

Bottom Ash Data

2019 Week 36

The following analytical report was sent to the Ministry of Environment and Climate Change Strategy on September 23, 2019. The data represents bottom ash composite results for week 36 of 2019 (September 1, 2019 to September 7, 2019).

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



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Burnaby BC V3N 4V3

Date Received: 10-SEP-19
Report Date: 19-SEP-19 10:40 (MT)
Version: FINAL

Client Phone: 604-521-1025

Certificate of Analysis

Lab Work Order #: L2344555
Project P.O. #: VANCO-0000048466
Job Reference:
C of C Numbers:
Legal Site Desc:

Brent Mack, B.Sc.
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2344555-1	L2344555-2	L2344555-3	L2344555-4	L2344555-5
		Description	Soil	Soil	Soil	Soil	Soil
		Sampled Date	04-SEP-19	04-SEP-19	04-SEP-19	04-SEP-19	04-SEP-19
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1936-A-1	BA1936-A-2	BA1936-A-3	BA1936-A-4	BA1936-A-5
Grouping	Analyte						
SOIL							
Physical Tests	Moisture (%)		19.1	19.9	20.4	20.9	21.1
	pH (1:2 soil:water) (pH)		10.45	10.49	10.60	10.49	10.52
Metals	Aluminum (Al) (mg/kg)		33800	26300	30900	27300	29100
	Antimony (Sb) (mg/kg)		123	108	102	264	115
	Arsenic (As) (mg/kg)		45.1	31.5	34.2	40.9	31.4
	Barium (Ba) (mg/kg)		555	520	508	529	567
	Beryllium (Be) (mg/kg)		0.47	0.37	0.38	0.39	0.36
	Bismuth (Bi) (mg/kg)		5.73	4.35	5.69	6.65	5.14
	Boron (B) (mg/kg)		364	257	236	279	317
	Cadmium (Cd) (mg/kg)		11.6	9.52	9.45	22.5	10.4
	Calcium (Ca) (mg/kg)		130000	109000	117000	109000	114000
	Chromium (Cr) (mg/kg)		186	172	225	164	362
	Cobalt (Co) (mg/kg)		53.0	45.6	87.0	82.1	30.5
	Copper (Cu) (mg/kg)		2510	2780	3880	2230	2290
	Iron (Fe) (mg/kg)		62200	75000	66600	65900	75800
	Lead (Pb) (mg/kg)		461	810	454	5580	514
	Lithium (Li) (mg/kg)		40.1	17.9	19.1	18.1	19.0
	Magnesium (Mg) (mg/kg)		12500	9800	9430	9590	10000
	Manganese (Mn) (mg/kg)		1330	1710	838	997	919
	Mercury (Hg) (mg/kg)		0.053	<0.050	<0.050	<0.050	<0.050
	Molybdenum (Mo) (mg/kg)		31.0	25.3	37.2	25.1	53.9
	Nickel (Ni) (mg/kg)		123	175	203	111	258
	Phosphorus (P) (mg/kg)		10800	10100	10800	9700	10900
	Potassium (K) (mg/kg)		5770	5230	4980	5000	4870
	Selenium (Se) (mg/kg)		0.32	0.30	0.39	0.33	0.48
	Silver (Ag) (mg/kg)		4.57	4.48	5.80	1.20	6.47
	Sodium (Na) (mg/kg)		15200	13100	13400	13300	13300
	Strontium (Sr) (mg/kg)		332	265	324	266	274
	Sulfur (S) (mg/kg)		13500	11100	11400	11400	11800
Thallium (Tl) (mg/kg)		<0.050	<0.050	0.053	0.078	<0.050	
Tin (Sn) (mg/kg)		100	624	108	137	94.0	
Titanium (Ti) (mg/kg)		507	263	275	365	492	
Tungsten (W) (mg/kg)		13.2	7.87	7.72	24.7	11.9	
Uranium (U) (mg/kg)		6.61	5.41	5.47	5.60	5.65	
Vanadium (V) (mg/kg)		52.8	50.1	49.8	44.7	53.3	
Zinc (Zn) (mg/kg)		5490	5500	4620	24200	6570	
Zirconium (Zr) (mg/kg)		1.5	1.5	1.7	1.1	1.1	

