Bottom Ash Data

2024 Week 50

The following analytical report represents bottom ash composite results for week 50 of 2024 (December 8, 2024 to December 14, 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	: **VA24D3809**		
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	: 18-Dec-2024 14:33
PO	: VANCO0000052919	Date Analysis Commenced	: 20-Dec-2024
C-O-C number	: ----	Issue Date	: 30-Dec-2024 09:09
Sampler	: ----		
Site	: (includes 2:1pH)		
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*
Chau Tran	Analyst	Metals, Burnaby, British Columbia
Ghazaleh Khanmirzaei	Analyst	Metals, Burnaby, British Columbia
Janice Leung	Supervisor - Organics Instrumentation	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*
%	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
(Matrix: Soil/Solid)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA 2450-A-1	BA 2450-A-2	BA 2450-A-3	BA 2450-A-4	BA 2450-A-5
					Client sampling date / time	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00
						VA24D3809-001	VA24D3809-002	VA24D3809-003	VA24D3809-004	VA24D3809-005
						Result	Result	Result	Result	Result
Physical Tests										
Moisture	----	E144/VA	0.25	%		25.0	26.1	25.9	24.7	24.4
pH (1:2 soil:water)	----	E108/VA	0.10	pH units		11.7	11.8	11.8	11.7	11.8
Metals										
Aluminum	7429-90-5	E440/VA	50	mg/kg		41000	33200	33900	33400	39600
Antimony	7440-36-0	E440/VA	0.10	mg/kg		382	141	116	130	172
Arsenic	7440-38-2	E440/VA	0.10	mg/kg		26.0	19.2	17.4	18.5	23.7
Barium	7440-39-3	E440/VA	0.50	mg/kg		575	608	534	499	528
Beryllium	7440-41-7	E440/VA	0.10	mg/kg		0.32	0.36	0.35	0.36	0.38
Bismuth	7440-69-9	E440/VA	0.20	mg/kg		11.9	10.6	8.25	10.7	11.5
Boron	7440-42-8	E440/VA	5.0	mg/kg		196	250	201	236	198
Cadmium	7440-43-9	E440/VA	0.020	mg/kg		12.3	10.0	8.24	9.92	12.1
Calcium	7440-70-2	E440/VA	50	mg/kg		125000	142000	136000	135000	164000
Chromium	7440-47-3	E440/VA	0.50	mg/kg		242	173	144	143	159
Cobalt	7440-48-4	E440/VA	0.10	mg/kg		56.0	36.1	118	329	71.4
Copper	7440-50-8	E440/VA	0.50	mg/kg		1880	25800	3760	10600	3300
Iron	7439-89-6	E440/VA	50	mg/kg		67800	58500	63000	47100	36200
Lead	7439-92-1	E440/VA	0.50	mg/kg		2310	351	356	336	458
Lithium	7439-93-2	E440/VA	2.0	mg/kg		25.7	24.2	28.4	52.6	32.2
Magnesium	7439-95-4	E440/VA	20	mg/kg		11900	12300	12700	12100	14100
Manganese	7439-96-5	E440/VA	1.0	mg/kg		1130	1030	760	724	1140
Mercury	7439-97-6	E510/VA	0.0500	mg/kg		0.0530	0.230	0.199	<0.0500	<0.0500

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA 2450-A-1	BA 2450-A-2	BA 2450-A-3	BA 2450-A-4	BA 2450-A-5
					Client sampling date / time	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00
						VA24D3809-001	VA24D3809-002	VA24D3809-003	VA24D3809-004	VA24D3809-005
						Result	Result	Result	Result	Result
Metals										
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg		14.8	13.7	15.3	16.4	15.7
Nickel	7440-02-0	E440/VA	0.50	mg/kg		126	122	110	249	108
Phosphorus	7723-14-0	E440/VA	50	mg/kg		9400	10400	9650	9180	11800
Potassium	7440-09-7	E440/VA	100	mg/kg		6010	5350	5640	5290	6340
Selenium	7782-49-2	E440/VA	0.20	mg/kg		0.34	1.94	0.36	0.38	0.50
Silver	7440-22-4	E440/VA	0.10	mg/kg		6.77	19.4	6.21	13.0	11.0
Sodium	7440-23-5	E440/VA	50	mg/kg		17500	15400	16800	15800	17800
Strontium	7440-24-6	E440/VA	0.50	mg/kg		348	312	300	360	344
Sulfur	7704-34-9	E440/VA	1000	mg/kg		11700	11900	10500	11500	15000
Thallium	7440-28-0	E440/VA	0.050	mg/kg		<0.050	0.076	<0.050	<0.050	<0.050
Tin	7440-31-5	E440/VA	2.0	mg/kg		129	145	117	2510	139
Titanium	7440-32-6	E440/VA	1.0	mg/kg		276	263	205	313	391
Tungsten	7440-33-7	E440/VA	0.50	mg/kg		10.2	5.52	5.25	6.76	11.5
Uranium	7440-61-1	E440/VA	0.050	mg/kg		1.71	1.85	1.68	1.74	2.11
Vanadium	7440-62-2	E440/VA	0.20	mg/kg		36.1	45.3	39.4	37.0	39.5
Zinc	7440-66-6	E440/VA	2.0	mg/kg		3420	8040	3700	7080	5100
Zirconium	7440-67-7	E440/VA	1.0	mg/kg		4.3	2.2	2.5	2.6	3.0
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units		11.9	12.0	12.0	12.0	12.0
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units		8.77	8.88	10.8	9.34	9.25
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	BA 2450-A-1	BA 2450-A-2	BA 2450-A-3	BA 2450-A-4	BA 2450-A-5
					Client sampling date / time	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00
						VA24D3809-001	VA24D3809-002	VA24D3809-003	VA24D3809-004	VA24D3809-005
						Result	Result	Result	Result	Result
TCLP Metals										
pH, TCLP final	----	EPP444/VA	0.010	pH units		6.96	6.91	6.89	6.76	6.91
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		2.44	2.43	2.39	2.47	2.63
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L		0.092	0.157	0.080	0.089	0.080
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L		1950	1940	1940	1940	1930
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		0.575	0.583	0.665	0.861	0.511
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L		0.745	0.753	0.712	0.745	0.754
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		137	136	142	138	136
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		0.34	0.32	0.36	0.35	0.29
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	BA 2450-A-1	BA 2450-A-2	BA 2450-A-3	BA 2450-A-4	BA 2450-A-5
					Client sampling date / time	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00
						VA24D3809-001	VA24D3809-002	VA24D3809-003	VA24D3809-004	VA24D3809-005
						Result	Result	Result	Result	Result
TCLP Metals										
Zinc, TCLP	7440-66-6	E444/VA	0.50	mg/L		6.96	8.08	7.72	12.7	8.94
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	BA 2450-A-6	BA 2450-A-7	BA 2450-A-8	BA 2450-A-9	BA 2450-A-10
					Client sampling date / time	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00
						VA24D3809-006	VA24D3809-007	VA24D3809-008	VA24D3809-009	VA24D3809-010
						Result	Result	Result	Result	Result
Physical Tests										
Moisture	----	E144/VA	0.25	%		23.5	25.0	24.7	23.7	26.7
pH (1:2 soil:water)	----	E108/VA	0.10	pH units		11.8	11.6	11.6	11.7	11.9
Metals										
Aluminum	7429-90-5	E440/VA	50	mg/kg		38100	45800	49000	39600	38000
Antimony	7440-36-0	E440/VA	0.10	mg/kg		281	123	130	72.4	168
Arsenic	7440-38-2	E440/VA	0.10	mg/kg		22.0	17.4	19.7	20.9	23.2
Barium	7440-39-3	E440/VA	0.50	mg/kg		542	562	624	591	440
Beryllium	7440-41-7	E440/VA	0.10	mg/kg		0.37	0.34	0.38	0.36	0.37
Bismuth	7440-69-9	E440/VA	0.20	mg/kg		11.0	9.31	12.6	8.94	13.0
Boron	7440-42-8	E440/VA	5.0	mg/kg		497	223	172	247	297
Cadmium	7440-43-9	E440/VA	0.020	mg/kg		11.2	8.81	12.2	11.0	13.8
Calcium	7440-70-2	E440/VA	50	mg/kg		140000	136000	140000	130000	161000

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA 2450-A-6	BA 2450-A-7	BA 2450-A-8	BA 2450-A-9	BA 2450-A-10
					Client sampling date / time	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00
						VA24D3809-006	VA24D3809-007	VA24D3809-008	VA24D3809-009	VA24D3809-010
						Result	Result	Result	Result	Result
Metals										
Chromium	7440-47-3	E440/VA	0.50	mg/kg		158	421	172	137	196
Cobalt	7440-48-4	E440/VA	0.10	mg/kg		50.6	86.6	37.8	190	57.3
Copper	7440-50-8	E440/VA	0.50	mg/kg		5820	1390	7590	2170	2090
Iron	7439-89-6	E440/VA	50	mg/kg		45600	72000	47700	59400	37900
Lead	7439-92-1	E440/VA	0.50	mg/kg		3460	323	372	366	498
Lithium	7439-93-2	E440/VA	2.0	mg/kg		28.7	27.5	25.7	41.8	28.2
Magnesium	7439-95-4	E440/VA	20	mg/kg		12200	11900	13000	12400	14100
Manganese	7439-96-5	E440/VA	1.0	mg/kg		868	897	783	850	896
Mercury	7439-97-6	E510/VA	0.0500	mg/kg		<0.0500	<0.0500	<0.0500	<0.0500	0.0627
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg		21.4	26.1	15.3	14.7	21.1
Nickel	7440-02-0	E440/VA	0.50	mg/kg		161	435	605	235	183
Phosphorus	7723-14-0	E440/VA	50	mg/kg		9020	11600	12000	9080	11500
Potassium	7440-09-7	E440/VA	100	mg/kg		5420	5480	5420	6020	6320
Selenium	7782-49-2	E440/VA	0.20	mg/kg		0.41	0.38	0.51	0.37	0.52
Silver	7440-22-4	E440/VA	0.10	mg/kg		6.07	4.47	5.20	4.91	6.28
Sodium	7440-23-5	E440/VA	50	mg/kg		15400	13900	15400	16300	17100
Strontium	7440-24-6	E440/VA	0.50	mg/kg		438	300	341	314	378
Sulfur	7704-34-9	E440/VA	1000	mg/kg		12600	11100	12800	12800	13300
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		171	165	125	172	154
Titanium	7440-32-6	E440/VA	1.0	mg/kg		249	263	337	342	222

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA 2450-A-6	BA 2450-A-7	BA 2450-A-8	BA 2450-A-9	BA 2450-A-10
					Client sampling date / time	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00
						VA24D3809-006	VA24D3809-007	VA24D3809-008	VA24D3809-009	VA24D3809-010
						Result	Result	Result	Result	Result
Metals										
Tungsten	7440-33-7	E440/VA	0.50	mg/kg		4.84	8.11	5.42	4.06	6.42
Uranium	7440-61-1	E440/VA	0.050	mg/kg		1.98	1.78	2.01	1.93	2.18
Vanadium	7440-62-2	E440/VA	0.20	mg/kg		49.4	45.7	43.1	40.8	38.6
Zinc	7440-66-6	E440/VA	2.0	mg/kg		5490	4950	5740	5940	4690
Zirconium	7440-67-7	E440/VA	1.0	mg/kg		3.7	3.5	3.9	8.1	2.2
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units		12.0	12.0	12.0	12.0	12.1
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units		9.18	9.37	9.30	9.47	9.38
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		7.32	7.57	6.78	6.70	10.6
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		2.25	2.30	3.00	2.53	0.93
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L		<0.050	<0.050	0.120	0.100	<0.050
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L		1780	1820	1980	1930	940
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		0.513	0.240	0.681	0.628	<0.050
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L		0.570	0.634	0.774	0.757	0.651
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)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA 2450-A-6	BA 2450-A-7	BA 2450-A-8	BA 2450-A-9	BA 2450-A-10
					Client sampling date / time	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00	11-Dec-2024 09:00
						VA24D3809-006	VA24D3809-007	VA24D3809-008	VA24D3809-009	VA24D3809-010
						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		120	120	143	140	6.9
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	0.26	0.46	0.43	<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		2.14	<0.50	20.7	13.4	<0.50
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	BA 2450-A-11	BA 2450-A-12	----	----	----
					Client sampling date / time	11-Dec-2024 09:00	11-Dec-2024 09:00	----	----	----
						VA24D3809-011	VA24D3809-012	----	----	----
						Result	Result	----	----	----
Physical Tests										
Moisture	----	E144/VA	0.25	%		25.0	23.9	----	----	----
pH (1:2 soil:water)	----	E108/VA	0.10	pH units		11.7	11.7	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA 2450-A-11	BA 2450-A-12	----	----	----
					Client sampling date / time	11-Dec-2024 09:00	11-Dec-2024 09:00	----	----	----
						VA24D3809-011	VA24D3809-012	----	----	----
						Result	Result	----	----	----
Metals										
Aluminum	7429-90-5	E440/VA	50	mg/kg		35000	29700	----	----	----
Antimony	7440-36-0	E440/VA	0.10	mg/kg		181	148	----	----	----
Arsenic	7440-38-2	E440/VA	0.10	mg/kg		26.5	20.9	----	----	----
Barium	7440-39-3	E440/VA	0.50	mg/kg		489	476	----	----	----
Beryllium	7440-41-7	E440/VA	0.10	mg/kg		0.36	0.33	----	----	----
Bismuth	7440-69-9	E440/VA	0.20	mg/kg		13.4	11.8	----	----	----
Boron	7440-42-8	E440/VA	5.0	mg/kg		184	204	----	----	----
Cadmium	7440-43-9	E440/VA	0.020	mg/kg		16.6	11.1	----	----	----
Calcium	7440-70-2	E440/VA	50	mg/kg		164000	140000	----	----	----
Chromium	7440-47-3	E440/VA	0.50	mg/kg		154	175	----	----	----
Cobalt	7440-48-4	E440/VA	0.10	mg/kg		104	45.0	----	----	----
Copper	7440-50-8	E440/VA	0.50	mg/kg		1980	1830	----	----	----
Iron	7439-89-6	E440/VA	50	mg/kg		37300	67500	----	----	----
Lead	7439-92-1	E440/VA	0.50	mg/kg		451	494	----	----	----
Lithium	7439-93-2	E440/VA	2.0	mg/kg		28.2	26.6	----	----	----
Magnesium	7439-95-4	E440/VA	20	mg/kg		15800	12600	----	----	----
Manganese	7439-96-5	E440/VA	1.0	mg/kg		839	852	----	----	----
Mercury	7439-97-6	E510/VA	0.0500	mg/kg		0.0670	0.0557	----	----	----
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg		18.4	16.8	----	----	----
Nickel	7440-02-0	E440/VA	0.50	mg/kg		187	228	----	----	----
Phosphorus	7723-14-0	E440/VA	50	mg/kg		13300	10300	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA 2450-A-11	BA 2450-A-12	----	----	----
					Client sampling date / time	11-Dec-2024 09:00	11-Dec-2024 09:00	----	----	----
						VA24D3809-011	VA24D3809-012	----	----	----
						Result	Result	----	----	----
Metals										
Potassium	7440-09-7	E440/VA	100	mg/kg		6530	5990	----	----	----
Selenium	7782-49-2	E440/VA	0.20	mg/kg		0.57	0.40	----	----	----
Silver	7440-22-4	E440/VA	0.10	mg/kg		8.13	6.89	----	----	----
Sodium	7440-23-5	E440/VA	50	mg/kg		18100	16400	----	----	----
Strontium	7440-24-6	E440/VA	0.50	mg/kg		356	308	----	----	----
Sulfur	7704-34-9	E440/VA	1000	mg/kg		16200	13000	----	----	----
Thallium	7440-28-0	E440/VA	0.050	mg/kg		<0.050	<0.050	----	----	----
Tin	7440-31-5	E440/VA	2.0	mg/kg		170	150	----	----	----
Titanium	7440-32-6	E440/VA	1.0	mg/kg		221	294	----	----	----
Tungsten	7440-33-7	E440/VA	0.50	mg/kg		7.66	6.69	----	----	----
Uranium	7440-61-1	E440/VA	0.050	mg/kg		2.20	1.87	----	----	----
Vanadium	7440-62-2	E440/VA	0.20	mg/kg		42.3	36.0	----	----	----
Zinc	7440-66-6	E440/VA	2.0	mg/kg		5410	3740	----	----	----
Zirconium	7440-67-7	E440/VA	1.0	mg/kg		2.9	2.2	----	----	----
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units		11.9	12.1	----	----	----
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units		9.39	9.82	----	----	----
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units		2.88	2.88	----	----	----
pH, TCLP final	----	EPP444/VA	0.010	pH units		7.35	6.88	----	----	----
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	BA 2450-A-11	BA 2450-A-12	----	----	----
					Client sampling date / time	11-Dec-2024 09:00	11-Dec-2024 09:00	----	----	----
						VA24D3809-011	VA24D3809-012	----	----	----
						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		2.32	2.44	----	----	----
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L		0.198	0.079	----	----	----
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L		1840	2000	----	----	----
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		0.260	1.09	----	----	----
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L		0.677	0.778	----	----	----
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		122	134	----	----	----
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	0.26	----	----	----
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		1.52	8.53	----	----	----
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.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24D3809**	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	: 18-Dec-2024 14:33
PO	: VANCO0000052919	Issue Date	: 30-Dec-2024 09:10
C-O-C number	: ----		
Sampler	: ----		
Site	: (includes 2:1pH)		
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	VA24D3809-001	BA 2450-A-1	Antimony	7440-36-0	E440	89.6 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24D3809-001	BA 2450-A-1	Cobalt	7440-48-4	E440	39.7 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24D3809-001	BA 2450-A-1	Lead	7439-92-1	E440	154 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24D3809-001	BA 2450-A-1	Manganese	7439-96-5	E440	30.7 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24D3809-001	BA 2450-A-1	Nickel	7440-02-0	E440	48.3 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24D3809-001	BA 2450-A-1	Silver	7440-22-4	E440	52.8 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24D3809-001	BA 2450-A-1	Tungsten	7440-33-7	E440	35.8 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24D3809-001	BA 2450-A-1	Zirconium	7440-67-7	E440	2.5 % 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.*

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 BA 2450-A-1	E510	11-Dec-2024	22-Dec-2024	28 days	11 days	✓	27-Dec-2024	28 days	5 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA 2450-A-10	E510	11-Dec-2024	22-Dec-2024	28 days	11 days	✓	27-Dec-2024	28 days	5 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA 2450-A-11	E510	11-Dec-2024	22-Dec-2024	28 days	11 days	✓	27-Dec-2024	28 days	5 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA 2450-A-12	E510	11-Dec-2024	22-Dec-2024	28 days	11 days	✓	27-Dec-2024	28 days	5 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA 2450-A-2	E510	11-Dec-2024	22-Dec-2024	28 days	11 days	✓	27-Dec-2024	28 days	5 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA 2450-A-3	E510	11-Dec-2024	22-Dec-2024	28 days	11 days	✓	27-Dec-2024	28 days	5 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA 2450-A-4	E510	11-Dec-2024	22-Dec-2024	28 days	11 days	✓	27-Dec-2024	28 days	5 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 BA 2450-A-5	E510	11-Dec-2024	22-Dec-2024	28 days	11 days	✓	27-Dec-2024	28 days	5 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA 2450-A-6	E510	11-Dec-2024	22-Dec-2024	28 days	11 days	✓	27-Dec-2024	28 days	5 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA 2450-A-7	E510	11-Dec-2024	22-Dec-2024	28 days	11 days	✓	27-Dec-2024	28 days	5 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA 2450-A-8	E510	11-Dec-2024	22-Dec-2024	28 days	11 days	✓	27-Dec-2024	28 days	5 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA 2450-A-9	E510	11-Dec-2024	22-Dec-2024	28 days	11 days	✓	27-Dec-2024	28 days	5 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA 2450-A-1	E440	11-Dec-2024	22-Dec-2024	180 days	11 days	✓	27-Dec-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA 2450-A-10	E440	11-Dec-2024	22-Dec-2024	180 days	11 days	✓	27-Dec-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA 2450-A-11	E440	11-Dec-2024	22-Dec-2024	180 days	11 days	✓	27-Dec-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA 2450-A-12	E440	11-Dec-2024	22-Dec-2024	180 days	11 days	✓	27-Dec-2024	180 days	16 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 BA 2450-A-2	E440	11-Dec-2024	22-Dec-2024	180 days	11 days	✓	27-Dec-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA 2450-A-3	E440	11-Dec-2024	22-Dec-2024	180 days	11 days	✓	27-Dec-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA 2450-A-4	E440	11-Dec-2024	22-Dec-2024	180 days	11 days	✓	27-Dec-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA 2450-A-5	E440	11-Dec-2024	22-Dec-2024	180 days	11 days	✓	27-Dec-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA 2450-A-6	E440	11-Dec-2024	22-Dec-2024	180 days	11 days	✓	27-Dec-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA 2450-A-7	E440	11-Dec-2024	22-Dec-2024	180 days	11 days	✓	27-Dec-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA 2450-A-8	E440	11-Dec-2024	22-Dec-2024	180 days	11 days	✓	27-Dec-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA 2450-A-9	E440	11-Dec-2024	22-Dec-2024	180 days	11 days	✓	27-Dec-2024	180 days	16 days	✓
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA 2450-A-1	E144	11-Dec-2024	----	----	----		21-Dec-2024	----	10 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 BA 2450-A-10	E144	11-Dec-2024	----	----	----		21-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA 2450-A-11	E144	11-Dec-2024	----	----	----		21-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA 2450-A-12	E144	11-Dec-2024	----	----	----		21-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA 2450-A-2	E144	11-Dec-2024	----	----	----		21-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA 2450-A-3	E144	11-Dec-2024	----	----	----		21-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA 2450-A-4	E144	11-Dec-2024	----	----	----		21-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA 2450-A-5	E144	11-Dec-2024	----	----	----		21-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA 2450-A-6	E144	11-Dec-2024	----	----	----		21-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA 2450-A-7	E144	11-Dec-2024	----	----	----		21-Dec-2024	----	10 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 BA 2450-A-8	E144	11-Dec-2024	----	----	----		21-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA 2450-A-9	E144	11-Dec-2024	----	----	----		21-Dec-2024	----	10 days	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA 2450-A-1	E108	11-Dec-2024	22-Dec-2024	30 days	11 days	✓	23-Dec-2024	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA 2450-A-10	E108	11-Dec-2024	22-Dec-2024	30 days	11 days	✓	23-Dec-2024	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA 2450-A-11	E108	11-Dec-2024	22-Dec-2024	30 days	11 days	✓	23-Dec-2024	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA 2450-A-12	E108	11-Dec-2024	22-Dec-2024	30 days	11 days	✓	23-Dec-2024	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA 2450-A-2	E108	11-Dec-2024	22-Dec-2024	30 days	11 days	✓	23-Dec-2024	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA 2450-A-3	E108	11-Dec-2024	22-Dec-2024	30 days	11 days	✓	23-Dec-2024	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA 2450-A-4	E108	11-Dec-2024	22-Dec-2024	30 days	11 days	✓	23-Dec-2024	30 days	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 : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA 2450-A-5	E108	11-Dec-2024	22-Dec-2024	30 days	11 days	✓	23-Dec-2024	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA 2450-A-6	E108	11-Dec-2024	22-Dec-2024	30 days	11 days	✓	23-Dec-2024	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA 2450-A-7	E108	11-Dec-2024	22-Dec-2024	30 days	11 days	✓	23-Dec-2024	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA 2450-A-8	E108	11-Dec-2024	22-Dec-2024	30 days	11 days	✓	23-Dec-2024	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA 2450-A-9	E108	11-Dec-2024	22-Dec-2024	30 days	11 days	✓	23-Dec-2024	30 days	12 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA 2450-A-1	E512	20-Dec-2024	24-Dec-2024	37 days	13 days	✓	24-Dec-2024	37 days	13 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA 2450-A-10	E512	20-Dec-2024	24-Dec-2024	37 days	13 days	✓	24-Dec-2024	37 days	13 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA 2450-A-11	E512	20-Dec-2024	24-Dec-2024	37 days	13 days	✓	24-Dec-2024	37 days	13 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA 2450-A-12	E512	20-Dec-2024	24-Dec-2024	37 days	13 days	✓	24-Dec-2024	37 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*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA 2450-A-2	E512	20-Dec-2024	24-Dec-2024	37 days	13 days	✓	24-Dec-2024	37 days	13 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA 2450-A-3	E512	20-Dec-2024	24-Dec-2024	37 days	13 days	✓	24-Dec-2024	37 days	13 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA 2450-A-4	E512	20-Dec-2024	24-Dec-2024	37 days	13 days	✓	24-Dec-2024	37 days	13 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA 2450-A-5	E512	20-Dec-2024	24-Dec-2024	37 days	13 days	✓	24-Dec-2024	37 days	13 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA 2450-A-6	E512	20-Dec-2024	24-Dec-2024	37 days	13 days	✓	24-Dec-2024	37 days	13 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA 2450-A-7	E512	20-Dec-2024	24-Dec-2024	37 days	13 days	✓	24-Dec-2024	37 days	13 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA 2450-A-8	E512	20-Dec-2024	24-Dec-2024	37 days	13 days	✓	24-Dec-2024	37 days	13 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA 2450-A-9	E512	20-Dec-2024	24-Dec-2024	37 days	13 days	✓	24-Dec-2024	37 days	13 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA 2450-A-1	E444	20-Dec-2024	24-Dec-2024	189 days	13 days	✓	27-Dec-2024	189 days	16 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) BA 2450-A-10	E444	20-Dec-2024	24-Dec-2024	189 days	13 days	✓	27-Dec-2024	189 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA 2450-A-11	E444	20-Dec-2024	24-Dec-2024	189 days	13 days	✓	27-Dec-2024	189 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA 2450-A-12	E444	20-Dec-2024	24-Dec-2024	189 days	13 days	✓	27-Dec-2024	189 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA 2450-A-2	E444	20-Dec-2024	24-Dec-2024	189 days	13 days	✓	27-Dec-2024	189 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA 2450-A-3	E444	20-Dec-2024	24-Dec-2024	189 days	13 days	✓	27-Dec-2024	189 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA 2450-A-4	E444	20-Dec-2024	24-Dec-2024	189 days	13 days	✓	27-Dec-2024	189 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA 2450-A-5	E444	20-Dec-2024	24-Dec-2024	189 days	13 days	✓	27-Dec-2024	189 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA 2450-A-6	E444	20-Dec-2024	24-Dec-2024	189 days	13 days	✓	27-Dec-2024	189 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA 2450-A-7	E444	20-Dec-2024	24-Dec-2024	189 days	13 days	✓	27-Dec-2024	189 days	16 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) BA 2450-A-8	E444	20-Dec-2024	24-Dec-2024	189 days	13 days	✓	27-Dec-2024	189 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA 2450-A-9	E444	20-Dec-2024	24-Dec-2024	189 days	13 days	✓	27-Dec-2024	189 days	16 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA 2450-A-1	EPP444	11-Dec-2024	20-Dec-2024	----	----		----	28 days	9 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA 2450-A-10	EPP444	11-Dec-2024	20-Dec-2024	----	----		----	28 days	9 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA 2450-A-11	EPP444	11-Dec-2024	20-Dec-2024	----	----		----	28 days	9 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA 2450-A-12	EPP444	11-Dec-2024	20-Dec-2024	----	----		----	28 days	9 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA 2450-A-2	EPP444	11-Dec-2024	20-Dec-2024	----	----		----	28 days	9 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA 2450-A-3	EPP444	11-Dec-2024	20-Dec-2024	----	----		----	28 days	9 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA 2450-A-4	EPP444	11-Dec-2024	20-Dec-2024	----	----		----	28 days	9 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) BA 2450-A-5	EPP444	11-Dec-2024	20-Dec-2024	----	----		----	28 days	9 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA 2450-A-6	EPP444	11-Dec-2024	20-Dec-2024	----	----		----	28 days	9 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA 2450-A-7	EPP444	11-Dec-2024	20-Dec-2024	----	----		----	28 days	9 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA 2450-A-8	EPP444	11-Dec-2024	20-Dec-2024	----	----		----	28 days	9 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA 2450-A-9	EPP444	11-Dec-2024	20-Dec-2024	----	----		----	28 days	9 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	1822166	1	12	8.3	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	1819608	1	12	8.3	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	1822167	1	12	8.3	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	1819609	1	12	8.3	5.0	✓
Moisture Content by Gravimetry	E144	1819611	1	12	8.3	5.0	✓
pH by Meter (1:2 Soil:Water Extraction)	E108	1819610	1	12	8.3	5.0	✓
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	1819608	2	12	16.6	10.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	1819609	2	12	16.6	10.0	✓
Moisture Content by Gravimetry	E144	1819611	1	12	8.3	5.0	✓
pH by Meter (1:2 Soil:Water Extraction)	E108	1819610	1	12	8.3	5.0	✓
Method Blanks (MB)							
Mercury by CVAAS (TCLP)	E512	1822166	1	12	8.3	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	1819608	1	12	8.3	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	1822167	1	12	8.3	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	1819609	1	12	8.3	5.0	✓
Moisture Content by Gravimetry	E144	1819611	1	12	8.3	5.0	✓
Matrix Spikes (MS)							
Mercury by CVAAS (TCLP)	E512	1822166	1	12	8.3	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	1822167	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	: **VA24D3809**	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	: 18-Dec-2024 14:33
PO	: VANCO0000052919	Date Analysis Commenced	: 20-Dec-2024
C-O-C number	: ----	Issue Date	: 30-Dec-2024 09:10
Sampler	: ----		
Site	: (includes 2:1pH)		
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*
Chau Tran	Analyst	Vancouver Metals, Burnaby, British Columbia
Ghazaleh Khanmirzaei	Analyst	Vancouver Metals, Burnaby, British Columbia
Janice Leung	Supervisor - Organics Instrumentation	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: 1819610)											
VA24D3809-001	BA 2450-A-1	pH (1:2 soil:water)	----	E108	0.10	pH units	11.7	11.7	0.0%	5%	----
Physical Tests (QC Lot: 1819611)											
VA24D3809-001	BA 2450-A-1	Moisture	----	E144	0.25	%	25.0	23.5	6.25%	20%	----
Metals (QC Lot: 1819608)											
VA24D3809-001	BA 2450-A-1	Mercury	7439-97-6	E510	0.0500	mg/kg	0.0530	<0.0500	0.0030	Diff <2x LOR	----
Metals (QC Lot: 1819609)											
VA24D3809-001	BA 2450-A-1	Aluminum	7429-90-5	E440	50	mg/kg	41000	33900	18.9%	40%	----
		Antimony	7440-36-0	E440	0.10	mg/kg	382	146	89.6%	30%	DUP-H
		Arsenic	7440-38-2	E440	0.10	mg/kg	26.0	21.0	21.4%	30%	----
		Barium	7440-39-3	E440	0.50	mg/kg	575	618	7.21%	40%	----
		Beryllium	7440-41-7	E440	0.10	mg/kg	0.32	0.36	0.03	Diff <2x LOR	----
		Bismuth	7440-69-9	E440	0.20	mg/kg	11.9	9.13	26.1%	30%	----
		Boron	7440-42-8	E440	5.0	mg/kg	196	167	16.3%	30%	----
		Cadmium	7440-43-9	E440	0.020	mg/kg	12.3	9.41	26.3%	30%	----
		Calcium	7440-70-2	E440	50	mg/kg	125000	133000	6.11%	30%	----
		Chromium	7440-47-3	E440	0.50	mg/kg	242	193	22.3%	30%	----
		Cobalt	7440-48-4	E440	0.10	mg/kg	56.0	37.4	39.7%	30%	DUP-H
		Copper	7440-50-8	E440	0.50	mg/kg	1880	1850	2.02%	30%	----
		Iron	7439-89-6	E440	50	mg/kg	67800	62700	7.92%	30%	----
		Lead	7439-92-1	E440	0.50	mg/kg	2310	302	154%	40%	DUP-H
		Lithium	7439-93-2	E440	2.0	mg/kg	25.7	24.7	3.99%	30%	----
		Magnesium	7439-95-4	E440	20	mg/kg	11900	12300	3.07%	30%	----
		Manganese	7439-96-5	E440	1.0	mg/kg	1130	831	30.7%	30%	DUP-H
		Molybdenum	7439-98-7	E440	0.10	mg/kg	14.8	15.7	5.87%	40%	----
		Nickel	7440-02-0	E440	0.50	mg/kg	126	206	48.3%	30%	DUP-H
		Phosphorus	7723-14-0	E440	50	mg/kg	9400	10000	6.40%	30%	----
		Potassium	7440-09-7	E440	100	mg/kg	6010	6020	0.0788%	40%	----
		Selenium	7782-49-2	E440	0.20	mg/kg	0.34	0.43	0.09	Diff <2x LOR	----
		Silver	7440-22-4	E440	0.10	mg/kg	6.77	3.94	52.8%	40%	DUP-H
		Sodium	7440-23-5	E440	50	mg/kg	17500	17200	1.83%	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: 1819609) - continued											
VA24D3809-001	BA 2450-A-1	Strontium	7440-24-6	E440	0.50	mg/kg	348	417	17.9%	40%	----
		Sulfur	7704-34-9	E440	1000	mg/kg	11700	11100	5.39%	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	129	138	7.28%	40%	----
