Bottom Ash Data

2024 Week 43

The following analytical report represents bottom ash composite results for week 43 of 2024 (October 20, 2024 to October 26, 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	:	**VA24C9283**			
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	:	30-Oct-2024 12:05
PO	:	46693	Date Analysis Commenced	:	07-Nov-2024
C-O-C number	:	----	Issue Date	:	10-Nov-2024 14:13
Sampler	:	----			
Site	:	(includes 2:1 pH)			
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*
Ghazaleh Khanmirzaei	Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Organics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	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*
mg/kg	milligrams per kilogram
%	percent
pH units	pH units
mg/L	milligrams per litre

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

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

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	BA2443-A-1	BA2443-A-2	BA2443-A-3	BA2443-A-4	BA2443-A-5
					Client sampling date / time	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00
						VA24C9283-001	VA24C9283-002	VA24C9283-003	VA24C9283-004	VA24C9283-005
						Result	Result	Result	Result	Result
Physical Tests										
Moisture	----	E144/VA	0.25	%		30.1	30.3	32.0	30.6	31.4
pH (1:2 soil:water)	----	E108/VA	0.10	pH units		10.1	10.1	10.1	10.1	10.1
Metals										
Aluminum	7429-90-5	E440/VA	50	mg/kg		39000	43300	39500	34700	36300
Antimony	7440-36-0	E440/VA	0.10	mg/kg		145	114	122	121	115
Arsenic	7440-38-2	E440/VA	0.10	mg/kg		32.8	25.5	29.4	26.2	31.0
Barium	7440-39-3	E440/VA	0.50	mg/kg		560	499	393	482	478
Beryllium	7440-41-7	E440/VA	0.10	mg/kg		0.39	0.38	0.34	0.39	0.34
Bismuth	7440-69-9	E440/VA	0.20	mg/kg		14.0	8.02	12.3	7.91	10.5
Boron	7440-42-8	E440/VA	5.0	mg/kg		183	176	188	171	197
Cadmium	7440-43-9	E440/VA	0.020	mg/kg		13.5	12.1	14.2	13.9	11.4
Calcium	7440-70-2	E440/VA	50	mg/kg		141000	137000	139000	136000	138000
Chromium	7440-47-3	E440/VA	0.50	mg/kg		128	134	228	145	125
Cobalt	7440-48-4	E440/VA	0.10	mg/kg		44.2	69.9	74.9	159	90.9
Copper	7440-50-8	E440/VA	0.50	mg/kg		4530	2100	3370	1840	1620
Iron	7439-89-6	E440/VA	50	mg/kg		37800	35000	38400	43300	45800
Lead	7439-92-1	E440/VA	0.50	mg/kg		360	704	406	335	365
Lithium	7439-93-2	E440/VA	2.0	mg/kg		30.0	34.5	29.6	31.2	29.9
Magnesium	7439-95-4	E440/VA	20	mg/kg		11800	11900	12200	11600	12000
Manganese	7439-96-5	E440/VA	1.0	mg/kg		642	692	766	778	670
Mercury	7439-97-6	E510/VA	0.0500	mg/kg		<0.0500	<0.0500	<0.0500	0.0573	<0.0500

Analytical Results

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

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	BA2443-A-1	BA2443-A-2	BA2443-A-3	BA2443-A-4	BA2443-A-5
					Client sampling date / time	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00
						VA24C9283-001	VA24C9283-002	VA24C9283-003	VA24C9283-004	VA24C9283-005
						Result	Result	Result	Result	Result
Metals										
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg		16.9	20.6	21.5	18.5	17.7
Nickel	7440-02-0	E440/VA	0.50	mg/kg		166	185	118	140	133
Phosphorus	7723-14-0	E440/VA	50	mg/kg		9440	8700	10100	8950	10400
Potassium	7440-09-7	E440/VA	100	mg/kg		6550	6630	7080	6630	6260
Selenium	7782-49-2	E440/VA	0.20	mg/kg		0.43	0.46	0.44	0.40	0.45
Silver	7440-22-4	E440/VA	0.10	mg/kg		4.42	4.37	12.2	5.53	5.39
Sodium	7440-23-5	E440/VA	50	mg/kg		16800	17800	18000	17000	16600
Strontium	7440-24-6	E440/VA	0.50	mg/kg		310	297	336	325	300
Sulfur	7704-34-9	E440/VA	1000	mg/kg		14100	13700	14200	13500	13800
Thallium	7440-28-0	E440/VA	0.050	mg/kg		0.051	<0.050	<0.050	<0.050	<0.050
Tin	7440-31-5	E440/VA	2.0	mg/kg		116	173	204	108	118
Titanium	7440-32-6	E440/VA	1.0	mg/kg		570	309	265	253	271
Tungsten	7440-33-7	E440/VA	0.50	mg/kg		7.68	8.29	8.88	10.9	8.31
Uranium	7440-61-1	E440/VA	0.050	mg/kg		2.72	2.53	2.59	2.58	2.46
Vanadium	7440-62-2	E440/VA	0.20	mg/kg		42.6	41.9	41.7	42.5	39.3
Zinc	7440-66-6	E440/VA	2.0	mg/kg		4210	5740	4760	4700	3080
Zirconium	7440-67-7	E440/VA	1.0	mg/kg		4.0	4.0	4.4	3.1	3.2
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units		11.3	11.3	11.3	11.3	11.3
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units		7.54	6.91	6.51	6.54	6.70
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/Accreditation	LOR	Unit	Client sample ID	BA2443-A-1	BA2443-A-2	BA2443-A-3	BA2443-A-4	BA2443-A-5
					Client sampling date / time	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00
						VA24C9283-001	VA24C9283-002	VA24C9283-003	VA24C9283-004	VA24C9283-005
						Result	Result	Result	Result	Result
TCLP Metals										
pH, TCLP final	----	EPP444/VA	0.010	pH units		6.58	6.66	6.78	6.65	6.72
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		2.34	2.26	2.48	2.39	2.21
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L		0.121	0.127	0.154	0.120	0.164
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L		2060	1960	2110	2050	2020
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		0.830	1.48	1.42	1.61	0.815
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L		1.15	0.862	0.838	0.812	1.30
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		130	121	126	123	122
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		0.37	0.40	0.34	0.40	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)				Client sample ID	BA2443-A-1	BA2443-A-2	BA2443-A-3	BA2443-A-4	BA2443-A-5
				Client sampling date / time	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9283-001	VA24C9283-002	VA24C9283-003	VA24C9283-004	VA24C9283-005
					Result	Result	Result	Result	Result
TCLP Metals									
Zinc, TCLP	7440-66-6	E444/VA	0.50	mg/L	20.2	14.9	15.5	21.5	26.1
Zirconium, TCLP	7440-67-7	E444/VA	10	mg/L	<10	<10	<10	<10	<10

