Bottom Ash Data

2024 Week 30

The following analytical report represents bottom ash composite results for week 30 of 2024 (July 21, 2024 to July 27, 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	: **VA24B8976**	Page	: 1 of 11
Client	: **Reworld Renewable Burnaby, ULC**	Laboratory	: ALS Environmental - Vancouver
Contact	: Nicole Victor	Account Manager	: Ian Chen
Address	: 5150 Riverbend Drive Burnaby BC Canada V3N 4V3	Address	: 8081 Lougheed Highway Burnaby BC Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: ----	Date Samples Received	: 31-Jul-2024 13:10
PO	: Weekly Bottom Ash -Suite	Date Analysis Commenced	: 01-Aug-2024
C-O-C number	: ----	Issue Date	: 08-Aug-2024 14:58
Sampler	: ----		
Site	: (includes 2:1pH)		
Quote number	: Covanta Burnaby Standing Offer 2024		
No. of samples received	: 12		
No. of samples analysed	: 12		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
Ghazaleh Khanmirzaei	Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Maya Urquhart	Lab Analyst	Metals, Burnaby, British Columbia
Rebecca Sit	Supervisor - Organics Extractions	Organics, Burnaby, British Columbia

General Comments

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

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

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

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

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

Unit	*Description*
%	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	BA2430-A-1	BA2430-A-2	BA2430-A-3	BA2430-A-4	BA2430-A-5
					Client sampling date / time	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00
						VA24B8976-001	VA24B8976-002	VA24B8976-003	VA24B8976-004	VA24B8976-005
						Result	Result	Result	Result	Result
Physical Tests										
Moisture	----	E144/VA	0.25	%		19.8	18.4	19.3	19.6	18.9
pH (1:2 soil:water)	----	E108/VA	0.10	pH units		11.8	11.9	12.1	11.7	11.8
Metals										
Aluminum	7429-90-5	E440/VA	50	mg/kg		35600	35600	40100	45100	41800
Antimony	7440-36-0	E440/VA	0.10	mg/kg		156	111	108	125	116
Arsenic	7440-38-2	E440/VA	0.10	mg/kg		36.1	27.3	30.2	25.7	28.8
Barium	7440-39-3	E440/VA	0.50	mg/kg		545	520	555	549	580
Beryllium	7440-41-7	E440/VA	0.10	mg/kg		0.37	0.35	0.37	0.37	0.39
Bismuth	7440-69-9	E440/VA	0.20	mg/kg		12.7	8.99	8.24	8.99	317
Boron	7440-42-8	E440/VA	5.0	mg/kg		210	196	210	193	191
Cadmium	7440-43-9	E440/VA	0.020	mg/kg		10.5	7.63	21.7	7.46	8.40
Calcium	7440-70-2	E440/VA	50	mg/kg		151000	143000	131000	132000	138000
Chromium	7440-47-3	E440/VA	0.50	mg/kg		208	154	137	163	257
Cobalt	7440-48-4	E440/VA	0.10	mg/kg		68.5	64.3	90.5	295	91.3
Copper	7440-50-8	E440/VA	0.50	mg/kg		2430	3460	1280	5570	2040
Iron	7439-89-6	E440/VA	50	mg/kg		50500	48300	32200	46700	66200
Lead	7439-92-1	E440/VA	0.50	mg/kg		1000	316	563	311	1000
Lithium	7439-93-2	E440/VA	2.0	mg/kg		30.5	23.4	29.5	45.3	27.7
Magnesium	7439-95-4	E440/VA	20	mg/kg		13300	12100	11200	11100	11500
Manganese	7439-96-5	E440/VA	1.0	mg/kg		873	788	667	784	856
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		22.2	20.7	20.3	25.6	21.6
Nickel	7440-02-0	E440/VA	0.50	mg/kg		184	127	181	194	204
Phosphorus	7723-14-0	E440/VA	50	mg/kg		11400	10500	9880	10000	11700
Potassium	7440-09-7	E440/VA	100	mg/kg		7810	6610	7220	6180	6520
Selenium	7782-49-2	E440/VA	0.20	mg/kg		0.47	0.38	0.71	0.30	0.34
Silver	7440-22-4	E440/VA	0.10	mg/kg		8.96	8.53	5.95	5.28	7.12
Sodium	7440-23-5	E440/VA	50	mg/kg		19600	16300	18100	14800	16500
Strontium	7440-24-6	E440/VA	0.50	mg/kg		334	305	324	301	376
Sulfur	7704-34-9	E440/VA	1000	mg/kg		14600	12700	12200	12500	12700

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2430-A-1	BA2430-A-2	BA2430-A-3	BA2430-A-4	BA2430-A-5
					Client sampling date / time	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00
						VA24B8976-001	VA24B8976-002	VA24B8976-003	VA24B8976-004	VA24B8976-005
						Result	Result	Result	Result	Result
Metals										
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		375	106	90.0	92.9	315
Titanium	7440-32-6	E440/VA	1.0	mg/kg		206	240	307	312	247
Tungsten	7440-33-7	E440/VA	0.50	mg/kg		16.1	26.4	12.4	15.1	15.4
Uranium	7440-61-1	E440/VA	0.050	mg/kg		1.64	1.55	1.68	1.46	1.58
Vanadium	7440-62-2	E440/VA	0.20	mg/kg		43.7	35.4	38.1	37.4	38.7
Zinc	7440-66-6	E440/VA	2.0	mg/kg		4600	4040	4000	5160	3420
Zirconium	7440-67-7	E440/VA	1.0	mg/kg		2.4	2.6	2.4	3.3	2.9
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units		11.9	11.8	11.9	11.8	11.8
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units		8.41	6.25	7.19	7.21	7.22
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units		2.92	2.92	2.92	2.92	2.92
pH, TCLP final	----	EPP444/VA	0.010	pH units		7.48	7.61	7.76	7.36	7.56
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		1.92	1.96	1.90	1.92	1.93
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L		1730	1750	1740	1730	1720
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		0.114	0.117	0.120	0.289	0.118
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L		0.924	0.942	0.917	0.952	1.00
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		87.7	95.5	97.5	99.1	97.6
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	<0.25	<0.25	<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