		Titanium	7440-32-6	E440	1.0	mg/kg	276	256	7.40%	40%	----
		Tungsten	7440-33-7	E440	0.50	mg/kg	10.2	7.14	35.8%	30%	DUP-H
		Uranium	7440-61-1	E440	0.050	mg/kg	1.71	1.82	6.51%	30%	----
		Vanadium	7440-62-2	E440	0.20	mg/kg	36.1	39.3	8.54%	30%	----
		Zinc	7440-66-6	E440	2.0	mg/kg	3420	3680	7.24%	30%	----
		Zirconium	7440-67-7	E440	1.0	mg/kg	4.3	# 1.8	2.5	Diff <2x LOR	DUP-H
TCLP Metals (QC Lot: 1822166)											
VA24D3809-001	BA 2450-A-1	Mercury, TCLP	7439-97-6	E512	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
TCLP Metals (QC Lot: 1822167)											
VA24D3809-001	BA 2450-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	2.44	2.26	0.18	Diff <2x LOR	----
		Cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.092	0.090	0.002	Diff <2x LOR	----
		Calcium, TCLP	7440-70-2	E444	10	mg/L	1950	1880	3.52%	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	0.575	0.567	1.34%	30%	----
		Copper, TCLP	7440-50-8	E444	0.050	mg/L	0.745	0.720	3.30%	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	137	134	2.02%	30%	----
		Nickel, TCLP	7440-02-0	E444	0.25	mg/L	0.34	0.34	0.002	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	6.96	6.89	1.01%	30%	----
		Zirconium, TCLP	7440-67-7	E444	10	mg/L	<10	<10	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: 1819611)						
Moisture	----	E144	0.25	%	<0.25	----
Metals (QCLot: 1819608)						
Mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 1819609)						
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: 1819609) - 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: 1822166)						
Mercury, TCLP	7439-97-6	E512	0.001	mg/L	<0.0010	----
TCLP Metals (QCLot: 1822167)						
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	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1819610)									
pH (1:2 soil:water)	----	E108	----	pH units	6 pH units	100	95.0	105	----
Physical Tests (QCLot: 1819611)									
Moisture	----	E144	0.25	%	50 %	100	90.0	110	----
Metals (QCLot: 1819608)									
Mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	99.2	80.0	120	----
Metals (QCLot: 1819609)									
Aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	96.5	80.0	120	----
Antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	109	80.0	120	----
Arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	102	80.0	120	----
Barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	97.8	80.0	120	----
Beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	100.0	80.0	120	----
Bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	95.8	80.0	120	----
Boron	7440-42-8	E440	5	mg/kg	100 mg/kg	97.5	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	98.0	80.0	120	----
Chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	99.2	80.0	120	----
Cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	95.2	80.0	120	----
Copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	94.1	80.0	120	----
Iron	7439-89-6	E440	50	mg/kg	100 mg/kg	103	80.0	120	----
Lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	100	80.0	120	----
Lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	101	80.0	120	----
Magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	100	80.0	120	----
Manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	95.9	80.0	120	----
Molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	110	80.0	120	----
Nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	96.2	80.0	120	----
Phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	101	80.0	120	----
Potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	97.0	80.0	120	----
Selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	101	80.0	120	----
Silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	99.8	80.0	120	----
Sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	98.2	80.0	120	----
Strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	111	80.0	120	----
Sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	94.0	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: 1819609) - continued									
Thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	98.1	80.0	120	----
Tin	7440-31-5	E440	2	mg/kg	50 mg/kg	102	80.0	120	----
Titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	98.4	80.0	120	----
Tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	102	80.0	120	----
Uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	103	80.0	120	----
Vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	100	80.0	120	----
Zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	98.4	80.0	120	----
Zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	113	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: 1822166)										
VA24D3809-001	BA 2450-A-1	Mercury, TCLP	7439-97-6	E512	0.0011 mg/L	0.001 mg/L	111	50.0	140	----
TCLP Metals (QCLot: 1822167)										
VA24D3809-001	BA 2450-A-1	Antimony, TCLP	7440-36-0	E444	5.02 mg/L	5 mg/L	100	50.0	140	----
		Arsenic, TCLP	7440-38-2	E444	5.0 mg/L	5 mg/L	99.3	50.0	140	----
		Barium, TCLP	7440-39-3	E444	10.4 mg/L	12.5 mg/L	83.7	50.0	140	----
		Beryllium, TCLP	7440-41-7	E444	0.236 mg/L	0.25 mg/L	94.5	50.0	140	----
