metrovancouver

Bottom Ash Data

2024 Week 48

The following analytical report represents bottom ash composite results for week 48 of 2024 (November 24, 2024 to November 30, 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	: **VA24D2686**		
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-Dec-2024 13:04
PO	: VANCO0000052919	Date Analysis Commenced	: 07-Dec-2024
C-O-C number	: ----	Issue Date	: 12-Dec-2024 21:56
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*
Janice Leung	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Wingyee Cheng	Analyst- General	Metals, Burnaby, British Columbia

General Comments

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

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

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

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

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

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	BA2448-A-1	BA2448-A-2	BA2448-A-3	BA2448-A-4	BA2448-A-5
					Client sampling date / time	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00
						VA24D2686-001	VA24D2686-002	VA24D2686-003	VA24D2686-004	VA24D2686-005
						Result	Result	Result	Result	Result
Physical Tests										
Moisture	----	E144/VA	0.25	%		26.5	25.8	25.3	27.3	25.1
pH (1:2 soil:water)	----	E108/VA	0.10	pH units		11.9	12.0	11.9	11.8	11.9
Metals										
Aluminum	7429-90-5	E440/VA	50	mg/kg		42400	37600	37400	33400	37500
Antimony	7440-36-0	E440/VA	0.10	mg/kg		95.5	99.5	88.7	92.8	98.8
Arsenic	7440-38-2	E440/VA	0.10	mg/kg		14.6	16.8	14.8	15.7	25.5
Barium	7440-39-3	E440/VA	0.50	mg/kg		478	463	510	524	597
Beryllium	7440-41-7	E440/VA	0.10	mg/kg		0.41	0.36	0.42	0.37	0.37
Bismuth	7440-69-9	E440/VA	0.20	mg/kg		7.78	16.5	6.24	6.50	6.92
Boron	7440-42-8	E440/VA	5.0	mg/kg		213	190	199	163	194
Cadmium	7440-43-9	E440/VA	0.020	mg/kg		12.9	6.86	8.36	7.44	6.66
Calcium	7440-70-2	E440/VA	50	mg/kg		140000	132000	133000	143000	141000
Chromium	7440-47-3	E440/VA	0.50	mg/kg		152	213	166	132	147
Cobalt	7440-48-4	E440/VA	0.10	mg/kg		115	64.6	174	54.8	44.1
Copper	7440-50-8	E440/VA	0.50	mg/kg		2010	2960	3220	3200	2750
Iron	7439-89-6	E440/VA	50	mg/kg		57800	67300	59700	49200	55700
Lead	7439-92-1	E440/VA	0.50	mg/kg		671	993	864	402	588
Lithium	7439-93-2	E440/VA	2.0	mg/kg		31.7	29.3	35.9	34.4	30.2
Magnesium	7439-95-4	E440/VA	20	mg/kg		12900	13100	12400	12500	13400
Manganese	7439-96-5	E440/VA	1.0	mg/kg		813	934	1130	769	1010
Mercury	7439-97-6	E510/VA	0.0500	mg/kg		<0.0500	<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	BA2448-A-1	BA2448-A-2	BA2448-A-3	BA2448-A-4	BA2448-A-5
					Client sampling date / time	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00
						VA24D2686-001	VA24D2686-002	VA24D2686-003	VA24D2686-004	VA24D2686-005
						Result	Result	Result	Result	Result
Metals										
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg		15.6	20.9	14.5	15.4	14.5
Nickel	7440-02-0	E440/VA	0.50	mg/kg		152	202	197	178	249
Phosphorus	7723-14-0	E440/VA	50	mg/kg		9190	8060	8120	10500	9330
Potassium	7440-09-7	E440/VA	100	mg/kg		4980	4870	5180	5050	4840
Selenium	7782-49-2	E440/VA	0.20	mg/kg		0.58	0.49	0.36	0.38	0.39
Silver	7440-22-4	E440/VA	0.10	mg/kg		4.72	3.88	7.17	4.50	3.78
Sodium	7440-23-5	E440/VA	50	mg/kg		16100	15400	17100	15800	15800
Strontium	7440-24-6	E440/VA	0.50	mg/kg		293	279	328	276	285
Sulfur	7704-34-9	E440/VA	1000	mg/kg		12100	12100	11500	12100	11600
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		106	121	110	102	199
Titanium	7440-32-6	E440/VA	1.0	mg/kg		269	224	249	186	268
Tungsten	7440-33-7	E440/VA	0.50	mg/kg		5.22	6.78	5.44	7.80	6.83
Uranium	7440-61-1	E440/VA	0.050	mg/kg		1.73	1.69	1.78	1.86	1.70
Vanadium	7440-62-2	E440/VA	0.20	mg/kg		40.4	37.0	59.4	36.6	39.3
Zinc	7440-66-6	E440/VA	2.0	mg/kg		5510	3680	3060	3730	3420
Zirconium	7440-67-7	E440/VA	1.0	mg/kg		2.6	2.7	2.4	1.7	1.6
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units		11.9	12.0	11.9	12.0	12.0
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units		6.20	5.55	6.01	7.86	7.40
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units		2.86	2.86	2.86	2.86	2.86

