

## Bottom Ash Data

2023 Week 41

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The following analytical report represents bottom ash composite results for week 41 of 2023 (October 8, 2023 to October 14, 2023).

The bottom ash meets the conditions of Metro Vancouver's 2020 Bottom Ash Management Plan and is suitable for disposal.



## CERTIFICATE OF ANALYSIS

**Work Order** : **VA23C5386**  
**Contact** : **Covanta Burnaby Renewable Energy, ULC**  
**Contact** : Nicole Victor  
**Address** : 5150 Riverbend Drive  
                   Burnaby BC Canada V3N 4V3  
**Telephone** : ----  
**Project** : Weekly Bottom Ash - Suite  
**PO** : VANCO0000051998  
**C-O-C number** : ----  
**Sampler** : ----  
**Site** : ----  
**Quote number** : Standing Offer (BC work)  
**No. of samples received** : 12  
**No. of samples analysed** : 12

**Page** : 1 of 11  
**Laboratory** : ALS Environmental - Vancouver  
**Account Manager** : Ian Chen  
**Address** : 8081 Lougheed Highway  
                   Burnaby BC Canada V5A 1W9  
**Telephone** : +1 604 253 4188  
**Date Samples Received** : 23-Oct-2023 12:15  
**Date Analysis Commenced** : 25-Oct-2023  
**Issue Date** : 01-Nov-2023 23:18

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Janice Leung	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Sam Silveira	Lab Assistant	Metals, Burnaby, British Columbia



## General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances  
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
%	percent
mg/kg	milligrams per kilogram
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior 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.

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

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



## Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil/Solid)					BA2341-A-1	BA2341-A-2	BA2341-A-3	BA2341-A-4	BA2341-A-5
Client sampling date / time					11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5386-001	VA23C5386-002	VA23C5386-003	VA23C5386-004	VA23C5386-005
					Result	Result	Result	Result	Result
<b>Physical Tests</b>									
Moisture	----	E144/VA	0.25	%	28.0	28.2	25.9	27.3	24.7
pH (1:2 soil:water)	----	E108/VA	0.10	pH units	10.3	10.4	10.3	10.3	10.3
<b>Metals</b>									
Aluminum	7429-90-5	E440/VA	50	mg/kg	35700	38200	40600	34400	38000
Antimony	7440-36-0	E440/VA	0.10	mg/kg	119	94.2	113	116	117
Arsenic	7440-38-2	E440/VA	0.10	mg/kg	28.0	18.8	21.7	22.0	21.2
Barium	7440-39-3	E440/VA	0.50	mg/kg	442	570	439	408	382
Beryllium	7440-41-7	E440/VA	0.10	mg/kg	0.40	0.38	0.38	0.32	0.36
Bismuth	7440-69-9	E440/VA	0.20	mg/kg	11.1	8.37	10.2	8.11	11.4
Boron	7440-42-8	E440/VA	5.0	mg/kg	167	158	216	160	177
Cadmium	7440-43-9	E440/VA	0.020	mg/kg	12.1	8.06	10.8	10.2	12.0
Calcium	7440-70-2	E440/VA	50	mg/kg	172000	151000	158000	153000	169000
Chromium	7440-47-3	E440/VA	0.50	mg/kg	155	184	254	202	172
Cobalt	7440-48-4	E440/VA	0.10	mg/kg	60.8	393	177	37.6	176
Copper	7440-50-8	E440/VA	0.50	mg/kg	3790	3410	1700	6660	4350
Iron	7439-89-6	E440/VA	50	mg/kg	44400	79800	51200	61700	40800
Lead	7439-92-1	E440/VA	0.50	mg/kg	436	290	1260	524	1130
Lithium	7439-93-2	E440/VA	2.0	mg/kg	27.1	57.7	35.3	30.5	34.1
Magnesium	7439-95-4	E440/VA	20	mg/kg	14600	12500	12400	12500	13600
Manganese	7439-96-5	E440/VA	1.0	mg/kg	1070	1030	1220	1090	724
Mercury	7439-97-6	E510/VA	0.0500	mg/kg	0.0581	0.0636	0.0932	0.0630	0.119
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg	32.8	19.4	39.0	19.7	23.5
Nickel	7440-02-0	E440/VA	0.50	mg/kg	139	212	294	468	121
Phosphorus	7723-14-0	E440/VA	50	mg/kg	12600	9460	11500	10400	12100
Potassium	7440-09-7	E440/VA	100	mg/kg	7580	6500	8350	7320	8150
Selenium	7782-49-2	E440/VA	0.20	mg/kg	0.36	0.47	0.33	0.30	0.38
Silver	7440-22-4	E440/VA	0.10	mg/kg	5.10	6.20	3.88	3.98	6.08
Sodium	7440-23-5	E440/VA	50	mg/kg	19800	16700	21900	18800	21100
Strontium	7440-24-6	E440/VA	0.50	mg/kg	326	295	310	298	334



## Analytical Results

Sub-Matrix: Soil					Client sample ID	BA2341-A-1	BA2341-A-2	BA2341-A-3	BA2341-A-4	BA2341-A-5
(Matrix: Soil/Solid)					Client sampling date / time	11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5386-001	VA23C5386-002	VA23C5386-003	VA23C5386-004	VA23C5386-005	
					Result	Result	Result	Result	Result	
<b>Metals</b>										
Sulfur	7704-34-9	E440/VA	1000	mg/kg	13700	11300	13300	12200	14700	
Thallium	7440-28-0	E440/VA	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	0.055	
Tin	7440-31-5	E440/VA	2.0	mg/kg	131	107	135	147	116	
Titanium	7440-32-6	E440/VA	1.0	mg/kg	202	304	192	201	210	
Tungsten	7440-33-7	E440/VA	0.50	mg/kg	11.2	8.92	9.13	11.6	13.2	
Uranium	7440-61-1	E440/VA	0.050	mg/kg	3.54	3.12	3.54	3.16	3.69	
Vanadium	7440-62-2	E440/VA	0.20	mg/kg	44.5	42.6	46.8	41.9	44.6	
Zinc	7440-66-6	E440/VA	2.0	mg/kg	5060	3570	3740	4820	4410	
Zirconium	7440-67-7	E440/VA	1.0	mg/kg	2.2	2.1	4.0	2.7	3.4	
<b>TCLP Metals</b>										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units	11.5	11.5	11.5	11.6	11.4	
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units	5.46	5.37	5.64	6.07	5.46	
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units	2.87	2.87	2.87	2.87	2.87	
pH, TCLP final	----	EPP444/VA	0.010	pH units	7.18	6.83	6.85	6.72	6.62	
Antimony, TCLP	7440-36-0	E444/VA	1.00	mg/L	<1.00	<1.00	<1.00	<1.00	<1.00	
Arsenic, TCLP	7440-38-2	E444/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Barium, TCLP	7440-39-3	E444/VA	2.5	mg/L	<2.5	<2.5	<2.5	<2.5	<2.5	
Beryllium, TCLP	7440-41-7	E444/VA	0.025	mg/L	<0.025	<0.025	<0.025	<0.025	<0.025	
Boron, TCLP	7440-42-8	E444/VA	0.50	mg/L	1.75	1.76	1.79	1.75	1.72	
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L	0.055	0.147	0.079	0.184	0.095	
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L	1780	1840	1940	1890	1830	
Chromium, TCLP	7440-47-3	E444/VA	0.25	mg/L	<0.25	<0.25	<0.25	<0.25	<0.25	
Cobalt, TCLP	7440-48-4	E444/VA	0.050	mg/L	1.33	0.642	1.57	0.746	0.912	
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L	0.933	1.14	1.00	0.872	0.966	
Iron, TCLP	7439-89-6	E444/VA	5.0	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	
Lead, TCLP	7439-92-1	E444/VA	0.25	mg/L	<0.25	<0.25	<0.25	<0.25	<0.25	
Magnesium, TCLP	7439-95-4	E444/VA	2.5	mg/L	100	106	112	109	105	
Mercury, TCLP	7439-97-6	E512/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Nickel, TCLP	7440-02-0	E444/VA	0.25	mg/L	<0.25	0.29	0.52	0.30	0.34	
Selenium, TCLP	7782-49-2	E444/VA	0.10	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	



## Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BA2341-A-1	BA2341-A-2	BA2341-A-3	BA2341-A-4	BA2341-A-5
Client sampling date / time					11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5386-001	VA23C5386-002	VA23C5386-003	VA23C5386-004	VA23C5386-005	
					Result	Result	Result	Result	Result	
<b>TCLP Metals</b>										
Silver, TCLP	7440-22-4	E444/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Thallium, TCLP	7440-28-0	E444/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium, TCLP	7440-61-1	E444/VA	0.20	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vanadium, TCLP	7440-62-2	E444/VA	0.15	mg/L	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Zinc, TCLP	7440-66-6	E444/VA	0.50	mg/L	3.86	14.0	12.7	11.0	14.6	
Zirconium, TCLP	7440-67-7	E444/VA	10	mg/L	<10	<10	<10	<10	<10	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



## Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil/Solid)					BA2341-A-6	BA2341-A-7	BA2341-A-8	BA2341-A-9	BA2341-A-10
Client sampling date / time					11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5386-006	VA23C5386-007	VA23C5386-008	VA23C5386-009	VA23C5386-010
					Result	Result	Result	Result	Result
<b>Physical Tests</b>									
Moisture	---	E144/VA	0.25	%	26.4	26.7	26.7	23.9	26.9
pH (1:2 soil:water)	---	E108/VA	0.10	pH units	10.3	10.9	10.4	10.2	10.3
<b>Metals</b>									
Aluminum	7429-90-5	E440/VA	50	mg/kg	44800	40300	36600	40400	41500
Antimony	7440-36-0	E440/VA	0.10	mg/kg	97.0	150	89.7	93.7	105
Arsenic	7440-38-2	E440/VA	0.10	mg/kg	24.2	19.4	23.8	20.7	18.9
Barium	7440-39-3	E440/VA	0.50	mg/kg	421	476	612	468	498
Beryllium	7440-41-7	E440/VA	0.10	mg/kg	0.36	0.42	0.39	0.36	0.35
Bismuth	7440-69-9	E440/VA	0.20	mg/kg	12.5	8.78	6.89	9.54	11.4
Boron	7440-42-8	E440/VA	5.0	mg/kg	189	145	184	160	169
Cadmium	7440-43-9	E440/VA	0.020	mg/kg	28.4	9.17	8.50	10.2	13.2
Calcium	7440-70-2	E440/VA	50	mg/kg	152000	164000	150000	162000	148000
Chromium	7440-47-3	E440/VA	0.50	mg/kg	146	137	259	159	174
Cobalt	7440-48-4	E440/VA	0.10	mg/kg	112	113	81.3	154	166
Copper	7440-50-8	E440/VA	0.50	mg/kg	2680	1650	2340	1330	2980
Iron	7439-89-6	E440/VA	50	mg/kg	51800	44200	72500	52700	66300
Lead	7439-92-1	E440/VA	0.50	mg/kg	341	484	8500	336	340
Lithium	7439-93-2	E440/VA	2.0	mg/kg	31.1	29.3	30.1	32.8	33.8
Magnesium	7439-95-4	E440/VA	20	mg/kg	12000	12200	12300	13300	12200
Manganese	7439-96-5	E440/VA	1.0	mg/kg	902	1570	4300	836	1060
Mercury	7439-97-6	E510/VA	0.0500	mg/kg	0.113	0.0693	0.114	0.0719	0.0935
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg	19.3	17.6	18.5	18.2	17.1
Nickel	7440-02-0	E440/VA	0.50	mg/kg	118	1160	313	147	175
Phosphorus	7723-14-0	E440/VA	50	mg/kg	10900	12400	10600	12400	9680
Potassium	7440-09-7	E440/VA	100	mg/kg	7330	6770	5640	7260	6640
Selenium	7782-49-2	E440/VA	0.20	mg/kg	0.32	0.34	0.29	0.37	0.28
Silver	7440-22-4	E440/VA	0.10	mg/kg	4.90	6.33	3.80	3.87	3.80
Sodium	7440-23-5	E440/VA	50	mg/kg	19300	18100	16700	19100	17600
Strontium	7440-24-6	E440/VA	0.50	mg/kg	308	329	331	309	289
Sulfur	7704-34-9	E440/VA	1000	mg/kg	13700	12700	10400	13400	11600



## Analytical Results

Sub-Matrix: Soil					Client sample ID	BA2341-A-6	BA2341-A-7	BA2341-A-8	BA2341-A-9	BA2341-A-10
(Matrix: Soil/Solid)					Client sampling date / time	11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5386-006	VA23C5386-007	VA23C5386-008	VA23C5386-009	VA23C5386-010	
					Result	Result	Result	Result	Result	
<b>Metals</b>										
Thallium	7440-28-0	E440/VA	0.050	mg/kg	<0.050	<0.050	0.083	<0.050	<0.050	
Tin	7440-31-5	E440/VA	2.0	mg/kg	124	107	164	102	128	
Titanium	7440-32-6	E440/VA	1.0	mg/kg	201	201	206	199	226	
Tungsten	7440-33-7	E440/VA	0.50	mg/kg	10.3	7.79	13.5	8.88	8.65	
Uranium	7440-61-1	E440/VA	0.050	mg/kg	3.49	3.50	2.88	3.50	3.19	
Vanadium	7440-62-2	E440/VA	0.20	mg/kg	45.3	42.6	40.8	40.2	41.8	
Zinc	7440-66-6	E440/VA	2.0	mg/kg	4170	6400	4700	4280	5110	
Zirconium	7440-67-7	E440/VA	1.0	mg/kg	5.1	4.4	2.6	3.8	3.7	
<b>TCLP Metals</b>										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units	11.5	11.7	11.6	11.5	11.5	
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units	5.71	6.66	5.70	5.07	5.63	
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units	2.87	2.87	2.87	2.87	2.87	
pH, TCLP final	----	EPP444/VA	0.010	pH units	6.72	7.18	6.78	6.61	6.89	
Antimony, TCLP	7440-36-0	E444/VA	1.00	mg/L	<1.00	<1.00	<1.00	<1.00	<1.00	
Arsenic, TCLP	7440-38-2	E444/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Barium, TCLP	7440-39-3	E444/VA	2.5	mg/L	<2.5	<2.5	<2.5	<2.5	<2.5	
Beryllium, TCLP	7440-41-7	E444/VA	0.025	mg/L	<0.025	<0.025	<0.025	<0.025	<0.025	
Boron, TCLP	7440-42-8	E444/VA	0.50	mg/L	1.75	1.91	1.79	1.71	1.81	
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L	0.121	<0.050	0.100	0.090	0.259	
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L	1810	1840	1860	1840	1870	
Chromium, TCLP	7440-47-3	E444/VA	0.25	mg/L	<0.25	<0.25	<0.25	<0.25	<0.25	
Cobalt, TCLP	7440-48-4	E444/VA	0.050	mg/L	0.625	0.308	0.788	0.614	1.01	
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L	1.20	0.983	0.917	0.948	0.860	
Iron, TCLP	7439-89-6	E444/VA	5.0	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	
Lead, TCLP	7439-92-1	E444/VA	0.25	mg/L	<0.25	<0.25	<0.25	<0.25	<0.25	
Magnesium, TCLP	7439-95-4	E444/VA	2.5	mg/L	106	104	104	104	110	
Mercury, TCLP	7439-97-6	E512/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Nickel, TCLP	7440-02-0	E444/VA	0.25	mg/L	0.30	<0.25	0.36	0.35	0.34	
Selenium, TCLP	7782-49-2	E444/VA	0.10	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
Silver, TCLP	7440-22-4	E444/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	





## Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil/Solid)					BA2341-A-6	BA2341-A-7	BA2341-A-8	BA2341-A-9	BA2341-A-10
Client sampling date / time					11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00	11-Oct-2023 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5386-006	VA23C5386-007	VA23C5386-008	VA23C5386-009	VA23C5386-010
					Result	Result	Result	Result	Result
<b>TCLP Metals</b>									
Thallium, TCLP	7440-28-0	E444/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium, TCLP	7440-61-1	E444/VA	0.20	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20
Vanadium, TCLP	7440-62-2	E444/VA	0.15	mg/L	<0.15	<0.15	<0.15	<0.15	<0.15
Zinc, TCLP	7440-66-6	E444/VA	0.50	mg/L	11.0	2.70	15.3	15.5	7.10
Zirconium, TCLP	7440-67-7	E444/VA	10	mg/L	<10	<10	<10	<10	<10