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2430-A-1	BA2430-A-2	BA2430-A-3	BA2430-A-4	BA2430-A-5
					Client sampling date / time	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00
						VA24B8976-001	VA24B8976-002	VA24B8976-003	VA24B8976-004	VA24B8976-005
						Result	Result	Result	Result	Result
TCLP Metals										
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		<0.50	<0.50	<0.50	0.65	<0.50
Zirconium, TCLP	7440-67-7	E444/VA	10	mg/L		<10	<10	<10	<10	<10

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

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	LOR	Unit	Client sample ID	BA2430-A-6	BA2430-A-7	BA2430-A-8	BA2430-A-9	BA2430-A-10
					Client sampling date / time	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00
						VA24B8976-006	VA24B8976-007	VA24B8976-008	VA24B8976-009	VA24B8976-010
						Result	Result	Result	Result	Result
Physical Tests										
Moisture	----	E144/VA	0.25	%		18.2	18.5	19.1	19.9	19.3
pH (1:2 soil:water)	----	E108/VA	0.10	pH units		11.4	12.0	11.9	11.8	11.8
Metals										
Aluminum	7429-90-5	E440/VA	50	mg/kg		44400	33000	38400	41400	32900
Antimony	7440-36-0	E440/VA	0.10	mg/kg		105	116	102	130	118
Arsenic	7440-38-2	E440/VA	0.10	mg/kg		29.9	24.2	34.4	39.3	27.2
Barium	7440-39-3	E440/VA	0.50	mg/kg		605	605	591	601	521
Beryllium	7440-41-7	E440/VA	0.10	mg/kg		0.37	0.31	0.36	0.37	0.34
Bismuth	7440-69-9	E440/VA	0.20	mg/kg		8.98	6.62	10.2	9.08	11.5
Boron	7440-42-8	E440/VA	5.0	mg/kg		180	202	220	188	159
Cadmium	7440-43-9	E440/VA	0.020	mg/kg		29.7	6.27	8.30	9.67	55.4
Calcium	7440-70-2	E440/VA	50	mg/kg		130000	118000	134000	143000	140000
Chromium	7440-47-3	E440/VA	0.50	mg/kg		250	672	154	147	165
Cobalt	7440-48-4	E440/VA	0.10	mg/kg		154	33.5	46.9	70.1	100
Copper	7440-50-8	E440/VA	0.50	mg/kg		1740	1020	2240	2040	1220
Iron	7439-89-6	E440/VA	50	mg/kg		50700	56000	46000	34800	48100
Lead	7439-92-1	E440/VA	0.50	mg/kg		318	243	800	401	397
Lithium	7439-93-2	E440/VA	2.0	mg/kg		39.6	21.0	23.8	24.7	25.2
Magnesium	7439-95-4	E440/VA	20	mg/kg		11600	11100	12000	13200	12400
Manganese	7439-96-5	E440/VA	1.0	mg/kg		1050	644	802	1150	893
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		29.2	17.5	17.1	23.7	23.7
Nickel	7440-02-0	E440/VA	0.50	mg/kg		263	371	113	272	154
Phosphorus	7723-14-0	E440/VA	50	mg/kg		9740	11100	8940	10000	11800
Potassium	7440-09-7	E440/VA	100	mg/kg		6700	5440	6380	7070	6820
Selenium	7782-49-2	E440/VA	0.20	mg/kg		0.35	0.27	0.38	0.40	0.36
Silver	7440-22-4	E440/VA	0.10	mg/kg		4.99	5.29	5.29	12.0	10.4
Sodium	7440-23-5	E440/VA	50	mg/kg		16900	14400	16300	19000	16600
Strontium	7440-24-6	E440/VA	0.50	mg/kg		298	239	310	320	314
Sulfur	7704-34-9	E440/VA	1000	mg/kg		12600	10000	12700	13200	12800
Thallium	7440-28-0	E440/VA	0.050	mg/kg		<0.050	<0.050	<0.050	<0.050	<0.050

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2430-A-6	BA2430-A-7	BA2430-A-8	BA2430-A-9	BA2430-A-10
					Client sampling date / time	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00
						VA24B8976-006	VA24B8976-007	VA24B8976-008	VA24B8976-009	VA24B8976-010
						Result	Result	Result	Result	Result
Metals										
Tin	7440-31-5	E440/VA	2.0	mg/kg		96.6	82.8	130	131	106
Titanium	7440-32-6	E440/VA	1.0	mg/kg		284	216	248	542	273
Tungsten	7440-33-7	E440/VA	0.50	mg/kg		12.6	10.6	13.4	15.8	17.9
Uranium	7440-61-1	E440/VA	0.050	mg/kg		1.56	1.41	1.57	1.72	1.58
Vanadium	7440-62-2	E440/VA	0.20	mg/kg		37.5	36.7	39.5	38.1	46.9
Zinc	7440-66-6	E440/VA	2.0	mg/kg		3640	2720	3300	4450	3920
Zirconium	7440-67-7	E440/VA	1.0	mg/kg		3.0	2.0	2.9	2.2	2.2
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units		11.8	11.9	11.9	11.9	11.9
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units		7.89	7.01	7.76	8.27	7.84
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units		2.92	2.92	2.92	2.92	2.92
pH, TCLP final	----	EPP444/VA	0.010	pH units		7.19	7.76	7.93	7.77	7.69
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		1.89	1.96	1.93	1.93	1.96
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L		1720	1760	1760	1750	1780
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		0.332	0.198	0.122	0.111	0.243
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L		1.20	0.945	1.05	0.972	0.995
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		94.8	97.7	93.6	96.2	95.4
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	<0.25	<0.25	<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

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	BA2430-A-6	BA2430-A-7	BA2430-A-8	BA2430-A-9	BA2430-A-10
					Client sampling date / time	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00	24-Jul-2024 09:00
						VA24B8976-006	VA24B8976-007	VA24B8976-008	VA24B8976-009	VA24B8976-010
						Result	Result	Result	Result	Result
TCLP Metals										
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		1.33	<0.50	<0.50	<0.50	<0.50
Zirconium, TCLP	7440-67-7	E444/VA	10	mg/L		<10	<10	<10	<10	<10

