Bottom Ash Data

2024 Week 44

The following analytical report represents bottom ash composite results for week 44 of 2024 (October 27, 2024 to November 2, 2024).

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	:	**VA24C9772**			
Client	:	**Reworld Renewable Burnaby, ULC**	Laboratory	:	ALS Environmental - Vancouver
Contact	:	Nicole Victor	Account Manager	:	Gulraj Dhanaua
Address	:	5150 Riverbend Drive Burnaby British Columbia Canada V3N 4V3	Address	:	8081 Lougheed Highway Burnaby BC Canada V5A 1W9
Telephone	:	----	Telephone	:	+1 604 253 4188
Project	:	Weekly Bottom Ash - Suite	Date Samples Received	:	04-Nov-2024 10:55
PO	:	VANCO0000052919	Date Analysis Commenced	:	11-Nov-2024
C-O-C number	:	----	Issue Date	:	15-Nov-2024 10:01
Sampler	:	----			
Site	:	----			
Quote number	:	Covanta Burnaby Standing Offer 2024			
No. of samples received	:	12			
No. of samples analysed	:	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 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.

Signatories	*Position*	*Laboratory Department*
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Organics, Burnaby, British Columbia
Maya Urquhart	Lab Analyst	Metals, Burnaby, British Columbia
Rebecca Sit	Supervisor - Organics Extractions	Organics, 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).

Unit	*Description*
mg/kg	milligrams per kilogram
%	percent
pH units	pH units
mg/L	milligrams per litre

<: 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
(Matrix: Soil/Solid)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2444-A-1	BA2444-A-2	BA2444-A-3	BA2444-A-4	BA2444-A-5
					Client sampling date / time	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00
						VA24C9772-001	VA24C9772-002	VA24C9772-003	VA24C9772-004	VA24C9772-005
						Result	Result	Result	Result	Result
Physical Tests										
Moisture	----	E144/VA	0.25	%		27.5	28.5	29.8	29.2	31.3
pH (1:2 soil:water)	----	E108/VA	0.10	pH units		10.2	10.3	10.3	10.6	10.5
Metals										
Aluminum	7429-90-5	E440/VA	50	mg/kg		28600	31000	40900	31200	31000
Antimony	7440-36-0	E440/VA	0.10	mg/kg		87.6	88.6	80.0	89.2	89.9
Arsenic	7440-38-2	E440/VA	0.10	mg/kg		16.9	19.2	16.1	17.0	15.6
Barium	7440-39-3	E440/VA	0.50	mg/kg		410	449	462	407	336
Beryllium	7440-41-7	E440/VA	0.10	mg/kg		0.30	0.32	0.30	0.32	0.37
Bismuth	7440-69-9	E440/VA	0.20	mg/kg		7.21	7.01	7.04	8.37	10.9
Boron	7440-42-8	E440/VA	5.0	mg/kg		121	142	165	168	126
Cadmium	7440-43-9	E440/VA	0.020	mg/kg		8.13	8.02	8.14	9.11	7.03
Calcium	7440-70-2	E440/VA	50	mg/kg		109000	109000	108000	111000	106000
Chromium	7440-47-3	E440/VA	0.50	mg/kg		169	145	129	112	113
Cobalt	7440-48-4	E440/VA	0.10	mg/kg		30.7	180	52.6	81.5	95.3
Copper	7440-50-8	E440/VA	0.50	mg/kg		1840	8450	1130	6150	5610
Iron	7439-89-6	E440/VA	50	mg/kg		51500	49000	53100	55200	38900
Lead	7439-92-1	E440/VA	0.50	mg/kg		304	444	338	371	356
Lithium	7439-93-2	E440/VA	2.0	mg/kg		25.9	36.6	26.5	25.2	25.9
Magnesium	7439-95-4	E440/VA	20	mg/kg		9600	11000	10300	10700	10200
Manganese	7439-96-5	E440/VA	1.0	mg/kg		634	895	792	742	722
Mercury	7439-97-6	E510/VA	0.0500	mg/kg		0.0667	<0.0500	<0.0500	<0.0500	<0.0500

Analytical Results

Sub-Matrix: Soil
(Matrix: Soil/Solid)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2444-A-1	BA2444-A-2	BA2444-A-3	BA2444-A-4	BA2444-A-5
					Client sampling date / time	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00
						VA24C9772-001	VA24C9772-002	VA24C9772-003	VA24C9772-004	VA24C9772-005
						Result	Result	Result	Result	Result
Metals										
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg		28.6	18.1	16.7	16.2	17.0
Nickel	7440-02-0	E440/VA	0.50	mg/kg		171	816	181	123	204
Phosphorus	7723-14-0	E440/VA	50	mg/kg		8870	9930	8480	9170	8860
Potassium	7440-09-7	E440/VA	100	mg/kg		4950	5050	5060	4630	4960
Selenium	7782-49-2	E440/VA	0.20	mg/kg		0.31	0.34	0.23	0.26	0.28
Silver	7440-22-4	E440/VA	0.10	mg/kg		4.01	3.51	3.01	4.71	>29.9
Sodium	7440-23-5	E440/VA	50	mg/kg		13100	13400	13300	13000	13800
Strontium	7440-24-6	E440/VA	0.50	mg/kg		352	256	265	277	228
Sulfur	7704-34-9	E440/VA	1000	mg/kg		9900	9000	9000	9000	9100
Thallium	7440-28-0	E440/VA	0.050	mg/kg		<0.050	<0.050	<0.050	<0.050	<0.050
Tin	7440-31-5	E440/VA	2.0	mg/kg		153	87.0	135	518	4280
Titanium	7440-32-6	E440/VA	1.0	mg/kg		206	227	287	215	187
Tungsten	7440-33-7	E440/VA	0.50	mg/kg		7.16	14.2	6.62	7.18	5.72
Uranium	7440-61-1	E440/VA	0.050	mg/kg		1.98	1.86	1.91	1.86	1.81
Vanadium	7440-62-2	E440/VA	0.20	mg/kg		34.3	36.8	52.7	35.6	36.0
Zinc	7440-66-6	E440/VA	2.0	mg/kg		9660	5140	2670	5010	3050
Zirconium	7440-67-7	E440/VA	1.0	mg/kg		1.6	1.6	3.5	2.4	3.0
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units		11.4	11.4	11.4	11.5	11.6
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units		6.16	6.15	6.81	6.99	6.84
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units		2.88	2.88	2.88	2.88	2.88