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



## Analytical Results

Sub-Matrix: Soil					Client sample ID	BA2341-A-11	BA2341-A-12	----	----	----
(Matrix: Soil/Solid)					Client sampling date / time	11-Oct-2023 09:00	11-Oct-2023 09:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5386-011	VA23C5386-012	-----	-----	-----	
					Result	Result	----	----	----	
<b>Physical Tests</b>										
Moisture	---	E144/VA	0.25	%	28.9	27.0	----	----	----	
pH (1:2 soil:water)	---	E108/VA	0.10	pH units	10.2	10.4	----	----	----	
<b>Metals</b>										
Aluminum	7429-90-5	E440/VA	50	mg/kg	34200	37500	----	----	----	
Antimony	7440-36-0	E440/VA	0.10	mg/kg	120	104	----	----	----	
Arsenic	7440-38-2	E440/VA	0.10	mg/kg	20.0	21.7	----	----	----	
Barium	7440-39-3	E440/VA	0.50	mg/kg	412	411	----	----	----	
Beryllium	7440-41-7	E440/VA	0.10	mg/kg	0.34	0.37	----	----	----	
Bismuth	7440-69-9	E440/VA	0.20	mg/kg	9.80	11.2	----	----	----	
Boron	7440-42-8	E440/VA	5.0	mg/kg	159	190	----	----	----	
Cadmium	7440-43-9	E440/VA	0.020	mg/kg	10.3	11.0	----	----	----	
Calcium	7440-70-2	E440/VA	50	mg/kg	155000	160000	----	----	----	
Chromium	7440-47-3	E440/VA	0.50	mg/kg	193	173	----	----	----	
Cobalt	7440-48-4	E440/VA	0.10	mg/kg	84.2	75.3	----	----	----	
Copper	7440-50-8	E440/VA	0.50	mg/kg	2030	2590	----	----	----	
Iron	7439-89-6	E440/VA	50	mg/kg	51300	58400	----	----	----	
Lead	7439-92-1	E440/VA	0.50	mg/kg	486	341	----	----	----	
Lithium	7439-93-2	E440/VA	2.0	mg/kg	33.7	31.5	----	----	----	
Magnesium	7439-95-4	E440/VA	20	mg/kg	11900	12000	----	----	----	
Manganese	7439-96-5	E440/VA	1.0	mg/kg	1000	836	----	----	----	
Mercury	7439-97-6	E510/VA	0.0500	mg/kg	0.0670	0.185	----	----	----	
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg	18.6	17.3	----	----	----	
Nickel	7440-02-0	E440/VA	0.50	mg/kg	228	136	----	----	----	
Phosphorus	7723-14-0	E440/VA	50	mg/kg	12300	11200	----	----	----	
Potassium	7440-09-7	E440/VA	100	mg/kg	7200	6760	----	----	----	
Selenium	7782-49-2	E440/VA	0.20	mg/kg	0.35	0.28	----	----	----	
Silver	7440-22-4	E440/VA	0.10	mg/kg	6.18	7.51	----	----	----	
Sodium	7440-23-5	E440/VA	50	mg/kg	17600	17600	----	----	----	
Strontium	7440-24-6	E440/VA	0.50	mg/kg	292	315	----	----	----	
Sulfur	7704-34-9	E440/VA	1000	mg/kg	13200	12300	----	----	----	



## Analytical Results

Sub-Matrix: Soil					Client sample ID	BA2341-A-11	BA2341-A-12	----	----	----
(Matrix: Soil/Solid)					Client sampling date / time	11-Oct-2023 09:00	11-Oct-2023 09:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5386-011	VA23C5386-012	-----	-----	-----	
					Result	Result	---	---	---	
<b>Metals</b>										
Thallium	7440-28-0	E440/VA	0.050	mg/kg	<0.050	<0.050	---	---	---	
Tin	7440-31-5	E440/VA	2.0	mg/kg	196	123	---	---	---	
Titanium	7440-32-6	E440/VA	1.0	mg/kg	189	192	---	---	---	
Tungsten	7440-33-7	E440/VA	0.50	mg/kg	13.6	13.0	---	---	---	
Uranium	7440-61-1	E440/VA	0.050	mg/kg	3.37	3.40	---	---	---	
Vanadium	7440-62-2	E440/VA	0.20	mg/kg	41.7	42.0	---	---	---	
Zinc	7440-66-6	E440/VA	2.0	mg/kg	9120	4280	---	---	---	
Zirconium	7440-67-7	E440/VA	1.0	mg/kg	3.4	4.1	---	---	---	
<b>TCLP Metals</b>										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units	11.5	11.6	---	---	---	
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units	5.69	6.00	---	---	---	
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units	2.87	2.87	---	---	---	
pH, TCLP final	----	EPP444/VA	0.010	pH units	6.61	7.10	---	---	---	
Antimony, TCLP	7440-36-0	E444/VA	1.00	mg/L	<1.00	<1.00	---	---	---	
Arsenic, TCLP	7440-38-2	E444/VA	1.0	mg/L	<1.0	<1.0	---	---	---	
Barium, TCLP	7440-39-3	E444/VA	2.5	mg/L	<2.5	<2.5	---	---	---	
Beryllium, TCLP	7440-41-7	E444/VA	0.025	mg/L	<0.025	<0.025	---	---	---	
Boron, TCLP	7440-42-8	E444/VA	0.50	mg/L	1.72	1.84	---	---	---	
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L	0.118	<0.050	---	---	---	
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L	1820	1900	---	---	---	
Chromium, TCLP	7440-47-3	E444/VA	0.25	mg/L	<0.25	<0.25	---	---	---	
Cobalt, TCLP	7440-48-4	E444/VA	0.050	mg/L	1.49	0.625	---	---	---	
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L	1.04	0.751	---	---	---	
Iron, TCLP	7439-89-6	E444/VA	5.0	mg/L	<5.0	<5.0	---	---	---	
Lead, TCLP	7439-92-1	E444/VA	0.25	mg/L	<0.25	<0.25	---	---	---	
Magnesium, TCLP	7439-95-4	E444/VA	2.5	mg/L	109	106	---	---	---	
Mercury, TCLP	7439-97-6	E512/VA	0.0010	mg/L	<0.0010	<0.0010	---	---	---	
Nickel, TCLP	7440-02-0	E444/VA	0.25	mg/L	0.34	<0.25	---	---	---	
Selenium, TCLP	7782-49-2	E444/VA	0.10	mg/L	<0.10	<0.10	---	---	---	
Silver, TCLP	7440-22-4	E444/VA	0.050	mg/L	<0.050	<0.050	---	---	---	



## Analytical Results

Sub-Matrix: Soil					Client sample ID		BA2341-A-11	BA2341-A-12	----	----	----
(Matrix: Soil/Solid)					Client sampling date / time		11-Oct-2023 09:00	11-Oct-2023 09:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5386-011	VA23C5386-012	-----	-----	-----	-----	-----
TCLP Metals					Result	Result	---	---	---	---	---
Thallium, TCLP	7440-28-0	E444/VA	1.0	mg/L	<1.0	<1.0	---	---	---	---	---
Uranium, TCLP	7440-61-1	E444/VA	0.20	mg/L	<0.20	<0.20	---	---	---	---	---
Vanadium, TCLP	7440-62-2	E444/VA	0.15	mg/L	<0.15	<0.15	---	---	---	---	---
Zinc, TCLP	7440-66-6	E444/VA	0.50	mg/L	15.2	3.57	---	---	---	---	---
Zirconium, TCLP	7440-67-7	E444/VA	10	mg/L	<10	<10	---	---	---	---	---

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



## QUALITY CONTROL INTERPRETIVE REPORT

<p><b>Work Order</b> : <b>VA23C5386</b></p> <p><b>Client</b> : <b>Covanta Burnaby Renewable Energy, ULC</b></p> <p><b>Contact</b> : Nicole Victor</p> <p><b>Address</b> : 5150 Riverbend Drive Burnaby BC Canada V3N 4V3</p> <p><b>Telephone</b> : ----</p> <p><b>Project</b> : Weekly Bottom Ash - Suite</p> <p><b>PO</b> : VANCO0000051998</p> <p><b>C-O-C number</b> : ----</p> <p><b>Sampler</b> : ----</p> <p><b>Site</b> : ----</p> <p><b>Quote number</b> : Standing Offer (BC work)</p> <p><b>No. of samples received</b> : 12</p> <p><b>No. of samples analysed</b> : 12</p>	<p><b>Page</b> : 1 of 17</p> <p><b>Laboratory</b> : ALS Environmental - Vancouver</p> <p><b>Account Manager</b> : Ian Chen</p> <p><b>Address</b> : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p><b>Telephone</b> : +1 604 253 4188</p> <p><b>Date Samples Received</b> : 23-Oct-2023 12:15</p> <p><b>Issue Date</b> : 01-Nov-2023 23:18</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

**Key**

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

### Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

### Summary of Outliers

#### Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Duplicate outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

#### Outliers: Reference Material (RM) Samples

- Reference Material (RM) Sample outliers occur - please see the following pages for full details.

### ***Outliers : Analysis Holding Time Compliance (Breaches)***

- No Analysis Holding Time Outliers exist.

### ***Outliers : Frequency of Quality Control Samples***

- No Quality Control Sample Frequency Outliers occur.



**Outliers : Quality Control Samples**

*Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes*

Matrix: Soil/Solid

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
<b>Duplicate (DUP) RPDs</b>								
Metals	VA23C5386-001	BA2341-A-1	Arsenic	7440-38-2	E440	33.7 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA23C5386-001	BA2341-A-1	Cadmium	7440-43-9	E440	34.4 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA23C5386-001	BA2341-A-1	Cobalt	7440-48-4	E440	45.4 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA23C5386-001	BA2341-A-1	Copper	7440-50-8	E440	48.2 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA23C5386-001	BA2341-A-1	Iron	7439-89-6	E440	50.2 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA23C5386-001	BA2341-A-1	Lead	7439-92-1	E440	167 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	VA23C5386-001	BA2341-A-1	Manganese	7439-96-5	E440	36.6 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA23C5386-001	BA2341-A-1	Nickel	7440-02-0	E440	37.3 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA23C5386-001	BA2341-A-1	Zinc	7440-66-6	E440	75.3 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA23C5386-001	BA2341-A-1	Zirconium	7440-67-7	E440	2.3 % DUP-H	Diff <2x LOR	Low Level DUP DQO exceeded (difference > 2 LOR).

