

# Appendix A Point of Discharge from Water Treatment System Documentation

No discharge from the water treatment plant, nothing to report

## Appendix B Receiving Environment Documentation

## Receiving Environment Sample Analysis









Reviewed and signed by:

LAB ID: M... Date Sampled: ...

Upstream: ... Downstream: ...

BIOW FAL - Short Term, BIOW FAL - Long Term, BIOW MAL - Short Term, BIOW MAL - Long Term

Main data table with columns for Analyte, Units, and various guideline values (e.g., 6.5.0, 7.0.4.7, 4.70, 4.80).

Applied Guidelines: British Columbia Approved and Working Water Quality Guidelines (NOV 2021) - SCAWWQG - Freshwater Aquatic Life

Color Key: ...

Color Key: ...

Color Key: ...

SCAWWQG 2021 - BC Water Quality Guidelines for the Protection of Aquatic Life, Wildlife & Agriculture - Accessed From: ...

Note: These long-term guidelines apply to averaged data as collected for rivers, streams, and creeks. They are not intended to be used for...

Note: These long-term guidelines apply to averaged data as collected for rivers, streams, and creeks. They are not intended to be used for...





# Receiving Environment Lab Documentation



## CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

<p><b>Work Order</b> : <b>VA23C6077</b></p> <p><b>Client</b> : <b>Triton Environmental Consultants Ltd.</b></p> <p><b>Contact</b></p> <p><b>Address</b> : Suite 650, 1040 West Georgia St Vancouver BC Canada V6E 4H1</p> <p><b>Telephone</b></p> <p><b>Project</b> : ----</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : 20-1070612</p> <p><b>Sampler</b> : ----</p> <p><b>Site</b> : Water Analysis</p> <p><b>Quote number</b> : VA23-TRIT100-012</p> <p><b>No. of samples received</b> : 2</p> <p><b>No. of samples analysed</b> : 2</p>	<p><b>Page</b> : 1 of 14</p> <p><b>Laboratory</b> : ALS Environmental - Vancouver</p> <p><b>Account Manager</b> :</p> <p><b>Address</b> : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p><b>Telephone</b> :</p> <p><b>Date Samples Received</b> : 30-Oct-2023 13:50</p> <p><b>Date Analysis Commenced</b> : 31-Oct-2023</p> <p><b>Issue Date</b> : 14-Nov-2023 11:27</p>
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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
- Guideline Comparison

**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.

<u>Signatories</u>	<u>Position</u>	<u>Laboratory Department</u>
Anshim Anshim	Lab Assistant	Metals, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kate Dimitrova	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Administration, Burnaby, British Columbia



### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
SQU DS1	Water	Phosphorus, total		BCAWWQG	SDW AO	0.0295 mg/L	0.01 mg/L
	Water	Phosphorus, total		BCAWWQG	SDW AO	<0.050	0.01 mg/L
	Water	Aluminum, total	Guideline limit based on $WQG = \{ [0.645 \ln(\text{DOC}) + 2.255 \ln(\text{DOC})] + [1.995 \text{DOC}] + [-0.284 \ln(\text{DOC}) - 9.898] / 3$ and Hardness = 10, pH = 6 and DOC = 0.08	BCAWWQG	FAL-LT	0.164 mg/L	0.00185 mg/L
	Water	Calcium, dissolved	Sensitivity to acid inputs can be determined by the concentration of dissolved calcium: < 4 mg/L is High; 4-8 mg/L is Moderate; >8 mg/L is Low.	BCAWWQG	FAL-LT	6.81 mg/L	8 mg/L
	Water	Copper, dissolved	0.2 ug/L is considered to be the lowest concentration routinely measured. Refer to <a href="https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/copper/bc_blm_users_manual.pdf">https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/copper/bc_blm_users_manual.pdf</a> for calculation of site specific WQG.	BCAWWQG	FAL-LT	0.00052 mg/L	0.0002 mg/L
	Water	Mercury, total		BCAWWQG	W-LT	<0.0000050	0 mg/L
	Water	Mercury, dissolved		BCAWWQG	W-LT	<0.0000050	0 mg/L
SQU US1	Water	Phosphorus, total		BCAWWQG	SDW AO	0.0522 mg/L	0.01 mg/L
	Water	Phosphorus, total		BCAWWQG	SDW AO	0.068 mg/L	0.01 mg/L
	Water	Ammonia, total (as N)	WQG based on pH=9.0 and T=20 oC	BCAWWQG	FAL-LT	0.215 mg/L	0.102 mg/L
	Water	Aluminum, total	Guideline limit based on $WQG = \{ [0.645 \ln(\text{DOC}) + 2.255 \ln(\text{DOC})] + [1.995 \text{DOC}] + [-0.284 \ln(\text{DOC}) - 9.898] / 3$ and Hardness = 10, pH = 6 and DOC = 0.08	BCAWWQG	FAL-LT	0.121 mg/L	0.00185 mg/L
	Water	Calcium, dissolved	Sensitivity to acid inputs can be determined by the concentration of dissolved calcium: < 4 mg/L is High; 4-8 mg/L is Moderate; >8 mg/L is Low.	BCAWWQG	FAL-LT	7.03 mg/L	8 mg/L
	Water	Copper, dissolved	0.2 ug/L is considered to be the lowest concentration routinely measured. Refer to <a href="https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/copper/bc_blm_users_manual.pdf">https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/copper/bc_blm_users_manual.pdf</a> for calculation of site specific WQG.	BCAWWQG	FAL-LT	0.00053 mg/L	0.0002 mg/L
	Water	Ammonia, total (as N)	WQG based on pH=9, T=25°C and Salinity=10 g/kg	BCAWWQG	MAL-LT	0.215 mg/L	0.1 mg/L
	Water	Mercury, total		BCAWWQG	W-LT	<0.0000050	0 mg/L
	Water	Mercury, dissolved		BCAWWQG	W-LT	<0.0000050	0 mg/L



## 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.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key : LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
°C	degrees celsius
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
pH units	pH units

>: greater than.

<: less than.

Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).

For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit.

## Sample Comments

Sample	Client Id	Comment
VA23C6077-001	SQU DS1	Water samples for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.
VA23C6077-002	SQU US1	Water sample for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. Water samples for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.



## Analytical Results Evaluation

				Client sample ID	SQU DS1	SQU US1	----	----	----	----	----
Matrix: Water				Sampling date/time	30-Oct-2023 10:10	30-Oct-2023 10:45	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C6077-001	VA23C6077-002	-----	-----	-----	-----	-----	-----
<b>Field Tests</b>											
Conductivity, field	----	EF001/VA	µS/cm	74.700	74.200	----	----	----	----	----	----
pH, field	----	EF001/VA	pH units	7.54	7.68	----	----	----	----	----	----
Temperature, field	----	EF001/VA	°C	3.20	3.50	----	----	----	----	----	----
<b>Physical Tests</b>											
Hardness (as CaCO <sub>3</sub> ), dissolved	----	EC100/VA	mg/L	20.5	21.4	----	----	----	----	----	----
Hardness (as CaCO <sub>3</sub> ), from total Ca/Mg	----	EC100A/VA	mg/L	22.7	21.7	----	----	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	mg/L	49	48	----	----	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	mg/L	<3.0	3.8	----	----	----	----	----	----
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	7664-41-7	E298/VA	mg/L	0.0929	0.215	----	----	----	----	----	----
Ammonia, un-ionized (as N), field	7664-41-7	EC298A/VA	mg/L	<0.0010	0.0011	----	----	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	mg/L	0.142	0.268	----	----	----	----	----	----
Nitrogen, total	7727-37-9	E366/VA	mg/L	0.221	0.418	----	----	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	mg/L	0.0295	0.0522	----	----	----	----	----	----
<b>Organic / Inorganic Carbon</b>											
Carbon, total organic [TOC]	----	E355-L/VA	mg/L	0.91	1.22	----	----	----	----	----	----
<b>Total Sulfides</b>											
Sulfide, total (as S)	18496-25-8	E395/VA	mg/L	<0.0015	----	----	----	----	----	----	----
Sulfide, un-ionized (as H <sub>2</sub> S), from total	7783-06-4	EC395/VA	mg/L	<0.0015	----	----	----	----	----	----	----
Sulfide, total (as H <sub>2</sub> S)	7783-06-4	E395/VA	mg/L	<0.0016	----	----	----	----	----	----	----
<b>Total Metals</b>											
Aluminum, total	7429-90-5	E420/VA	mg/L	0.164	0.121	----	----	----	----	----	----
Antimony, total	7440-36-0	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Arsenic, total	7440-38-2	E420/VA	mg/L	0.00019	0.00020	----	----	----	----	----	----
Barium, total	7440-39-3	E420/VA	mg/L	0.0122	0.0106	----	----	----	----	----	----
Beryllium, total	7440-41-7	E420/VA	mg/L	<0.000100	<0.000100	----	----	----	----	----	----
Bismuth, total	7440-69-9	E420/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----



## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU DS1	SQU US1	----	----	----	----	----
				Sampling date/time	30-Oct-2023 10:10	30-Oct-2023 10:45	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C6077-001	VA23C6077-002	-----	-----	-----	-----	-----	-----
<b>Total Metals</b>											
<b>Boron, total</b>	7440-42-8	E420/VA	mg/L	0.013	0.014	----	----	----	----	----	----
<b>Cadmium, total</b>	7440-43-9	E420/VA	mg/L	0.000086	0.000061	----	----	----	----	----	----
<b>Calcium, total</b>	7440-70-2	E420/VA	mg/L	7.54	7.08	----	----	----	----	----	----
<b>Cesium, total</b>	7440-46-2	E420/VA	mg/L	0.000028	0.000028	----	----	----	----	----	----
<b>Chromium, total</b>	7440-47-3	E420/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
<b>Cobalt, total</b>	7440-48-4	E420/VA	mg/L	0.00015	0.00012	----	----	----	----	----	----
<b>Copper, total</b>	7440-50-8	E420/VA	mg/L	0.00079	0.00068	----	----	----	----	----	----
<b>Iron, total</b>	7439-89-6	E420/VA	mg/L	0.262	0.222	----	----	----	----	----	----
<b>Lead, total</b>	7439-92-1	E420/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
<b>Lithium, total</b>	7439-93-2	E420/VA	mg/L	0.0018	0.0015	----	----	----	----	----	----
<b>Magnesium, total</b>	7439-95-4	E420/VA	mg/L	0.934	0.969	----	----	----	----	----	----
<b>Manganese, total</b>	7439-96-5	E420/VA	mg/L	0.0181	0.0165	----	----	----	----	----	----
<b>Mercury, total</b>	7439-97-6	E508/VA	mg/L	<0.0000050	<0.0000050	----	----	----	----	----	----
<b>Molybdenum, total</b>	7439-98-7	E420/VA	mg/L	0.000567	0.000527	----	----	----	----	----	----
<b>Nickel, total</b>	7440-02-0	E420/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
<b>Phosphorus, total</b>	7723-14-0	E420/VA	mg/L	<0.050	0.068	----	----	----	----	----	----
<b>Potassium, total</b>	7440-09-7	E420/VA	mg/L	0.966	1.05	----	----	----	----	----	----
<b>Rubidium, total</b>	7440-17-7	E420/VA	mg/L	0.00149	0.00154	----	----	----	----	----	----
<b>Selenium, total</b>	7782-49-2	E420/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
<b>Silicon, total</b>	7440-21-3	E420/VA	mg/L	5.30	5.54	----	----	----	----	----	----
<b>Silver, total</b>	7440-22-4	E420/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
<b>Sodium, total</b>	7440-23-5	E420/VA	mg/L	3.36	3.77	----	----	----	----	----	----
<b>Strontium, total</b>	7440-24-6	E420/VA	mg/L	0.0448	0.0429	----	----	----	----	----	----
<b>Sulfur, total</b>	7704-34-9	E420/VA	mg/L	2.10	2.05	----	----	----	----	----	----
<b>Tellurium, total</b>	13494-80-9	E420/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
<b>Thallium, total</b>	7440-28-0	E420/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
<b>Thorium, total</b>	7440-29-1	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
<b>Tin, total</b>	7440-31-5	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
<b>Titanium, total</b>	7440-32-6	E420/VA	mg/L	0.00868	0.00620	----	----	----	----	----	----



## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU DS1	SQU US1	----	----	----	----	----
				Sampling date/time	30-Oct-2023 10:10	30-Oct-2023 10:45	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C6077-001	VA23C6077-002	-----	-----	-----	-----	-----	-----
<b>Total Metals</b>											
Tungsten, total	7440-33-7	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Uranium, total	7440-61-1	E420/VA	mg/L	0.000035	0.000028	----	----	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	mg/L	0.00163	0.00159	----	----	----	----	----	----
Zinc, total	7440-66-6	E420/VA	mg/L	<0.0030	<0.0030	----	----	----	----	----	----
Zirconium, total	7440-67-7	E420/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
<b>Dissolved Metals</b>											
Aluminum, dissolved	7429-90-5	E421/VA	mg/L	0.0280	0.0290	----	----	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	mg/L	0.00014	0.00015	----	----	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	mg/L	0.0108	0.0103	----	----	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	mg/L	<0.000020	<0.000020	----	----	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Boron, dissolved	7440-42-8	E421/VA	mg/L	0.013	0.015	----	----	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	mg/L	0.0000068	0.0000070	----	----	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	mg/L	6.81	7.03	----	----	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	mg/L	0.000021	0.000023	----	----	----	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	mg/L	0.00011	<0.00010	----	----	----	----	----	----
Copper, dissolved	7440-50-8	E421/VA	mg/L	0.00052	0.00053	----	----	----	----	----	----
Iron, dissolved	7439-89-6	E421/VA	mg/L	0.116	0.121	----	----	----	----	----	----
Lead, dissolved	7439-92-1	E421/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	mg/L	0.0015	0.0014	----	----	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	mg/L	0.848	0.943	----	----	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	mg/L	0.0156	0.0157	----	----	----	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	mg/L	<0.0000050	<0.0000050	----	----	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	mg/L	0.000580	0.000605	----	----	----	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	mg/L	<0.050	<0.050	----	----	----	----	----	----





## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU DS1	SQU US1	----	----	----	----	----
				Sampling date/time	30-Oct-2023 10:10	30-Oct-2023 10:45	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C6077-001	VA23C6077-002	-----	-----	-----	-----	-----	-----
<b>Dissolved Metals</b>											
Potassium, dissolved	7440-09-7	E421/VA	mg/L	0.872	0.992	----	----	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	mg/L	0.00130	0.00152	----	----	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	mg/L	5.25	5.54	----	----	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	mg/L	3.30	3.67	----	----	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	mg/L	0.0448	0.0497	----	----	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	mg/L	2.01	2.09	----	----	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Tin, dissolved	7440-31-5	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	mg/L	0.00095	0.00090	----	----	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	mg/L	0.000026	0.000027	----	----	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	mg/L	0.00125	0.00142	----	----	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	mg/L	0.0014	0.0013	----	----	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	mg/L	<0.00030	<0.00030	----	----	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	Field	Field	----	----	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	Field	Field	----	----	----	----	----	----
<b>Aggregate Organics</b>											
Chemical oxygen demand [COD]	----	E559-L/VA	mg/L	<10	<10	----	----	----	----	----	----
Phenols, total (4AAP)	----	E562/EO	mg/L	<0.0010	<0.0010	----	----	----	----	----	----

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.



## Summary of Guideline Limits

Analyte	CAS Number	Unit	BCAWWQG L-ST	BCAWWQG MAL-LT	BCAWWQG MAL-ST	BCAWWQG W-LT	BCAWWQG W-ST		
<b>Field Tests</b>									
Conductivity, field	----	µS/cm	--	--	<a--	--	--		
pH, field	----	pH units	--	--	<a--	--	--		
Temperature, field	----	°C	--	--	<a--	--	--		
<b>Physical Tests</b>									
Hardness (as CaCO3), dissolved	----	mg/L	--	--	<a--	--	--		
Hardness (as CaCO3), from total Ca/Mg	----	mg/L	--	--	<a--	--	--		
Solids, total dissolved [TDS]	----	mg/L	--	--	<a--	3000 mg/L	--		
Solids, total suspended [TSS]	----	mg/L	--	25 mg/L	<a--	--	--		
<b>Anions and Nutrients</b>									
Ammonia, total (as N)	7664-41-7	mg/L	--	0.1 mg/L	0.67 mg/L	--	--		
Ammonia, un-ionized (as N), field	7664-41-7	mg/L	--	--	<a--	--	--		
Kjeldahl nitrogen, total [TKN]	----	mg/L	--	--	<a--	--	--		
Nitrogen, total	7727-37-9	mg/L	--	--	<a--	--	--		
Phosphorus, total	7723-14-0	mg/L	--	--	<a--	--	--		
<b>Organic / Inorganic Carbon</b>									
Carbon, total organic [TOC]	----	mg/L	--	--	<a--	--	--		
<b>Total Sulfides</b>									
Sulfide, total (as H2S)	7783-06-4	mg/L	--	0.002 mg/L	<a--	0.05 mg/L	--		
Sulfide, total (as S)	18496-25-8	mg/L	--	--	<a--	--	--		
Sulfide, un-ionized (as H2S), from total	7783-06-4	mg/L	--	--	<a--	--	--		
<b>Total Metals</b>									
Aluminum, total	7429-90-5	mg/L	5 mg/L	--	<a--	--	5 mg/L		
Antimony, total	7440-36-0	mg/L	--	--	<a--	--	--		
Arsenic, total	7440-38-2	mg/L	--	0.0125 mg/L	<a--	0.025 mg/L	--		
Barium, total	7440-39-3	mg/L	--	--	<a--	--	--		
Beryllium, total	7440-41-7	mg/L	--	0.1 mg/L	<a--	--	--		
Bismuth, total	7440-69-9	mg/L	--	--	<a--	--	--		
Boron, total	7440-42-8	mg/L	--	1.2 mg/L	<a--	5 mg/L	--		
Cadmium, total	7440-43-9	mg/L	--	0.00012 mg/L	<a--	--	--		
Calcium, total	7440-70-2	mg/L	--	--	<a--	--	--		
Cesium, total	7440-46-2	mg/L	--	--	<a--	--	--		
Chromium, total	7440-47-3	mg/L	--	0.0015 mg/L	<a--	--	--		
Cobalt, total	7440-48-4	mg/L	--	--	<a--	--	--		
Copper, total	7440-50-8	mg/L	0.3 mg/L	--	0.003 mg/L	--	0.3 mg/L		
Iron, total	7439-89-6	mg/L	--	--	<a--	--	--		
Lead, total	7439-92-1	mg/L	0.1 mg/L	0.002 mg/L	0.14 mg/L	--	0.1 mg/L		
Lithium, total	7439-93-2	mg/L	--	--	<a--	5 mg/L	--		



Analyte	CAS Number	Unit	BCAWWQG L-ST	BCAWWQG MAL-LT	BCAWWQG MAL-ST	BCAWWQG W-LT	BCAWWQG W-ST		
<b>Total Metals - Continued</b>									
Magnesium, total	7439-95-4	mg/L	--	--	<a--	100 mg/L	--		
Manganese, total	7439-96-5	mg/L	--	0.1 mg/L	<a--	--	--		
Mercury, total	7439-97-6	mg/L	0.003 mg/L	1E-05 mg/L	<a--	1E-06 mg/L	--		
Molybdenum, total	7439-98-7	mg/L	--	--	<a--	0.016 mg/L	--		
Nickel, total	7440-02-0	mg/L	--	0.0083 mg/L	<a--	1 mg/L	--		
Phosphorus, total	7723-14-0	mg/L	--	--	<a--	--	--		
Potassium, total	7440-09-7	mg/L	--	--	<a--	--	--		
Rubidium, total	7440-17-7	mg/L	--	--	<a--	--	--		
Selenium, total	7782-49-2	mg/L	--	0.002 mg/L	<a--	0.002 mg/L	--		
Silicon, total	7440-21-3	mg/L	--	--	<a--	--	--		
Silver, total	7440-22-4	mg/L	--	0.0015 mg/L	<a--	--	--		
Sodium, total	7440-23-5	mg/L	--	--	<a--	200 mg/L	--		
Strontium, total	7440-24-6	mg/L	--	--	<a--	--	--		
Sulfur, total	7704-34-9	mg/L	--	--	<a--	--	--		
Tellurium, total	13494-80-9	mg/L	--	--	<a--	--	--		
Thallium, total	7440-28-0	mg/L	--	--	<a--	--	--		
Thorium, total	7440-29-1	mg/L	--	--	<a--	--	--		
Tin, total	7440-31-5	mg/L	--	--	<a--	--	--		
Titanium, total	7440-32-6	mg/L	--	--	<a--	--	--		
Tungsten, total	7440-33-7	mg/L	--	--	<a--	--	--		
Uranium, total	7440-61-1	mg/L	--	0.1 mg/L	<a--	0.2 mg/L	--		
Vanadium, total	7440-62-2	mg/L	--	0.05 mg/L	<a--	0.1 mg/L	--		
Zinc, total	7440-66-6	mg/L	--	0.01 mg/L	0.055 mg/L	--	--		
Zirconium, total	7440-67-7	mg/L	--	--	<a--	--	--		
<b>Dissolved Metals</b>									
Aluminum, dissolved	7429-90-5	mg/L	5 mg/L	--	<a--	--	5 mg/L		
Antimony, dissolved	7440-36-0	mg/L	--	--	<a--	--	--		
Arsenic, dissolved	7440-38-2	mg/L	--	0.0125 mg/L	<a--	0.025 mg/L	--		
Barium, dissolved	7440-39-3	mg/L	--	--	<a--	--	--		
Beryllium, dissolved	7440-41-7	mg/L	--	0.1 mg/L	<a--	--	--		
Bismuth, dissolved	7440-69-9	mg/L	--	--	<a--	--	--		
Boron, dissolved	7440-42-8	mg/L	--	1.2 mg/L	<a--	5 mg/L	--		
Cadmium, dissolved	7440-43-9	mg/L	--	0.00012 mg/L	<a--	--	--		
Calcium, dissolved	7440-70-2	mg/L	--	--	<a--	--	--		
Cesium, dissolved	7440-46-2	mg/L	--	--	<a--	--	--		
Chromium, dissolved	7440-47-3	mg/L	--	0.0015 mg/L	<a--	--	--		
Cobalt, dissolved	7440-48-4	mg/L	--	--	<a--	--	--		
Copper, dissolved	7440-50-8	mg/L	0.3 mg/L	--	0.003 mg/L	--	0.3 mg/L		
Dissolved mercury filtration location	----	-	--	--	<a--	--	--		



Analyte	CAS Number	Unit	BCAWWQG L-ST	BCAWWQG MAL-LT	BCAWWQG MAL-ST	BCAWWQG W-LT	BCAWWQG W-ST		
<b>Dissolved Metals - Continued</b>									
Dissolved metals filtration location	----	-	--	--	<a--	--	--		
Iron, dissolved	7439-89-6	mg/L	--	--	<a--	--	--		
Lead, dissolved	7439-92-1	mg/L	0.1 mg/L	0.002 mg/L	0.14 mg/L	--	0.1 mg/L		
Lithium, dissolved	7439-93-2	mg/L	--	--	<a--	5 mg/L	--		
Magnesium, dissolved	7439-95-4	mg/L	--	--	<a--	100 mg/L	--		
Manganese, dissolved	7439-96-5	mg/L	--	0.1 mg/L	<a--	--	--		
Mercury, dissolved	7439-97-6	mg/L	0.003 mg/L	1E-05 mg/L	<a--	1E-06 mg/L	--		
Molybdenum, dissolved	7439-98-7	mg/L	--	--	<a--	0.016 mg/L	--		
Nickel, dissolved	7440-02-0	mg/L	--	0.0083 mg/L	<a--	1 mg/L	--		
Phosphorus, dissolved	7723-14-0	mg/L	--	--	<a--	--	--		
Potassium, dissolved	7440-09-7	mg/L	--	--	<a--	--	--		
Rubidium, dissolved	7440-17-7	mg/L	--	--	<a--	--	--		
Selenium, dissolved	7782-49-2	mg/L	--	0.002 mg/L	<a--	0.002 mg/L	--		
Silicon, dissolved	7440-21-3	mg/L	--	--	<a--	--	--		
Silver, dissolved	7440-22-4	mg/L	--	0.0015 mg/L	<a--	--	--		
Sodium, dissolved	7440-23-5	mg/L	--	--	<a--	200 mg/L	--		
Strontium, dissolved	7440-24-6	mg/L	--	--	<a--	--	--		
Sulfur, dissolved	7704-34-9	mg/L	--	--	<a--	--	--		
Tellurium, dissolved	13494-80-9	mg/L	--	--	<a--	--	--		
Thallium, dissolved	7440-28-0	mg/L	--	--	<a--	--	--		
Thorium, dissolved	7440-29-1	mg/L	--	--	<a--	--	--		
Tin, dissolved	7440-31-5	mg/L	--	--	<a--	--	--		
Titanium, dissolved	7440-32-6	mg/L	--	--	<a--	--	--		
Tungsten, dissolved	7440-33-7	mg/L	--	--	<a--	--	--		
Uranium, dissolved	7440-61-1	mg/L	--	0.1 mg/L	<a--	0.2 mg/L	--		
Vanadium, dissolved	7440-62-2	mg/L	--	0.05 mg/L	<a--	0.1 mg/L	--		
Zinc, dissolved	7440-66-6	mg/L	--	0.01 mg/L	0.055 mg/L	--	--		
Zirconium, dissolved	7440-67-7	mg/L	--	--	<a--	--	--		
<b>Aggregate Organics</b>									
Chemical oxygen demand [COD]	----	mg/L	--	--	<a--	--	--		
Phenols, total (4AAP)	----	mg/L	--	--	<a--	0.002 mg/L	--		
Analyte	CAS Number	Unit	BCAWWQG SDW AO	BCAWWQG SDW MAC	BCAWWQG FAL-LT	BCAWWQG FAL-ST	BCAWWQG I-LT	BCAWWQG I-ST	BCAWWQG L-LT
<b>Field Tests</b>									
Conductivity, field	----	µS/cm	--	--	<a--	--	--	--	--
pH, field	----	pH units	--	--	<a--	--	--	--	--
Temperature, field	----	°C	--	--	<a--	--	--	--	--
<b>Physical Tests</b>									
Hardness (as CaCO3), dissolved	----	mg/L	--	--	<a--	--	--	--	--