* 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	L2344555-6 Soil 04-SEP-19 09:00 BA1936-A-6	L2344555-7 Soil 04-SEP-19 09:00 BA1936-A-7	L2344555-8 Soil 04-SEP-19 09:00 BA1936-A-8	L2344555-9 Soil 04-SEP-19 09:00 BA1936-A-9	L2344555-10 Soil 04-SEP-19 09:00 BA1936-A-10	
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	18.1	19.5	19.0	18.3	14.5
	pH (1:2 soil:water) (pH)	10.57	10.43	10.36	10.70	10.68
Metals	Aluminum (Al) (mg/kg)	35800	34900	40200	27900	30700
	Antimony (Sb) (mg/kg)	101	155	139	96.5	111
	Arsenic (As) (mg/kg)	30.2	33.3	30.9	36.2	32.7
	Barium (Ba) (mg/kg)	635	607	562	490	508
	Beryllium (Be) (mg/kg)	0.42	0.32	0.35	0.39	0.42
	Bismuth (Bi) (mg/kg)	19.1	5.30	6.32	4.88	12.4
	Boron (B) (mg/kg)	335	213	413	445	708
	Cadmium (Cd) (mg/kg)	12.2	9.59	10.6	10.8	10.7
	Calcium (Ca) (mg/kg)	119000	110000	120000	125000	124000
	Chromium (Cr) (mg/kg)	188	249	182	202	172
	Cobalt (Co) (mg/kg)	106	61.8	51.0	28.1	334
	Copper (Cu) (mg/kg)	1900	33300	1550	3230	1890
	Iron (Fe) (mg/kg)	67400	70100	62100	51800	58200
	Lead (Pb) (mg/kg)	422	387	4530	484	426
	Lithium (Li) (mg/kg)	25.9	18.4	17.9	19.7	28.9
	Magnesium (Mg) (mg/kg)	9930	9890	10500	10100	11800
	Manganese (Mn) (mg/kg)	1200	995	894	703	1000
	Mercury (Hg) (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Molybdenum (Mo) (mg/kg)	104	33.6	27.6	35.8	33.4
	Nickel (Ni) (mg/kg)	200	132	191	105	119
	Phosphorus (P) (mg/kg)	10000	9940	9540	12100	11200
	Potassium (K) (mg/kg)	5070	4910	4940	5170	5320
	Selenium (Se) (mg/kg)	0.35	1.17	0.31	0.39	0.30
	Silver (Ag) (mg/kg)	5.76	5.37	5.45	6.31	5.75
	Sodium (Na) (mg/kg)	14400	12400	12700	14500	16800
	Strontium (Sr) (mg/kg)	431	290	289	283	268
	Sulfur (S) (mg/kg)	11500	11400	12100	12300	11400
	Thallium (Tl) (mg/kg)	<0.050	0.065	<0.050	0.051	<0.050
	Tin (Sn) (mg/kg)	624	81.7	285	108	112
	Titanium (Ti) (mg/kg)	840	799	829	481	324
	Tungsten (W) (mg/kg)	10.2	10.8	12.1	11.7	9.08
	Uranium (U) (mg/kg)	5.89	5.65	5.79	6.01	5.58
	Vanadium (V) (mg/kg)	53.0	47.5	46.6	49.7	46.4
	Zinc (Zn) (mg/kg)	4000	6380	3680	3430	3890
	Zirconium (Zr) (mg/kg)	1.2	1.2	1.4	1.8	1.9