**Result Qualifiers**

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.

Reference Material (RM) Sample								
Metals	QC-MRG2-1212280 003	----	Titanium	7440-32-6	E440	131 % MES	70.0-130%	Recovery greater than upper control limit

**Result Qualifiers**

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).

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Work Order : VA23C5386  
Client : Covanta Burnaby Renewable Energy, ULC  
Project : Weekly Bottom Ash - Suite

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## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Metals : Mercury in Soil/Solid by CVAAS</b>											
<b>LDPE bag</b> BA2341-A-1	E510	11-Oct-2023	31-Oct-2023	28 days	20 days	✔	01-Nov-2023	28 days	21 days	✔	
<b>Metals : Mercury in Soil/Solid by CVAAS</b>											
<b>LDPE bag</b> BA2341-A-10	E510	11-Oct-2023	31-Oct-2023	28 days	20 days	✔	01-Nov-2023	28 days	21 days	✔	
<b>Metals : Mercury in Soil/Solid by CVAAS</b>											
<b>LDPE bag</b> BA2341-A-11	E510	11-Oct-2023	31-Oct-2023	28 days	20 days	✔	01-Nov-2023	28 days	21 days	✔	
<b>Metals : Mercury in Soil/Solid by CVAAS</b>											
<b>LDPE bag</b> BA2341-A-12	E510	11-Oct-2023	31-Oct-2023	28 days	20 days	✔	01-Nov-2023	28 days	21 days	✔	
<b>Metals : Mercury in Soil/Solid by CVAAS</b>											
<b>LDPE bag</b> BA2341-A-2	E510	11-Oct-2023	31-Oct-2023	28 days	20 days	✔	01-Nov-2023	28 days	21 days	✔	
<b>Metals : Mercury in Soil/Solid by CVAAS</b>											
<b>LDPE bag</b> BA2341-A-3	E510	11-Oct-2023	31-Oct-2023	28 days	20 days	✔	01-Nov-2023	28 days	21 days	✔	
<b>Metals : Mercury in Soil/Solid by CVAAS</b>											
<b>LDPE bag</b> BA2341-A-4	E510	11-Oct-2023	31-Oct-2023	28 days	20 days	✔	01-Nov-2023	28 days	21 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Metals : Mercury in Soil/Solid by CVAAS</b>											
LDPE bag BA2341-A-5	E510	11-Oct-2023	31-Oct-2023	28 days	20 days	✔	01-Nov-2023	28 days	21 days	✔	
<b>Metals : Mercury in Soil/Solid by CVAAS</b>											
LDPE bag BA2341-A-6	E510	11-Oct-2023	31-Oct-2023	28 days	20 days	✔	01-Nov-2023	28 days	21 days	✔	
<b>Metals : Mercury in Soil/Solid by CVAAS</b>											
LDPE bag BA2341-A-7	E510	11-Oct-2023	31-Oct-2023	28 days	20 days	✔	01-Nov-2023	28 days	21 days	✔	
<b>Metals : Mercury in Soil/Solid by CVAAS</b>											
LDPE bag BA2341-A-8	E510	11-Oct-2023	31-Oct-2023	28 days	20 days	✔	01-Nov-2023	28 days	21 days	✔	
<b>Metals : Mercury in Soil/Solid by CVAAS</b>											
LDPE bag BA2341-A-9	E510	11-Oct-2023	31-Oct-2023	28 days	20 days	✔	01-Nov-2023	28 days	21 days	✔	
<b>Metals : Metals in Soil/Solid by CRC ICMS</b>											
LDPE bag BA2341-A-1	E440	11-Oct-2023	31-Oct-2023	180 days	20 days	✔	01-Nov-2023	180 days	21 days	✔	
<b>Metals : Metals in Soil/Solid by CRC ICMS</b>											
LDPE bag BA2341-A-10	E440	11-Oct-2023	31-Oct-2023	180 days	20 days	✔	01-Nov-2023	180 days	21 days	✔	
<b>Metals : Metals in Soil/Solid by CRC ICMS</b>											
LDPE bag BA2341-A-11	E440	11-Oct-2023	31-Oct-2023	180 days	20 days	✔	01-Nov-2023	180 days	21 days	✔	
<b>Metals : Metals in Soil/Solid by CRC ICMS</b>											
LDPE bag BA2341-A-12	E440	11-Oct-2023	31-Oct-2023	180 days	20 days	✔	01-Nov-2023	180 days	21 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Metals : Metals in Soil/Solid by CRC ICPMS</b>											
LDPE bag BA2341-A-2	E440	11-Oct-2023	31-Oct-2023	180 days	20 days	✔	01-Nov-2023	180 days	21 days	✔	
<b>Metals : Metals in Soil/Solid by CRC ICPMS</b>											
LDPE bag BA2341-A-3	E440	11-Oct-2023	31-Oct-2023	180 days	20 days	✔	01-Nov-2023	180 days	21 days	✔	
<b>Metals : Metals in Soil/Solid by CRC ICPMS</b>											
LDPE bag BA2341-A-4	E440	11-Oct-2023	31-Oct-2023	180 days	20 days	✔	01-Nov-2023	180 days	21 days	✔	
<b>Metals : Metals in Soil/Solid by CRC ICPMS</b>											
LDPE bag BA2341-A-5	E440	11-Oct-2023	31-Oct-2023	180 days	20 days	✔	01-Nov-2023	180 days	21 days	✔	
<b>Metals : Metals in Soil/Solid by CRC ICPMS</b>											
LDPE bag BA2341-A-6	E440	11-Oct-2023	31-Oct-2023	180 days	20 days	✔	01-Nov-2023	180 days	21 days	✔	
<b>Metals : Metals in Soil/Solid by CRC ICPMS</b>											
LDPE bag BA2341-A-7	E440	11-Oct-2023	31-Oct-2023	180 days	20 days	✔	01-Nov-2023	180 days	21 days	✔	
<b>Metals : Metals in Soil/Solid by CRC ICPMS</b>											
LDPE bag BA2341-A-8	E440	11-Oct-2023	31-Oct-2023	180 days	20 days	✔	01-Nov-2023	180 days	21 days	✔	
<b>Metals : Metals in Soil/Solid by CRC ICPMS</b>											
LDPE bag BA2341-A-9	E440	11-Oct-2023	31-Oct-2023	180 days	20 days	✔	01-Nov-2023	180 days	21 days	✔	
<b>Physical Tests : Moisture Content by Gravimetry</b>											
LDPE bag BA2341-A-1	E144	11-Oct-2023	----	----	----		29-Oct-2023	----	18 days		



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
<b>Physical Tests : Moisture Content by Gravimetry</b>										
LDPE bag BA2341-A-10	E144	11-Oct-2023	----	----	----		29-Oct-2023	----	18 days	
<b>Physical Tests : Moisture Content by Gravimetry</b>										
LDPE bag BA2341-A-11	E144	11-Oct-2023	----	----	----		29-Oct-2023	----	18 days	
<b>Physical Tests : Moisture Content by Gravimetry</b>										
LDPE bag BA2341-A-12	E144	11-Oct-2023	----	----	----		29-Oct-2023	----	18 days	
<b>Physical Tests : Moisture Content by Gravimetry</b>										
LDPE bag BA2341-A-2	E144	11-Oct-2023	----	----	----		29-Oct-2023	----	18 days	
<b>Physical Tests : Moisture Content by Gravimetry</b>										
LDPE bag BA2341-A-3	E144	11-Oct-2023	----	----	----		29-Oct-2023	----	18 days	
<b>Physical Tests : Moisture Content by Gravimetry</b>										
LDPE bag BA2341-A-4	E144	11-Oct-2023	----	----	----		29-Oct-2023	----	18 days	
<b>Physical Tests : Moisture Content by Gravimetry</b>										
LDPE bag BA2341-A-5	E144	11-Oct-2023	----	----	----		29-Oct-2023	----	18 days	
<b>Physical Tests : Moisture Content by Gravimetry</b>										
LDPE bag BA2341-A-6	E144	11-Oct-2023	----	----	----		29-Oct-2023	----	18 days	
<b>Physical Tests : Moisture Content by Gravimetry</b>										
LDPE bag BA2341-A-7	E144	11-Oct-2023	----	----	----		29-Oct-2023	----	18 days	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Physical Tests : Moisture Content by Gravimetry</b>											
LDPE bag BA2341-A-8	E144	11-Oct-2023	----	----	----		29-Oct-2023	----	18 days		
<b>Physical Tests : Moisture Content by Gravimetry</b>											
LDPE bag BA2341-A-9	E144	11-Oct-2023	----	----	----		29-Oct-2023	----	18 days		
<b>Physical Tests : pH by Meter (1:2 Soil:Water Extraction)</b>											
LDPE bag BA2341-A-1	E108	11-Oct-2023	31-Oct-2023	30 days	20 days	✔	31-Oct-2023	30 days	20 days	✔	
<b>Physical Tests : pH by Meter (1:2 Soil:Water Extraction)</b>											
LDPE bag BA2341-A-10	E108	11-Oct-2023	31-Oct-2023	30 days	20 days	✔	31-Oct-2023	30 days	20 days	✔	
<b>Physical Tests : pH by Meter (1:2 Soil:Water Extraction)</b>											
LDPE bag BA2341-A-11	E108	11-Oct-2023	31-Oct-2023	30 days	20 days	✔	31-Oct-2023	30 days	20 days	✔	
<b>Physical Tests : pH by Meter (1:2 Soil:Water Extraction)</b>											
LDPE bag BA2341-A-12	E108	11-Oct-2023	31-Oct-2023	30 days	20 days	✔	31-Oct-2023	30 days	20 days	✔	
<b>Physical Tests : pH by Meter (1:2 Soil:Water Extraction)</b>											
LDPE bag BA2341-A-2	E108	11-Oct-2023	31-Oct-2023	30 days	20 days	✔	31-Oct-2023	30 days	20 days	✔	
<b>Physical Tests : pH by Meter (1:2 Soil:Water Extraction)</b>											
LDPE bag BA2341-A-3	E108	11-Oct-2023	31-Oct-2023	30 days	20 days	✔	31-Oct-2023	30 days	20 days	✔	
<b>Physical Tests : pH by Meter (1:2 Soil:Water Extraction)</b>											
LDPE bag BA2341-A-4	E108	11-Oct-2023	31-Oct-2023	30 days	20 days	✔	31-Oct-2023	30 days	20 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Physical Tests : pH by Meter (1:2 Soil:Water Extraction)</b>											
LDPE bag BA2341-A-5	E108	11-Oct-2023	31-Oct-2023	30 days	20 days	✔	31-Oct-2023	30 days	20 days	✔	
<b>Physical Tests : pH by Meter (1:2 Soil:Water Extraction)</b>											
LDPE bag BA2341-A-6	E108	11-Oct-2023	31-Oct-2023	30 days	20 days	✔	31-Oct-2023	30 days	20 days	✔	
<b>Physical Tests : pH by Meter (1:2 Soil:Water Extraction)</b>											
LDPE bag BA2341-A-7	E108	11-Oct-2023	31-Oct-2023	30 days	20 days	✔	31-Oct-2023	30 days	20 days	✔	
<b>Physical Tests : pH by Meter (1:2 Soil:Water Extraction)</b>											
LDPE bag BA2341-A-8	E108	11-Oct-2023	31-Oct-2023	30 days	20 days	✔	31-Oct-2023	30 days	20 days	✔	
<b>Physical Tests : pH by Meter (1:2 Soil:Water Extraction)</b>											
LDPE bag BA2341-A-9	E108	11-Oct-2023	31-Oct-2023	30 days	20 days	✔	31-Oct-2023	30 days	20 days	✔	
<b>TCLP Metals : Mercury by CVAAS (TCLP)</b>											
Glass vial - total (lab preserved) BA2341-A-1	E512	25-Oct-2023	30-Oct-2023	42 days	19 days	✔	30-Oct-2023	42 days	19 days	✔	
<b>TCLP Metals : Mercury by CVAAS (TCLP)</b>											
Glass vial - total (lab preserved) BA2341-A-10	E512	25-Oct-2023	30-Oct-2023	42 days	19 days	✔	30-Oct-2023	42 days	19 days	✔	
<b>TCLP Metals : Mercury by CVAAS (TCLP)</b>											
Glass vial - total (lab preserved) BA2341-A-11	E512	25-Oct-2023	30-Oct-2023	42 days	19 days	✔	30-Oct-2023	42 days	19 days	✔	
<b>TCLP Metals : Mercury by CVAAS (TCLP)</b>											
Glass vial - total (lab preserved) BA2341-A-12	E512	25-Oct-2023	30-Oct-2023	42 days	19 days	✔	30-Oct-2023	42 days	19 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
<b>TCLP Metals : Mercury by CVAAS (TCLP)</b>										
Glass vial - total (lab preserved) BA2341-A-2	E512	25-Oct-2023	30-Oct-2023	42 days	19 days	✔	30-Oct-2023	42 days	19 days	✔
<b>TCLP Metals : Mercury by CVAAS (TCLP)</b>										
Glass vial - total (lab preserved) BA2341-A-3	E512	25-Oct-2023	30-Oct-2023	42 days	19 days	✔	30-Oct-2023	42 days	19 days	✔
<b>TCLP Metals : Mercury by CVAAS (TCLP)</b>										
Glass vial - total (lab preserved) BA2341-A-4	E512	25-Oct-2023	30-Oct-2023	42 days	19 days	✔	30-Oct-2023	42 days	19 days	✔
<b>TCLP Metals : Mercury by CVAAS (TCLP)</b>										
Glass vial - total (lab preserved) BA2341-A-5	E512	25-Oct-2023	30-Oct-2023	42 days	19 days	✔	30-Oct-2023	42 days	19 days	✔
<b>TCLP Metals : Mercury by CVAAS (TCLP)</b>										
Glass vial - total (lab preserved) BA2341-A-6	E512	25-Oct-2023	30-Oct-2023	42 days	19 days	✔	30-Oct-2023	42 days	19 days	✔
<b>TCLP Metals : Mercury by CVAAS (TCLP)</b>										
Glass vial - total (lab preserved) BA2341-A-7	E512	25-Oct-2023	30-Oct-2023	42 days	19 days	✔	30-Oct-2023	42 days	19 days	✔
<b>TCLP Metals : Mercury by CVAAS (TCLP)</b>										
Glass vial - total (lab preserved) BA2341-A-8	E512	25-Oct-2023	30-Oct-2023	42 days	19 days	✔	30-Oct-2023	42 days	19 days	✔
<b>TCLP Metals : Mercury by CVAAS (TCLP)</b>										
Glass vial - total (lab preserved) BA2341-A-9	E512	25-Oct-2023	30-Oct-2023	42 days	19 days	✔	30-Oct-2023	42 days	19 days	✔
<b>TCLP Metals : Metals by CRC ICPMS (TCLP)</b>										
HDPE - total (lab preserved) BA2341-A-1	E444	25-Oct-2023	30-Oct-2023	194 days	19 days	✔	31-Oct-2023	194 days	20 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>TCLP Metals : Metals by CRC ICPMS (TCLP)</b>											
HDPE - total (lab preserved) BA2341-A-10	E444	25-Oct-2023	30-Oct-2023	194 days	19 days	✔	31-Oct-2023	194 days	20 days	✔	
<b>TCLP Metals : Metals by CRC ICPMS (TCLP)</b>											
HDPE - total (lab preserved) BA2341-A-11	E444	25-Oct-2023	30-Oct-2023	194 days	19 days	✔	31-Oct-2023	194 days	20 days	✔	
<b>TCLP Metals : Metals by CRC ICPMS (TCLP)</b>											
HDPE - total (lab preserved) BA2341-A-12	E444	25-Oct-2023	30-Oct-2023	194 days	19 days	✔	31-Oct-2023	194 days	20 days	✔	
<b>TCLP Metals : Metals by CRC ICPMS (TCLP)</b>											
HDPE - total (lab preserved) BA2341-A-2	E444	25-Oct-2023	30-Oct-2023	194 days	19 days	✔	31-Oct-2023	194 days	20 days	✔	
<b>TCLP Metals : Metals by CRC ICPMS (TCLP)</b>											
HDPE - total (lab preserved) BA2341-A-3	E444	25-Oct-2023	30-Oct-2023	194 days	19 days	✔	31-Oct-2023	194 days	20 days	✔	
<b>TCLP Metals : Metals by CRC ICPMS (TCLP)</b>											
HDPE - total (lab preserved) BA2341-A-4	E444	25-Oct-2023	30-Oct-2023	194 days	19 days	✔	31-Oct-2023	194 days	20 days	✔	
<b>TCLP Metals : Metals by CRC ICPMS (TCLP)</b>											
HDPE - total (lab preserved) BA2341-A-5	E444	25-Oct-2023	30-Oct-2023	194 days	19 days	✔	31-Oct-2023	194 days	20 days	✔	
<b>TCLP Metals : Metals by CRC ICPMS (TCLP)</b>											
HDPE - total (lab preserved) BA2341-A-6	E444	25-Oct-2023	30-Oct-2023	194 days	19 days	✔	31-Oct-2023	194 days	20 days	✔	
<b>TCLP Metals : Metals by CRC ICPMS (TCLP)</b>											
HDPE - total (lab preserved) BA2341-A-7	E444	25-Oct-2023	30-Oct-2023	194 days	19 days	✔	31-Oct-2023	194 days	20 days	✔	