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

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

Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)				Client sample ID	BA2430-A-11	BA2430-A-12	----	----	----
				Client sampling date / time	24-Jul-2024 09:00	24-Jul-2024 09:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24B8976-011	VA24B8976-012	--------	--------	--------
					Result	Result	----	----	----
Physical Tests									
Moisture	----	E144/VA	0.25	%	19.0	19.8	----	----	----
pH (1:2 soil:water)	----	E108/VA	0.10	pH units	11.8	12.1	----	----	----
Metals									
Aluminum	7429-90-5	E440/VA	50	mg/kg	38600	40700	----	----	----
Antimony	7440-36-0	E440/VA	0.10	mg/kg	109	111	----	----	----
Arsenic	7440-38-2	E440/VA	0.10	mg/kg	29.8	27.1	----	----	----
Barium	7440-39-3	E440/VA	0.50	mg/kg	584	544	----	----	----
Beryllium	7440-41-7	E440/VA	0.10	mg/kg	0.36	0.36	----	----	----
Bismuth	7440-69-9	E440/VA	0.20	mg/kg	8.98	7.55	----	----	----
Boron	7440-42-8	E440/VA	5.0	mg/kg	172	217	----	----	----
Cadmium	7440-43-9	E440/VA	0.020	mg/kg	6.88	10.9	----	----	----
Calcium	7440-70-2	E440/VA	50	mg/kg	130000	134000	----	----	----
Chromium	7440-47-3	E440/VA	0.50	mg/kg	133	214	----	----	----
Cobalt	7440-48-4	E440/VA	0.10	mg/kg	35.9	89.6	----	----	----
Copper	7440-50-8	E440/VA	0.50	mg/kg	1700	1170	----	----	----
Iron	7439-89-6	E440/VA	50	mg/kg	47900	32900	----	----	----
Lead	7439-92-1	E440/VA	0.50	mg/kg	342	304	----	----	----
Lithium	7439-93-2	E440/VA	2.0	mg/kg	21.9	24.3	----	----	----
Magnesium	7439-95-4	E440/VA	20	mg/kg	11200	11300	----	----	----
Manganese	7439-96-5	E440/VA	1.0	mg/kg	678	881	----	----	----
Mercury	7439-97-6	E510/VA	0.0500	mg/kg	<0.0500	<0.0500	----	----	----
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg	24.0	20.5	----	----	----
Nickel	7440-02-0	E440/VA	0.50	mg/kg	165	139	----	----	----
Phosphorus	7723-14-0	E440/VA	50	mg/kg	9610	9070	----	----	----
Potassium	7440-09-7	E440/VA	100	mg/kg	6490	6680	----	----	----
Selenium	7782-49-2	E440/VA	0.20	mg/kg	0.36	0.32	----	----	----
Silver	7440-22-4	E440/VA	0.10	mg/kg	6.36	5.61	----	----	----
Sodium	7440-23-5	E440/VA	50	mg/kg	16300	16200	----	----	----
Strontium	7440-24-6	E440/VA	0.50	mg/kg	288	295	----	----	----
Sulfur	7704-34-9	E440/VA	1000	mg/kg	11000	12200	----	----	----
Thallium	7440-28-0	E440/VA	0.050	mg/kg	<0.050	<0.050	----	----	----

Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BA2430-A-11	BA2430-A-12	----	----	----
					Client sampling date / time	24-Jul-2024 09:00	24-Jul-2024 09:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24B8976-011	VA24B8976-012	--------	--------	--------
						Result	Result	----	----	----
Metals										
Tin	7440-31-5	E440/VA	2.0	mg/kg		86.6	95.4	----	----	----
Titanium	7440-32-6	E440/VA	1.0	mg/kg		331	248	----	----	----
Tungsten	7440-33-7	E440/VA	0.50	mg/kg		15.7	14.0	----	----	----
Uranium	7440-61-1	E440/VA	0.050	mg/kg		1.60	1.58	----	----	----
Vanadium	7440-62-2	E440/VA	0.20	mg/kg		37.4	33.1	----	----	----
Zinc	7440-66-6	E440/VA	2.0	mg/kg		3240	4330	----	----	----
Zirconium	7440-67-7	E440/VA	1.0	mg/kg		2.4	3.4	----	----	----
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		7.68	7.98	----	----	----
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units		2.92	2.92	----	----	----
pH, TCLP final	----	EPP444/VA	0.010	pH units		7.79	7.70	----	----	----
Antimony, TCLP	7440-36-0	E444/VA	1.00	mg/L		<1.00	<1.00	----	----	----
Arsenic, TCLP	7440-38-2	E444/VA	1.0	mg/L		<1.0	<1.0	----	----	----
Barium, TCLP	7440-39-3	E444/VA	2.5	mg/L		<2.5	<2.5	----	----	----
Beryllium, TCLP	7440-41-7	E444/VA	0.025	mg/L		<0.025	<0.025	----	----	----
Boron, TCLP	7440-42-8	E444/VA	0.50	mg/L		1.94	2.00	----	----	----
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		1770	1750	----	----	----
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		0.202	0.180	----	----	----
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L		0.987	0.914	----	----	----
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		92.9	93.5	----	----	----
Mercury, TCLP	7439-97-6	E512/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Nickel, TCLP	7440-02-0	E444/VA	0.25	mg/L		<0.25	<0.25	----	----	----
Selenium, TCLP	7782-49-2	E444/VA	0.10	mg/L		<0.10	<0.10	----	----	----
Silver, TCLP	7440-22-4	E444/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Thallium, TCLP	7440-28-0	E444/VA	1.0	mg/L		<1.0	<1.0	----	----	----
Uranium, TCLP	7440-61-1	E444/VA	0.20	mg/L		<0.20	<0.20	----	----	----

Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BA2430-A-11	BA2430-A-12	----	----	----
					Client sampling date / time	24-Jul-2024 09:00	24-Jul-2024 09:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24B8976-011	VA24B8976-012	--------	--------	--------
						Result	Result	----	----	----
TCLP Metals										
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		<0.50	<0.50	----	----	----
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	: **VA24B8976**	Page	: 1 of 16
Client	: **Reworld Renewable Burnaby, ULC**	Laboratory	: ALS Environmental - Vancouver
Contact	: Nicole Victor	Account Manager	: Ian Chen
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	: ----	Date Samples Received	: 31-Jul-2024 13:10
PO	: Weekly Bottom Ash -Suite	Issue Date	: 08-Aug-2024 14:59
C-O-C number	: ----		
Sampler	: ----		
Site	: (includes 2:1pH)		
Quote number	: Covanta Burnaby Standing Offer 2024		
No. of samples received	: 12		
No. of samples analysed	: 12		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Soil/Solid**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Duplicate (DUP) RPDs								
Metals	VA24B8976-001	BA2430-A-1	Bismuth	7440-69-9	E440	37.3 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24B8976-001	BA2430-A-1	Copper	7440-50-8	E440	38.1 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24B8976-001	BA2430-A-1	Lead	7439-92-1	E440	75.0 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24B8976-001	BA2430-A-1	Nickel	7440-02-0	E440	83.3 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24B8976-001	BA2430-A-1	Tin	7440-31-5	E440	103 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.

Result Qualifiers

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

Analysis Holding Time Compliance

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

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

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

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

Matrix: **Soil/Solid**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2430-A-1	E510	24-Jul-2024	02-Aug-2024	28 days	9 days	✓	03-Aug-2024	28 days	10 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2430-A-10	E510	24-Jul-2024	02-Aug-2024	28 days	9 days	✓	03-Aug-2024	28 days	10 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2430-A-11	E510	24-Jul-2024	02-Aug-2024	28 days	9 days	✓	03-Aug-2024	28 days	10 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2430-A-12	E510	24-Jul-2024	02-Aug-2024	28 days	9 days	✓	03-Aug-2024	28 days	10 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2430-A-2	E510	24-Jul-2024	02-Aug-2024	28 days	9 days	✓	03-Aug-2024	28 days	10 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2430-A-3	E510	24-Jul-2024	02-Aug-2024	28 days	9 days	✓	03-Aug-2024	28 days	10 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2430-A-4	E510	24-Jul-2024	02-Aug-2024	28 days	9 days	✓	03-Aug-2024	28 days	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
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2430-A-5	E510	24-Jul-2024	02-Aug-2024	28 days	9 days	✓	03-Aug-2024	28 days	10 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2430-A-6	E510	24-Jul-2024	02-Aug-2024	28 days	9 days	✓	03-Aug-2024	28 days	10 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2430-A-7	E510	24-Jul-2024	02-Aug-2024	28 days	9 days	✓	03-Aug-2024	28 days	10 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2430-A-8	E510	24-Jul-2024	02-Aug-2024	28 days	9 days	✓	03-Aug-2024	28 days	10 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2430-A-9	E510	24-Jul-2024	02-Aug-2024	28 days	9 days	✓	03-Aug-2024	28 days	10 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2430-A-1	E440	24-Jul-2024	02-Aug-2024	180 days	9 days	✓	04-Aug-2024	180 days	11 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2430-A-10	E440	24-Jul-2024	02-Aug-2024	180 days	9 days	✓	04-Aug-2024	180 days	11 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2430-A-11	E440	24-Jul-2024	02-Aug-2024	180 days	9 days	✓	04-Aug-2024	180 days	11 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2430-A-12	E440	24-Jul-2024	02-Aug-2024	180 days	9 days	✓	04-Aug-2024	180 days	11 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 BA2430-A-2	E440	24-Jul-2024	02-Aug-2024	180 days	9 days	✓	04-Aug-2024	180 days	11 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2430-A-3	E440	24-Jul-2024	02-Aug-2024	180 days	9 days	✓	04-Aug-2024	180 days	11 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2430-A-4	E440	24-Jul-2024	02-Aug-2024	180 days	9 days	✓	04-Aug-2024	180 days	11 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2430-A-5	E440	24-Jul-2024	02-Aug-2024	180 days	9 days	✓	04-Aug-2024	180 days	11 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2430-A-6	E440	24-Jul-2024	02-Aug-2024	180 days	9 days	✓	04-Aug-2024	180 days	11 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2430-A-7	E440	24-Jul-2024	02-Aug-2024	180 days	9 days	✓	04-Aug-2024	180 days	11 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2430-A-8	E440	24-Jul-2024	02-Aug-2024	180 days	9 days	✓	04-Aug-2024	180 days	11 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2430-A-9	E440	24-Jul-2024	02-Aug-2024	180 days	9 days	✓	04-Aug-2024	180 days	11 days	✓
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2430-A-1	E144	24-Jul-2024	----	----	----		01-Aug-2024	----	8 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 BA2430-A-10	E144	24-Jul-2024	----	----	----		01-Aug-2024	----	8 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2430-A-11	E144	24-Jul-2024	----	----	----		01-Aug-2024	----	8 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2430-A-12	E144	24-Jul-2024	----	----	----		01-Aug-2024	----	8 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2430-A-2	E144	24-Jul-2024	----	----	----		01-Aug-2024	----	8 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2430-A-3	E144	24-Jul-2024	----	----	----		01-Aug-2024	----	8 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2430-A-4	E144	24-Jul-2024	----	----	----		01-Aug-2024	----	8 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2430-A-5	E144	24-Jul-2024	----	----	----		01-Aug-2024	----	8 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2430-A-6	E144	24-Jul-2024	----	----	----		01-Aug-2024	----	8 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2430-A-7	E144	24-Jul-2024	----	----	----		01-Aug-2024	----	8 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 BA2430-A-8	E144	24-Jul-2024	----	----	----		01-Aug-2024	----	8 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2430-A-9	E144	24-Jul-2024	----	----	----		01-Aug-2024	----	8 days	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2430-A-1	E108	24-Jul-2024	02-Aug-2024	30 days	9 days	✓	02-Aug-2024	30 days	9 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2430-A-10	E108	24-Jul-2024	02-Aug-2024	30 days	9 days	✓	02-Aug-2024	30 days	9 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2430-A-11	E108	24-Jul-2024	02-Aug-2024	30 days	9 days	✓	02-Aug-2024	30 days	9 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2430-A-12	E108	24-Jul-2024	02-Aug-2024	30 days	9 days	✓	02-Aug-2024	30 days	9 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2430-A-2	E108	24-Jul-2024	02-Aug-2024	30 days	9 days	✓	02-Aug-2024	30 days	9 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2430-A-3	E108	24-Jul-2024	02-Aug-2024	30 days	9 days	✓	02-Aug-2024	30 days	9 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2430-A-4	E108	24-Jul-2024	02-Aug-2024	30 days	9 days	✓	02-Aug-2024	30 days	9 days	✓

Matrix: **Soil/Solid**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2430-A-5	E108	24-Jul-2024	02-Aug-2024	30 days	9 days	✓	02-Aug-2024	30 days	9 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2430-A-6	E108	24-Jul-2024	02-Aug-2024	30 days	9 days	✓	02-Aug-2024	30 days	9 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2430-A-7	E108	24-Jul-2024	02-Aug-2024	30 days	9 days	✓	02-Aug-2024	30 days	9 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2430-A-8	E108	24-Jul-2024	02-Aug-2024	30 days	9 days	✓	02-Aug-2024	30 days	9 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2430-A-9	E108	24-Jul-2024	02-Aug-2024	30 days	9 days	✓	02-Aug-2024	30 days	9 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2430-A-1	E512	01-Aug-2024	08-Aug-2024	36 days	15 days	✓	08-Aug-2024	36 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2430-A-10	E512	01-Aug-2024	08-Aug-2024	36 days	15 days	✓	08-Aug-2024	36 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2430-A-11	E512	01-Aug-2024	08-Aug-2024	36 days	15 days	✓	08-Aug-2024	36 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2430-A-12	E512	01-Aug-2024	08-Aug-2024	36 days	15 days	✓	08-Aug-2024	36 days	15 days	✓

Matrix: **Soil/Solid**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2430-A-2	E512	01-Aug-2024	08-Aug-2024	36 days	15 days	✓	08-Aug-2024	36 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2430-A-3	E512	01-Aug-2024	08-Aug-2024	36 days	15 days	✓	08-Aug-2024	36 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2430-A-4	E512	01-Aug-2024	08-Aug-2024	36 days	15 days	✓	08-Aug-2024	36 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2430-A-5	E512	01-Aug-2024	08-Aug-2024	36 days	15 days	✓	08-Aug-2024	36 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2430-A-6	E512	01-Aug-2024	08-Aug-2024	36 days	15 days	✓	08-Aug-2024	36 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2430-A-7	E512	01-Aug-2024	08-Aug-2024	36 days	15 days	✓	08-Aug-2024	36 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2430-A-8	E512	01-Aug-2024	08-Aug-2024	36 days	15 days	✓	08-Aug-2024	36 days	15 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2430-A-9	E512	01-Aug-2024	08-Aug-2024	36 days	15 days	✓	08-Aug-2024	36 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2430-A-1	E444	01-Aug-2024	07-Aug-2024	188 days	14 days	✓	08-Aug-2024	188 days	15 days	✓

Matrix: **Soil/Solid**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2430-A-10	E444	01-Aug-2024	07-Aug-2024	188 days	14 days	✓	08-Aug-2024	188 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2430-A-11	E444	01-Aug-2024	07-Aug-2024	188 days	14 days	✓	08-Aug-2024	188 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2430-A-12	E444	01-Aug-2024	07-Aug-2024	188 days	14 days	✓	08-Aug-2024	188 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2430-A-2	E444	01-Aug-2024	07-Aug-2024	188 days	14 days	✓	08-Aug-2024	188 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2430-A-3	E444	01-Aug-2024	07-Aug-2024	188 days	14 days	✓	08-Aug-2024	188 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2430-A-4	E444	01-Aug-2024	07-Aug-2024	188 days	14 days	✓	08-Aug-2024	188 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2430-A-5	E444	01-Aug-2024	07-Aug-2024	188 days	14 days	✓	08-Aug-2024	188 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2430-A-6	E444	01-Aug-2024	07-Aug-2024	188 days	14 days	✓	08-Aug-2024	188 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2430-A-7	E444	01-Aug-2024	07-Aug-2024	188 days	14 days	✓	08-Aug-2024	188 days	15 days	✓

Matrix: **Soil/Solid**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved)										
BA2430-A-8	E444	01-Aug-2024	07-Aug-2024	188 days	14 days	✓	08-Aug-2024	188 days	15 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved)										
BA2430-A-9	E444	01-Aug-2024	07-Aug-2024	188 days	14 days	✓	08-Aug-2024	188 days	15 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS)										
BA2430-A-1	EPP444	24-Jul-2024	01-Aug-2024	----	----		----	28 days	8 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS)										
BA2430-A-10	EPP444	24-Jul-2024	01-Aug-2024	----	----		----	28 days	8 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS)										
BA2430-A-11	EPP444	24-Jul-2024	01-Aug-2024	----	----		----	28 days	8 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS)										
BA2430-A-12	EPP444	24-Jul-2024	01-Aug-2024	----	----		----	28 days	8 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS)										
BA2430-A-2	EPP444	24-Jul-2024	01-Aug-2024	----	----		----	28 days	8 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS)										
BA2430-A-3	EPP444	24-Jul-2024	01-Aug-2024	----	----		----	28 days	8 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS)										
BA2430-A-4	EPP444	24-Jul-2024	01-Aug-2024	----	----		----	28 days	8 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) BA2430-A-5	EPP444	24-Jul-2024	01-Aug-2024	----	----		----	28 days	8 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2430-A-6	EPP444	24-Jul-2024	01-Aug-2024	----	----		----	28 days	8 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2430-A-7	EPP444	24-Jul-2024	01-Aug-2024	----	----		----	28 days	8 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2430-A-8	EPP444	24-Jul-2024	01-Aug-2024	----	----		----	28 days	8 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2430-A-9	EPP444	24-Jul-2024	01-Aug-2024	----	----		----	28 days	8 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	1582860	1	12	8.3	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	1575315	1	12	8.3	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	1582861	1	12	8.3	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	1575316	1	12	8.3	5.0	✓
Moisture Content by Gravimetry	E144	1575319	1	12	8.3	5.0	✓
pH by Meter (1:2 Soil:Water Extraction)	E108	1575317	1	12	8.3	5.0	✓
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	1575315	2	12	16.6	10.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	1575316	2	12	16.6	10.0	✓
Moisture Content by Gravimetry	E144	1575319	1	12	8.3	5.0	✓
pH by Meter (1:2 Soil:Water Extraction)	E108	1575317	1	12	8.3	5.0	✓
Method Blanks (MB)							
Mercury by CVAAS (TCLP)	E512	1582860	1	12	8.3	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	1575315	1	12	8.3	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	1582861	1	12	8.3	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	1575316	1	12	8.3	5.0	✓
Moisture Content by Gravimetry	E144	1575319	1	12	8.3	5.0	✓
Matrix Spikes (MS)							
Mercury by CVAAS (TCLP)	E512	1582860	1	12	8.3	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	1582861	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	: **VA24B8976**	Page	: 1 of 12
Client	: Reworld Renewable Burnaby, ULC	Laboratory	: ALS Environmental - Vancouver
Contact	: Nicole Victor	Account Manager	: Ian Chen
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	: ----	Date Samples Received	: 31-Jul-2024 13:10
PO	: Weekly Bottom Ash -Suite	Date Analysis Commenced	: 01-Aug-2024
C-O-C number	: ----	Issue Date	: 08-Aug-2024 14:58
Sampler	: ----		
Site	: (includes 2:1pH)		
Quote number	: Covanta Burnaby Standing Offer 2024		
No. of samples received	: 12		
No. of samples analysed	: 12		

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
Ghazaleh Khanmirzaei	Analyst	Vancouver Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Maya Urquhart	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
Rebecca Sit	Supervisor - Organics Extractions	Vancouver Organics, Burnaby, British Columbia

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Soil/Solid**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1575317)											
VA24B8976-001	BA2430-A-1	pH (1:2 soil:water)	----	E108	0.10	pH units	11.8	12.0	1.8%	5%	----
Physical Tests (QC Lot: 1575319)											
VA24B8976-001	BA2430-A-1	Moisture	----	E144	0.25	%	19.8	19.6	0.805%	20%	----
Metals (QC Lot: 1575315)											
VA24B8976-001	BA2430-A-1	Mercury	7439-97-6	E510	0.0500	mg/kg	<0.0500	<0.0500	0	Diff <2x LOR	----
Metals (QC Lot: 1575316)											
VA24B8976-001	BA2430-A-1	Aluminum	7429-90-5	E440	50	mg/kg	35600	30000	17.2%	40%	----
		Antimony	7440-36-0	E440	0.10	mg/kg	156	116	29.5%	30%	----
		Arsenic	7440-38-2	E440	0.10	mg/kg	36.1	27.7	26.4%	30%	----
		Barium	7440-39-3	E440	0.50	mg/kg	545	532	2.48%	40%	----
		Beryllium	7440-41-7	E440	0.10	mg/kg	0.37	0.34	0.03	Diff <2x LOR	----
		Bismuth	7440-69-9	E440	0.20	mg/kg	12.7	8.71	37.3%	30%	DUP-H
		Boron	7440-42-8	E440	5.0	mg/kg	210	185	12.8%	30%	----
		Cadmium	7440-43-9	E440	0.020	mg/kg	10.5	8.64	19.1%	30%	----
		Calcium	7440-70-2	E440	50	mg/kg	151000	131000	14.0%	30%	----
		Chromium	7440-47-3	E440	0.50	mg/kg	208	175	17.5%	30%	----
		Cobalt	7440-48-4	E440	0.10	mg/kg	68.5	75.8	10.2%	30%	----
		Copper	7440-50-8	E440	0.50	mg/kg	2430	1650	38.1%	30%	DUP-H
		Iron	7439-89-6	E440	50	mg/kg	50500	49100	2.84%	30%	----
		Lead	7439-92-1	E440	0.50	mg/kg	1000	455	75.0%	40%	DUP-H
		Lithium	7439-93-2	E440	2.0	mg/kg	30.5	39.5	25.6%	30%	----
		Magnesium	7439-95-4	E440	20	mg/kg	13300	11900	11.0%	30%	----
		Manganese	7439-96-5	E440	1.0	mg/kg	873	804	8.27%	30%	----
		Molybdenum	7439-98-7	E440	0.10	mg/kg	22.2	21.0	5.31%	40%	----
		Nickel	7440-02-0	E440	0.50	mg/kg	184	446	83.3%	30%	DUP-H
		Phosphorus	7723-14-0	E440	50	mg/kg	11400	8800	25.4%	30%	----
		Potassium	7440-09-7	E440	100	mg/kg	7810	5990	26.3%	40%	----
		Selenium	7782-49-2	E440	0.20	mg/kg	0.47	0.36	0.11	Diff <2x LOR	----
		Silver	7440-22-4	E440	0.10	mg/kg	8.96	6.45	32.7%	40%	----
		Sodium	7440-23-5	E440	50	mg/kg	19600	14600	28.9%	40%	----

Sub-Matrix: **Soil/Solid**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Metals (QC Lot: 1575316) - continued											
VA24B8976-001	BA2430-A-1	Strontium	7440-24-6	E440	0.50	mg/kg	334	280	17.6%	40%	----
		Sulfur	7704-34-9	E440	1000	mg/kg	14600	12300	16.6%	30%	----
		Thallium	7440-28-0	E440	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Tin	7440-31-5	E440	2.0	mg/kg	375	120	103%	40%	DUP-H
		Titanium	7440-32-6	E440	1.0	mg/kg	206	168	20.4%	40%	----
		Tungsten	7440-33-7	E440	0.50	mg/kg	16.1	17.9	10.4%	30%	----
		Uranium	7440-61-1	E440	0.050	mg/kg	1.64	1.47	11.1%	30%	----
		Vanadium	7440-62-2	E440	0.20	mg/kg	43.7	35.5	20.7%	30%	----
		Zinc	7440-66-6	E440	2.0	mg/kg	4600	3780	19.4%	30%	----
		Zirconium	7440-67-7	E440	1.0	mg/kg	2.4	2.9	0.4	Diff <2x LOR	----
TCLP Metals (QC Lot: 1582860)											
VA24B8976-001	BA2430-A-1	Mercury, TCLP	7439-97-6	E512	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
TCLP Metals (QC Lot: 1582861)											
VA24B8976-001	BA2430-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	1.92	1.83	0.08	Diff <2x LOR	----
		Cadmium, TCLP	7440-43-9	E444	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Calcium, TCLP	7440-70-2	E444	10	mg/L	1730	1680	2.55%	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	0.114	0.112	0.002	Diff <2x LOR	----
		Copper, TCLP	7440-50-8	E444	0.050	mg/L	0.924	0.913	1.12%	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	87.7	89.1	1.59%	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	<0.50	<0.50	0	Diff <2x LOR	----
		Zirconium, TCLP	7440-67-7	E444	10	mg/L	<10	<10	0	Diff <2x LOR	----

Qualifiers

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

Method Blank (MB) Report

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

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1575319)						
Moisture	----	E144	0.25	%	<0.25	----
Metals (QCLot: 1575315)						
Mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 1575316)						
Aluminum	7429-90-5	E440	50	mg/kg	<50	----
Antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
Arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
Barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
Beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
Bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
Boron	7440-42-8	E440	5	mg/kg	<5.0	----
Cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
Calcium	7440-70-2	E440	50	mg/kg	<50	----
Chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
Cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
Copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
Iron	7439-89-6	E440	50	mg/kg	<50	----
Lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
Lithium	7439-93-2	E440	2	mg/kg	<2.0	----
Magnesium	7439-95-4	E440	20	mg/kg	<20	----
Manganese	7439-96-5	E440	1	mg/kg	<1.0	----
Molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
Nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
Phosphorus	7723-14-0	E440	50	mg/kg	<50	----
Potassium	7440-09-7	E440	100	mg/kg	<100	----
Selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
Silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
Sodium	7440-23-5	E440	50	mg/kg	<50	----
Strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
Sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
Thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
Tin	7440-31-5	E440	2	mg/kg	<2.0	----

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 1575316) - continued						
Titanium	7440-32-6	E440	1	mg/kg	<1.0	----
Tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
Uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
Vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
Zinc	7440-66-6	E440	2	mg/kg	<2.0	----
Zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
TCLP Metals (QCLot: 1582860)						
Mercury, TCLP	7439-97-6	E512	0.001	mg/L	<0.0010	----
TCLP Metals (QCLot: 1582861)						
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: 1575317)									
pH (1:2 soil:water)	----	E108	----	pH units	6 pH units	100	95.0	105	----
Physical Tests (QCLot: 1575319)									
Moisture	----	E144	0.25	%	50 %	100	90.0	110	----
Metals (QCLot: 1575315)									
Mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	96.4	80.0	120	----
Metals (QCLot: 1575316)									
Aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	106	80.0	120	----
Antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	101	80.0	120	----
Arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	109	80.0	120	----
Barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	108	80.0	120	----
Beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	94.8	80.0	120	----
Bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	95.6	80.0	120	----
Boron	7440-42-8	E440	5	mg/kg	100 mg/kg	86.4	80.0	120	----
Cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	103	80.0	120	----
Calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	96.6	80.0	120	----
Chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	106	80.0	120	----
Cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	104	80.0	120	----
Copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	104	80.0	120	----
Iron	7439-89-6	E440	50	mg/kg	100 mg/kg	99.5	80.0	120	----
Lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	101	80.0	120	----
Lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	95.3	80.0	120	----
Magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	105	80.0	120	----
Manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	106	80.0	120	----
Molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	104	80.0	120	----
Nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	104	80.0	120	----
Phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	113	80.0	120	----
Potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	113	80.0	120	----
Selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	98.8	80.0	120	----
Silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	93.2	80.0	120	----
Sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	107	80.0	120	----
Strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	111	80.0	120	----
Sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	102	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: 1575316) - continued									
Thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	99.2	80.0	120	----
Tin	7440-31-5	E440	2	mg/kg	50 mg/kg	101	80.0	120	----
Titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	104	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	104	80.0	120	----
Vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	108	80.0	120	----
Zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	106	80.0	120	----
Zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	107	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: 1582860)										
VA24B8976-001	BA2430-A-1	Mercury, TCLP	7439-97-6	E512	0.0009 mg/L	0.001 mg/L	94.9	50.0	140	----
TCLP Metals (QCLot: 1582861)										
VA24B8976-001	BA2430-A-1	Antimony, TCLP	7440-36-0	E444	5.02 mg/L	5 mg/L	100	50.0	140	----
		Arsenic, TCLP	7440-38-2	E444	5.1 mg/L	5 mg/L	103	50.0	140	----
		Barium, TCLP	7440-39-3	E444	13.5 mg/L	12.5 mg/L	108	50.0	140	----
		Beryllium, TCLP	7440-41-7	E444	0.253 mg/L	0.25 mg/L	101	50.0	140	----
		Boron, TCLP	7440-42-8	E444	9.36 mg/L	10 mg/L	93.6	50.0	140	----
		Cadmium, TCLP	7440-43-9	E444	0.256 mg/L	0.25 mg/L	102	50.0	140	----
		Calcium, TCLP	7440-70-2	E444	ND mg/L	----	ND	50.0	140	----
		Chromium, TCLP	7440-47-3	E444	1.25 mg/L	1.25 mg/L	99.9	50.0	140	----
		Cobalt, TCLP	7440-48-4	E444	0.242 mg/L	0.25 mg/L	96.9	50.0	140	----
		Copper, TCLP	7440-50-8	E444	2.30 mg/L	2.5 mg/L	91.8	50.0	140	----
		Iron, TCLP	7439-89-6	E444	240 mg/L	250 mg/L	96.1	50.0	140	----
		Lead, TCLP	7439-92-1	E444	9.70 mg/L	10 mg/L	97.0	50.0	140	----
		Magnesium, TCLP	7439-95-4	E444	250 mg/L	250 mg/L	99.9	50.0	140	----
		Nickel, TCLP	7440-02-0	E444	2.42 mg/L	2.5 mg/L	96.6	50.0	140	----
		Selenium, TCLP	7782-49-2	E444	5.18 mg/L	5 mg/L	104	50.0	140	----
		Silver, TCLP	7440-22-4	E444	0.084 mg/L	0.1 mg/L	83.9	50.0	140	----
		Thallium, TCLP	7440-28-0	E444	5.0 mg/L	5 mg/L	99.1	50.0	140	----
		Uranium, TCLP	7440-61-1	E444	5.09 mg/L	5 mg/L	102	50.0	150	----
		Vanadium, TCLP	7440-62-2	E444	0.75 mg/L	0.75 mg/L	100	50.0	140	----
		Zinc, TCLP	7440-66-6	E444	9.35 mg/L	10 mg/L	93.5	50.0	140	----
		Zirconium, TCLP	7440-67-7	E444	0.9 mg/L	1 mg/L	93.5	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: 1575315)									
QC-1575315-003	MRCA-21	Mercury	7439-97-6	E510	0.068 mg/kg	95.3	70.0	130	----
Metals (QCLot: 1575316)									
QC-1575316-003	MRCA-21	Aluminum	7429-90-5	E440	22500 mg/kg	110	70.0	130	----
QC-1575316-003	MRCA-21	Antimony	7440-36-0	E440	24.8 mg/kg	106	70.0	130	----
QC-1575316-003	MRCA-21	Arsenic	7440-38-2	E440	21.2 mg/kg	105	70.0	130	----
QC-1575316-003	MRCA-21	Barium	7440-39-3	E440	788 mg/kg	107	70.0	130	----
QC-1575316-003	MRCA-21	Beryllium	7440-41-7	E440	1.82 mg/kg	107	70.0	130	----
QC-1575316-003	MRCA-21	Bismuth	7440-69-9	E440	1.78 mg/kg	101	70.0	130	----
QC-1575316-003	MRCA-21	Cadmium	7440-43-9	E440	2.15 mg/kg	104	70.0	130	----
QC-1575316-003	MRCA-21	Calcium	7440-70-2	E440	4900 mg/kg	103	70.0	130	----
QC-1575316-003	MRCA-21	Chromium	7440-47-3	E440	56.9 mg/kg	107	70.0	130	----
QC-1575316-003	MRCA-21	Cobalt	7440-48-4	E440	32 mg/kg	103	70.0	130	----
QC-1575316-003	MRCA-21	Copper	7440-50-8	E440	969 mg/kg	104	70.0	130	----
QC-1575316-003	MRCA-21	Iron	7439-89-6	E440	32700 mg/kg	105	70.0	130	----
QC-1575316-003	MRCA-21	Lead	7439-92-1	E440	919 mg/kg	100.0	70.0	130	----
QC-1575316-003	MRCA-21	Lithium	7439-93-2	E440	47.3 mg/kg	108	70.0	130	----
QC-1575316-003	MRCA-21	Magnesium	7439-95-4	E440	7780 mg/kg	105	70.0	130	----
QC-1575316-003	MRCA-21	Manganese	7439-96-5	E440	8640 mg/kg	105	70.0	130	----
QC-1575316-003	MRCA-21	Molybdenum	7439-98-7	E440	25.1 mg/kg	100.0	70.0	130	----
QC-1575316-003	MRCA-21	Nickel	7440-02-0	E440	1000 mg/kg	105	70.0	130	----
QC-1575316-003	MRCA-21	Phosphorus	7723-14-0	E440	660 mg/kg	108	70.0	130	----
QC-1575316-003	MRCA-21	Potassium	7440-09-7	E440	10800 mg/kg	110	70.0	130	----
QC-1575316-003	MRCA-21	Selenium	7782-49-2	E440	1.04 mg/kg	117	60.0	140	----
QC-1575316-003	MRCA-21	Silver	7440-22-4	E440	8.98 mg/kg	103	70.0	130	----
QC-1575316-003	MRCA-21	Sodium	7440-23-5	E440	1770 mg/kg	109	70.0	130	----
QC-1575316-003	MRCA-21	Strontium	7440-24-6	E440	41 mg/kg	106	70.0	130	----
QC-1575316-003	MRCA-21	Sulfur	7704-34-9	E440	3940 mg/kg	102	50.0	150	----
QC-1575316-003	MRCA-21	Thallium	7440-28-0	E440	0.907 mg/kg	104	70.0	130	----
QC-1575316-003	MRCA-21	Tin	7440-31-5	E440	3.79 mg/kg	102	40.0	160	----
QC-1575316-003	MRCA-21	Titanium	7440-32-6	E440	2790 mg/kg	106	70.0	130	----
QC-1575316-003	MRCA-21	Tungsten	7440-33-7	E440	6.99 mg/kg	120	70.0	130	----
QC-1575316-003	MRCA-21	Uranium	7440-61-1	E440	3.97 mg/kg	102	70.0	130	----
QC-1575316-003	MRCA-21	Vanadium	7440-62-2	E440	66.2 mg/kg	106	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: 1575316) - continued									
QC-1575316-003	MRCA-21	Zinc	7440-66-6	E440	828 mg/kg	104	70.0	130	----
QC-1575316-003	MRCA-21	Zirconium	7440-67-7	E440	6.91 mg/kg	121	70.0	130	----

ALS Environmental

Chain of Custody / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

COC # _____ Page ___ of ___

Report To			
Company:	Covanta Energy		
Contact:	Nicole Victor / Dan Skrypnyk		
Address:	5150 Riverbend Drive		
	Burnaby BC		
Phone:	604-521-1025	Fax:	☐ Yes ☐ No

Invoice To	Same as Report ?		
Hardcopy of Invoice with Report?	☐ Yes	☐ No	
Company:			
Contact:			
Address:			
Phone:		Fax:	

Lab Work Order # (lab use only): _____

Report Format / Distribution				
☐ Standard	☐ Other			
☑ PDF	☐ Excel	☐ Digital	☐ Fax	
Email 1:	nvictor@covanta.com			
Email 2:	ofetherstonhaugh@covanta.com			
Email 3:	dskrypnyk@covanta.com			
	brent.kirkpatrick@metrovancouver.org			
	Sarah.Wellman@metrovancouver.org			

Client / Project Information	
Job #:	
PO / AFE:	PO# ~~46093~~ Weekly Bottom Ash - Suite
LSD:	(includes 2:1 pH)
Quote #:	

ALS Contact: _____ Sampler: _____

Service Requested (Rush for routine analysis subject to availability)

- (●) Regular (Standard Turnaround Times - Business Days)
- ( ) Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT
- ( ) Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT
- ( ) Same Day or Weekend Emergency - Contact ALS to Confirm TAT

Analysis Request

Please indicate below Filtered, Preserved or both (F, P, F/P)

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
	BA2430-A-1	24-Jul-24	9:00	Soil	X	X		X	1
	BA2430-A-2	24-Jul-24	9:00	Soil	X	X		X	1
	BA2430-A-3	24-Jul-24	9:00	Soil	X	X		X	1
	BA2430-A-4	24-Jul-24	9:00	Soil	X	X		X	1
	BA2430-A-5	24-Jul-24	9:00	Soil	X	X		X	1
	BA2430-A-6	24-Jul-24	9:00	Soil	X	X		X	1
	BA2430-A-7	24-Jul-24	9:00	Soil	X	X		X	1
	BA2430-A-8	24-Jul-24	9:00	Soil	X	X		X	1
	BA2430-A-9	24-Jul-24	9:00	Soil	X	X		X	1
	BA2430-A-10	24-Jul-24	9:00	Soil	X	X		X	1
	BA2430-A-11	24-Jul-24	9:00	Soil	X	X		X	1
	BA2430-A-12	24-Jul-24	9:00	Soil	X	X		X	1

Environmental Division
Vancouver
Work Order Reference
VA24B8976

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
[signature]	31-Jul-24	0700	JC	31-7-24	13:10	22.21 °C				