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2344555-11	L2344555-12			
		Description	Soil	Soil			
		Sampled Date	04-SEP-19	04-SEP-19			
		Sampled Time	09:00	09:00			
		Client ID	BA1936-A-11	BA1936-A-12			
Grouping	Analyte						
SOIL							
Physical Tests	Moisture (%)	21.0	18.7				
	pH (1:2 soil:water) (pH)	10.64	10.54				
Metals	Aluminum (Al) (mg/kg)	34300	27400				
	Antimony (Sb) (mg/kg)	94.0	96.1				
	Arsenic (As) (mg/kg)	32.1	29.5				
	Barium (Ba) (mg/kg)	571	552				
	Beryllium (Be) (mg/kg)	0.42	0.36				
	Bismuth (Bi) (mg/kg)	4.21	6.11				
	Boron (B) (mg/kg)	291	227				
	Cadmium (Cd) (mg/kg)	9.95	12.8				
	Calcium (Ca) (mg/kg)	122000	108000				
	Chromium (Cr) (mg/kg)	209	179				
	Cobalt (Co) (mg/kg)	47.4	167				
	Copper (Cu) (mg/kg)	3590	1590				
	Iron (Fe) (mg/kg)	67200	50000				
	Lead (Pb) (mg/kg)	571	1580				
	Lithium (Li) (mg/kg)	19.8	20.7				
	Magnesium (Mg) (mg/kg)	11500	9410				
	Manganese (Mn) (mg/kg)	954	892				
	Mercury (Hg) (mg/kg)	<0.050	<0.050				
	Molybdenum (Mo) (mg/kg)	30.7	32.5				
	Nickel (Ni) (mg/kg)	141	362				
	Phosphorus (P) (mg/kg)	11900	9290				
	Potassium (K) (mg/kg)	5670	4750				
	Selenium (Se) (mg/kg)	0.31	0.24				
	Silver (Ag) (mg/kg)	14.6	16.1				
	Sodium (Na) (mg/kg)	14900	12900				
	Strontium (Sr) (mg/kg)	298	269				
	Sulfur (S) (mg/kg)	11700	10300				
	Thallium (Tl) (mg/kg)	0.056	0.050				
	Tin (Sn) (mg/kg)	336	120				
	Titanium (Ti) (mg/kg)	402	607				
	Tungsten (W) (mg/kg)	15.9	7.78				
	Uranium (U) (mg/kg)	5.73	5.07				
Vanadium (V) (mg/kg)	51.8	42.8					
Zinc (Zn) (mg/kg)	4210	4010					
Zirconium (Zr) (mg/kg)	1.7	1.1					

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2344555-1	L2344555-2	L2344555-3	L2344555-4	L2344555-5
		Description	Soil	Soil	Soil	Soil	Soil
		Sampled Date	04-SEP-19	04-SEP-19	04-SEP-19	04-SEP-19	04-SEP-19
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1936-A-1	BA1936-A-2	BA1936-A-3	BA1936-A-4	BA1936-A-5
Grouping	Analyte						
SOIL							
TCLP Metals	1st Preliminary pH (pH)		11.52	11.53	11.56	11.52	11.52
	2nd Preliminary pH (pH)		8.08	8.08	7.96	7.96	8.66
	Final pH (pH)		6.03	6.11	6.15	5.90	5.91
	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)		2.93	3.73	3.26	3.32	3.23
	Cadmium (Cd)-Leachable (mg/L)		0.168	0.171	0.175	0.207	0.205
	Calcium (Ca)-Leachable (mg/L)		1860	1850	1880	1880	1800
	Chromium (Cr)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Cobalt (Co)-Leachable (mg/L)		1.24	0.895	1.17	0.803	0.784
	Copper (Cu)-Leachable (mg/L)		0.663	2.28	0.939	1.56	1.54
	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)		129	127	132	134	130
	Mercury (Hg)-Leachable (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Nickel (Ni)-Leachable (mg/L)		0.91	0.58	0.61	0.71	0.70
	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)		53.9	42.6	36.7	57.5	57.6

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2344555-6	L2344555-7	L2344555-8	L2344555-9	L2344555-10
		Description	Soil	Soil	Soil	Soil	Soil
		Sampled Date	04-SEP-19	04-SEP-19	04-SEP-19	04-SEP-19	04-SEP-19
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1936-A-6	BA1936-A-7	BA1936-A-8	BA1936-A-9	BA1936-A-10
Grouping	Analyte						
SOIL							
TCLP Metals	1st Preliminary pH (pH)		11.53	11.58	11.52	11.62	11.63
	2nd Preliminary pH (pH)		8.39	8.34	8.16	8.80	8.70
	Final pH (pH)		6.15	6.15	6.12	5.88	5.61
	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)		4.05	2.87	3.59	2.83	2.82
	Cadmium (Cd)-Leachable (mg/L)		0.155	0.180	0.174	0.254	0.181
	Calcium (Ca)-Leachable (mg/L)		1730	1850	1930	1750	1610
	Chromium (Cr)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Cobalt (Co)-Leachable (mg/L)		0.642	0.787	1.75	0.612	0.765
	Copper (Cu)-Leachable (mg/L)		0.892	1.12	0.623	1.06	1.28
	Iron (Fe)-Leachable (mg/L)		<5.0	<5.0	<5.0	<5.0	7.5
	Lead (Pb)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Magnesium (Mg)-Leachable (mg/L)		118	131	144	127	109
	Mercury (Hg)-Leachable (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Nickel (Ni)-Leachable (mg/L)		0.45	0.44	0.49	0.62	0.73
	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)		49.7	81.6	39.9	62.6	40.2