Matrix: Soil/Solid

Evaluation: \* = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>TCLP Metals : Metals by CRC ICPMS (TCLP)</b>											
HDPE - total (lab preserved) BA2341-A-8	E444	25-Oct-2023	30-Oct-2023	194 days	19 days	✓	31-Oct-2023	194 days	20 days	✓	
<b>TCLP Metals : Metals by CRC ICPMS (TCLP)</b>											
HDPE - total (lab preserved) BA2341-A-9	E444	25-Oct-2023	30-Oct-2023	194 days	19 days	✓	31-Oct-2023	194 days	20 days	✓	
<b>TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)</b>											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2341-A-1	EPP444	11-Oct-2023	25-Oct-2023	----	----		----	28 days	14 days	✓	
<b>TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)</b>											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2341-A-10	EPP444	11-Oct-2023	25-Oct-2023	----	----		----	28 days	14 days	✓	
<b>TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)</b>											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2341-A-11	EPP444	11-Oct-2023	25-Oct-2023	----	----		----	28 days	14 days	✓	
<b>TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)</b>											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2341-A-12	EPP444	11-Oct-2023	25-Oct-2023	----	----		----	28 days	14 days	✓	
<b>TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)</b>											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2341-A-2	EPP444	11-Oct-2023	25-Oct-2023	----	----		----	28 days	14 days	✓	
<b>TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)</b>											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2341-A-3	EPP444	11-Oct-2023	25-Oct-2023	----	----		----	28 days	14 days	✓	
<b>TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)</b>											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2341-A-4	EPP444	11-Oct-2023	25-Oct-2023	----	----		----	28 days	14 days	✓	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
<b>TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)</b>										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2341-A-5	EPP444	11-Oct-2023	25-Oct-2023	----	----		----	28 days	14 days	✔
<b>TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)</b>										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2341-A-6	EPP444	11-Oct-2023	25-Oct-2023	----	----		----	28 days	14 days	✔
<b>TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)</b>										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2341-A-7	EPP444	11-Oct-2023	25-Oct-2023	----	----		----	28 days	14 days	✔
<b>TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)</b>										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2341-A-8	EPP444	11-Oct-2023	25-Oct-2023	----	----		----	28 days	14 days	✔
<b>TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)</b>										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2341-A-9	EPP444	11-Oct-2023	25-Oct-2023	----	----		----	28 days	14 days	✔

**Legend & Qualifier Definitions**

Rec. HT: ALS recommended hold time (see units).



## Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Mercury in Soil/Solid by CVAAS	E510	1212280	1	20	5.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	1212281	1	20	5.0	5.0	✔
Moisture Content by Gravimetry	E144	1212283	1	12	8.3	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	1212282	1	20	5.0	5.0	✔
<b>Laboratory Control Samples (LCS)</b>							
Mercury in Soil/Solid by CVAAS	E510	1212280	2	20	10.0	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	1212281	2	20	10.0	10.0	✔
Moisture Content by Gravimetry	E144	1212283	1	12	8.3	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	1212282	1	20	5.0	5.0	✔
<b>Method Blanks (MB)</b>							
Mercury by CVAAS (TCLP)	E512	1213584	1	12	8.3	5.0	✔
Mercury in Soil/Solid by CVAAS	E510	1212280	1	20	5.0	5.0	✔
Metals by CRC ICPMS (TCLP)	E444	1213585	1	12	8.3	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	1212281	1	20	5.0	5.0	✔
Moisture Content by Gravimetry	E144	1212283	1	12	8.3	5.0	✔
<b>Matrix Spikes (MS)</b>							
Mercury by CVAAS (TCLP)	E512	1213584	1	12	8.3	5.0	✔
Metals by CRC ICPMS (TCLP)	E444	1213585	1	12	8.3	5.0	✔



## Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 ALS Environmental - Vancouver	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^{\circ}\text{C}$ ), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^{\circ}\text{C}$ ) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 ALS Environmental - Vancouver	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at $105^{\circ}\text{C}$ . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Metals in Soil/Solid by CRC ICPMS	E440 ALS Environmental - Vancouver	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with $\text{HNO}_3$ and $\text{HCl}$ .  Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines.  Analysis is by Collision/Reaction Cell ICPMS.
Metals by CRC ICPMS (TCLP)	E444 ALS Environmental - Vancouver	Soil/Solid	EPA 1311/6020B (mod)	An extract produced by the Toxicity Characteristic Leachate Procedure (TCLP) as per EPA 1311 is analyzed by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 ALS Environmental - Vancouver	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with $\text{HNO}_3$ and $\text{HCl}$ , followed by CVAAS analysis.
Mercury by CVAAS (TCLP)	E512 ALS Environmental - Vancouver	Soil/Solid	SW 846 -1311/245.1 CVAA ON TCLP LEACHATE	An extract produced by the Toxicity Characteristic Leachate Procedure (TCLP) as per EPA 1311 is analyzed by CVAAS.
Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil:Water for pH/EC	EP108 ALS Environmental - Vancouver	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at $<60^{\circ}\text{C}$ ) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Digestion for Metals and Mercury	EP440  ALS Environmental - Vancouver	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO <sub>3</sub> and HCl. This method is intended to liberate metals that may be environmentally available.
TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)	EPP444  ALS Environmental - Vancouver	Soil/Solid	EPA 1311	Preparation of a Toxicity Characteristic Leaching Procedure (TCLP) solid sample involves particle size reduction, homogenization, then determination of appropriate extraction fluid. A measured portion of fresh subsample is placed in an extraction bottle with the appropriate extraction fluid then tumbled in a rotary extractor for 18+/- 2 hours at 23 +/- 2 C. The liquid leachate is filtered to separate from solids then bottled and prepared for analytical tests.

## QUALITY CONTROL REPORT

<b>Work Order</b>	: <b>VA23C5386</b>	<b>Page</b>	: 1 of 11
<b>Client</b>	: Covanta Burnaby Renewable Energy, ULC	<b>Laboratory</b>	: ALS Environmental - Vancouver
<b>Contact</b>	: Nicole Victor	<b>Account Manager</b>	: Ian Chen
<b>Address</b>	: 5150 Riverbend Drive Burnaby BC Canada V3N 4V3	<b>Address</b>	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
<b>Telephone</b>	:	<b>Telephone</b>	: +1 604 253 4188
<b>Project</b>	: Weekly Bottom Ash - Suite	<b>Date Samples Received</b>	: 23-Oct-2023 12:15
<b>PO</b>	: VANCO0000051998	<b>Date Analysis Commenced</b>	: 25-Oct-2023
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 01-Nov-2023 23:18
<b>Sampler</b>	: ----            ----		
<b>Site</b>	: ----		
<b>Quote number</b>	: Standing Offer (BC work)		
<b>No. of samples received</b>	: 12		
<b>No. of samples analysed</b>	: 12		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Janice Leung	Supervisor - Organics Instrumentation	Vancouver Organics, Burnaby, British Columbia
Owen Cheng		Vancouver Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Vancouver Metals, Burnaby, British Columbia
Sam Silveira	Lab Assistant	Vancouver Metals, Burnaby, British Columbia



## General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

### Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

# = Indicates a QC result that did not meet the ALS DQO.

## Workorder Comments

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Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