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2448-A-1	BA2448-A-2	BA2448-A-3	BA2448-A-4	BA2448-A-5
					Client sampling date / time	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00
						VA24D2686-001	VA24D2686-002	VA24D2686-003	VA24D2686-004	VA24D2686-005
						Result	Result	Result	Result	Result
TCLP Metals										
pH, TCLP final	----	EPP444/VA	0.010	pH units		6.87	6.75	6.72	6.84	6.77
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		1.85	1.98	2.00	2.03	1.98
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L		0.057	0.056	0.088	0.077	0.071
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L		1880	1940	1970	1980	1920
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		0.982	0.813	0.855	0.574	0.871
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L		0.976	0.853	0.866	0.724	0.724
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		122	124	124	122	121
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	<0.25	0.30	0.27	0.28
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	BA2448-A-1	BA2448-A-2	BA2448-A-3	BA2448-A-4	BA2448-A-5
					Client sampling date / time	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00
						VA24D2686-001	VA24D2686-002	VA24D2686-003	VA24D2686-004	VA24D2686-005
						Result	Result	Result	Result	Result
TCLP Metals										
Zinc, TCLP	7440-66-6	E444/VA	0.50	mg/L		8.04	9.15	12.6	8.82	11.9
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	BA2448-A-6	BA2448-A-7	BA2448-A-8	BA2448-A-9	BA2448-A-10
					Client sampling date / time	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00
						VA24D2686-006	VA24D2686-007	VA24D2686-008	VA24D2686-009	VA24D2686-010
						Result	Result	Result	Result	Result
Physical Tests										
Moisture	----	E144/VA	0.25	%		26.2	26.6	24.7	27.0	26.8
pH (1:2 soil:water)	----	E108/VA	0.10	pH units		11.6	11.8	11.7	11.8	11.7
Metals										
Aluminum	7429-90-5	E440/VA	50	mg/kg		47500	38000	46300	40100	43800
Antimony	7440-36-0	E440/VA	0.10	mg/kg		77.8	266	88.5	108	127
Arsenic	7440-38-2	E440/VA	0.10	mg/kg		13.8	17.0	12.9	15.2	12.8
Barium	7440-39-3	E440/VA	0.50	mg/kg		624	599	560	460	635
Beryllium	7440-41-7	E440/VA	0.10	mg/kg		0.42	0.38	0.39	0.44	0.38
Bismuth	7440-69-9	E440/VA	0.20	mg/kg		4.74	15.4	5.96	5.94	5.18
Boron	7440-42-8	E440/VA	5.0	mg/kg		192	229	171	189	152
Cadmium	7440-43-9	E440/VA	0.020	mg/kg		5.66	13.6	7.36	6.14	6.39
Calcium	7440-70-2	E440/VA	50	mg/kg		128000	124000	126000	144000	130000

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2448-A-6	BA2448-A-7	BA2448-A-8	BA2448-A-9	BA2448-A-10
					Client sampling date / time	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00
						VA24D2686-006	VA24D2686-007	VA24D2686-008	VA24D2686-009	VA24D2686-010
						Result	Result	Result	Result	Result
Metals										
Chromium	7440-47-3	E440/VA	0.50	mg/kg		177	132	168	144	185
Cobalt	7440-48-4	E440/VA	0.10	mg/kg		96.8	226	101	98.1	87.7
Copper	7440-50-8	E440/VA	0.50	mg/kg		11100	4050	3530	6570	32400
Iron	7439-89-6	E440/VA	50	mg/kg		59900	65800	65700	58400	72600
Lead	7439-92-1	E440/VA	0.50	mg/kg		418	20200	498	1150	458
Lithium	7439-93-2	E440/VA	2.0	mg/kg		33.1	42.6	40.5	37.8	35.0
Magnesium	7439-95-4	E440/VA	20	mg/kg		12500	11900	12000	13600	11200
Manganese	7439-96-5	E440/VA	1.0	mg/kg		836	889	852	874	828
Mercury	7439-97-6	E510/VA	0.0500	mg/kg		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg		30.4	13.5	42.4	28.5	25.7
Nickel	7440-02-0	E440/VA	0.50	mg/kg		190	155	102	132	203
Phosphorus	7723-14-0	E440/VA	50	mg/kg		7320	9260	7450	8970	9810
Potassium	7440-09-7	E440/VA	100	mg/kg		5040	4800	5100	5240	4910
Selenium	7782-49-2	E440/VA	0.20	mg/kg		0.37	0.41	0.31	0.38	0.42
Silver	7440-22-4	E440/VA	0.10	mg/kg		23.2	10.5	3.21	8.94	3.46
Sodium	7440-23-5	E440/VA	50	mg/kg		16100	16000	17000	17400	16000
Strontium	7440-24-6	E440/VA	0.50	mg/kg		272	265	369	295	345
Sulfur	7704-34-9	E440/VA	1000	mg/kg		10000	10600	10200	12200	9700
Thallium	7440-28-0	E440/VA	0.050	mg/kg		<0.050	0.127	<0.050	<0.050	<0.050
Tin	7440-31-5	E440/VA	2.0	mg/kg		1450	110	99.3	99.4	359
Titanium	7440-32-6	E440/VA	1.0	mg/kg		327	311	290	239	268