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

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

Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)				Client sample ID	BA2443-A-6	BA2443-A-7	BA2443-A-8	BA2443-A-9	BA2443-A-10
				Client sampling date / time	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9283-006	VA24C9283-007	VA24C9283-008	VA24C9283-009	VA24C9283-010
					Result	Result	Result	Result	Result
Physical Tests									
Moisture	----	E144/VA	0.25	%	32.1	30.5	31.0	31.4	30.8
pH (1:2 soil:water)	----	E108/VA	0.10	pH units	10.2	10.1	10.1	10.1	10.1
Metals									
Aluminum	7429-90-5	E440/VA	50	mg/kg	40700	37200	50800	43000	51200
Antimony	7440-36-0	E440/VA	0.10	mg/kg	109	118	120	129	131
Arsenic	7440-38-2	E440/VA	0.10	mg/kg	24.3	30.1	27.4	26.4	29.1
Barium	7440-39-3	E440/VA	0.50	mg/kg	380	350	499	405	356
Beryllium	7440-41-7	E440/VA	0.10	mg/kg	0.37	0.34	0.37	0.39	0.36
Bismuth	7440-69-9	E440/VA	0.20	mg/kg	6.13	8.88	8.59	8.31	11.6
Boron	7440-42-8	E440/VA	5.0	mg/kg	165	290	232	238	186
Cadmium	7440-43-9	E440/VA	0.020	mg/kg	10.9	22.1	16.0	12.9	13.7
Calcium	7440-70-2	E440/VA	50	mg/kg	129000	142000	140000	136000	141000

Analytical Results

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

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	BA2443-A-6	BA2443-A-7	BA2443-A-8	BA2443-A-9	BA2443-A-10
					Client sampling date / time	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00
						VA24C9283-006	VA24C9283-007	VA24C9283-008	VA24C9283-009	VA24C9283-010
						Result	Result	Result	Result	Result
Metals										
Chromium	7440-47-3	E440/VA	0.50	mg/kg		125	146	126	176	130
Cobalt	7440-48-4	E440/VA	0.10	mg/kg		401	69.1	99.6	129	83.7
Copper	7440-50-8	E440/VA	0.50	mg/kg		1180	1920	1400	4400	1570
Iron	7439-89-6	E440/VA	50	mg/kg		41800	40100	39900	38600	32000
Lead	7439-92-1	E440/VA	0.50	mg/kg		388	387	395	354	425
Lithium	7439-93-2	E440/VA	2.0	mg/kg		36.0	42.9	33.8	35.2	31.0
Magnesium	7439-95-4	E440/VA	20	mg/kg		10900	11700	11700	11400	11600
Manganese	7439-96-5	E440/VA	1.0	mg/kg		689	717	776	828	992
Mercury	7439-97-6	E510/VA	0.0500	mg/kg		<0.0500	0.0506	<0.0500	<0.0500	<0.0500
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg		17.9	26.0	17.3	22.3	17.0
Nickel	7440-02-0	E440/VA	0.50	mg/kg		164	226	118	289	158
Phosphorus	7723-14-0	E440/VA	50	mg/kg		9420	10400	9880	9330	9620
Potassium	7440-09-7	E440/VA	100	mg/kg		6120	6780	6650	6370	6620
Selenium	7782-49-2	E440/VA	0.20	mg/kg		0.38	0.47	0.38	0.41	0.50
Silver	7440-22-4	E440/VA	0.10	mg/kg		3.90	5.26	4.34	5.51	5.03
Sodium	7440-23-5	E440/VA	50	mg/kg		15800	17600	17900	16800	16800
Strontium	7440-24-6	E440/VA	0.50	mg/kg		277	312	306	303	302
Sulfur	7704-34-9	E440/VA	1000	mg/kg		12300	14400	13400	13800	14600
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		90.9	128	110	119	119
Titanium	7440-32-6	E440/VA	1.0	mg/kg		347	307	521	328	402

Analytical Results

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

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	BA2443-A-6	BA2443-A-7	BA2443-A-8	BA2443-A-9	BA2443-A-10
					Client sampling date / time	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00
						VA24C9283-006	VA24C9283-007	VA24C9283-008	VA24C9283-009	VA24C9283-010
						Result	Result	Result	Result	Result
Metals										
Tungsten	7440-33-7	E440/VA	0.50	mg/kg		5.79	10.6	13.5	8.43	8.12
Uranium	7440-61-1	E440/VA	0.050	mg/kg		2.28	2.65	2.46	2.55	2.57
Vanadium	7440-62-2	E440/VA	0.20	mg/kg		47.4	43.2	40.4	41.4	43.8
Zinc	7440-66-6	E440/VA	2.0	mg/kg		3050	3730	3050	3630	3380
Zirconium	7440-67-7	E440/VA	1.0	mg/kg		3.8	4.1	3.8	3.4	4.6
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units		11.3	11.2	11.3	11.3	11.3
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units		7.46	7.41	8.00	7.68	6.45
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		6.98	6.73	6.75	6.85	6.69
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		2.20	2.24	2.21	2.24	2.42
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L		0.101	0.131	0.133	0.105	0.404
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L		1980	1990	2020	1920	2160
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		1.07	1.30	0.926	0.619	0.874
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L		0.977	1.06	1.00	1.06	1.04
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/Accreditation	LOR	Unit	Client sample ID	BA2443-A-6	BA2443-A-7	BA2443-A-8	BA2443-A-9	BA2443-A-10
					Client sampling date / time	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00	23-Oct-2024 09:00
						VA24C9283-006	VA24C9283-007	VA24C9283-008	VA24C9283-009	VA24C9283-010
						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		118	120	118	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		0.34	0.27	0.29	0.27	0.38
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		5.94	11.8	20.6	7.08	13.4
Zirconium, TCLP	7440-67-7	E444/VA	10	mg/L		<10	<10	<10	<10	<10

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

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

Analytical Results

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

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	BA2443-A-11	BA2443-A-12	----	----	----
					Client sampling date / time	23-Oct-2024 09:00	23-Oct-2024 09:00	----	----	----
						VA24C9283-011	VA24C9283-012	----	----	----
						Result	Result	----	----	----
Physical Tests										
Moisture	----	E144/VA	0.25	%		30.4	31.2	----	----	----
pH (1:2 soil:water)	----	E108/VA	0.10	pH units		10.1	10.2	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	BA2443-A-11	BA2443-A-12	----	----	----
					Client sampling date / time	23-Oct-2024 09:00	23-Oct-2024 09:00	----	----	----
						VA24C9283-011	VA24C9283-012	----	----	----
						Result	Result	----	----	----
Metals										
Aluminum	7429-90-5	E440/VA	50	mg/kg		33000	38900	----	----	----
Antimony	7440-36-0	E440/VA	0.10	mg/kg		129	116	----	----	----
Arsenic	7440-38-2	E440/VA	0.10	mg/kg		26.5	23.1	----	----	----
Barium	7440-39-3	E440/VA	0.50	mg/kg		330	525	----	----	----
Beryllium	7440-41-7	E440/VA	0.10	mg/kg		0.36	0.38	----	----	----
Bismuth	7440-69-9	E440/VA	0.20	mg/kg		9.55	40.8	----	----	----
Boron	7440-42-8	E440/VA	5.0	mg/kg		202	205	----	----	----
Cadmium	7440-43-9	E440/VA	0.020	mg/kg		15.0	20.3	----	----	----
Calcium	7440-70-2	E440/VA	50	mg/kg		144000	132000	----	----	----
Chromium	7440-47-3	E440/VA	0.50	mg/kg		159	126	----	----	----
Cobalt	7440-48-4	E440/VA	0.10	mg/kg		76.8	70.6	----	----	----
Copper	7440-50-8	E440/VA	0.50	mg/kg		1620	2340	----	----	----
Iron	7439-89-6	E440/VA	50	mg/kg		43500	45600	----	----	----
Lead	7439-92-1	E440/VA	0.50	mg/kg		387	325	----	----	----
Lithium	7439-93-2	E440/VA	2.0	mg/kg		29.6	33.1	----	----	----
Magnesium	7439-95-4	E440/VA	20	mg/kg		13100	11300	----	----	----
Manganese	7439-96-5	E440/VA	1.0	mg/kg		730	772	----	----	----
Mercury	7439-97-6	E510/VA	0.0500	mg/kg		<0.0500	<0.0500	----	----	----
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg		20.6	18.0	----	----	----
Nickel	7440-02-0	E440/VA	0.50	mg/kg		144	152	----	----	----
Phosphorus	7723-14-0	E440/VA	50	mg/kg		10200	9660	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	BA2443-A-11	BA2443-A-12	----	----	----
					Client sampling date / time	23-Oct-2024 09:00	23-Oct-2024 09:00	----	----	----
						VA24C9283-011	VA24C9283-012	----	----	----
						Result	Result	----	----	----
Metals										
Potassium	7440-09-7	E440/VA	100	mg/kg		6700	6550	----	----	----
Selenium	7782-49-2	E440/VA	0.20	mg/kg		0.45	0.41	----	----	----
Silver	7440-22-4	E440/VA	0.10	mg/kg		13.8	3.72	----	----	----
Sodium	7440-23-5	E440/VA	50	mg/kg		17700	16600	----	----	----
Strontium	7440-24-6	E440/VA	0.50	mg/kg		400	305	----	----	----
Sulfur	7704-34-9	E440/VA	1000	mg/kg		13800	13100	----	----	----
Thallium	7440-28-0	E440/VA	0.050	mg/kg		<0.050	<0.050	----	----	----
Tin	7440-31-5	E440/VA	2.0	mg/kg		338	108	----	----	----
Titanium	7440-32-6	E440/VA	1.0	mg/kg		277	370	----	----	----
Tungsten	7440-33-7	E440/VA	0.50	mg/kg		9.10	10.4	----	----	----
Uranium	7440-61-1	E440/VA	0.050	mg/kg		2.68	2.44	----	----	----
Vanadium	7440-62-2	E440/VA	0.20	mg/kg		47.5	42.5	----	----	----
Zinc	7440-66-6	E440/VA	2.0	mg/kg		4220	3330	----	----	----
Zirconium	7440-67-7	E440/VA	1.0	mg/kg		2.7	2.6	----	----	----
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units		11.3	11.3	----	----	----
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units		7.77	7.26	----	----	----
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units		2.86	2.86	----	----	----
pH, TCLP final	----	EPP444/VA	0.010	pH units		6.84	6.85	----	----	----
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/Accreditation	LOR	Unit	Client sample ID	BA2443-A-11	BA2443-A-12	----	----	----
					Client sampling date / time	23-Oct-2024 09:00	23-Oct-2024 09:00	----	----	----
						VA24C9283-011	VA24C9283-012	----	----	----
						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		2.35	2.39	----	----	----
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L		0.118	0.092	----	----	----
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L		2010	2070	----	----	----
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		0.796	0.783	----	----	----
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L		0.971	0.863	----	----	----
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	128	----	----	----
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		0.35	0.31	----	----	----
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		8.88	6.56	----	----	----
Zirconium, TCLP	7440-67-7	E444/VA	10	mg/L		<10	<10	----	----	----

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

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

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24C9283**	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	: 30-Oct-2024 12:05
PO	: 46693	Issue Date	: 08-Nov-2024 22:33
C-O-C number	: ----		
Sampler	: ----		
Site	: (includes 2:1 pH)		
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 BA2443-A-1	E510	23-Oct-2024	07-Nov-2024	28 days	15 days	✓	08-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2443-A-10	E510	23-Oct-2024	07-Nov-2024	28 days	15 days	✓	08-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2443-A-11	E510	23-Oct-2024	07-Nov-2024	28 days	15 days	✓	08-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2443-A-12	E510	23-Oct-2024	07-Nov-2024	28 days	15 days	✓	08-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2443-A-2	E510	23-Oct-2024	07-Nov-2024	28 days	15 days	✓	08-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2443-A-3	E510	23-Oct-2024	07-Nov-2024	28 days	15 days	✓	08-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2443-A-4	E510	23-Oct-2024	07-Nov-2024	28 days	15 days	✓	08-Nov-2024	28 days	1 days	✓

Matrix: **Soil/Solid**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2443-A-5	E510	23-Oct-2024	07-Nov-2024	28 days	15 days	✓	08-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2443-A-6	E510	23-Oct-2024	07-Nov-2024	28 days	15 days	✓	08-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2443-A-7	E510	23-Oct-2024	07-Nov-2024	28 days	15 days	✓	08-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2443-A-8	E510	23-Oct-2024	07-Nov-2024	28 days	15 days	✓	08-Nov-2024	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2443-A-9	E510	23-Oct-2024	07-Nov-2024	28 days	15 days	✓	08-Nov-2024	28 days	1 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2443-A-1	E440	23-Oct-2024	07-Nov-2024	180 days	15 days	✓	08-Nov-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2443-A-10	E440	23-Oct-2024	07-Nov-2024	180 days	15 days	✓	08-Nov-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2443-A-11	E440	23-Oct-2024	07-Nov-2024	180 days	15 days	✓	08-Nov-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2443-A-12	E440	23-Oct-2024	07-Nov-2024	180 days	15 days	✓	08-Nov-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 BA2443-A-2	E440	23-Oct-2024	07-Nov-2024	180 days	15 days	✓	08-Nov-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2443-A-3	E440	23-Oct-2024	07-Nov-2024	180 days	15 days	✓	08-Nov-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2443-A-4	E440	23-Oct-2024	07-Nov-2024	180 days	15 days	✓	08-Nov-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2443-A-5	E440	23-Oct-2024	07-Nov-2024	180 days	15 days	✓	08-Nov-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2443-A-6	E440	23-Oct-2024	07-Nov-2024	180 days	15 days	✓	08-Nov-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2443-A-7	E440	23-Oct-2024	07-Nov-2024	180 days	15 days	✓	08-Nov-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2443-A-8	E440	23-Oct-2024	07-Nov-2024	180 days	15 days	✓	08-Nov-2024	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2443-A-9	E440	23-Oct-2024	07-Nov-2024	180 days	15 days	✓	08-Nov-2024	180 days	16 days	✓
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2443-A-1	E144	23-Oct-2024	----	----	----		06-Nov-2024	----	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
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2443-A-10	E144	23-Oct-2024	----	----	----		06-Nov-2024	----	15 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2443-A-11	E144	23-Oct-2024	----	----	----		06-Nov-2024	----	15 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2443-A-12	E144	23-Oct-2024	----	----	----		06-Nov-2024	----	15 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2443-A-2	E144	23-Oct-2024	----	----	----		06-Nov-2024	----	15 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2443-A-3	E144	23-Oct-2024	----	----	----		06-Nov-2024	----	15 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2443-A-4	E144	23-Oct-2024	----	----	----		06-Nov-2024	----	15 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2443-A-5	E144	23-Oct-2024	----	----	----		06-Nov-2024	----	15 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2443-A-6	E144	23-Oct-2024	----	----	----		06-Nov-2024	----	15 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2443-A-7	E144	23-Oct-2024	----	----	----		06-Nov-2024	----	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
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2443-A-8	E144	23-Oct-2024	----	----	----		06-Nov-2024	----	15 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2443-A-9	E144	23-Oct-2024	----	----	----		06-Nov-2024	----	15 days	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2443-A-1	E108	23-Oct-2024	07-Nov-2024	30 days	15 days	✓	07-Nov-2024	30 days	15 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2443-A-10	E108	23-Oct-2024	07-Nov-2024	30 days	15 days	✓	07-Nov-2024	30 days	15 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2443-A-11	E108	23-Oct-2024	07-Nov-2024	30 days	15 days	✓	07-Nov-2024	30 days	15 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2443-A-12	E108	23-Oct-2024	07-Nov-2024	30 days	15 days	✓	07-Nov-2024	30 days	15 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2443-A-2	E108	23-Oct-2024	07-Nov-2024	30 days	15 days	✓	07-Nov-2024	30 days	15 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2443-A-3	E108	23-Oct-2024	07-Nov-2024	30 days	15 days	✓	07-Nov-2024	30 days	15 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2443-A-4	E108	23-Oct-2024	07-Nov-2024	30 days	15 days	✓	07-Nov-2024	30 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
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2443-A-5	E108	23-Oct-2024	07-Nov-2024	30 days	15 days	✓	07-Nov-2024	30 days	15 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2443-A-6	E108	23-Oct-2024	07-Nov-2024	30 days	15 days	✓	07-Nov-2024	30 days	15 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2443-A-7	E108	23-Oct-2024	07-Nov-2024	30 days	15 days	✓	07-Nov-2024	30 days	15 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2443-A-8	E108	23-Oct-2024	07-Nov-2024	30 days	15 days	✓	07-Nov-2024	30 days	15 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2443-A-9	E108	23-Oct-2024	07-Nov-2024	30 days	15 days	✓	07-Nov-2024	30 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2443-A-1	E512	06-Nov-2024	08-Nov-2024	42 days	16 days	✓	08-Nov-2024	42 days	16 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2443-A-10	E512	06-Nov-2024	08-Nov-2024	42 days	16 days	✓	08-Nov-2024	42 days	16 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2443-A-11	E512	06-Nov-2024	08-Nov-2024	42 days	16 days	✓	08-Nov-2024	42 days	16 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2443-A-12	E512	06-Nov-2024	08-Nov-2024	42 days	16 days	✓	08-Nov-2024	42 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*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2443-A-2	E512	06-Nov-2024	08-Nov-2024	42 days	16 days	✓	08-Nov-2024	42 days	16 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2443-A-3	E512	06-Nov-2024	08-Nov-2024	42 days	16 days	✓	08-Nov-2024	42 days	16 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2443-A-4	E512	06-Nov-2024	08-Nov-2024	42 days	16 days	✓	08-Nov-2024	42 days	16 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2443-A-5	E512	06-Nov-2024	08-Nov-2024	42 days	16 days	✓	08-Nov-2024	42 days	16 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2443-A-6	E512	06-Nov-2024	08-Nov-2024	42 days	16 days	✓	08-Nov-2024	42 days	16 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2443-A-7	E512	06-Nov-2024	08-Nov-2024	42 days	16 days	✓	08-Nov-2024	42 days	16 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2443-A-8	E512	06-Nov-2024	08-Nov-2024	42 days	16 days	✓	08-Nov-2024	42 days	16 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2443-A-9	E512	06-Nov-2024	08-Nov-2024	42 days	16 days	✓	08-Nov-2024	42 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2443-A-1	E444	06-Nov-2024	08-Nov-2024	194 days	16 days	✓	08-Nov-2024	194 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) BA2443-A-10	E444	06-Nov-2024	08-Nov-2024	194 days	16 days	✓	08-Nov-2024	194 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2443-A-11	E444	06-Nov-2024	08-Nov-2024	194 days	16 days	✓	08-Nov-2024	194 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2443-A-12	E444	06-Nov-2024	08-Nov-2024	194 days	16 days	✓	08-Nov-2024	194 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2443-A-2	E444	06-Nov-2024	08-Nov-2024	194 days	16 days	✓	08-Nov-2024	194 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2443-A-3	E444	06-Nov-2024	08-Nov-2024	194 days	16 days	✓	08-Nov-2024	194 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2443-A-4	E444	06-Nov-2024	08-Nov-2024	194 days	16 days	✓	08-Nov-2024	194 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2443-A-5	E444	06-Nov-2024	08-Nov-2024	194 days	16 days	✓	08-Nov-2024	194 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2443-A-6	E444	06-Nov-2024	08-Nov-2024	194 days	16 days	✓	08-Nov-2024	194 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2443-A-7	E444	06-Nov-2024	08-Nov-2024	194 days	16 days	✓	08-Nov-2024	194 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)										
BA2443-A-8	E444	06-Nov-2024	08-Nov-2024	194 days	16 days	✓	08-Nov-2024	194 days	16 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved)										
BA2443-A-9	E444	06-Nov-2024	08-Nov-2024	194 days	16 days	✓	08-Nov-2024	194 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)										
BA2443-A-1	EPP444	23-Oct-2024	06-Nov-2024	----	----		----	28 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)										
BA2443-A-10	EPP444	23-Oct-2024	06-Nov-2024	----	----		----	28 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)										
BA2443-A-11	EPP444	23-Oct-2024	06-Nov-2024	----	----		----	28 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)										
BA2443-A-12	EPP444	23-Oct-2024	06-Nov-2024	----	----		----	28 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)										
BA2443-A-2	EPP444	23-Oct-2024	06-Nov-2024	----	----		----	28 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)										
BA2443-A-3	EPP444	23-Oct-2024	06-Nov-2024	----	----		----	28 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)										
BA2443-A-4	EPP444	23-Oct-2024	06-Nov-2024	----	----		----	28 days	14 days	✓

Matrix: **Soil/Solid**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times 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)										
BA2443-A-5	EPP444	23-Oct-2024	06-Nov-2024	----	----		----	28 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)										
BA2443-A-6	EPP444	23-Oct-2024	06-Nov-2024	----	----		----	28 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)										
BA2443-A-7	EPP444	23-Oct-2024	06-Nov-2024	----	----		----	28 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)										
BA2443-A-8	EPP444	23-Oct-2024	06-Nov-2024	----	----		----	28 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)										
BA2443-A-9	EPP444	23-Oct-2024	06-Nov-2024	----	----		----	28 days	14 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Soil/Solid**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Mercury by CVAAS (TCLP)	E512	1757579	1	12	8.3	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	1754223	1	14	7.1	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	1757578	1	12	8.3	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	1754222	1	19	5.2	5.0	✓
Moisture Content by Gravimetry	E144	1754225	1	12	8.3	5.0	✓
pH by Meter (1:2 Soil:Water Extraction)	E108	1754224	1	15	6.6	5.0	✓
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	1754223	2	14	14.2	10.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	1754222	2	19	10.5	10.0	✓
Moisture Content by Gravimetry	E144	1754225	1	12	8.3	5.0	✓
pH by Meter (1:2 Soil:Water Extraction)	E108	1754224	1	15	6.6	5.0	✓
Method Blanks (MB)							
Mercury by CVAAS (TCLP)	E512	1757579	1	12	8.3	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	1754223	1	14	7.1	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	1757578	1	12	8.3	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	1754222	1	19	5.2	5.0	✓
Moisture Content by Gravimetry	E144	1754225	1	12	8.3	5.0	✓
Matrix Spikes (MS)							
Mercury by CVAAS (TCLP)	E512	1757579	1	12	8.3	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	1757578	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	: **VA24C9283**	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	: 30-Oct-2024 12:05
PO	: 46693	Date Analysis Commenced	: 06-Nov-2024
C-O-C number	: ----	Issue Date	: 08-Nov-2024 22:33
Sampler	: ----		
Site	: (includes 2:1 pH)		
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*
Ghazaleh Khanmirzaei	Analyst	Vancouver Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Vancouver Organics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	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: 1754224)											
VA24C8434-003	Anonymous	pH (1:2 soil:water)	----	E108	0.10	pH units	7.87	7.86	0.1%	5%	----
Physical Tests (QC Lot: 1754225)											
VA24C9283-001	BA2443-A-1	Moisture	----	E144	0.25	%	30.1	31.3	4.03%	20%	----
Metals (QC Lot: 1754222)											
VA24C8434-003	Anonymous	Aluminum	7429-90-5	E440	50	mg/kg	12500	12200	2.41%	40%	----
		Antimony	7440-36-0	E440	0.10	mg/kg	0.37	0.37	0.004	Diff <2x LOR	----
		Arsenic	7440-38-2	E440	0.10	mg/kg	2.49	2.59	3.92%	30%	----
		Barium	7440-39-3	E440	0.50	mg/kg	49.4	46.2	6.64%	40%	----
		Beryllium	7440-41-7	E440	0.10	mg/kg	0.35	0.35	0.0009	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	0.035	0.042	0.007	Diff <2x LOR	----
		Calcium	7440-70-2	E440	50	mg/kg	4540	4420	2.62%	30%	----
		Chromium	7440-47-3	E440	0.50	mg/kg	12.6	12.4	2.25%	30%	----
		Cobalt	7440-48-4	E440	0.10	mg/kg	6.72	6.82	1.60%	30%	----
		Copper	7440-50-8	E440	0.50	mg/kg	20.1	20.5	2.03%	30%	----
		Iron	7439-89-6	E440	50	mg/kg	17600	17200	2.59%	30%	----
		Lead	7439-92-1	E440	0.50	mg/kg	3.61	3.71	2.80%	40%	----
		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	11100	10900	1.69%	30%	----
		Manganese	7439-96-5	E440	1.0	mg/kg	124	123	0.780%	30%	----
		Molybdenum	7439-98-7	E440	0.10	mg/kg	0.43	0.43	0.007	Diff <2x LOR	----
		Nickel	7440-02-0	E440	0.50	mg/kg	10.9	10.8	0.975%	30%	----
		Phosphorus	7723-14-0	E440	50	mg/kg	297	328	31	Diff <2x LOR	----
		Potassium	7440-09-7	E440	100	mg/kg	340	320	30	Diff <2x LOR	----
		Selenium	7782-49-2	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		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	867	853	1.64%	40%	----
		Strontium	7440-24-6	E440	0.50	mg/kg	73.0	75.5	3.48%	40%	----
		Sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	0	Diff <2x LOR	----

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: 1754222) - continued											
VA24C8434-003	Anonymous	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	<2.0	<2.0	0	Diff <2x LOR	----
		Titanium	7440-32-6	E440	1.0	mg/kg	435	398	8.82%	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	0.756	0.729	3.58%	30%	----
		Vanadium	7440-62-2	E440	0.20	mg/kg	36.6	35.0	4.47%	30%	----
		Zinc	7440-66-6	E440	2.0	mg/kg	50.8	54.7	7.34%	30%	----
		Zirconium	7440-67-7	E440	1.0	mg/kg	32.1	33.5	4.30%	30%	----
Metals (QC Lot: 1754223)											
VA24C8434-003	Anonymous	Mercury	7439-97-6	E510	0.0500	mg/kg	<0.0500	<0.0500	0	Diff <2x LOR	----
TCLP Metals (QC Lot: 1757578)											
VA24C9283-001	BA2443-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	2.34	2.16	0.18	Diff <2x LOR	----
		Cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.121	0.121	0.0001	Diff <2x LOR	----
		Calcium, TCLP	7440-70-2	E444	10	mg/L	2060	2010	2.16%	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	0.830	0.820	1.24%	30%	----
		Copper, TCLP	7440-50-8	E444	0.050	mg/L	1.15	1.12	2.76%	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	130	128	1.03%	30%	----
		Nickel, TCLP	7440-02-0	E444	0.25	mg/L	0.37	0.36	0.008	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	20.2	20.1	0.694%	30%	----
		Zirconium, TCLP	7440-67-7	E444	10	mg/L	<10	<10	0	Diff <2x LOR	----
TCLP Metals (QC Lot: 1757579)											
VA24C9283-001	BA2443-A-1	Mercury, TCLP	7439-97-6	E512	0.0010	mg/L	<0.0010	<0.0010	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: 1754225)						
Moisture	----	E144	0.25	%	<0.25	----
Metals (QCLot: 1754222)						
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: 1754222) - 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: 1754223)						
Mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
TCLP Metals (QCLot: 1757578)						
Antimony, TCLP	7440-36-0	E444	0.1	mg/L	<0.10	----
Arsenic, TCLP	7440-38-2	E444	1	mg/L	<1.0	----
Barium, TCLP	7440-39-3	E444	2.5	mg/L	<2.5	----
Beryllium, TCLP	7440-41-7	E444	0.025	mg/L	<0.025	----
Boron, TCLP	7440-42-8	E444	0.5	mg/L	<0.50	----
Cadmium, TCLP	7440-43-9	E444	0.05	mg/L	<0.050	----
Calcium, TCLP	7440-70-2	E444	10	mg/L	<10	----
Chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	----
Cobalt, TCLP	7440-48-4	E444	0.05	mg/L	<0.050	----
Copper, TCLP	7440-50-8	E444	0.05	mg/L	<0.050	----
Iron, TCLP	7439-89-6	E444	5	mg/L	<5.0	----
Lead, TCLP	7439-92-1	E444	0.25	mg/L	<0.25	----
Magnesium, TCLP	7439-95-4	E444	2.5	mg/L	<2.5	----
Nickel, TCLP	7440-02-0	E444	0.25	mg/L	<0.25	----
Selenium, TCLP	7782-49-2	E444	0.1	mg/L	<0.10	----
Silver, TCLP	7440-22-4	E444	0.05	mg/L	<0.050	----
Thallium, TCLP	7440-28-0	E444	1	mg/L	<1.0	----
Uranium, TCLP	7440-61-1	E444	0.2	mg/L	<0.20	----
Vanadium, TCLP	7440-62-2	E444	0.15	mg/L	<0.15	----
Zinc, TCLP	7440-66-6	E444	0.5	mg/L	<0.50	----
Zirconium, TCLP	7440-67-7	E444	10	mg/L	<10	----
TCLP Metals (QCLot: 1757579)						
Mercury, TCLP	7439-97-6	E512	0.001	mg/L	<0.0010	----

Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **Soil/Solid**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1754224)									
pH (1:2 soil:water)	----	E108	----	pH units	6 pH units	100	95.0	105	----
Physical Tests (QCLot: 1754225)									
Moisture	----	E144	0.25	%	50 %	99.3	90.0	110	----
Metals (QCLot: 1754222)									
Aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	102	80.0	120	----
Antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	108	80.0	120	----
Arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	108	80.0	120	----
Barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	104	80.0	120	----
Beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	104	80.0	120	----
Bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	93.4	80.0	120	----
Boron	7440-42-8	E440	5	mg/kg	100 mg/kg	105	80.0	120	----
Cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	101	80.0	120	----
Calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	104	80.0	120	----
Chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	105	80.0	120	----
Cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	100	80.0	120	----
Copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	97.9	80.0	120	----
Iron	7439-89-6	E440	50	mg/kg	100 mg/kg	104	80.0	120	----
Lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	97.6	80.0	120	----
Lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	108	80.0	120	----
Magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	102	80.0	120	----
Manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	103	80.0	120	----
Molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	109	80.0	120	----
Nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	98.8	80.0	120	----
Phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	100	80.0	120	----
Potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	101	80.0	120	----
Selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	103	80.0	120	----
Silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	97.2	80.0	120	----
Sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	99.8	80.0	120	----
Strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	105	80.0	120	----
Sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	96.2	80.0	120	----
Thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	95.7	80.0	120	----
Tin	7440-31-5	E440	2	mg/kg	50 mg/kg	104	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: 1754222) - continued									
Titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	103	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	101	80.0	120	----
Vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	105	80.0	120	----
Zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	98.3	80.0	120	----
Zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	120	80.0	120	----
Metals (QCLot: 1754223)									
Mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	100	80.0	120	----

Matrix Spike (MS) Report

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

Sub-Matrix: **Soil/Solid**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
TCLP Metals (QCLot: 1757578)										
VA24C9283-001	BA2443-A-1	Antimony, TCLP	7440-36-0	E444	5.16 mg/L	5 mg/L	103	50.0	140	----
		Arsenic, TCLP	7440-38-2	E444	5.2 mg/L	5 mg/L	104	50.0	140	----
		Barium, TCLP	7440-39-3	E444	12.8 mg/L	12.5 mg/L	102	50.0	140	----
		Beryllium, TCLP	7440-41-7	E444	0.257 mg/L	0.25 mg/L	103	50.0	140	----
		Boron, TCLP	7440-42-8	E444	10.5 mg/L	10 mg/L	105	50.0	140	----
		Cadmium, TCLP	7440-43-9	E444	0.248 mg/L	0.25 mg/L	99.2	50.0	140	----
		Calcium, TCLP	7440-70-2	E444	ND mg/L	----	ND	50.0	140	----
		Chromium, TCLP	7440-47-3	E444	1.26 mg/L	1.25 mg/L	101	50.0	140	----
		Cobalt, TCLP	7440-48-4	E444	ND mg/L	----	ND	50.0	140	----
		Copper, TCLP	7440-50-8	E444	2.31 mg/L	2.5 mg/L	92.6	50.0	140	----
		Iron, TCLP	7439-89-6	E444	244 mg/L	250 mg/L	97.7	50.0	140	----
		Lead, TCLP	7439-92-1	E444	9.76 mg/L	10 mg/L	97.6	50.0	140	----
		Magnesium, TCLP	7439-95-4	E444	244 mg/L	250 mg/L	97.4	50.0	140	----
		Nickel, TCLP	7440-02-0	E444	2.37 mg/L	2.5 mg/L	94.9	50.0	140	----
		Selenium, TCLP	7782-49-2	E444	5.49 mg/L	5 mg/L	110	50.0	140	----
		Silver, TCLP	7440-22-4	E444	0.081 mg/L	0.1 mg/L	80.7	50.0	140	----
		Thallium, TCLP	7440-28-0	E444	4.9 mg/L	5 mg/L	97.7	50.0	140	----
		Uranium, TCLP	7440-61-1	E444	4.96 mg/L	5 mg/L	99.2	50.0	150	----
		Vanadium, TCLP	7440-62-2	E444	0.76 mg/L	0.75 mg/L	101	50.0	140	----
		Zinc, TCLP	7440-66-6	E444	ND mg/L	----	ND	50.0	140	----
		Zirconium, TCLP	7440-67-7	E444	0.8 mg/L	1 mg/L	85.9	50.0	150	----
TCLP Metals (QCLot: 1757579)										
VA24C9283-001	BA2443-A-1	Mercury, TCLP	7439-97-6	E512	0.0009 mg/L	0.001 mg/L	90.6	50.0	140	----