Analytical Results

Sub-Matrix: Soil
(Matrix: Soil/Solid)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2444-A-1	BA2444-A-2	BA2444-A-3	BA2444-A-4	BA2444-A-5
					Client sampling date / time	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00
						VA24C9772-001	VA24C9772-002	VA24C9772-003	VA24C9772-004	VA24C9772-005
						Result	Result	Result	Result	Result
TCLP Metals										
pH, TCLP final	----	EPP444/VA	0.010	pH units		6.61	6.65	6.57	6.55	6.66
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		2.10	1.74	1.81	1.65	1.79
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L		0.130	0.199	0.098	0.189	0.251
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L		1980	1820	1910	1730	1840
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		1.52	0.766	1.06	1.29	0.715
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L		1.19	1.01	1.00	0.792	0.781
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		134	113	111	110	117
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		0.40	0.39	0.39	0.40	0.70
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
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

Analytical Results

Sub-Matrix: Soil
(Matrix: Soil/Solid)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2444-A-1	BA2444-A-2	BA2444-A-3	BA2444-A-4	BA2444-A-5
					Client sampling date / time	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00
						VA24C9772-001	VA24C9772-002	VA24C9772-003	VA24C9772-004	VA24C9772-005
						Result	Result	Result	Result	Result
TCLP Metals										
Zinc, TCLP	7440-66-6	E444/VA	0.50	mg/L		18.2	22.9	15.8	14.8	11.0
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.

Analytical Results

Sub-Matrix: Soil
(Matrix: Soil/Solid)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2444-A-6	BA2444-A-7	BA2444-A-8	BA2444-A-9	BA2444-A-10
					Client sampling date / time	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00
						VA24C9772-006	VA24C9772-007	VA24C9772-008	VA24C9772-009	VA24C9772-010
						Result	Result	Result	Result	Result
Physical Tests										
Moisture	----	E144/VA	0.25	%		28.9	29.6	31.0	29.3	28.9
pH (1:2 soil:water)	----	E108/VA	0.10	pH units		10.3	10.4	10.4	10.4	10.4
Metals										
Aluminum	7429-90-5	E440/VA	50	mg/kg		37200	34200	31200	36100	34600
Antimony	7440-36-0	E440/VA	0.10	mg/kg		231	91.2	89.2	91.9	93.7
Arsenic	7440-38-2	E440/VA	0.10	mg/kg		17.7	16.2	15.1	16.4	15.3
Barium	7440-39-3	E440/VA	0.50	mg/kg		395	448	439	467	433
Beryllium	7440-41-7	E440/VA	0.10	mg/kg		0.33	0.32	0.30	0.31	0.29
Bismuth	7440-69-9	E440/VA	0.20	mg/kg		12.4	8.46	6.03	7.56	7.22
Boron	7440-42-8	E440/VA	5.0	mg/kg		154	138	109	147	123
Cadmium	7440-43-9	E440/VA	0.020	mg/kg		9.91	9.06	7.97	8.06	8.52
Calcium	7440-70-2	E440/VA	50	mg/kg		112000	112000	108000	114000	106000

Analytical Results

Sub-Matrix: Soil
(Matrix: Soil/Solid)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2444-A-6	BA2444-A-7	BA2444-A-8	BA2444-A-9	BA2444-A-10
					Client sampling date / time	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00
						VA24C9772-006	VA24C9772-007	VA24C9772-008	VA24C9772-009	VA24C9772-010
						Result	Result	Result	Result	Result
Metals										
Chromium	7440-47-3	E440/VA	0.50	mg/kg		159	147	108	146	127
Cobalt	7440-48-4	E440/VA	0.10	mg/kg		50.2	130	85.4	45.9	184
Copper	7440-50-8	E440/VA	0.50	mg/kg		25200	3160	9960	1810	9770
Iron	7439-89-6	E440/VA	50	mg/kg		47600	58900	37800	52300	46000
Lead	7439-92-1	E440/VA	0.50	mg/kg		335	706	295	360	269
Lithium	7439-93-2	E440/VA	2.0	mg/kg		27.5	26.0	30.1	24.1	23.6
Magnesium	7439-95-4	E440/VA	20	mg/kg		10100	10100	10300	9920	9350
Manganese	7439-96-5	E440/VA	1.0	mg/kg		921	773	650	769	660
Mercury	7439-97-6	E510/VA	0.0500	mg/kg		<0.0500	<0.0500	<0.0500	<0.0500	0.126
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg		14.0	17.8	15.1	18.7	13.9
Nickel	7440-02-0	E440/VA	0.50	mg/kg		151	634	168	186	180
Phosphorus	7723-14-0	E440/VA	50	mg/kg		9640	8900	10500	11300	8780
Potassium	7440-09-7	E440/VA	100	mg/kg		5200	4880	4770	5010	4470
Selenium	7782-49-2	E440/VA	0.20	mg/kg		0.37	0.32	0.31	0.34	0.31
Silver	7440-22-4	E440/VA	0.10	mg/kg		>25.5	6.54	4.11	6.71	3.03
Sodium	7440-23-5	E440/VA	50	mg/kg		14100	13200	13100	13900	12500
Strontium	7440-24-6	E440/VA	0.50	mg/kg		384	250	232	250	236
Sulfur	7704-34-9	E440/VA	1000	mg/kg		9900	9600	9000	9500	8700
Thallium	7440-28-0	E440/VA	0.050	mg/kg		<0.050	<0.050	<0.050	<0.050	<0.050
Tin	7440-31-5	E440/VA	2.0	mg/kg		1370	100	254	135	98.0
Titanium	7440-32-6	E440/VA	1.0	mg/kg		322	210	180	233	207

Analytical Results

Sub-Matrix: Soil
(Matrix: Soil/Solid)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2444-A-6	BA2444-A-7	BA2444-A-8	BA2444-A-9	BA2444-A-10
					Client sampling date / time	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00
						VA24C9772-006	VA24C9772-007	VA24C9772-008	VA24C9772-009	VA24C9772-010
						Result	Result	Result	Result	Result
Metals										
Tungsten	7440-33-7	E440/VA	0.50	mg/kg		7.02	9.04	6.32	8.97	5.21
Uranium	7440-61-1	E440/VA	0.050	mg/kg		1.92	1.89	1.80	1.98	1.81
Vanadium	7440-62-2	E440/VA	0.20	mg/kg		35.5	35.3	33.2	46.4	33.4
Zinc	7440-66-6	E440/VA	2.0	mg/kg		3430	6600	2710	4260	3300
Zirconium	7440-67-7	E440/VA	1.0	mg/kg		2.8	2.3	2.1	2.1	2.2
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units		11.4	11.4	11.4	11.5	11.6
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units		5.65	6.97	6.48	7.12	6.54
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units		2.88	2.88	2.88	2.88	2.88
pH, TCLP final	----	EPP444/VA	0.010	pH units		6.93	6.87	6.86	6.81	6.94
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		1.82	1.65	1.79	1.78	2.05
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L		0.071	0.056	0.105	0.067	0.051
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L		1800	1660	1720	1630	1660
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		0.634	0.573	0.564	0.657	0.595
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L		1.06	0.894	0.696	0.780	0.784
Iron, TCLP	7439-89-6	E444/VA	5.0	mg/L		<5.0	<5.0	<5.0	<5.0	<5.0

Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)				Client sample ID	BA2444-A-6	BA2444-A-7	BA2444-A-8	BA2444-A-9	BA2444-A-10
				Client sampling date / time	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00	30-Oct-2024 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24C9772-006	VA24C9772-007	VA24C9772-008	VA24C9772-009	VA24C9772-010
					Result	Result	Result	Result	Result
TCLP Metals									
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	97.6	106	101	100	103
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	0.26	0.26	0.31	0.26	0.25
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
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	55.1	5.62	8.02	5.99	4.38
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.

Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)				Client sample ID	BA2444-A-11 1	BA2444-A-12 2	----	----	----
				Client sampling date / time	30-Oct-2024 09:00	30-Oct-2024 09:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24C9772-011	VA24C9772-012	----	----	----
					Result	Result	----	----	----
Physical Tests									
Moisture	----	E144/VA	0.25	%	30.4	30.2	----	----	----
pH (1:2 soil:water)	----	E108/VA	0.10	pH units	10.5	10.7	----	----	----

Analytical Results

Sub-Matrix: Soil
(Matrix: Soil/Solid)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID				
					BA2444-A-11 1	BA2444-A-12 2	----	----	----
				Client sampling date / time	30-Oct-2024 09:00	30-Oct-2024 09:00	----	----	----
					VA24C9772-011	VA24C9772-012	----	----	----
					Result	Result	----	----	----
Metals									
Aluminum	7429-90-5	E440/VA	50	mg/kg	34400	34100	----	----	----
Antimony	7440-36-0	E440/VA	0.10	mg/kg	80.0	87.6	----	----	----
Arsenic	7440-38-2	E440/VA	0.10	mg/kg	15.0	15.5	----	----	----
Barium	7440-39-3	E440/VA	0.50	mg/kg	412	391	----	----	----
Beryllium	7440-41-7	E440/VA	0.10	mg/kg	0.29	0.33	----	----	----
Bismuth	7440-69-9	E440/VA	0.20	mg/kg	6.06	5.32	----	----	----
Boron	7440-42-8	E440/VA	5.0	mg/kg	119	124	----	----	----
Cadmium	7440-43-9	E440/VA	0.020	mg/kg	9.83	7.34	----	----	----
Calcium	7440-70-2	E440/VA	50	mg/kg	103000	110000	----	----	----
Chromium	7440-47-3	E440/VA	0.50	mg/kg	877	116	----	----	----
Cobalt	7440-48-4	E440/VA	0.10	mg/kg	118	55.5	----	----	----
Copper	7440-50-8	E440/VA	0.50	mg/kg	1570	6040	----	----	----
Iron	7439-89-6	E440/VA	50	mg/kg	58600	43300	----	----	----
Lead	7439-92-1	E440/VA	0.50	mg/kg	434	465	----	----	----
Lithium	7439-93-2	E440/VA	2.0	mg/kg	25.0	24.4	----	----	----
Magnesium	7439-95-4	E440/VA	20	mg/kg	9520	9690	----	----	----
Manganese	7439-96-5	E440/VA	1.0	mg/kg	766	642	----	----	----
Mercury	7439-97-6	E510/VA	0.0500	mg/kg	<0.0500	<0.0500	----	----	----
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg	21.5	16.2	----	----	----
Nickel	7440-02-0	E440/VA	0.50	mg/kg	561	655	----	----	----
Phosphorus	7723-14-0	E440/VA	50	mg/kg	9190	8970	----	----	----

Analytical Results

Sub-Matrix: Soil
(Matrix: Soil/Solid)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2444-A-11 1	BA2444-A-12 2	----	----	----
					Client sampling date / time	30-Oct-2024 09:00	30-Oct-2024 09:00	----	----	----
						VA24C9772-011	VA24C9772-012	----	----	----
						Result	Result	----	----	----
Metals										
Potassium	7440-09-7	E440/VA	100	mg/kg		4350	4840	----	----	----
Selenium	7782-49-2	E440/VA	0.20	mg/kg		0.26	0.46	----	----	----
Silver	7440-22-4	E440/VA	0.10	mg/kg		6.08	8.80	----	----	----
Sodium	7440-23-5	E440/VA	50	mg/kg		12200	12600	----	----	----
Strontium	7440-24-6	E440/VA	0.50	mg/kg		230	234	----	----	----
Sulfur	7704-34-9	E440/VA	1000	mg/kg		8300	8800	----	----	----
Thallium	7440-28-0	E440/VA	0.050	mg/kg		<0.050	<0.050	----	----	----
Tin	7440-31-5	E440/VA	2.0	mg/kg		97.4	212	----	----	----
Titanium	7440-32-6	E440/VA	1.0	mg/kg		190	229	----	----	----
Tungsten	7440-33-7	E440/VA	0.50	mg/kg		6.38	8.11	----	----	----
Uranium	7440-61-1	E440/VA	0.050	mg/kg		1.75	1.83	----	----	----
Vanadium	7440-62-2	E440/VA	0.20	mg/kg		40.3	32.9	----	----	----
Zinc	7440-66-6	E440/VA	2.0	mg/kg		2770	5480	----	----	----
Zirconium	7440-67-7	E440/VA	1.0	mg/kg		3.1	2.9	----	----	----
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units		11.5	11.6	----	----	----
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units		6.85	6.79	----	----	----
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units		2.88	2.88	----	----	----
pH, TCLP final	----	EPP444/VA	0.010	pH units		6.92	6.96	----	----	----
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	----	----	----

Analytical Results

Sub-Matrix: Soil
(Matrix: Soil/Solid)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2444-A-11 1	BA2444-A-12 2	----	----	----
					Client sampling date / time	30-Oct-2024 09:00	30-Oct-2024 09:00	----	----	----
						VA24C9772-011	VA24C9772-012	----	----	----
						Result	Result	----	----	----
TCLP Metals										
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		1.67	1.84	----	----	----
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L		0.055	0.109	----	----	----
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L		1650	1680	----	----	----
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		0.725	0.637	----	----	----
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L		0.775	0.856	----	----	----
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		98.9	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		<0.25	<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	----	----	----
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		5.13	3.49	----	----	----
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.