		Boron, TCLP	7440-42-8	E444	9.33 mg/L	10 mg/L	93.3	50.0	140	----
		Cadmium, TCLP	7440-43-9	E444	0.231 mg/L	0.25 mg/L	92.6	50.0	140	----
		Calcium, TCLP	7440-70-2	E444	ND mg/L	----	ND	50.0	140	----
		Chromium, TCLP	7440-47-3	E444	1.22 mg/L	1.25 mg/L	97.6	50.0	140	----
		Cobalt, TCLP	7440-48-4	E444	ND mg/L	----	ND	50.0	140	----
		Copper, TCLP	7440-50-8	E444	2.27 mg/L	2.5 mg/L	90.8	50.0	140	----
		Iron, TCLP	7439-89-6	E444	238 mg/L	250 mg/L	95.3	50.0	140	----
		Lead, TCLP	7439-92-1	E444	8.73 mg/L	10 mg/L	87.3	50.0	140	----
		Magnesium, TCLP	7439-95-4	E444	245 mg/L	250 mg/L	98.2	50.0	140	----
		Nickel, TCLP	7440-02-0	E444	2.33 mg/L	2.5 mg/L	93.1	50.0	140	----
		Selenium, TCLP	7782-49-2	E444	4.88 mg/L	5 mg/L	97.7	50.0	140	----
		Silver, TCLP	7440-22-4	E444	0.071 mg/L	0.1 mg/L	71.0	50.0	140	----
		Thallium, TCLP	7440-28-0	E444	4.7 mg/L	5 mg/L	93.4	50.0	140	----
		Uranium, TCLP	7440-61-1	E444	4.74 mg/L	5 mg/L	94.8	50.0	150	----
		Vanadium, TCLP	7440-62-2	E444	0.73 mg/L	0.75 mg/L	97.2	50.0	140	----
		Zinc, TCLP	7440-66-6	E444	9.59 mg/L	10 mg/L	95.9	50.0	140	----
		Zirconium, TCLP	7440-67-7	E444	0.8 mg/L	1 mg/L	80.3	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:

					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: 1819608)									
QC-1819608-003	MRCA-21	Mercury	7439-97-6	E510	0.068 mg/kg	101	70.0	130	----
Metals (QCLot: 1819609)									
QC-1819609-003	MRCA-21	Aluminum	7429-90-5	E440	22500 mg/kg	106	70.0	130	----
QC-1819609-003	MRCA-21	Antimony	7440-36-0	E440	24.8 mg/kg	107	70.0	130	----
QC-1819609-003	MRCA-21	Arsenic	7440-38-2	E440	21.2 mg/kg	97.6	70.0	130	----
QC-1819609-003	MRCA-21	Barium	7440-39-3	E440	788 mg/kg	100	70.0	130	----
QC-1819609-003	MRCA-21	Beryllium	7440-41-7	E440	1.82 mg/kg	109	70.0	130	----
QC-1819609-003	MRCA-21	Bismuth	7440-69-9	E440	1.78 mg/kg	88.7	70.0	130	----
QC-1819609-003	MRCA-21	Cadmium	7440-43-9	E440	2.15 mg/kg	96.0	70.0	130	----
QC-1819609-003	MRCA-21	Calcium	7440-70-2	E440	4900 mg/kg	102	70.0	130	----
QC-1819609-003	MRCA-21	Chromium	7440-47-3	E440	56.9 mg/kg	99.3	70.0	130	----
QC-1819609-003	MRCA-21	Cobalt	7440-48-4	E440	32 mg/kg	97.3	70.0	130	----
QC-1819609-003	MRCA-21	Copper	7440-50-8	E440	969 mg/kg	98.9	70.0	130	----
QC-1819609-003	MRCA-21	Iron	7439-89-6	E440	32700 mg/kg	104	70.0	130	----
QC-1819609-003	MRCA-21	Lead	7439-92-1	E440	919 mg/kg	95.7	70.0	130	----
QC-1819609-003	MRCA-21	Lithium	7439-93-2	E440	47.3 mg/kg	110	70.0	130	----
QC-1819609-003	MRCA-21	Magnesium	7439-95-4	E440	7780 mg/kg	101	70.0	130	----
QC-1819609-003	MRCA-21	Manganese	7439-96-5	E440	8640 mg/kg	96.4	70.0	130	----
QC-1819609-003	MRCA-21	Molybdenum	7439-98-7	E440	25.1 mg/kg	104	70.0	130	----
QC-1819609-003	MRCA-21	Nickel	7440-02-0	E440	1000 mg/kg	100	70.0	130	----
QC-1819609-003	MRCA-21	Phosphorus	7723-14-0	E440	660 mg/kg	97.6	70.0	130	----
QC-1819609-003	MRCA-21	Potassium	7440-09-7	E440	10800 mg/kg	96.8	70.0	130	----
QC-1819609-003	MRCA-21	Selenium	7782-49-2	E440	1.04 mg/kg	107	60.0	140	----
QC-1819609-003	MRCA-21	Silver	7440-22-4	E440	8.98 mg/kg	101	70.0	130	----
QC-1819609-003	MRCA-21	Sodium	7440-23-5	E440	1770 mg/kg	113	70.0	130	----
QC-1819609-003	MRCA-21	Strontium	7440-24-6	E440	41 mg/kg	111	70.0	130	----
QC-1819609-003	MRCA-21	Sulfur	7704-34-9	E440	3940 mg/kg	100	50.0	150	----
QC-1819609-003	MRCA-21	Thallium	7440-28-0	E440	0.907 mg/kg	96.5	70.0	130	----
QC-1819609-003	MRCA-21	Tin	7440-31-5	E440	3.79 mg/kg	103	40.0	160	----
QC-1819609-003	MRCA-21	Titanium	7440-32-6	E440	2790 mg/kg	103	70.0	130	----
QC-1819609-003	MRCA-21	Tungsten	7440-33-7	E440	6.99 mg/kg	112	70.0	130	----
QC-1819609-003	MRCA-21	Uranium	7440-61-1	E440	3.97 mg/kg	91.7	70.0	130	----
QC-1819609-003	MRCA-21	Vanadium	7440-62-2	E440	66.2 mg/kg	98.9	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: 1819609) - continued									
QC-1819609-003	MRCA-21	Zinc	7440-66-6	E440	828 mg/kg	101	70.0	130	----
QC-1819609-003	MRCA-21	Zirconium	7440-67-7	E440	6.91 mg/kg	107	70.0	130	----

ALS Environmental

Chain of Custody / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

COC #

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# _VANCO 00000____Weekly Bottom Ash -	
Contact:				LSD:	(includes 2:1 pH)	
Address:						
Phone:		Fax:		Quote #:		
Lab Work Order # (lab use only)	D3809			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
	BA 2450-A-1	Dec 11 2024	9:00	Soil	X	X		X	1
	BA 2450-A-2	Dec 11 2024	9:00	Soil	X	X		X	1
	BA 2450-A-3	Dec 11 2024	9:00	Soil	X	X		X	1
	BA 2450-A-4	Dec 11 2024	9:00	Soil	X	X		X	1
	BA 2450-A-5	Dec 11 2024	9:00	Soil	X	X		X	1
	BA 2450-A-6	Dec 11 2024	9:00	Soil	X	X		X	1
	BA 2450-A-7	Dec 11 2024	9:00	Soil	X	X		X	1
	BA 2450-A-8	Dec 11 2024	9:00	Soil	X	X		X	1
	BA 2450-A-9	Dec 11 2024	9:00	Soil	X	X		X	1
	BA 2450-A-10	Dec 11 2024	9:00	Soil	X	X		X	1
	BA 2450-A-11	Dec 11 2024	9:00	Soil	X	X		X	1
	BA 2450-A-12	Dec 11 2024	9:00	Soil	X	X		X	1

Environmental Division
Vancouver
Work Order Reference
VA24D3809

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
KINGLIS	Dec 18/24					°C	HP	12/18/24	12:2 PM	

GENF 20.00 Front