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### Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Physical Tests (QC Lot: 1212282)</b>											
VA23C5386-001	BA2341-A-1	pH (1:2 soil:water)	----	E108	0.10	pH units	10.3	10.4	0.5%	5%	----
<b>Physical Tests (QC Lot: 1212283)</b>											
VA23C5386-001	BA2341-A-1	Moisture	----	E144	0.25	%	28.0	28.3	1.27%	20%	----
<b>Metals (QC Lot: 1212280)</b>											
VA23C5386-001	BA2341-A-1	Mercury	7439-97-6	E510	0.0500	mg/kg	0.0581	0.127	0.0686	Diff <2x LOR	----
<b>Metals (QC Lot: 1212281)</b>											
VA23C5386-001	BA2341-A-1	Aluminum	7429-90-5	E440	50	mg/kg	35700	47600	28.6%	40%	----
		Antimony	7440-36-0	E440	0.10	mg/kg	119	109	8.32%	30%	----
		Arsenic	7440-38-2	E440	0.10	mg/kg	28.0	19.9	33.7%	30%	DUP-H
		Barium	7440-39-3	E440	0.50	mg/kg	442	557	23.0%	40%	----
		Beryllium	7440-41-7	E440	0.10	mg/kg	0.40	0.33	0.07	Diff <2x LOR	----
		Bismuth	7440-69-9	E440	0.20	mg/kg	11.1	10.0	10.2%	30%	----
		Boron	7440-42-8	E440	5.0	mg/kg	167	190	12.7%	30%	----
		Cadmium	7440-43-9	E440	0.020	mg/kg	12.1	8.53	34.4%	30%	DUP-H
		Calcium	7440-70-2	E440	50	mg/kg	172000	137000	22.3%	30%	----
		Chromium	7440-47-3	E440	0.50	mg/kg	155	175	12.2%	30%	----
		Cobalt	7440-48-4	E440	0.10	mg/kg	60.8	96.5	45.4%	30%	DUP-H
		Copper	7440-50-8	E440	0.50	mg/kg	3790	6200	48.2%	30%	DUP-H
		Iron	7439-89-6	E440	50	mg/kg	44400	74000	50.2%	30%	DUP-H
		Lead	7439-92-1	E440	0.50	mg/kg	436	4840	167%	40%	DUP-H
		Lithium	7439-93-2	E440	2.0	mg/kg	27.1	28.6	5.44%	30%	----
		Magnesium	7439-95-4	E440	20	mg/kg	14600	11300	25.9%	30%	----
		Manganese	7439-96-5	E440	1.0	mg/kg	1070	742	36.6%	30%	DUP-H
		Molybdenum	7439-98-7	E440	0.10	mg/kg	32.8	22.6	36.8%	40%	----
		Nickel	7440-02-0	E440	0.50	mg/kg	139	203	37.3%	30%	DUP-H
		Phosphorus	7723-14-0	E440	50	mg/kg	12600	10700	16.6%	30%	----
		Potassium	7440-09-7	E440	100	mg/kg	7580	6210	19.9%	40%	----
		Selenium	7782-49-2	E440	0.20	mg/kg	0.36	0.33	0.02	Diff <2x LOR	----
		Silver	7440-22-4	E440	0.10	mg/kg	5.10	4.33	16.3%	40%	----
		Sodium	7440-23-5	E440	50	mg/kg	19800	16800	16.6%	40%	----





Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Metals (QC Lot: 1212281) - continued</b>											
VA23C5386-001	BA2341-A-1	Strontium	7440-24-6	E440	0.50	mg/kg	326	272	17.9%	40%	----
		Sulfur	7704-34-9	E440	1000	mg/kg	13700	10900	22.6%	30%	----
		Thallium	7440-28-0	E440	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Tin	7440-31-5	E440	2.0	mg/kg	131	126	4.05%	40%	----
		Titanium	7440-32-6	E440	1.0	mg/kg	202	239	16.7%	40%	----
		Tungsten	7440-33-7	E440	0.50	mg/kg	11.2	13.5	18.8%	30%	----
		Uranium	7440-61-1	E440	0.050	mg/kg	3.54	2.90	19.8%	30%	----
		Vanadium	7440-62-2	E440	0.20	mg/kg	44.5	47.0	5.57%	30%	----
		Zinc	7440-66-6	E440	2.0	mg/kg	5060	11200	75.3%	30%	DUP-H
		Zirconium	7440-67-7	E440	1.0	mg/kg	2.2	# 4.6	2.3	Diff <2x LOR	DUP-H

**Qualifiers**

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.



## Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Physical Tests (QCLot: 1212283)</b>						
Moisture	---	E144	0.25	%	<0.25	---
<b>Metals (QCLot: 1212280)</b>						
Mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
<b>Metals (QCLot: 1212281)</b>						
Aluminum	7429-90-5	E440	50	mg/kg	<50	---
Antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
Arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
Barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
Beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
Bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
Boron	7440-42-8	E440	5	mg/kg	<5.0	---
Cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
Calcium	7440-70-2	E440	50	mg/kg	<50	---
Chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
Cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
Copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
Iron	7439-89-6	E440	50	mg/kg	<50	---
Lead	7439-92-1	E440	0.5	mg/kg	<0.50	---
Lithium	7439-93-2	E440	2	mg/kg	<2.0	---
Magnesium	7439-95-4	E440	20	mg/kg	<20	---
Manganese	7439-96-5	E440	1	mg/kg	<1.0	---
Molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	---
Nickel	7440-02-0	E440	0.5	mg/kg	<0.50	---
Phosphorus	7723-14-0	E440	50	mg/kg	<50	---
Potassium	7440-09-7	E440	100	mg/kg	<100	---
Selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---
Silver	7440-22-4	E440	0.1	mg/kg	<0.10	---
Sodium	7440-23-5	E440	50	mg/kg	<50	---
Strontium	7440-24-6	E440	0.5	mg/kg	<0.50	---
Sulfur	7704-34-9	E440	1000	mg/kg	<1000	---
Thallium	7440-28-0	E440	0.05	mg/kg	<0.050	---
Tin	7440-31-5	E440	2	mg/kg	<2.0	---



Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Metals (QCLot: 1212281) - continued</b>						
Titanium	7440-32-6	E440	1	mg/kg	<1.0	----
Tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
Uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
Vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
Zinc	7440-66-6	E440	2	mg/kg	<2.0	----
Zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
<b>TCLP Metals (QCLot: 1213584)</b>						
Mercury, TCLP	7439-97-6	E512	0.001	mg/L	<0.0010	----
<b>TCLP Metals (QCLot: 1213585)</b>						
Antimony, TCLP	7440-36-0	E444	0.1	mg/L	<0.10	----
Arsenic, TCLP	7440-38-2	E444	1	mg/L	<1.0	----
Barium, TCLP	7440-39-3	E444	2.5	mg/L	<2.5	----
Beryllium, TCLP	7440-41-7	E444	0.025	mg/L	<0.025	----
Boron, TCLP	7440-42-8	E444	0.5	mg/L	<0.50	----
Cadmium, TCLP	7440-43-9	E444	0.05	mg/L	<0.050	----
Calcium, TCLP	7440-70-2	E444	10	mg/L	<10	----
Chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	----
Cobalt, TCLP	7440-48-4	E444	0.05	mg/L	<0.050	----
Copper, TCLP	7440-50-8	E444	0.05	mg/L	<0.050	----
Iron, TCLP	7439-89-6	E444	5	mg/L	<5.0	----
Lead, TCLP	7439-92-1	E444	0.25	mg/L	<0.25	----
Magnesium, TCLP	7439-95-4	E444	2.5	mg/L	<2.5	----
Nickel, TCLP	7440-02-0	E444	0.25	mg/L	<0.25	----
Selenium, TCLP	7782-49-2	E444	0.1	mg/L	<0.10	----
Silver, TCLP	7440-22-4	E444	0.05	mg/L	<0.050	----
Thallium, TCLP	7440-28-0	E444	1	mg/L	<1.0	----
Uranium, TCLP	7440-61-1	E444	0.2	mg/L	<0.20	----
Vanadium, TCLP	7440-62-2	E444	0.15	mg/L	<0.15	----
Zinc, TCLP	7440-66-6	E444	0.5	mg/L	<0.50	----
Zirconium, TCLP	7440-67-7	E444	10	mg/L	<10	----



## Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Physical Tests (QCLot: 1212282)</b>									
pH (1:2 soil:water)	----	E108	----	pH units	6 pH units	100	95.0	105	----
<b>Physical Tests (QCLot: 1212283)</b>									
Moisture	----	E144	0.25	%	50 %	100	90.0	110	----
<b>Metals (QCLot: 1212280)</b>									
Mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	108	80.0	120	----
<b>Metals (QCLot: 1212281)</b>									
Aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	106	80.0	120	----
Antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	103	80.0	120	----
Arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	106	80.0	120	----
Barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	105	80.0	120	----
Beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	99.6	80.0	120	----
Bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	102	80.0	120	----
Boron	7440-42-8	E440	5	mg/kg	100 mg/kg	91.0	80.0	120	----
Cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	102	80.0	120	----
Calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	98.8	80.0	120	----
Chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	105	80.0	120	----
Cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	99.5	80.0	120	----
Copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	98.1	80.0	120	----
Iron	7439-89-6	E440	50	mg/kg	100 mg/kg	95.9	80.0	120	----
Lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	102	80.0	120	----
Lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	96.2	80.0	120	----
Magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	109	80.0	120	----
Manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	102	80.0	120	----
Molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	102	80.0	120	----
Nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	99.4	80.0	120	----
Phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	105	80.0	120	----
Potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	106	80.0	120	----
Selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	91.8	80.0	120	----
Silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	92.2	80.0	120	----
Sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	104	80.0	120	----
Strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	105	80.0	120	----
Sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	94.4	80.0	120	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Metals (QCLot: 1212281) - continued</b>									
Thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	103	80.0	120	----
Tin	7440-31-5	E440	2	mg/kg	50 mg/kg	97.4	80.0	120	----
Titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	99.4	80.0	120	----
Tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	97.1	80.0	120	----
Uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	97.8	80.0	120	----
Vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	104	80.0	120	----
Zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	98.0	80.0	120	----
Zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	100	80.0	120	----



### Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Soil/Solid

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>TCLP Metals (QCLot: 1213584)</b>										
VA23C5386-001	BA2341-A-1	Mercury, TCLP	7439-97-6	E512	0.0010 mg/L	0.001 mg/L	99.5	50.0	140	----
<b>TCLP Metals (QCLot: 1213585)</b>										
VA23C5386-001	BA2341-A-1	Antimony, TCLP	7440-36-0	E444	4.40 mg/L	5 mg/L	88.0	50.0	140	----
		Arsenic, TCLP	7440-38-2	E444	4.5 mg/L	5 mg/L	90.5	50.0	140	----
		Barium, TCLP	7440-39-3	E444	10.4 mg/L	12.5 mg/L	83.3	50.0	140	----
		Beryllium, TCLP	7440-41-7	E444	0.211 mg/L	0.25 mg/L	84.5	50.0	140	----
		Boron, TCLP	7440-42-8	E444	8.27 mg/L	10 mg/L	82.7	50.0	140	----
		Cadmium, TCLP	7440-43-9	E444	0.224 mg/L	0.25 mg/L	89.6	50.0	140	----
		Calcium, TCLP	7440-70-2	E444	ND mg/L	250 mg/L	ND	50.0	140	----
		Chromium, TCLP	7440-47-3	E444	1.08 mg/L	1.25 mg/L	86.6	50.0	140	----
		Cobalt, TCLP	7440-48-4	E444	ND mg/L	0.25 mg/L	ND	50.0	140	----
		Copper, TCLP	7440-50-8	E444	2.01 mg/L	2.5 mg/L	80.6	50.0	140	----
		Iron, TCLP	7439-89-6	E444	210 mg/L	250 mg/L	84.2	50.0	140	----
		Lead, TCLP	7439-92-1	E444	8.54 mg/L	10 mg/L	85.4	50.0	140	----
		Magnesium, TCLP	7439-95-4	E444	237 mg/L	250 mg/L	94.9	50.0	140	----
		Nickel, TCLP	7440-02-0	E444	2.10 mg/L	2.5 mg/L	84.2	50.0	140	----
		Selenium, TCLP	7782-49-2	E444	4.38 mg/L	5 mg/L	87.6	50.0	140	----
		Silver, TCLP	7440-22-4	E444	0.076 mg/L	0.1 mg/L	75.7	50.0	140	----
		Thallium, TCLP	7440-28-0	E444	4.2 mg/L	5 mg/L	84.0	50.0	140	----
		Uranium, TCLP	7440-61-1	E444	4.46 mg/L	5 mg/L	89.3	50.0	150	----
		Vanadium, TCLP	7440-62-2	E444	0.66 mg/L	0.75 mg/L	88.4	50.0	140	----
		Zinc, TCLP	7440-66-6	E444	7.80 mg/L	10 mg/L	78.0	50.0	140	----
		Zirconium, TCLP	7440-67-7	E444	0.8 mg/L	1 mg/L	81.0	50.0	150	----



## Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
<b>Metals (QCLot: 1212280)</b>									
	SCP SS-2	Mercury	7439-97-6	E510	0.059 mg/kg	111	70.0	130	----
<b>Metals (QCLot: 1212281)</b>									
	SCP SS-2	Aluminum	7429-90-5	E440	9817 mg/kg	116	70.0	130	----
	SCP SS-2	Antimony	7440-36-0	E440	3.99 mg/kg	115	70.0	130	----
	SCP SS-2	Arsenic	7440-38-2	E440	3.73 mg/kg	108	70.0	130	----
	SCP SS-2	Barium	7440-39-3	E440	105 mg/kg	105	70.0	130	----
	SCP SS-2	Beryllium	7440-41-7	E440	0.349 mg/kg	118	70.0	130	----
	SCP SS-2	Boron	7440-42-8	E440	8.5 mg/kg	132	40.0	160	----
	SCP SS-2	Cadmium	7440-43-9	E440	0.91 mg/kg	109	70.0	130	----
	SCP SS-2	Calcium	7440-70-2	E440	31082 mg/kg	113	70.0	130	----
	SCP SS-2	Chromium	7440-47-3	E440	101 mg/kg	127	70.0	130	----
	SCP SS-2	Cobalt	7440-48-4	E440	6.9 mg/kg	104	70.0	130	----
	SCP SS-2	Copper	7440-50-8	E440	123 mg/kg	104	70.0	130	----
	SCP SS-2	Iron	7439-89-6	E440	23558 mg/kg	106	70.0	130	----
	SCP SS-2	Lead	7439-92-1	E440	267 mg/kg	106	70.0	130	----
	SCP SS-2	Lithium	7439-93-2	E440	9.5 mg/kg	110	70.0	130	----
	SCP SS-2	Magnesium	7439-95-4	E440	5509 mg/kg	116	70.0	130	----
	SCP SS-2	Manganese	7439-96-5	E440	269 mg/kg	115	70.0	130	----
	SCP SS-2	Molybdenum	7439-98-7	E440	1.03 mg/kg	107	70.0	130	----
	SCP SS-2	Nickel	7440-02-0	E440	26.7 mg/kg	105	70.0	130	----
	SCP SS-2	Phosphorus	7723-14-0	E440	752 mg/kg	98.9	70.0	130	----
	SCP SS-2	Potassium	7440-09-7	E440	1587 mg/kg	126	70.0	130	----
	SCP SS-2	Sodium	7440-23-5	E440	797 mg/kg	104	70.0	130	----
	SCP SS-2	Strontium	7440-24-6	E440	86.1 mg/kg	109	70.0	130	----
	SCP SS-2	Thallium	7440-28-0	E440	0.0786 mg/kg	108	40.0	160	----
	SCP SS-2	Tin	7440-31-5	E440	10.6 mg/kg	106	70.0	130	----
	SCP SS-2	Titanium	7440-32-6	E440	839 mg/kg	# 131	70.0	130	MES



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
<b>Metals (QCLot: 1212281) - continued</b>									
	SCP SS-2	Uranium	7440-61-1	E440	0.52 mg/kg	106	70.0	130	----
	SCP SS-2	Vanadium	7440-62-2	E440	32.7 mg/kg	114	70.0	130	----
	SCP SS-2	Zinc	7440-66-6	E440	297 mg/kg	101	70.0	130	----
	SCP SS-2	Zirconium	7440-67-7	E440	5.73 mg/kg	109	70.0	130	----

## Qualifiers


Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).





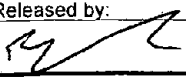
<b>Report To</b>		<b>Report Format / Distribution</b>		<b>Service Requested (Rush for routine analysis subject to availability)</b>	
Company: Covanta Energy		<input type="checkbox"/> Standard <input type="checkbox"/> Other		<input checked="" type="radio"/> Regular (Standard Turnaround Times - Business Days)	
Contact: Nicole Victor / 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: nvictor@covanta.com		<input type="radio"/> Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT	
Phone: 604-521-1025		Email 2: ofetherstonhaugh@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.Weliman@metrovancover.org			

<b>Invoice To</b> Same as Report?		<b>Client / Project Information</b>		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:		ALS Contact:		Sampler:					
Fax:									

Sample #	Sample Identification (This describes)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	MET-TCLP-VA (all metals, 1kg)	MOISTURE	Chrome 6	MET-CSR-FULL-VA (all metals)	Number of Containers
BA2341-A-1	Environmental Division Vancouver Work Order Reference <b>VA23C5386</b>  Telephone: +1 604 253 4188	11-Oct-23	9:00	Soil	X	X		X	1
BA2341-A-2		11-Oct-23	9:00	Soil	X	X		X	1
BA2341-A-3		11-Oct-23	9:00	Soil	X	X		X	1
BA2341-A-4		11-Oct-23	9:00	Soil	X	X		X	1
BA2341-A-5		11-Oct-23	9:00	Soil	X	X		X	1
BA2341-A-6		11-Oct-23	9:00	Soil	X	X		X	1
BA2341-A-7		11-Oct-23	9:00	Soil	X	X		X	1
BA2341-A-8		11-Oct-23	9:00	Soil	X	X		X	1
BA2341-A-9		11-Oct-23	9:00	Soil	X	X		X	1
BA2341-A-10		11-Oct-23	9:00	Soil	X	X		X	1
BA2341-A-11		11-Oct-23	9:00	Soil	X	X		X	1
BA2341-A-12		11-Oct-23	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.

<b>SHIPMENT RELEASE (client use)</b>			<b>SHIPMENT RECEPTION (lab use only)</b>			<b>SHIPMENT VERIFICATION (lab use only)</b>				
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations:
	23-Oct-23	0800				18, 17 °C	RK	10/23	12:45 pm	Yes / No ? If Yes add SIF