ALS Canada Ltd.

right solutions.
right partner.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24C9772**	Page	: 1 of 16
Client	: **Reworld Renewable Burnaby, ULC**	Laboratory	: ALS Environmental - Vancouver
Contact	: Nicole Victor	Account Manager	: Gulraj Dhanaua
Address	: 5150 Riverbend Drive Burnaby BC Canada V3N 4V3	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: Weekly Bottom Ash - Suite	Date Samples Received	: 04-Nov-2024 10:55
PO	: VANCO0000052919	Issue Date	: 15-Nov-2024 10:00
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: Covanta Burnaby Standing Offer 2024		
No. of samples received	: 12		
No. of samples analysed	: 12		

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

- No Reference Material (RM) Sample outliers occur.

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
Duplicate (DUP) RPDs								
Metals	VA24C9772-001	BA2444-A-1	Cobalt	7440-48-4	E440	58.8 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24C9772-001	BA2444-A-1	Molybdenum	7439-98-7	E440	43.2 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24C9772-001	BA2444-A-1	Nickel	7440-02-0	E440	33.1 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24C9772-001	BA2444-A-1	Silver	7440-22-4	E440	46.7 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24C9772-001	BA2444-A-1	Tin	7440-31-5	E440	51.0 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24C9772-001	BA2444-A-1	Zinc	7440-66-6	E440	103 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.

Result Qualifiers

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

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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2444-A-1	E510	30-Oct-2024	13-Nov-2024	28 days	14 days	✓	13-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2444-A-10	E510	30-Oct-2024	13-Nov-2024	28 days	14 days	✓	13-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2444-A-11 - 1	E510	30-Oct-2024	13-Nov-2024	28 days	14 days	✓	13-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2444-A-12 - 2	E510	30-Oct-2024	13-Nov-2024	28 days	14 days	✓	13-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2444-A-2	E510	30-Oct-2024	13-Nov-2024	28 days	14 days	✓	13-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2444-A-3	E510	30-Oct-2024	13-Nov-2024	28 days	14 days	✓	13-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2444-A-4	E510	30-Oct-2024	13-Nov-2024	28 days	14 days	✓	13-Nov-2024	28 days	1 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2444-A-5	E510	30-Oct-2024	13-Nov-2024	28 days	14 days	✓	13-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2444-A-6	E510	30-Oct-2024	13-Nov-2024	28 days	14 days	✓	13-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2444-A-7	E510	30-Oct-2024	13-Nov-2024	28 days	14 days	✓	13-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2444-A-8	E510	30-Oct-2024	13-Nov-2024	28 days	14 days	✓	13-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2444-A-9	E510	30-Oct-2024	13-Nov-2024	28 days	14 days	✓	13-Nov-2024	28 days	1 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2444-A-1	E440	30-Oct-2024	13-Nov-2024	180 days	14 days	✓	14-Nov-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2444-A-10	E440	30-Oct-2024	13-Nov-2024	180 days	14 days	✓	14-Nov-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2444-A-11 - 1	E440	30-Oct-2024	13-Nov-2024	180 days	14 days	✓	14-Nov-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2444-A-12 - 2	E440	30-Oct-2024	13-Nov-2024	180 days	14 days	✓	14-Nov-2024	180 days	15 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2444-A-2	E440	30-Oct-2024	13-Nov-2024	180 days	14 days	✓	14-Nov-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2444-A-3	E440	30-Oct-2024	13-Nov-2024	180 days	14 days	✓	14-Nov-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2444-A-4	E440	30-Oct-2024	13-Nov-2024	180 days	14 days	✓	14-Nov-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2444-A-5	E440	30-Oct-2024	13-Nov-2024	180 days	14 days	✓	14-Nov-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2444-A-6	E440	30-Oct-2024	13-Nov-2024	180 days	14 days	✓	14-Nov-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2444-A-7	E440	30-Oct-2024	13-Nov-2024	180 days	14 days	✓	14-Nov-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2444-A-8	E440	30-Oct-2024	13-Nov-2024	180 days	14 days	✓	14-Nov-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2444-A-9	E440	30-Oct-2024	13-Nov-2024	180 days	14 days	✓	14-Nov-2024	180 days	15 days	✓
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2444-A-1	E144	30-Oct-2024	----	----	----		11-Nov-2024	----	12 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2444-A-10	E144	30-Oct-2024	----	----	----		11-Nov-2024	----	12 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2444-A-11 - 1	E144	30-Oct-2024	----	----	----		11-Nov-2024	----	12 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2444-A-12 - 2	E144	30-Oct-2024	----	----	----		11-Nov-2024	----	12 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2444-A-2	E144	30-Oct-2024	----	----	----		11-Nov-2024	----	12 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2444-A-3	E144	30-Oct-2024	----	----	----		11-Nov-2024	----	12 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2444-A-4	E144	30-Oct-2024	----	----	----		11-Nov-2024	----	12 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2444-A-5	E144	30-Oct-2024	----	----	----		11-Nov-2024	----	12 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2444-A-6	E144	30-Oct-2024	----	----	----		11-Nov-2024	----	12 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2444-A-7	E144	30-Oct-2024	----	----	----		11-Nov-2024	----	12 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2444-A-8	E144	30-Oct-2024	----	----	----		11-Nov-2024	----	12 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2444-A-9	E144	30-Oct-2024	----	----	----		11-Nov-2024	----	12 days	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2444-A-1	E108	30-Oct-2024	13-Nov-2024	30 days	14 days	✓	13-Nov-2024	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2444-A-10	E108	30-Oct-2024	13-Nov-2024	30 days	14 days	✓	13-Nov-2024	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2444-A-11 - 1	E108	30-Oct-2024	13-Nov-2024	30 days	14 days	✓	13-Nov-2024	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2444-A-12 - 2	E108	30-Oct-2024	13-Nov-2024	30 days	14 days	✓	13-Nov-2024	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2444-A-2	E108	30-Oct-2024	13-Nov-2024	30 days	14 days	✓	13-Nov-2024	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2444-A-3	E108	30-Oct-2024	13-Nov-2024	30 days	14 days	✓	13-Nov-2024	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2444-A-4	E108	30-Oct-2024	13-Nov-2024	30 days	14 days	✓	13-Nov-2024	30 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2444-A-5	E108	30-Oct-2024	13-Nov-2024	30 days	14 days	✓	13-Nov-2024	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2444-A-6	E108	30-Oct-2024	13-Nov-2024	30 days	14 days	✓	13-Nov-2024	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2444-A-7	E108	30-Oct-2024	13-Nov-2024	30 days	14 days	✓	13-Nov-2024	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2444-A-8	E108	30-Oct-2024	13-Nov-2024	30 days	14 days	✓	13-Nov-2024	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2444-A-9	E108	30-Oct-2024	13-Nov-2024	30 days	14 days	✓	13-Nov-2024	30 days	14 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2444-A-1	E512	12-Nov-2024	14-Nov-2024	41 days	15 days	✓	14-Nov-2024	41 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2444-A-10	E512	12-Nov-2024	14-Nov-2024	41 days	15 days	✓	14-Nov-2024	41 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2444-A-11 - 1	E512	12-Nov-2024	14-Nov-2024	41 days	15 days	✓	14-Nov-2024	41 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2444-A-12 - 2	E512	12-Nov-2024	14-Nov-2024	41 days	15 days	✓	14-Nov-2024	41 days	15 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*	
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2444-A-2	E512	12-Nov-2024	14-Nov-2024	41 days	15 days	✓	14-Nov-2024	41 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2444-A-3	E512	12-Nov-2024	14-Nov-2024	41 days	15 days	✓	14-Nov-2024	41 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2444-A-4	E512	12-Nov-2024	14-Nov-2024	41 days	15 days	✓	14-Nov-2024	41 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2444-A-5	E512	12-Nov-2024	14-Nov-2024	41 days	15 days	✓	14-Nov-2024	41 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2444-A-6	E512	12-Nov-2024	14-Nov-2024	41 days	15 days	✓	14-Nov-2024	41 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2444-A-7	E512	12-Nov-2024	14-Nov-2024	41 days	15 days	✓	14-Nov-2024	41 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2444-A-8	E512	12-Nov-2024	14-Nov-2024	41 days	15 days	✓	14-Nov-2024	41 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2444-A-9	E512	12-Nov-2024	14-Nov-2024	41 days	15 days	✓	14-Nov-2024	41 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2444-A-1	E444	12-Nov-2024	14-Nov-2024	193 days	15 days	✓	14-Nov-2024	193 days	15 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*	
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2444-A-10	E444	12-Nov-2024	14-Nov-2024	193 days	15 days	✓	14-Nov-2024	193 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2444-A-11 - 1	E444	12-Nov-2024	14-Nov-2024	193 days	15 days	✓	14-Nov-2024	193 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2444-A-12 - 2	E444	12-Nov-2024	14-Nov-2024	193 days	15 days	✓	14-Nov-2024	193 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2444-A-2	E444	12-Nov-2024	14-Nov-2024	193 days	15 days	✓	14-Nov-2024	193 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2444-A-3	E444	12-Nov-2024	14-Nov-2024	193 days	15 days	✓	14-Nov-2024	193 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2444-A-4	E444	12-Nov-2024	14-Nov-2024	193 days	15 days	✓	14-Nov-2024	193 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2444-A-5	E444	12-Nov-2024	14-Nov-2024	193 days	15 days	✓	14-Nov-2024	193 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2444-A-6	E444	12-Nov-2024	14-Nov-2024	193 days	15 days	✓	14-Nov-2024	193 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2444-A-7	E444	12-Nov-2024	14-Nov-2024	193 days	15 days	✓	14-Nov-2024	193 days	15 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* Rec	*Holding Times* Actual	*Eval*	*Analysis Date*	*Holding Times* Rec	*Holding Times* Actual	*Eval*
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2444-A-8	E444	12-Nov-2024	14-Nov-2024	193 days	15 days	✓	14-Nov-2024	193 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2444-A-9	E444	12-Nov-2024	14-Nov-2024	193 days	15 days	✓	14-Nov-2024	193 days	15 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2444-A-1	EPP444	30-Oct-2024	12-Nov-2024	----	----		----	28 days	13 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2444-A-10	EPP444	30-Oct-2024	12-Nov-2024	----	----		----	28 days	13 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2444-A-11 - 1	EPP444	30-Oct-2024	12-Nov-2024	----	----		----	28 days	13 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2444-A-12 - 2	EPP444	30-Oct-2024	12-Nov-2024	----	----		----	28 days	13 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2444-A-2	EPP444	30-Oct-2024	12-Nov-2024	----	----		----	28 days	13 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2444-A-3	EPP444	30-Oct-2024	12-Nov-2024	----	----		----	28 days	13 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2444-A-4	EPP444	30-Oct-2024	12-Nov-2024	----	----		----	28 days	13 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS)										
BA2444-A-5	EPP444	30-Oct-2024	12-Nov-2024	----	----		----	28 days	13 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS)										
BA2444-A-6	EPP444	30-Oct-2024	12-Nov-2024	----	----		----	28 days	13 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS)										
BA2444-A-7	EPP444	30-Oct-2024	12-Nov-2024	----	----		----	28 days	13 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS)										
BA2444-A-8	EPP444	30-Oct-2024	12-Nov-2024	----	----		----	28 days	13 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS)										
BA2444-A-9	EPP444	30-Oct-2024	12-Nov-2024	----	----		----	28 days	13 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			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Mercury by CVAAS (TCLP)	E512	1766240	1	12	8.3	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	1760923	1	12	8.3	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	1766239	1	12	8.3	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	1760924	1	19	5.2	5.0	✓
Moisture Content by Gravimetry	E144	1760926	1	12	8.3	5.0	✓
pH by Meter (1:2 Soil:Water Extraction)	E108	1760925	1	19	5.2	5.0	✓
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	1760923	2	12	16.6	10.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	1760924	2	19	10.5	10.0	✓
Moisture Content by Gravimetry	E144	1760926	1	12	8.3	5.0	✓
pH by Meter (1:2 Soil:Water Extraction)	E108	1760925	1	19	5.2	5.0	✓
Method Blanks (MB)							
Mercury by CVAAS (TCLP)	E512	1766240	1	12	8.3	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	1760923	1	12	8.3	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	1766239	1	12	8.3	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	1760924	1	19	5.2	5.0	✓
Moisture Content by Gravimetry	E144	1760926	1	12	8.3	5.0	✓
Matrix Spikes (MS)							
Mercury by CVAAS (TCLP)	E512	1766240	1	12	8.3	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	1766239	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 ± 5°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 ºC) 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°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 HNO3 and HCl. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, 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 HNO3 and 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°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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 HNO3 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

Work Order	: **VA24C9772**	Page	: 1 of 12
Client	: Reworld Renewable Burnaby, ULC	Laboratory	: ALS Environmental - Vancouver
Contact	: Nicole Victor	Account Manager	: Gulraj Dhanaua
Address	: 5150 Riverbend Drive Burnaby BC Canada V3N 4V3	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: Weekly Bottom Ash - Suite	Date Samples Received	: 04-Nov-2024 10:55
PO	: VANCO0000052919	Date Analysis Commenced	: 11-Nov-2024
C-O-C number	: ----	Issue Date	: 15-Nov-2024 10:00
Sampler	: ----		
Site	: ----		
Quote number	: Covanta Burnaby Standing Offer 2024		
No. of samples received	: 12		
No. of samples analysed	: 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.

Signatories	*Position*	*Laboratory Department*
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Vancouver Organics, Burnaby, British Columbia
Maya Urquhart	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
Rebecca Sit	Supervisor - Organics Extractions	Vancouver Organics, 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

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

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
Physical Tests (QC Lot: 1760925)											
VA24C9772-001	BA2444-A-1	pH (1:2 soil:water)	----	E108	0.10	pH units	10.2	10.0	1.6%	5%	----
Physical Tests (QC Lot: 1760926)											
VA24C9772-001	BA2444-A-1	Moisture	----	E144	0.25	%	27.5	26.8	2.44%	20%	----
Metals (QC Lot: 1760923)											
VA24C9772-001	BA2444-A-1	Mercury	7439-97-6	E510	0.0500	mg/kg	0.0667	<0.0500	0.0167	Diff <2x LOR	----
Metals (QC Lot: 1760924)											
VA24C9772-001	BA2444-A-1	Aluminum	7429-90-5	E440	50	mg/kg	28600	31800	10.4%	40%	----
		Antimony	7440-36-0	E440	0.10	mg/kg	87.6	95.1	8.24%	30%	----
		Arsenic	7440-38-2	E440	0.10	mg/kg	16.9	16.8	1.01%	30%	----
		Barium	7440-39-3	E440	0.50	mg/kg	410	449	8.94%	40%	----
		Beryllium	7440-41-7	E440	0.10	mg/kg	0.30	0.31	0.02	Diff <2x LOR	----
		Bismuth	7440-69-9	E440	0.20	mg/kg	7.21	7.12	1.30%	30%	----
		Boron	7440-42-8	E440	5.0	mg/kg	121	132	8.70%	30%	----
		Cadmium	7440-43-9	E440	0.020	mg/kg	8.13	7.88	3.16%	30%	----
		Calcium	7440-70-2	E440	50	mg/kg	109000	112000	2.84%	30%	----
		Chromium	7440-47-3	E440	0.50	mg/kg	169	134	23.2%	30%	----
		Cobalt	7440-48-4	E440	0.10	mg/kg	30.7	56.3	58.8%	30%	DUP-H
		Copper	7440-50-8	E440	0.50	mg/kg	1840	1700	8.20%	30%	----
		Iron	7439-89-6	E440	50	mg/kg	51500	44100	15.4%	30%	----
		Lead	7439-92-1	E440	0.50	mg/kg	304	344	12.2%	40%	----
		Lithium	7439-93-2	E440	2.0	mg/kg	25.9	24.1	7.34%	30%	----
		Magnesium	7439-95-4	E440	20	mg/kg	9600	9940	3.42%	30%	----
		Manganese	7439-96-5	E440	1.0	mg/kg	634	682	7.28%	30%	----
		Molybdenum	7439-98-7	E440	0.10	mg/kg	28.6	18.5	43.2%	40%	DUP-H
		Nickel	7440-02-0	E440	0.50	mg/kg	171	122	33.1%	30%	DUP-H
		Phosphorus	7723-14-0	E440	50	mg/kg	8870	9300	4.67%	30%	----
		Potassium	7440-09-7	E440	100	mg/kg	4950	5110	3.25%	40%	----
		Selenium	7782-49-2	E440	0.20	mg/kg	0.31	0.32	0.007	Diff <2x LOR	----
		Silver	7440-22-4	E440	0.10	mg/kg	4.01	6.46	46.7%	40%	DUP-H
		Sodium	7440-23-5	E440	50	mg/kg	13100	14000	6.47%	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*
Metals (QC Lot: 1760924) - continued											
VA24C9772-001	BA2444-A-1	Strontium	7440-24-6	E440	0.50	mg/kg	352	262	29.3%	40%	----
		Sulfur	7704-34-9	E440	1000	mg/kg	9900	10100	2.00%	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	153	90.9	51.0%	40%	DUP-H
		Titanium	7440-32-6	E440	1.0	mg/kg	206	208	1.05%	40%	----
		Tungsten	7440-33-7	E440	0.50	mg/kg	7.16	8.63	18.6%	30%	----
		Uranium	7440-61-1	E440	0.050	mg/kg	1.98	2.03	2.52%	30%	----
		Vanadium	7440-62-2	E440	0.20	mg/kg	34.3	34.5	0.551%	30%	----
		Zinc	7440-66-6	E440	2.0	mg/kg	9660	3090	103%	30%	DUP-H
		Zirconium	7440-67-7	E440	1.0	mg/kg	1.6	2.0	0.4	Diff <2x LOR	----
TCLP Metals (QC Lot: 1766239)											
VA24C9772-001	BA2444-A-1	Antimony, TCLP	7440-36-0	E444	1.00	mg/L	<1.00	<1.00	0	Diff <2x LOR	----
		Arsenic, TCLP	7440-38-2	E444	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Barium, TCLP	7440-39-3	E444	2.5	mg/L	<2.5	<2.5	0	Diff <2x LOR	----
		Beryllium, TCLP	7440-41-7	E444	0.025	mg/L	<0.025	<0.025	0	Diff <2x LOR	----
		Boron, TCLP	7440-42-8	E444	0.50	mg/L	2.10	2.19	0.09	Diff <2x LOR	----
		Cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.130	0.131	0.0005	Diff <2x LOR	----
		Calcium, TCLP	7440-70-2	E444	10	mg/L	1980	2040	3.20%	30%	----
		Chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	<0.25	0	Diff <2x LOR	----
		Cobalt, TCLP	7440-48-4	E444	0.050	mg/L	1.52	1.50	1.45%	30%	----
		Copper, TCLP	7440-50-8	E444	0.050	mg/L	1.19	1.17	1.41%	30%	----
		Iron, TCLP	7439-89-6	E444	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Lead, TCLP	7439-92-1	E444	0.25	mg/L	<0.25	<0.25	0	Diff <2x LOR	----
		Magnesium, TCLP	7439-95-4	E444	2.5	mg/L	134	133	0.318%	30%	----
		Nickel, TCLP	7440-02-0	E444	0.25	mg/L	0.40	0.39	0.005	Diff <2x LOR	----
		Selenium, TCLP	7782-49-2	E444	0.10	mg/L	<0.10	<0.10	0	Diff <2x LOR	----
		Silver, TCLP	7440-22-4	E444	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Thallium, TCLP	7440-28-0	E444	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Uranium, TCLP	7440-61-1	E444	0.20	mg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Vanadium, TCLP	7440-62-2	E444	0.15	mg/L	<0.15	<0.15	0	Diff <2x LOR	----
		Zinc, TCLP	7440-66-6	E444	0.50	mg/L	18.2	18.0	1.49%	30%	----
		Zirconium, TCLP	7440-67-7	E444	10	mg/L	<10	<10	0	Diff <2x LOR	----
TCLP Metals (QC Lot: 1766240)											
VA24C9772-001	BA2444-A-1	Mercury, TCLP	7439-97-6	E512	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----

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
Physical Tests (QCLot: 1760926)						
Moisture	----	E144	0.25	%	<0.25	----
Metals (QCLot: 1760923)						
Mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 1760924)						
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
Metals (QCLot: 1760924) - continued						
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	----
TCLP Metals (QCLot: 1766239)						
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	----
TCLP Metals (QCLot: 1766240)						
Mercury, TCLP	7439-97-6	E512	0.001	mg/L	<0.0010	----

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	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1760925)									
pH (1:2 soil:water)	----	E108	----	pH units	6 pH units	100	95.0	105	----
Physical Tests (QCLot: 1760926)									
Moisture	----	E144	0.25	%	50 %	101	90.0	110	----
Metals (QCLot: 1760923)									
Mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	99.3	80.0	120	----
Metals (QCLot: 1760924)									
Aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	100	80.0	120	----
Antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	104	80.0	120	----
Arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	104	80.0	120	----
Barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	104	80.0	120	----
Beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	96.4	80.0	120	----
Bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	96.2	80.0	120	----
Boron	7440-42-8	E440	5	mg/kg	100 mg/kg	90.6	80.0	120	----
Cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	95.5	80.0	120	----
Calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	95.9	80.0	120	----
Chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	96.8	80.0	120	----
Cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	96.8	80.0	120	----
Copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	95.4	80.0	120	----
Iron	7439-89-6	E440	50	mg/kg	100 mg/kg	99.2	80.0	120	----
Lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	99.4	80.0	120	----
Lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	96.6	80.0	120	----
Magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	103	80.0	120	----
Manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	97.2	80.0	120	----
Molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	103	80.0	120	----
Nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	98.1	80.0	120	----
Phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	108	80.0	120	----
Potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	102	80.0	120	----
Selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	98.4	80.0	120	----
Silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	93.6	80.0	120	----
Sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	100	80.0	120	----
Strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	102	80.0	120	----
Sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	95.2	80.0	120	----

Sub-Matrix: **Soil/Solid**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 1760924) - continued									
Thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	96.9	80.0	120	----
Tin	7440-31-5	E440	2	mg/kg	50 mg/kg	96.9	80.0	120	----
Titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	97.0	80.0	120	----
Tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	103	80.0	120	----
Uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	102	80.0	120	----
Vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	99.7	80.0	120	----
Zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	98.7	80.0	120	----
Zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	97.4	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
TCLP Metals (QCLot: 1766239)										
VA24C9772-001	BA2444-A-1	Antimony, TCLP	7440-36-0	E444	5.19 mg/L	5 mg/L	104	50.0	140	----
		Arsenic, TCLP	7440-38-2	E444	5.3 mg/L	5 mg/L	107	50.0	140	----
		Barium, TCLP	7440-39-3	E444	13.6 mg/L	12.5 mg/L	108	50.0	140	----
		Beryllium, TCLP	7440-41-7	E444	0.250 mg/L	0.25 mg/L	99.9	50.0	140	----
		Boron, TCLP	7440-42-8	E444	9.78 mg/L	10 mg/L	97.8	50.0	140	----
		Cadmium, TCLP	7440-43-9	E444	0.252 mg/L	0.25 mg/L	101	50.0	140	----
		Calcium, TCLP	7440-70-2	E444	ND mg/L	----	ND	50.0	140	----
		Chromium, TCLP	7440-47-3	E444	1.27 mg/L	1.25 mg/L	102	50.0	140	----
		Cobalt, TCLP	7440-48-4	E444	ND mg/L	----	ND	50.0	140	----
		Copper, TCLP	7440-50-8	E444	2.47 mg/L	2.5 mg/L	98.9	50.0	140	----
		Iron, TCLP	7439-89-6	E444	253 mg/L	250 mg/L	101	50.0	140	----
		Lead, TCLP	7439-92-1	E444	9.76 mg/L	10 mg/L	97.6	50.0	140	----
		Magnesium, TCLP	7439-95-4	E444	261 mg/L	250 mg/L	104	50.0	140	----
		Nickel, TCLP	7440-02-0	E444	2.53 mg/L	2.5 mg/L	101	50.0	140	----
		Selenium, TCLP	7782-49-2	E444	5.10 mg/L	5 mg/L	102	50.0	140	----
		Silver, TCLP	7440-22-4	E444	0.079 mg/L	0.1 mg/L	78.9	50.0	140	----
		Thallium, TCLP	7440-28-0	E444	4.8 mg/L	5 mg/L	96.0	50.0	140	----
		Uranium, TCLP	7440-61-1	E444	4.86 mg/L	5 mg/L	97.3	50.0	150	----
		Vanadium, TCLP	7440-62-2	E444	0.79 mg/L	0.75 mg/L	105	50.0	140	----
		Zinc, TCLP	7440-66-6	E444	ND mg/L	----	ND	50.0	140	----
		Zirconium, TCLP	7440-67-7	E444	0.9 mg/L	1 mg/L	88.4	50.0	150	----
TCLP Metals (QCLot: 1766240)										
VA24C9772-001	BA2444-A-1	Mercury, TCLP	7439-97-6	E512	0.0009 mg/L	0.001 mg/L	89.5	50.0	140	----

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:

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Metals (QCLot: 1760923)									
QC-1760923-003	MRCA-21	Mercury	7439-97-6	E510	0.068 mg/kg	99.2	70.0	130	----
Metals (QCLot: 1760924)									
QC-1760924-003	MRCA-21	Aluminum	7429-90-5	E440	22500 mg/kg	108	70.0	130	----
QC-1760924-003	MRCA-21	Antimony	7440-36-0	E440	24.8 mg/kg	105	70.0	130	----
QC-1760924-003	MRCA-21	Arsenic	7440-38-2	E440	21.2 mg/kg	99.6	70.0	130	----
QC-1760924-003	MRCA-21	Barium	7440-39-3	E440	788 mg/kg	106	70.0	130	----
QC-1760924-003	MRCA-21	Beryllium	7440-41-7	E440	1.82 mg/kg	107	70.0	130	----
QC-1760924-003	MRCA-21	Bismuth	7440-69-9	E440	1.78 mg/kg	97.5	70.0	130	----
QC-1760924-003	MRCA-21	Cadmium	7440-43-9	E440	2.15 mg/kg	96.7	70.0	130	----
QC-1760924-003	MRCA-21	Calcium	7440-70-2	E440	4900 mg/kg	103	70.0	130	----
QC-1760924-003	MRCA-21	Chromium	7440-47-3	E440	56.9 mg/kg	99.4	70.0	130	----
QC-1760924-003	MRCA-21	Cobalt	7440-48-4	E440	32 mg/kg	98.2	70.0	130	----
QC-1760924-003	MRCA-21	Copper	7440-50-8	E440	969 mg/kg	101	70.0	130	----
QC-1760924-003	MRCA-21	Iron	7439-89-6	E440	32700 mg/kg	103	70.0	130	----
QC-1760924-003	MRCA-21	Lead	7439-92-1	E440	919 mg/kg	98.3	70.0	130	----
QC-1760924-003	MRCA-21	Lithium	7439-93-2	E440	47.3 mg/kg	107	70.0	130	----
QC-1760924-003	MRCA-21	Magnesium	7439-95-4	E440	7780 mg/kg	106	70.0	130	----
QC-1760924-003	MRCA-21	Manganese	7439-96-5	E440	8640 mg/kg	97.9	70.0	130	----
QC-1760924-003	MRCA-21	Molybdenum	7439-98-7	E440	25.1 mg/kg	103	70.0	130	----
QC-1760924-003	MRCA-21	Nickel	7440-02-0	E440	1000 mg/kg	102	70.0	130	----
QC-1760924-003	MRCA-21	Phosphorus	7723-14-0	E440	660 mg/kg	109	70.0	130	----
QC-1760924-003	MRCA-21	Potassium	7440-09-7	E440	10800 mg/kg	105	70.0	130	----
QC-1760924-003	MRCA-21	Selenium	7782-49-2	E440	1.04 mg/kg	109	60.0	140	----
QC-1760924-003	MRCA-21	Silver	7440-22-4	E440	8.98 mg/kg	98.5	70.0	130	----
QC-1760924-003	MRCA-21	Sodium	7440-23-5	E440	1770 mg/kg	109	70.0	130	----
QC-1760924-003	MRCA-21	Strontium	7440-24-6	E440	41 mg/kg	102	70.0	130	----
QC-1760924-003	MRCA-21	Sulfur	7704-34-9	E440	3940 mg/kg	94.9	50.0	150	----
QC-1760924-003	MRCA-21	Thallium	7440-28-0	E440	0.907 mg/kg	99.1	70.0	130	----
QC-1760924-003	MRCA-21	Tin	7440-31-5	E440	3.79 mg/kg	100	40.0	160	----
QC-1760924-003	MRCA-21	Titanium	7440-32-6	E440	2790 mg/kg	103	70.0	130	----
QC-1760924-003	MRCA-21	Tungsten	7440-33-7	E440	6.99 mg/kg	108	70.0	130	----
QC-1760924-003	MRCA-21	Uranium	7440-61-1	E440	3.97 mg/kg	112	70.0	130	----
QC-1760924-003	MRCA-21	Vanadium	7440-62-2	E440	66.2 mg/kg	102	70.0	130	----

Sub-Matrix:

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Metals (QCLot: 1760924) - continued									
QC-1760924-003	MRCA-21	Zinc	7440-66-6	E440	828 mg/kg	102	70.0	130	----
QC-1760924-003	MRCA-21	Zirconium	7440-67-7	E440	6.91 mg/kg	91.8	70.0	130	----

ALS Environmental

Chain of Custody / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

COC # _____

Page ____ of ____

Report To				Report Format / Distribution				Service Requested (Rush for routine analysis subject to availability)
Company:	Covanta Energy			☐ Standard ☐ Other				◉ Regular (Standard Turnaround Times - Business Days)
Contact:	Nicole Victor / Dan Skrypnyk			☑ PDF	☐ Excel	☐ Digital	☐ Fax	○ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT
Address:	5150 Riverbend Drive			Email 1:	nvictor@covanta.com			○ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT
	Burnaby BC			Email 2:	rminchin@covanta.com			○ Same Day or Weekend Emergency - Contact ALS to Confirm TAT
Phone:	604-521-1025	Fax:		Email 3:	dskrypnyk@covanta.com			Analysis Request
		☐ Yes	☐ No		brent.kirkpatrick@metrovancouver.org			
					Sarah.Wellman@metrovancouver.org			
Invoice To	Same as Report ?			Client / Project Information				Please indicate below Filtered, Preserved or both (F, P, F/P)
Hardcopy of Invoice with Report?		☐ Yes	☐ No	Job #:				
Company:				PO / AFE:	PO# 46693 Weekly Bottom Ash - Suite			
Contact:				LSD:	(includes 2:1 pH)			
Address:								
Phone:		Fax:		Quote #:				
Lab Work Order # (lab use only)	9772			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
[redacted]	BA2444-A-1	30-Oct-24	9:00	Soil	X	X				X						1
[redacted]	BA2444-A-2	30-Oct-24	9:00	Soil	X	X				X						1
[redacted]	BA2444-A-3	30-Oct-24	9:00	Soil	X	X				X						1
[redacted]	BA2444-A-4	30-Oct-24	9:00	Soil	X	X				X						1
[redacted]	BA2444-A-5	30-Oct-24	9:00	Soil	X	X				X						1
[redacted]	BA2444-A-6	30-Oct-24	9:00	Soil	X	X				X						1
[redacted]	BA2444-A-7	30-Oct-24	9:00	Soil	X	X				X						1
[redacted]	BA2444-A-8	30-Oct-24	9:00	Soil	X	X				X						1
[redacted]	BA2444-A-9	30-Oct-24	9:00	Soil	X	X				X						1
[redacted]	BA2444-A-10	30-Oct-24	9:00	Soil	X	X				X						1
[redacted]	BA2444-A-11	30-Oct-24	9:00	Soil	X	X				X						1
[redacted]	BA2444-A-12	30-Oct-24	9:00	Soil	X	X				X						1

Environmental Division
Vancouver
Work Order Reference
VA24C9772

Telephone : +1 604 253 4188

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.

Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
	4-Nov-24	0900	CW	04/Nov/24	1055	16 °C				