Analyte	CAS Number	Unit	BCAWWQG SDW AO	BCAWWQG SDW MAC	BCAWWQG FAL-LT	BCAWWQG FAL-ST	BCAWWQG I-LT	BCAWWQG I-ST	BCAWWQG L-LT
<b>Physical Tests - Continued</b>									
Hardness (as CaCO3), from total Ca/Mg	----	mg/L	--	--	<a--	--	--	--	--
Solids, total dissolved [TDS]	----	mg/L	--	--	<a--	--	500 mg/L	--	1000 mg/L
Solids, total suspended [TSS]	----	mg/L	--	--	<a--	--	--	--	--
<b>Anions and Nutrients</b>									
Ammonia, total (as N)	7664-41-7	mg/L	--	--	0.102 mg/L	0.752 mg/L	--	--	--
Ammonia, un-ionized (as N), field	7664-41-7	mg/L	--	--	<a--	--	--	--	--
Kjeldahl nitrogen, total [TKN]	----	mg/L	--	--	<a--	--	--	--	--
Nitrogen, total	7727-37-9	mg/L	--	--	<a--	--	--	--	--
Phosphorus, total	7723-14-0	mg/L	0.01 mg/L	--	<a--	--	--	--	--
<b>Organic / Inorganic Carbon</b>									
Carbon, total organic [TOC]	----	mg/L	--	4 mg/L	<a--	--	--	--	--
<b>Total Sulfides</b>									
Sulfide, total (as H2S)	7783-06-4	mg/L	--	--	0.002 mg/L	--	--	--	--
Sulfide, total (as S)	18496-25-8	mg/L	--	--	<a--	--	--	--	--
Sulfide, un-ionized (as H2S), from total	7783-06-4	mg/L	--	--	<a--	--	--	--	--
<b>Total Metals</b>									
Aluminum, total	7429-90-5	mg/L	--	9.5 mg/L	0.00185 mg/L	--	--	5 mg/L	--
Antimony, total	7440-36-0	mg/L	--	0.006 mg/L	0.009 mg/L	--	--	--	--
Arsenic, total	7440-38-2	mg/L	--	0.01 mg/L	0.005 mg/L	--	0.1 mg/L	--	0.025 mg/L
Barium, total	7440-39-3	mg/L	--	--	1 mg/L	--	--	--	--
Beryllium, total	7440-41-7	mg/L	--	--	0.00013 mg/L	--	0.1 mg/L	--	0.1 mg/L
Bismuth, total	7440-69-9	mg/L	--	--	<a--	--	--	--	--
Boron, total	7440-42-8	mg/L	--	5 mg/L	1.2 mg/L	--	0.5 mg/L	--	5 mg/L
Cadmium, total	7440-43-9	mg/L	--	0.005 mg/L	1.8E-05 mg/L	3E-05 mg/L	0.0051 mg/L	--	0.08 mg/L
Calcium, total	7440-70-2	mg/L	--	--	<a--	--	--	--	--
Cesium, total	7440-46-2	mg/L	--	--	<a--	--	--	--	--
Chromium, total	7440-47-3	mg/L	--	0.05 mg/L	0.001 mg/L	--	0.005 mg/L	--	0.05 mg/L
Cobalt, total	7440-48-4	mg/L	--	0.001 mg/L	0.004 mg/L	0.11 mg/L	0.05 mg/L	--	1 mg/L
Copper, total	7440-50-8	mg/L	1 mg/L	2 mg/L	<a--	0.0009 mg/L	--	0.2 mg/L	--
Iron, total	7439-89-6	mg/L	0.3 mg/L	--	<a--	1 mg/L	--	--	--
Lead, total	7439-92-1	mg/L	--	0.005 mg/L	0.00344 mg/L	0.003 mg/L	--	0.2 mg/L	--
Lithium, total	7439-93-2	mg/L	--	--	<a--	--	0.75 mg/L	--	--
Magnesium, total	7439-95-4	mg/L	--	--	<a--	--	--	--	--
Manganese, total	7439-96-5	mg/L	0.02 mg/L	0.12 mg/L	0.768 mg/L	0.816 mg/L	0.2 mg/L	--	--
Mercury, total	7439-97-6	mg/L	--	0.001 mg/L	1E-05 mg/L	--	--	0.002 mg/L	--
Molybdenum, total	7439-98-7	mg/L	--	0.088 mg/L	5.1 mg/L	46 mg/L	0.01 mg/L	0.05 mg/L	0.01 mg/L
Nickel, total	7440-02-0	mg/L	--	0.08 mg/L	0.025 mg/L	--	0.2 mg/L	--	1 mg/L
Phosphorus, total	7723-14-0	mg/L	0.01 mg/L	--	<a--	--	--	--	--
Potassium, total	7440-09-7	mg/L	--	--	373 mg/L	--	--	--	--