Reference Material (RM) Report

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

Sub-Matrix:

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Metals (QCLot: 1754222)									
QC-1754222-003	MRCA-21	Aluminum	7429-90-5	E440	22500 mg/kg	98.8	70.0	130	----
QC-1754222-003	MRCA-21	Antimony	7440-36-0	E440	24.8 mg/kg	98.2	70.0	130	----
QC-1754222-003	MRCA-21	Arsenic	7440-38-2	E440	21.2 mg/kg	95.9	70.0	130	----
QC-1754222-003	MRCA-21	Barium	7440-39-3	E440	788 mg/kg	96.2	70.0	130	----
QC-1754222-003	MRCA-21	Beryllium	7440-41-7	E440	1.82 mg/kg	103	70.0	130	----
QC-1754222-003	MRCA-21	Bismuth	7440-69-9	E440	1.78 mg/kg	82.4	70.0	130	----
QC-1754222-003	MRCA-21	Cadmium	7440-43-9	E440	2.15 mg/kg	98.9	70.0	130	----
QC-1754222-003	MRCA-21	Calcium	7440-70-2	E440	4900 mg/kg	102	70.0	130	----
QC-1754222-003	MRCA-21	Chromium	7440-47-3	E440	56.9 mg/kg	98.7	70.0	130	----
QC-1754222-003	MRCA-21	Cobalt	7440-48-4	E440	32 mg/kg	95.1	70.0	130	----
QC-1754222-003	MRCA-21	Copper	7440-50-8	E440	969 mg/kg	93.4	70.0	130	----
QC-1754222-003	MRCA-21	Iron	7439-89-6	E440	32700 mg/kg	95.7	70.0	130	----
QC-1754222-003	MRCA-21	Lead	7439-92-1	E440	919 mg/kg	89.6	70.0	130	----
QC-1754222-003	MRCA-21	Lithium	7439-93-2	E440	47.3 mg/kg	104	70.0	130	----
QC-1754222-003	MRCA-21	Magnesium	7439-95-4	E440	7780 mg/kg	97.1	70.0	130	----
QC-1754222-003	MRCA-21	Manganese	7439-96-5	E440	8640 mg/kg	95.6	70.0	130	----
QC-1754222-003	MRCA-21	Molybdenum	7439-98-7	E440	25.1 mg/kg	99.1	70.0	130	----
QC-1754222-003	MRCA-21	Nickel	7440-02-0	E440	1000 mg/kg	95.2	70.0	130	----
QC-1754222-003	MRCA-21	Phosphorus	7723-14-0	E440	660 mg/kg	98.4	70.0	130	----
QC-1754222-003	MRCA-21	Potassium	7440-09-7	E440	10800 mg/kg	95.9	70.0	130	----
QC-1754222-003	MRCA-21	Selenium	7782-49-2	E440	1.04 mg/kg	105	60.0	140	----
QC-1754222-003	MRCA-21	Silver	7440-22-4	E440	8.98 mg/kg	95.5	70.0	130	----
QC-1754222-003	MRCA-21	Sodium	7440-23-5	E440	1770 mg/kg	100	70.0	130	----
QC-1754222-003	MRCA-21	Strontium	7440-24-6	E440	41 mg/kg	98.1	70.0	130	----
QC-1754222-003	MRCA-21	Sulfur	7704-34-9	E440	3940 mg/kg	76.4	50.0	150	----
QC-1754222-003	MRCA-21	Thallium	7440-28-0	E440	0.907 mg/kg	93.2	70.0	130	----
QC-1754222-003	MRCA-21	Tin	7440-31-5	E440	3.79 mg/kg	100.0	40.0	160	----
QC-1754222-003	MRCA-21	Titanium	7440-32-6	E440	2790 mg/kg	99.4	70.0	130	----
QC-1754222-003	MRCA-21	Tungsten	7440-33-7	E440	6.99 mg/kg	109	70.0	130	----
QC-1754222-003	MRCA-21	Uranium	7440-61-1	E440	3.97 mg/kg	96.1	70.0	130	----
QC-1754222-003	MRCA-21	Vanadium	7440-62-2	E440	66.2 mg/kg	96.8	70.0	130	----
QC-1754222-003	MRCA-21	Zinc	7440-66-6	E440	828 mg/kg	93.4	70.0	130	----
QC-1754222-003	MRCA-21	Zirconium	7440-67-7	E440	6.91 mg/kg	117	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: 1754223)									
QC-1754223-003	MRCA-21	Mercury	7439-97-6	E510	0.068 mg/kg	94.4	70.0	130	----

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Report To				Report Format / Distribution				Service Requested (Rush for routine analysis subject to availability)
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	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)				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
	BA2443-A-1	23-Oct-24	9:00	Soil	X	X	X	X	1
	BA2443-A-2	23-Oct-24	9:00	Soil	X	X		X	1
	BA2443-A-3	23-Oct-24	9:00	Soil	X	X		X	1
	BA2443-A-4	23-Oct-24	9:00	Soil	X	X		X	1
	BA2443-A-5	23-Oct-24	9:00	Soil	X	X		X	1
	BA2443-A-6	23-Oct-24	9:00	Soil	X	X		X	1
	BA2443-A-7	23-Oct-24	9:00	Soil	X	X		X	1
	BA2443-A-8	23-Oct-24	9:00	Soil	X	X		X	1
	BA2443-A-9	23-Oct-24	9:00	Soil	X	X		X	1
	BA2443-A-10	23-Oct-24	9:00	Soil	X	X		X	1
	BA2443-A-11	23-Oct-24	9:00	Soil	X	X		X	1
	BA2443-A-12	23-Oct-24	9:00	Soil	X	X		X	1

Environmental Division
Vancouver
Work Order Reference
VA24C9283

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
	28-Oct-24	0820	JC	OCT 30 2024	1205	17 °C				

GENF 20.00 Front