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2448-A-6	BA2448-A-7	BA2448-A-8	BA2448-A-9	BA2448-A-10
					Client sampling date / time	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00
						VA24D2686-006	VA24D2686-007	VA24D2686-008	VA24D2686-009	VA24D2686-010
						Result	Result	Result	Result	Result
Metals										
Tungsten	7440-33-7	E440/VA	0.50	mg/kg		5.55	9.14	4.52	8.78	5.80
Uranium	7440-61-1	E440/VA	0.050	mg/kg		1.64	1.55	1.68	1.83	1.52
Vanadium	7440-62-2	E440/VA	0.20	mg/kg		41.5	36.9	47.8	43.2	42.0
Zinc	7440-66-6	E440/VA	2.0	mg/kg		3410	7120	9800	5000	4120
Zirconium	7440-67-7	E440/VA	1.0	mg/kg		2.7	1.6	3.4	2.6	2.4
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units		12.0	12.0	11.9	11.9	11.9
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units		7.26	7.58	6.85	6.65	6.82
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units		2.86	2.86	2.86	2.86	2.86
pH, TCLP final	----	EPP444/VA	0.010	pH units		6.84	6.79	6.68	6.56	6.89
Antimony, TCLP	7440-36-0	E444/VA	1.00	mg/L		<1.00	<1.00	<1.00	<1.00	<1.00
Arsenic, TCLP	7440-38-2	E444/VA	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Barium, TCLP	7440-39-3	E444/VA	2.5	mg/L		<2.5	<2.5	<2.5	<2.5	<2.5
Beryllium, TCLP	7440-41-7	E444/VA	0.025	mg/L		<0.025	<0.025	<0.025	<0.025	<0.025
Boron, TCLP	7440-42-8	E444/VA	0.50	mg/L		2.00	2.08	1.94	2.00	1.95
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L		0.056	0.162	0.064	0.086	0.062
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L		2000	1930	1920	1840	1940
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		1.12	0.683	0.869	1.30	1.32
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L		0.996	0.842	0.961	0.844	0.814
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	BA2448-A-6	BA2448-A-7	BA2448-A-8	BA2448-A-9	BA2448-A-10
				Client sampling date / time	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00	27-Nov-2024 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24D2686-006	VA24D2686-007	VA24D2686-008	VA24D2686-009	VA24D2686-010
					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	125	127	127	123	119
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	<0.25	0.27	0.32	<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	9.04	8.58	12.0	15.8	6.17
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	BA2448-A-11	BA2448-A-12	----	----	----
				Client sampling date / time	27-Nov-2024 09:00	27-Nov-2024 09:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24D2686-011	VA24D2686-012	----	----	----
					Result	Result	----	----	----
Physical Tests									
Moisture	----	E144/VA	0.25	%	25.8	25.3	----	----	----
pH (1:2 soil:water)	----	E108/VA	0.10	pH units	11.8	11.6	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2448-A-11	BA2448-A-12	----	----	----
					Client sampling date / time	27-Nov-2024 09:00	27-Nov-2024 09:00	----	----	----
						VA24D2686-011	VA24D2686-012	----	----	----
						Result	Result	----	----	----
Metals										
Aluminum	7429-90-5	E440/VA	50	mg/kg		48200	71300	----	----	----
Antimony	7440-36-0	E440/VA	0.10	mg/kg		87.1	79.3	----	----	----
Arsenic	7440-38-2	E440/VA	0.10	mg/kg		12.5	11.9	----	----	----
Barium	7440-39-3	E440/VA	0.50	mg/kg		609	651	----	----	----
Beryllium	7440-41-7	E440/VA	0.10	mg/kg		0.36	0.41	----	----	----
Bismuth	7440-69-9	E440/VA	0.20	mg/kg		4.58	5.79	----	----	----
Boron	7440-42-8	E440/VA	5.0	mg/kg		164	130	----	----	----
Cadmium	7440-43-9	E440/VA	0.020	mg/kg		8.16	7.21	----	----	----
Calcium	7440-70-2	E440/VA	50	mg/kg		120000	125000	----	----	----
Chromium	7440-47-3	E440/VA	0.50	mg/kg		125	115	----	----	----
Cobalt	7440-48-4	E440/VA	0.10	mg/kg		121	78.0	----	----	----
Copper	7440-50-8	E440/VA	0.50	mg/kg		8590	1740	----	----	----
Iron	7439-89-6	E440/VA	50	mg/kg		65200	62000	----	----	----
Lead	7439-92-1	E440/VA	0.50	mg/kg		724	385	----	----	----
Lithium	7439-93-2	E440/VA	2.0	mg/kg		34.7	32.1	----	----	----
Magnesium	7439-95-4	E440/VA	20	mg/kg		11700	11400	----	----	----
Manganese	7439-96-5	E440/VA	1.0	mg/kg		864	1420	----	----	----
Mercury	7439-97-6	E510/VA	0.0500	mg/kg		<0.0500	<0.0500	----	----	----
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg		18.5	14.5	----	----	----
Nickel	7440-02-0	E440/VA	0.50	mg/kg		163	160	----	----	----
Phosphorus	7723-14-0	E440/VA	50	mg/kg		8440	7360	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2448-A-11	BA2448-A-12	----	----	----
					Client sampling date / time	27-Nov-2024 09:00	27-Nov-2024 09:00	----	----	----
						VA24D2686-011	VA24D2686-012	----	----	----
						Result	Result	----	----	----
Metals										
Potassium	7440-09-7	E440/VA	100	mg/kg		4430	5480	----	----	----
Selenium	7782-49-2	E440/VA	0.20	mg/kg		0.44	0.27	----	----	----
Silver	7440-22-4	E440/VA	0.10	mg/kg		3.31	6.42	----	----	----
Sodium	7440-23-5	E440/VA	50	mg/kg		15100	17200	----	----	----
Strontium	7440-24-6	E440/VA	0.50	mg/kg		254	288	----	----	----
Sulfur	7704-34-9	E440/VA	1000	mg/kg		10300	9900	----	----	----
Thallium	7440-28-0	E440/VA	0.050	mg/kg		<0.050	<0.050	----	----	----
Tin	7440-31-5	E440/VA	2.0	mg/kg		101	90.6	----	----	----
Titanium	7440-32-6	E440/VA	1.0	mg/kg		334	813	----	----	----
Tungsten	7440-33-7	E440/VA	0.50	mg/kg		3.56	4.14	----	----	----
Uranium	7440-61-1	E440/VA	0.050	mg/kg		1.53	1.60	----	----	----
Vanadium	7440-62-2	E440/VA	0.20	mg/kg		39.1	49.6	----	----	----
Zinc	7440-66-6	E440/VA	2.0	mg/kg		4140	3580	----	----	----
Zirconium	7440-67-7	E440/VA	1.0	mg/kg		2.5	2.8	----	----	----
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units		11.9	11.9	----	----	----
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units		7.59	7.34	----	----	----
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units		2.86	2.86	----	----	----
pH, TCLP final	----	EPP444/VA	0.010	pH units		6.88	6.91	----	----	----
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	BA2448-A-11	BA2448-A-12	----	----	----
					Client sampling date / time	27-Nov-2024 09:00	27-Nov-2024 09:00	----	----	----
						VA24D2686-011	VA24D2686-012	----	----	----
						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		1.98	1.94	----	----	----
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L		<0.050	0.050	----	----	----
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L		1940	1930	----	----	----
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		0.646	1.13	----	----	----
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L		0.788	0.722	----	----	----
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		120	121	----	----	----
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	0.42	----	----	----
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		7.17	7.28	----	----	----
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	: **VA24D2686**	Page	: 1 of 15
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-Dec-2024 13:04
PO	: VANCO0000052919	Issue Date	: 12-Dec-2024 21:56
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 Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- 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.

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 BA2448-A-1	E510	27-Nov-2024	10-Dec-2024	28 days	13 days	✓	11-Dec-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2448-A-10	E510	27-Nov-2024	10-Dec-2024	28 days	13 days	✓	11-Dec-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2448-A-11	E510	27-Nov-2024	10-Dec-2024	28 days	13 days	✓	11-Dec-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2448-A-12	E510	27-Nov-2024	10-Dec-2024	28 days	13 days	✓	11-Dec-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2448-A-2	E510	27-Nov-2024	10-Dec-2024	28 days	13 days	✓	11-Dec-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2448-A-3	E510	27-Nov-2024	10-Dec-2024	28 days	13 days	✓	11-Dec-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2448-A-4	E510	27-Nov-2024	10-Dec-2024	28 days	13 days	✓	11-Dec-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 BA2448-A-5	E510	27-Nov-2024	10-Dec-2024	28 days	13 days	✓	11-Dec-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2448-A-6	E510	27-Nov-2024	10-Dec-2024	28 days	13 days	✓	11-Dec-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2448-A-7	E510	27-Nov-2024	10-Dec-2024	28 days	13 days	✓	11-Dec-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2448-A-8	E510	27-Nov-2024	10-Dec-2024	28 days	13 days	✓	11-Dec-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2448-A-9	E510	27-Nov-2024	10-Dec-2024	28 days	13 days	✓	11-Dec-2024	28 days	1 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2448-A-1	E440	27-Nov-2024	10-Dec-2024	180 days	13 days	✓	12-Dec-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2448-A-10	E440	27-Nov-2024	10-Dec-2024	180 days	13 days	✓	12-Dec-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2448-A-11	E440	27-Nov-2024	10-Dec-2024	180 days	13 days	✓	12-Dec-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2448-A-12	E440	27-Nov-2024	10-Dec-2024	180 days	13 days	✓	12-Dec-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 BA2448-A-2	E440	27-Nov-2024	10-Dec-2024	180 days	13 days	✓	12-Dec-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2448-A-3	E440	27-Nov-2024	10-Dec-2024	180 days	13 days	✓	12-Dec-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2448-A-4	E440	27-Nov-2024	10-Dec-2024	180 days	13 days	✓	12-Dec-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2448-A-5	E440	27-Nov-2024	10-Dec-2024	180 days	13 days	✓	12-Dec-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2448-A-6	E440	27-Nov-2024	10-Dec-2024	180 days	13 days	✓	12-Dec-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2448-A-7	E440	27-Nov-2024	10-Dec-2024	180 days	13 days	✓	12-Dec-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2448-A-8	E440	27-Nov-2024	10-Dec-2024	180 days	13 days	✓	12-Dec-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2448-A-9	E440	27-Nov-2024	10-Dec-2024	180 days	13 days	✓	12-Dec-2024	180 days	15 days	✓
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2448-A-1	E144	27-Nov-2024	----	----	----		07-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 BA2448-A-10	E144	27-Nov-2024	----	----	----		07-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2448-A-11	E144	27-Nov-2024	----	----	----		07-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2448-A-12	E144	27-Nov-2024	----	----	----		07-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2448-A-2	E144	27-Nov-2024	----	----	----		07-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2448-A-3	E144	27-Nov-2024	----	----	----		07-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2448-A-4	E144	27-Nov-2024	----	----	----		07-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2448-A-5	E144	27-Nov-2024	----	----	----		07-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2448-A-6	E144	27-Nov-2024	----	----	----		07-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2448-A-7	E144	27-Nov-2024	----	----	----		07-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 BA2448-A-8	E144	27-Nov-2024	----	----	----		07-Dec-2024	----	10 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2448-A-9	E144	27-Nov-2024	----	----	----		07-Dec-2024	----	10 days	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2448-A-1	E108	27-Nov-2024	10-Dec-2024	30 days	13 days	✓	10-Dec-2024	30 days	13 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2448-A-10	E108	27-Nov-2024	10-Dec-2024	30 days	13 days	✓	10-Dec-2024	30 days	13 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2448-A-11	E108	27-Nov-2024	10-Dec-2024	30 days	13 days	✓	10-Dec-2024	30 days	13 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2448-A-12	E108	27-Nov-2024	10-Dec-2024	30 days	13 days	✓	10-Dec-2024	30 days	13 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2448-A-2	E108	27-Nov-2024	10-Dec-2024	30 days	13 days	✓	10-Dec-2024	30 days	13 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2448-A-3	E108	27-Nov-2024	10-Dec-2024	30 days	13 days	✓	10-Dec-2024	30 days	13 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2448-A-4	E108	27-Nov-2024	10-Dec-2024	30 days	13 days	✓	10-Dec-2024	30 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
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2448-A-5	E108	27-Nov-2024	10-Dec-2024	30 days	13 days	✓	10-Dec-2024	30 days	13 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2448-A-6	E108	27-Nov-2024	10-Dec-2024	30 days	13 days	✓	10-Dec-2024	30 days	13 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2448-A-7	E108	27-Nov-2024	10-Dec-2024	30 days	13 days	✓	10-Dec-2024	30 days	13 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2448-A-8	E108	27-Nov-2024	10-Dec-2024	30 days	13 days	✓	10-Dec-2024	30 days	13 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2448-A-9	E108	27-Nov-2024	10-Dec-2024	30 days	13 days	✓	10-Dec-2024	30 days	13 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2448-A-1	E512	10-Dec-2024	11-Dec-2024	41 days	14 days	✓	11-Dec-2024	41 days	14 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2448-A-10	E512	10-Dec-2024	11-Dec-2024	41 days	14 days	✓	11-Dec-2024	41 days	14 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2448-A-11	E512	10-Dec-2024	11-Dec-2024	41 days	14 days	✓	11-Dec-2024	41 days	14 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2448-A-12	E512	10-Dec-2024	11-Dec-2024	41 days	14 days	✓	11-Dec-2024	41 days	14 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2448-A-2	E512	10-Dec-2024	11-Dec-2024	41 days	14 days	✓	11-Dec-2024	41 days	14 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2448-A-3	E512	10-Dec-2024	11-Dec-2024	41 days	14 days	✓	11-Dec-2024	41 days	14 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2448-A-4	E512	10-Dec-2024	11-Dec-2024	41 days	14 days	✓	11-Dec-2024	41 days	14 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2448-A-5	E512	10-Dec-2024	11-Dec-2024	41 days	14 days	✓	11-Dec-2024	41 days	14 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2448-A-6	E512	10-Dec-2024	11-Dec-2024	41 days	14 days	✓	11-Dec-2024	41 days	14 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2448-A-7	E512	10-Dec-2024	11-Dec-2024	41 days	14 days	✓	11-Dec-2024	41 days	14 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2448-A-8	E512	10-Dec-2024	11-Dec-2024	41 days	14 days	✓	11-Dec-2024	41 days	14 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2448-A-9	E512	10-Dec-2024	11-Dec-2024	41 days	14 days	✓	11-Dec-2024	41 days	14 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2448-A-1	E444	10-Dec-2024	11-Dec-2024	193 days	14 days	✓	11-Dec-2024	193 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
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2448-A-10	E444	10-Dec-2024	11-Dec-2024	193 days	14 days	✓	11-Dec-2024	193 days	14 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2448-A-11	E444	10-Dec-2024	11-Dec-2024	193 days	14 days	✓	11-Dec-2024	193 days	14 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2448-A-12	E444	10-Dec-2024	11-Dec-2024	193 days	14 days	✓	11-Dec-2024	193 days	14 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2448-A-2	E444	10-Dec-2024	11-Dec-2024	193 days	14 days	✓	11-Dec-2024	193 days	14 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2448-A-3	E444	10-Dec-2024	11-Dec-2024	193 days	14 days	✓	11-Dec-2024	193 days	14 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2448-A-4	E444	10-Dec-2024	11-Dec-2024	193 days	14 days	✓	11-Dec-2024	193 days	14 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2448-A-5	E444	10-Dec-2024	11-Dec-2024	193 days	14 days	✓	11-Dec-2024	193 days	14 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2448-A-6	E444	10-Dec-2024	11-Dec-2024	193 days	14 days	✓	11-Dec-2024	193 days	14 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2448-A-7	E444	10-Dec-2024	11-Dec-2024	193 days	14 days	✓	11-Dec-2024	193 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*
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2448-A-8	E444	10-Dec-2024	11-Dec-2024	193 days	14 days	✓	11-Dec-2024	193 days	14 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2448-A-9	E444	10-Dec-2024	11-Dec-2024	193 days	14 days	✓	11-Dec-2024	193 days	14 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2448-A-1	EPP444	27-Nov-2024	10-Dec-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) BA2448-A-10	EPP444	27-Nov-2024	10-Dec-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) BA2448-A-11	EPP444	27-Nov-2024	10-Dec-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) BA2448-A-12	EPP444	27-Nov-2024	10-Dec-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) BA2448-A-2	EPP444	27-Nov-2024	10-Dec-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) BA2448-A-3	EPP444	27-Nov-2024	10-Dec-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) BA2448-A-4	EPP444	27-Nov-2024	10-Dec-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)										
BA2448-A-5	EPP444	27-Nov-2024	10-Dec-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)										
BA2448-A-6	EPP444	27-Nov-2024	10-Dec-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)										
BA2448-A-7	EPP444	27-Nov-2024	10-Dec-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)										
BA2448-A-8	EPP444	27-Nov-2024	10-Dec-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)										
BA2448-A-9	EPP444	27-Nov-2024	10-Dec-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	1804843	1	12	8.3	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	1800179	1	12	8.3	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	1804844	1	12	8.3	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	1800178	1	14	7.1	5.0	✓
Moisture Content by Gravimetry	E144	1800181	1	12	8.3	5.0	✓
pH by Meter (1:2 Soil:Water Extraction)	E108	1800180	1	14	7.1	5.0	✓
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	1800179	2	12	16.6	10.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	1800178	2	14	14.2	10.0	✓
Moisture Content by Gravimetry	E144	1800181	1	12	8.3	5.0	✓
pH by Meter (1:2 Soil:Water Extraction)	E108	1800180	1	14	7.1	5.0	✓
Method Blanks (MB)							
Mercury by CVAAS (TCLP)	E512	1804843	1	12	8.3	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	1800179	1	12	8.3	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	1804844	1	12	8.3	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	1800178	1	14	7.1	5.0	✓
Moisture Content by Gravimetry	E144	1800181	1	12	8.3	5.0	✓
Matrix Spikes (MS)							
Mercury by CVAAS (TCLP)	E512	1804843	1	12	8.3	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	1804844	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	: **VA24D2686**	Page	: 1 of 11
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-Dec-2024 13:04
PO	: VANCO0000052919	Date Analysis Commenced	: 07-Dec-2024
C-O-C number	: ----	Issue Date	: 12-Dec-2024 21:56
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*
Janice Leung	Supervisor - Organics Instrumentation	Vancouver Organics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Vancouver Metals, Burnaby, British Columbia
Wingyee Cheng	Analyst- General	Vancouver Metals, Burnaby, British Columbia

General Comments

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

Key :

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

Workorder Comments

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: 1800180)											
VA24D2658-001	Anonymous	pH (1:2 soil:water)	----	E108	0.10	pH units	7.39	7.39	0.0%	5%	----
Physical Tests (QC Lot: 1800181)											
VA24D2686-001	BA2448-A-1	Moisture	----	E144	0.25	%	26.5	25.4	4.30%	20%	----
Metals (QC Lot: 1800178)											
VA24D2658-001	Anonymous	Aluminum	7429-90-5	E440	50	mg/kg	903	1060	16.4%	40%	----
		Antimony	7440-36-0	E440	0.10	mg/kg	1.73	1.76	1.50%	30%	----
		Arsenic	7440-38-2	E440	0.10	mg/kg	2.16	2.25	4.21%	30%	----
		Barium	7440-39-3	E440	0.50	mg/kg	162	155	4.59%	40%	----
		Beryllium	7440-41-7	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		Bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		Boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		Cadmium	7440-43-9	E440	0.020	mg/kg	4.78	4.60	3.95%	30%	----
		Calcium	7440-70-2	E440	50	mg/kg	26000	25200	3.23%	30%	----
		Chromium	7440-47-3	E440	0.50	mg/kg	65.3	63.5	2.75%	30%	----
		Cobalt	7440-48-4	E440	0.10	mg/kg	1.95	1.98	1.34%	30%	----
		Copper	7440-50-8	E440	0.50	mg/kg	136	133	2.31%	30%	----
		Iron	7439-89-6	E440	50	mg/kg	281000	276000	1.83%	30%	----
		Lead	7439-92-1	E440	0.50	mg/kg	0.59	0.66	0.06	Diff <2x LOR	----
		Lithium	7439-93-2	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		Magnesium	7439-95-4	E440	20	mg/kg	2080	2060	0.785%	30%	----
		Manganese	7439-96-5	E440	1.0	mg/kg	106	107	0.384%	30%	----
		Molybdenum	7439-98-7	E440	0.10	mg/kg	16.1	15.8	2.07%	40%	----
		Nickel	7440-02-0	E440	0.50	mg/kg	44.3	43.7	1.35%	30%	----
		Phosphorus	7723-14-0	E440	50	mg/kg	10600	10300	3.68%	30%	----
		Potassium	7440-09-7	E440	100	mg/kg	370	400	30	Diff <2x LOR	----
		Selenium	7782-49-2	E440	0.20	mg/kg	826	798	3.46%	30%	----
		Silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		Sodium	7440-23-5	E440	50	mg/kg	130	147	17	Diff <2x LOR	----
		Strontium	7440-24-6	E440	0.50	mg/kg	58.5	57.8	1.21%	40%	----
		Sulfur	7704-34-9	E440	1000	mg/kg	20800	20800	0.200%	30%	----

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: 1800178) - continued											
VA24D2658-001	Anonymous	Thallium	7440-28-0	E440	0.050	mg/kg	0.090	0.085	0.005	Diff <2x LOR	----
		Tin	7440-31-5	E440	2.0	mg/kg	3.4	3.3	0.1	Diff <2x LOR	----
		Titanium	7440-32-6	E440	1.0	mg/kg	55.7	67.0	18.4%	40%	----
		Tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		Uranium	7440-61-1	E440	0.050	mg/kg	24.9	24.3	2.42%	30%	----
		Vanadium	7440-62-2	E440	0.20	mg/kg	22.3	25.3	12.8%	30%	----
		Zinc	7440-66-6	E440	2.0	mg/kg	142	139	2.04%	30%	----
		Zirconium	7440-67-7	E440	1.0	mg/kg	1.7	1.9	0.2	Diff <2x LOR	----
Metals (QC Lot: 1800179)											
VA24D2686-001	BA2448-A-1	Mercury	7439-97-6	E510	0.0500	mg/kg	<0.0500	<0.0500	0	Diff <2x LOR	----
TCLP Metals (QC Lot: 1804843)											
VA24D2686-001	BA2448-A-1	Mercury, TCLP	7439-97-6	E512	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
TCLP Metals (QC Lot: 1804844)											
VA24D2686-001	BA2448-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	1.85	1.87	0.02	Diff <2x LOR	----
		Cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.057	0.056	0.0006	Diff <2x LOR	----
		Calcium, TCLP	7440-70-2	E444	10	mg/L	1880	1920	2.27%	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	0.982	0.942	4.06%	30%	----
		Copper, TCLP	7440-50-8	E444	0.050	mg/L	0.976	0.941	3.68%	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	122	120	2.24%	30%	----
		Nickel, TCLP	7440-02-0	E444	0.25	mg/L	<0.25	<0.25	0	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	8.04	7.70	4.34%	30%	----
		Zirconium, TCLP	7440-67-7	E444	10	mg/L	<10	<10	0	Diff <2x LOR	----

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: 1800181)						
Moisture	----	E144	0.25	%	<0.25	----
Metals (QCLot: 1800178)						
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	----
Titanium	7440-32-6	E440	1	mg/kg	<1.0	----

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 1800178) - continued						
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	----
Metals (QCLot: 1800179)						
Mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
TCLP Metals (QCLot: 1804843)						
Mercury, TCLP	7439-97-6	E512	0.001	mg/L	<0.0010	----
TCLP Metals (QCLot: 1804844)						
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: 1800180)									
pH (1:2 soil:water)	----	E108	----	pH units	6 pH units	100	95.0	105	----
Physical Tests (QCLot: 1800181)									
Moisture	----	E144	0.25	%	50 %	100	90.0	110	----
Metals (QCLot: 1800178)									
Aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	96.9	80.0	120	----
Antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	96.3	80.0	120	----
Arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	101	80.0	120	----
Barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	97.5	80.0	120	----
Beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	102	80.0	120	----
Bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	94.6	80.0	120	----
Boron	7440-42-8	E440	5	mg/kg	100 mg/kg	101	80.0	120	----
Cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	91.1	80.0	120	----
Calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	95.3	80.0	120	----
Chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	96.6	80.0	120	----
Cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	92.5	80.0	120	----
Copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	91.7	80.0	120	----
Iron	7439-89-6	E440	50	mg/kg	100 mg/kg	90.5	80.0	120	----
Lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	96.8	80.0	120	----
Lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	97.7	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	93.8	80.0	120	----
Molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	93.0	80.0	120	----
Nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	91.8	80.0	120	----
Phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	91.1	80.0	120	----
Potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	96.4	80.0	120	----
Selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	97.8	80.0	120	----
Silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	85.9	80.0	120	----
Sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	103	80.0	120	----
Strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	91.6	80.0	120	----
Sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	90.0	80.0	120	----
Thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	94.3	80.0	120	----
Tin	7440-31-5	E440	2	mg/kg	50 mg/kg	97.6	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: 1800178) - continued									
Titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	96.7	80.0	120	----
Tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	93.9	80.0	120	----
Uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	90.0	80.0	120	----
Vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	96.3	80.0	120	----
Zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	92.0	80.0	120	----
Zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	97.5	80.0	120	----
Metals (QCLot: 1800179)									
Mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	94.3	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: 1804843)										
VA24D2686-001	BA2448-A-1	Mercury, TCLP	7439-97-6	E512	0.0010 mg/L	0.001 mg/L	96.8	50.0	140	----
TCLP Metals (QCLot: 1804844)										
VA24D2686-001	BA2448-A-1	Antimony, TCLP	7440-36-0	E444	4.85 mg/L	5 mg/L	96.9	50.0	140	----
		Arsenic, TCLP	7440-38-2	E444	4.7 mg/L	5 mg/L	94.0	50.0	140	----
		Barium, TCLP	7440-39-3	E444	11.2 mg/L	12.5 mg/L	90.0	50.0	140	----
		Beryllium, TCLP	7440-41-7	E444	0.244 mg/L	0.25 mg/L	97.6	50.0	140	----
		Boron, TCLP	7440-42-8	E444	8.85 mg/L	10 mg/L	88.5	50.0	140	----
		Cadmium, TCLP	7440-43-9	E444	0.224 mg/L	0.25 mg/L	89.8	50.0	140	----
		Calcium, TCLP	7440-70-2	E444	ND mg/L	----	ND	50.0	140	----
		Chromium, TCLP	7440-47-3	E444	1.11 mg/L	1.25 mg/L	88.5	50.0	140	----
		Cobalt, TCLP	7440-48-4	E444	ND mg/L	----	ND	50.0	140	----
		Copper, TCLP	7440-50-8	E444	2.12 mg/L	2.5 mg/L	85.0	50.0	140	----
		Iron, TCLP	7439-89-6	E444	227 mg/L	250 mg/L	91.0	50.0	140	----
		Lead, TCLP	7439-92-1	E444	9.28 mg/L	10 mg/L	92.8	50.0	140	----
		Magnesium, TCLP	7439-95-4	E444	217 mg/L	250 mg/L	86.8	50.0	140	----
		Nickel, TCLP	7440-02-0	E444	2.24 mg/L	2.5 mg/L	89.5	50.0	140	----
		Selenium, TCLP	7782-49-2	E444	4.52 mg/L	5 mg/L	90.5	50.0	140	----
		Silver, TCLP	7440-22-4	E444	0.081 mg/L	0.1 mg/L	81.4	50.0	140	----
		Thallium, TCLP	7440-28-0	E444	4.7 mg/L	5 mg/L	93.2	50.0	140	----
		Uranium, TCLP	7440-61-1	E444	4.71 mg/L	5 mg/L	94.2	50.0	150	----
		Vanadium, TCLP	7440-62-2	E444	0.69 mg/L	0.75 mg/L	92.4	50.0	140	----
		Zinc, TCLP	7440-66-6	E444	8.70 mg/L	10 mg/L	87.0	50.0	140	----
		Zirconium, TCLP	7440-67-7	E444	0.8 mg/L	1 mg/L	84.5	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: 1800178)									
QC-1800178-003	MRCA-21	Aluminum	7429-90-5	E440	22500 mg/kg	103	70.0	130	----
QC-1800178-003	MRCA-21	Antimony	7440-36-0	E440	24.8 mg/kg	97.5	70.0	130	----
QC-1800178-003	MRCA-21	Arsenic	7440-38-2	E440	21.2 mg/kg	96.9	70.0	130	----
QC-1800178-003	MRCA-21	Barium	7440-39-3	E440	788 mg/kg	105	70.0	130	----
QC-1800178-003	MRCA-21	Beryllium	7440-41-7	E440	1.82 mg/kg	109	70.0	130	----
QC-1800178-003	MRCA-21	Bismuth	7440-69-9	E440	1.78 mg/kg	99.3	70.0	130	----
QC-1800178-003	MRCA-21	Cadmium	7440-43-9	E440	2.15 mg/kg	94.8	70.0	130	----
QC-1800178-003	MRCA-21	Calcium	7440-70-2	E440	4900 mg/kg	101	70.0	130	----
QC-1800178-003	MRCA-21	Chromium	7440-47-3	E440	56.9 mg/kg	99.6	70.0	130	----
QC-1800178-003	MRCA-21	Cobalt	7440-48-4	E440	32 mg/kg	96.6	70.0	130	----
QC-1800178-003	MRCA-21	Copper	7440-50-8	E440	969 mg/kg	99.8	70.0	130	----
QC-1800178-003	MRCA-21	Iron	7439-89-6	E440	32700 mg/kg	99.9	70.0	130	----
QC-1800178-003	MRCA-21	Lead	7439-92-1	E440	919 mg/kg	97.1	70.0	130	----
QC-1800178-003	MRCA-21	Lithium	7439-93-2	E440	47.3 mg/kg	107	70.0	130	----
QC-1800178-003	MRCA-21	Magnesium	7439-95-4	E440	7780 mg/kg	104	70.0	130	----
QC-1800178-003	MRCA-21	Manganese	7439-96-5	E440	8640 mg/kg	101	70.0	130	----
QC-1800178-003	MRCA-21	Molybdenum	7439-98-7	E440	25.1 mg/kg	92.3	70.0	130	----
QC-1800178-003	MRCA-21	Nickel	7440-02-0	E440	1000 mg/kg	97.0	70.0	130	----
QC-1800178-003	MRCA-21	Phosphorus	7723-14-0	E440	660 mg/kg	90.2	70.0	130	----
QC-1800178-003	MRCA-21	Potassium	7440-09-7	E440	10800 mg/kg	101	70.0	130	----
QC-1800178-003	MRCA-21	Selenium	7782-49-2	E440	1.04 mg/kg	97.7	60.0	140	----
QC-1800178-003	MRCA-21	Silver	7440-22-4	E440	8.98 mg/kg	93.4	70.0	130	----
QC-1800178-003	MRCA-21	Sodium	7440-23-5	E440	1770 mg/kg	107	70.0	130	----
QC-1800178-003	MRCA-21	Strontium	7440-24-6	E440	41 mg/kg	97.1	70.0	130	----
QC-1800178-003	MRCA-21	Sulfur	7704-34-9	E440	3940 mg/kg	103	50.0	150	----
QC-1800178-003	MRCA-21	Thallium	7440-28-0	E440	0.907 mg/kg	95.0	70.0	130	----
QC-1800178-003	MRCA-21	Tin	7440-31-5	E440	3.79 mg/kg	96.6	40.0	160	----
QC-1800178-003	MRCA-21	Titanium	7440-32-6	E440	2790 mg/kg	101	70.0	130	----
QC-1800178-003	MRCA-21	Tungsten	7440-33-7	E440	6.99 mg/kg	107	70.0	130	----
QC-1800178-003	MRCA-21	Uranium	7440-61-1	E440	3.97 mg/kg	98.4	70.0	130	----
QC-1800178-003	MRCA-21	Vanadium	7440-62-2	E440	66.2 mg/kg	98.3	70.0	130	----
QC-1800178-003	MRCA-21	Zinc	7440-66-6	E440	828 mg/kg	97.4	70.0	130	----
QC-1800178-003	MRCA-21	Zirconium	7440-67-7	E440	6.91 mg/kg	112	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: 1800179)									
QC-1800179-003	MRCA-21	Mercury	7439-97-6	E510	0.068 mg/kg	97.6	70.0	130	----

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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)	VA24D2686			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
	BA2448-A-1	27-Nov-24	9:00	Soil	X	X		X	1
	BA2448-A-2	27-Nov-24	9:00	Soil	X	X		X	1
	BA2448-A-3	27-Nov-24	9:00	Soil	X	X		X	1
	BA2448-A-4	27-Nov-24	9:00	Soil	X	X		X	1
	BA2448-A-5	27-Nov-24	9:00	Soil	X	X		X	1
	BA2448-A-6	27-Nov-24	9:00	Soil	X	X		X	1
	BA2448-A-7	27-Nov-24	9:00	Soil	X	X		X	1
	BA2448-A-8	27-Nov-24	9:00	Soil	X	X		X	1
	BA2448-A-9	27-Nov-24	9:00	Soil	X	X		X	1
	BA2448-A-10	27-Nov-24	9:00	Soil	X	X		X	1
	BA2448-A-11	27-Nov-24	9:00	Soil	X	X		X	1
	BA2448-A-12	27-Nov-24	9:00	Soil	X	X		X	1

Environmental Division
Vancouver
Work Order Reference
VA24D2686

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-Dec-24	08:0				°C	CR	Dec 4th	12:10	

GENF 20.00 Front

14°C, 14°C