* 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	L2344555-11 Soil 04-SEP-19 09:00 BA1936-A-11	L2344555-12 Soil 04-SEP-19 09:00 BA1936-A-12		
Grouping	Analyte				
SOIL					
TCLP Metals	1st Preliminary pH (pH)	11.60	11.59		
	2nd Preliminary pH (pH)	8.71	8.93		
	Final pH (pH)	6.35	6.03		
	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)	3.56	4.38		
	Cadmium (Cd)-Leachable (mg/L)	0.271	0.230		
	Calcium (Ca)-Leachable (mg/L)	1970	2080		
	Chromium (Cr)-Leachable (mg/L)	<0.25	<0.25		
	Cobalt (Co)-Leachable (mg/L)	0.978	0.949		
	Copper (Cu)-Leachable (mg/L)	0.671	1.78		
	Iron (Fe)-Leachable (mg/L)	<5.0	<5.0		
	Lead (Pb)-Leachable (mg/L)	<0.25	0.31		
	Magnesium (Mg)-Leachable (mg/L)	150	150		
	Mercury (Hg)-Leachable (mg/L)	<0.0010	<0.0010		
	Nickel (Ni)-Leachable (mg/L)	0.48	0.52		
	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)	37.3	51.0		

* 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	Antimony (Sb)	DUP-H	L2344555-10, -11, -12, -9
Duplicate	Antimony (Sb)	DUP-H	L2344555-10, -11, -12, -9
Duplicate	Arsenic (As)	DUP-H	L2344555-10, -11, -12, -9
Duplicate	Arsenic (As)	DUP-H	L2344555-10, -11, -12, -9
Duplicate	Cadmium (Cd)	DUP-H	L2344555-10, -11, -12, -9
Duplicate	Calcium (Ca)	DUP-H	L2344555-10, -11, -12, -9
Duplicate	Lead (Pb)	DUP-H	L2344555-10, -11, -12, -9
Duplicate	Silver (Ag)	DUP-H	L2344555-10, -11, -12, -9
Duplicate	Uranium (U)	DUP-H	L2344555-10, -11, -12, -9
Matrix Spike	Calcium (Ca)-Leachable	MS-B	L2344555-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Cobalt (Co)-Leachable	MS-B	L2344555-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Zinc (Zn)-Leachable	MS-B	L2344555-1, -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**
AG-200.2-A-CCMS-VA	Soil	Elevated Ag in Soil by CRC ICPMS	EPA 200.2/6020A
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.			
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, 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:

Reference Information

Laboratory Definition Code	Laboratory Location
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VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA
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Chain of Custody Numbers:

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.



Ch:



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"/> Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT											
Address: 5150 Riverbend Drive				<input type="checkbox"/> Excel				<input type="checkbox"/> Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT											
Burnaby BC				<input type="checkbox"/> Digital				<input type="checkbox"/> Same Day or Weekend Emergency - Contact ALS to Confirm TAT.											
Phone: 604-521-1025				<input type="checkbox"/> Fax															
				<input type="checkbox"/> Yes				<input type="checkbox"/> No											
				Email 1: smckinney@covanta.com															
				Email 2: rjohnson4@covanta.com															
				Email 3: dskrypnik@covanta.com															
				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:															

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		
BA1936-A-1		04-Sep-19	9:00	Soil	X	X		X						1	
BA1936-A-2		04-Sep-19	9:00	Soil	X	X		X						1	
BA1936-A-3		04-Sep-19	9:00	Soil	X	X		X						1	
BA1936-A-4		04-Sep-19	9:00	Soil	X	X		X						1	
BA1936-A-5		04-Sep-19	9:00	Soil	X	X		X						1	
BA1936-A-6		04-Sep-19	9:00	Soil	X	X		X						1	
BA1936-A-7		04-Sep-19	9:00	Soil	X	X		X						1	
BA1936-A-8		04-Sep-19	9:00	Soil	X	X		X						1	
BA1936-A-9		04-Sep-19	9:00	Soil	X	X		X						1	
BA1936-A-10		04-Sep-19	9:00	Soil	X	X		X						1	
BA1936-A-11		04-Sep-19	9:00	Soil	X	X		X						1	
BA1936-A-12		04-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): 16-Sep-19	Time (hh-mm): 0800	Received by: HA	Date: 9/10	Time: 12pm	Temperature: 22°C	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF