	1990	2060
	Iron (Fe) (mg/kg)		81900	55800	65400	52600	48400
	Lead (Pb) (mg/kg)		619	673	429	422	387
	Lithium (Li) (mg/kg)		17.4	19.2	16.3	39.0	23.1
	Magnesium (Mg) (mg/kg)		11000	10100	9520	9650	11800
	Manganese (Mn) (mg/kg)		1150	967	808	904	669
	Mercury (Hg) (mg/kg)		0.093	<0.050	<0.050	0.095	<0.050
	Molybdenum (Mo) (mg/kg)		591	52.9	76.0	108	52.6
	Nickel (Ni) (mg/kg)		2870	118	104	174	127
	Phosphorus (P) (mg/kg)		8520	8450	8410	9360	10200
	Potassium (K) (mg/kg)		4570	4300	4170	4620	4590
	Selenium (Se) (mg/kg)		0.33	0.40	0.62	0.42	0.43
	Silver (Ag) (mg/kg)		4.43	8.85	3.46	8.46	5.60
	Sodium (Na) (mg/kg)		14700	13700	14000	14500	14800
	Strontium (Sr) (mg/kg)		389	372	518	342	388
	Sulfur (S) (mg/kg)		10900	10400	9700	12600	11700
Thallium (Tl) (mg/kg)		0.066	0.066	0.064	0.080	0.140	
Tin (Sn) (mg/kg)		115	460	111	137	115	
Titanium (Ti) (mg/kg)		1240	1160	1510	1150	1060	
Tungsten (W) (mg/kg)		8.48	9.73	4.16	6.24	4.68	
Uranium (U) (mg/kg)		4.72	4.34	4.13	5.20	4.81	
Vanadium (V) (mg/kg)		60.3	46.9	57.3	49.0	46.6	
Zinc (Zn) (mg/kg)		3720	3240	3370	8330	22500	
Zirconium (Zr) (mg/kg)		1.1	1.4	1.4	1.5	1.5	

\* 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	L2226145-6 SOIL 23-JAN-19 09:00 BA1904-A-6	L2226145-7 SOIL 23-JAN-19 09:00 BA1904-A-7	L2226145-8 SOIL 23-JAN-19 09:00 BA1904-A-8	L2226145-9 SOIL 23-JAN-19 09:00 BA1904-A-9	L2226145-10 SOIL 23-JAN-19 09:00 BA1904-A-10	
Grouping	Analyte					
<b>SOIL</b>						
<b>Physical Tests</b>	Moisture (%)	22.7	21.8	22.9	22.8	21.0
	pH (1:2 soil:water) (pH)	11.89	11.84	11.74	11.78	11.94
<b>Metals</b>	Aluminum (Al) (mg/kg)	34600	53200	33100	28800	43400
	Antimony (Sb) (mg/kg)	117	99.9	123	107	107
	Arsenic (As) (mg/kg)	23.1	27.6	33.5	21.0	22.7
	Barium (Ba) (mg/kg)	529	724	656	630	728
	Beryllium (Be) (mg/kg)	0.44	0.42	0.38	0.36	0.39
	Bismuth (Bi) (mg/kg)	20.2	62.0	6.68	58.3	5.63
	Boron (B) (mg/kg)	436	431	367	327	580
	Cadmium (Cd) (mg/kg)	9.56	9.50	19.9	10.9	10.3
	Calcium (Ca) (mg/kg)	130000	132000	124000	126000	126000
	Chromium (Cr) (mg/kg)	156	213	142	256	206
	Cobalt (Co) (mg/kg)	53.1	46.7	40.1	36.9	29.0
	Copper (Cu) (mg/kg)	1410	1800	11600	4020	7120
	Iron (Fe) (mg/kg)	47700	50100	57800	57700	51700
	Lead (Pb) (mg/kg)	464	1200	797	717	363
	Lithium (Li) (mg/kg)	20.4	18.7	24.3	15.7	17.2
	Magnesium (Mg) (mg/kg)	9800	12700	10700	11200	11600
	Manganese (Mn) (mg/kg)	687	838	805	967	688
	Mercury (Hg) (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Molybdenum (Mo) (mg/kg)	52.5	46.1	49.2	57.9	52.4
	Nickel (Ni) (mg/kg)	137	172	198	394	179
	Phosphorus (P) (mg/kg)	9200	11100	9910	11100	10300
	Potassium (K) (mg/kg)	4710	4420	4340	4600	4670
	Selenium (Se) (mg/kg)	0.32	0.50	0.93	0.48	2.25
	Silver (Ag) (mg/kg)	5.80	3.00	3.87	4.34	4.06
	Sodium (Na) (mg/kg)	14400	14400	13700	14000	15700
	Strontium (Sr) (mg/kg)	359	274	307	269	339
	Sulfur (S) (mg/kg)	11000	11900	11200	12200	10800
	Thallium (Tl) (mg/kg)	0.062	0.076	0.079	0.068	0.062
	Tin (Sn) (mg/kg)	95.3	98.1	168	124	108
	Titanium (Ti) (mg/kg)	820	1940	1180	890	1660
	Tungsten (W) (mg/kg)	4.26	8.46	7.40	7.46	6.05
	Uranium (U) (mg/kg)	4.56	4.52	4.82	4.93	4.46
	Vanadium (V) (mg/kg)	45.7	61.6	46.5	50.5	50.5
	Zinc (Zn) (mg/kg)	3550	3840	6760	4740	3240
	Zirconium (Zr) (mg/kg)	1.4	3.0	1.2	1.0	1.8

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

## ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2226145-11	L2226145-12		
		Description	SOIL	SOIL		
		Sampled Date	23-JAN-19	23-JAN-19		
		Sampled Time	09:00	09:00		
		Client ID	BA1904-A-11	BA1904-A-12		
Grouping	Analyte					
<b>SOIL</b>						
<b>Physical Tests</b>	Moisture (%)		23.0	22.0		
	pH (1:2 soil:water) (pH)		11.96	11.87		
<b>Metals</b>	Aluminum (Al) (mg/kg)		34500	37400		
	Antimony (Sb) (mg/kg)		125	158		
	Arsenic (As) (mg/kg)		29.9	27.2		
	Barium (Ba) (mg/kg)		677	605		
	Beryllium (Be) (mg/kg)		0.40	0.41		
	Bismuth (Bi) (mg/kg)		7.49	6.68		
	Boron (B) (mg/kg)		374	507		
	Cadmium (Cd) (mg/kg)		8.87	10.4		
	Calcium (Ca) (mg/kg)		131000	127000		
	Chromium (Cr) (mg/kg)		142	170		
	Cobalt (Co) (mg/kg)		230	78.6		
	Copper (Cu) (mg/kg)		2000	3280		
	Iron (Fe) (mg/kg)		47800	56500		
	Lead (Pb) (mg/kg)		527	614		
	Lithium (Li) (mg/kg)		45.3	18.4		
	Magnesium (Mg) (mg/kg)		11000	10400		
	Manganese (Mn) (mg/kg)		738	2480		
	Mercury (Hg) (mg/kg)		<0.050	<0.050		
	Molybdenum (Mo) (mg/kg)		44.6	122		
	Nickel (Ni) (mg/kg)		152	99.3		
	Phosphorus (P) (mg/kg)		11300	11100		
	Potassium (K) (mg/kg)		4350	4710		
	Selenium (Se) (mg/kg)		0.47	0.33		
	Silver (Ag) (mg/kg)		3.47	3.54		
	Sodium (Na) (mg/kg)		14500	15700		
	Strontium (Sr) (mg/kg)		305	299		
	Sulfur (S) (mg/kg)		12000	11800		
	Thallium (Tl) (mg/kg)		0.067	0.070		
	Tin (Sn) (mg/kg)		108	93.8		
	Titanium (Ti) (mg/kg)		889	1280		
	Tungsten (W) (mg/kg)		8.14	5.32		
	Uranium (U) (mg/kg)		4.60	4.98		
Vanadium (V) (mg/kg)		46.9	50.0			
Zinc (Zn) (mg/kg)		3530	3640			
Zirconium (Zr) (mg/kg)		1.1	1.8			

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

## ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2226145-1	L2226145-2	L2226145-3	L2226145-4	L2226145-5
		Description	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled Date	23-JAN-19	23-JAN-19	23-JAN-19	23-JAN-19	23-JAN-19
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1904-A-1	BA1904-A-2	BA1904-A-3	BA1904-A-4	BA1904-A-5
Grouping	Analyte						
<b>SOIL</b>							
<b>TCLP Metals</b>	1st Preliminary pH (pH)		11.74	11.84	11.77	11.75	11.85
	2nd Preliminary pH (pH)		10.18	9.91	9.90	9.62	10.40
	Final pH (pH)		6.16	6.30	6.04	6.24	6.08
	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)		5.57	6.46	6.00	6.51	5.53
	Cadmium (Cd)-Leachable (mg/L)		0.146	0.185	0.397	0.157	0.202
	Calcium (Ca)-Leachable (mg/L)		2060	2120	2040	2110	2050
	Chromium (Cr)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Cobalt (Co)-Leachable (mg/L)		0.366	0.409	0.507	0.822	0.491
	Copper (Cu)-Leachable (mg/L)		1.02	0.713	0.603	1.22	0.741
	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)		128	130	122	129	124
	Mercury (Hg)-Leachable (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Nickel (Ni)-Leachable (mg/L)		0.44	0.45	0.39	0.42	0.57
	Selenium (Se)-Leachable (mg/L)		<1.0	<1.0	<1.0	<1.0	<1.0
	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)		47.2	35.6	40.5	48.6	61.9

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

## ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2226145-6	L2226145-7	L2226145-8	L2226145-9	L2226145-10
		Description	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled Date	23-JAN-19	23-JAN-19	23-JAN-19	23-JAN-19	23-JAN-19
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1904-A-6	BA1904-A-7	BA1904-A-8	BA1904-A-9	BA1904-A-10
Grouping	Analyte						
<b>SOIL</b>							
<b>TCLP Metals</b>	1st Preliminary pH (pH)		11.74	11.71	11.74	11.56	11.61
	2nd Preliminary pH (pH)		9.67	9.75	9.56	9.20	9.07
	Final pH (pH)		6.42	6.18	6.19	6.25	6.23
	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)		6.74	6.83	6.22	6.48	7.59
	Cadmium (Cd)-Leachable (mg/L)		0.207	0.201	0.148	0.137	0.208
	Calcium (Ca)-Leachable (mg/L)		2040	2050	2090	1980	2030
	Chromium (Cr)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Cobalt (Co)-Leachable (mg/L)		0.506	0.517	0.540	1.14	0.514
	Copper (Cu)-Leachable (mg/L)		0.751	0.505	0.915	1.35	1.19
	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	0.33
	Magnesium (Mg)-Leachable (mg/L)		129	127	129	123	127
	Mercury (Hg)-Leachable (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Nickel (Ni)-Leachable (mg/L)		0.52	0.46	0.53	0.50	0.38
	Selenium (Se)-Leachable (mg/L)		<1.0	<1.0	<1.0	<1.0	<1.0
	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)		35.3	45.8	33.8	29.2	40.5

\* 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	L2226145-11 SOIL 23-JAN-19 09:00 BA1904-A-11	L2226145-12 SOIL 23-JAN-19 09:00 BA1904-A-12		
Grouping	Analyte				
<b>SOIL</b>					
<b>TCLP Metals</b>	1st Preliminary pH (pH)	11.67	11.58		
	2nd Preliminary pH (pH)	9.36	9.55		
	Final pH (pH)	6.24	6.17		
	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)	5.69	5.97		
	Cadmium (Cd)-Leachable (mg/L)	0.443	0.168		
	Calcium (Ca)-Leachable (mg/L)	2020	2050		
	Chromium (Cr)-Leachable (mg/L)	<0.25	<0.25		
	Cobalt (Co)-Leachable (mg/L)	0.331	0.478		
	Copper (Cu)-Leachable (mg/L)	1.57	0.735		
	Iron (Fe)-Leachable (mg/L)	<5.0	<5.0		
	Lead (Pb)-Leachable (mg/L)	0.36	<0.25		
	Magnesium (Mg)-Leachable (mg/L)	127	126		
	Mercury (Hg)-Leachable (mg/L)	<0.0010	<0.0010		
	Nickel (Ni)-Leachable (mg/L)	0.40	0.44		
	Selenium (Se)-Leachable (mg/L)	<1.0	<1.0		
	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)	42.2	36.3		

\* 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)
Matrix Spike	Calcium (Ca)-Leachable	MS-B	L2226145-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Cobalt (Co)-Leachable	MS-B	L2226145-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Zinc (Zn)-Leachable	MS-B	L2226145-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9

### Qualifiers for Individual Parameters Listed:

Qualifier	Description
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-ICP-VA</b>	Soil	Metals by ICPOES (TCLP)	EPA 1311/6010B
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 inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).			
<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 the pH, Electrometric in Soil and Sediment method - Section B Physical/Inorganic and Misc. Constituents, BC Environmental Laboratory Manual 2007. 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.*



L2226145-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		<input type="checkbox"/> Standard <input type="checkbox"/> Other				<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		Email 2: rjohnson4@covanta.com				<input type="radio"/> Same Day or Weekend Emergency - Contact ALS to Confirm TAT									
Fax: <input type="checkbox"/> Yes <input type="checkbox"/> No		Email 3: dskrypnik@covanta.com				<b>Analysis Request</b>									
		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:													
Lab Work Order # (lab use only)		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	Chromium 6	MET-CSR+FULL-VA (all metals)					Number of Containers
BA1904-A-1				23-Jan-19	9:00	Soil	X	X		X					1
BA1904-A-2				23-Jan-19	9:00	Soil	X	X		X					1
BA1904-A-3				23-Jan-19	9:00	Soil	X	X		X					1
BA1904-A-4				23-Jan-19	9:00	Soil	X	X		X					1
BA1904-A-5				23-Jan-19	9:00	Soil	X	X		X					1
BA1904-A-6				23-Jan-19	9:00	Soil	X	X		X					1
BA1904-A-7				23-Jan-19	9:00	Soil	X	X		X					1
BA1904-A-8				23-Jan-19	9:00	Soil	X	X		X					1
BA1904-A-9				23-Jan-19	9:00	Soil	X	X		X					1
BA1904-A-10				23-Jan-19	9:00	Soil	X	X		X					1
BA1904-A-11				23-Jan-19	9:00	Soil	X	X		X					1
BA1904-A-12				23-Jan-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:					
<i>[Signature]</i>	29-Jan-19	07:00	<i>[Signature]</i>	Jan 29, 2019	10:40am	20 °C				Yes / No ?					
										If Yes add SIF					