Analyte	CAS Number	Unit	BCAWWQG SDW AO	BCAWWQG SDW MAC	BCAWWQG FAL-LT	BCAWWQG FAL-ST	BCAWWQG I-LT	BCAWWQG I-ST	BCAWWQG L-LT
<b>Total Metals - Continued</b>									
Rubidium, total	7440-17-7	mg/L	--	--	<a--	--	--	--	--
Selenium, total	7782-49-2	mg/L	--	0.01 mg/L	0.001 mg/L	--	0.01 mg/L	--	0.03 mg/L
Silicon, total	7440-21-3	mg/L	--	--	<a--	--	--	--	--
Silver, total	7440-22-4	mg/L	--	--	5E-05 mg/L	0.0001 mg/L	--	--	--
Sodium, total	7440-23-5	mg/L	--	--	<a--	--	--	--	--
Strontium, total	7440-24-6	mg/L	--	7 mg/L	<a--	--	--	--	--
Sulfur, total	7704-34-9	mg/L	--	--	<a--	--	--	--	--
Tellurium, total	13494-80-9	mg/L	--	--	<a--	--	--	--	--
Thallium, total	7440-28-0	mg/L	--	--	0.0008 mg/L	--	--	--	--
Thorium, total	7440-29-1	mg/L	--	--	<a--	--	--	--	--
Tin, total	7440-31-5	mg/L	--	--	<a--	--	--	--	--
Titanium, total	7440-32-6	mg/L	--	--	2 mg/L	--	--	--	--
Tungsten, total	7440-33-7	mg/L	--	--	<a--	--	--	--	--
Uranium, total	7440-61-1	mg/L	--	0.02 mg/L	0.0085 mg/L	--	0.01 mg/L	--	0.2 mg/L
Vanadium, total	7440-62-2	mg/L	--	--	0.006 mg/L	--	0.1 mg/L	--	0.1 mg/L
Zinc, total	7440-66-6	mg/L	5 mg/L	3 mg/L	0.00348 mg/L	0.0186 mg/L	1 mg/L	--	2 mg/L
Zirconium, total	7440-67-7	mg/L	--	--	<a--	--	--	--	--
<b>Dissolved Metals</b>									
Aluminum, dissolved	7429-90-5	mg/L	--	--	<a--	--	--	5 mg/L	--
Antimony, dissolved	7440-36-0	mg/L	--	--	0.009 mg/L	--	--	--	--
Arsenic, dissolved	7440-38-2	mg/L	--	--	0.005 mg/L	--	0.1 mg/L	--	0.025 mg/L
Barium, dissolved	7440-39-3	mg/L	--	--	1 mg/L	--	--	--	--
Beryllium, dissolved	7440-41-7	mg/L	--	--	0.00013 mg/L	--	0.1 mg/L	--	0.1 mg/L
Bismuth, dissolved	7440-69-9	mg/L	--	--	<a--	--	--	--	--
Boron, dissolved	7440-42-8	mg/L	--	--	1.2 mg/L	--	0.5 mg/L	--	5 mg/L
Cadmium, dissolved	7440-43-9	mg/L	--	--	1.8E-05 mg/L	3E-05 mg/L	0.0051 mg/L	--	0.08 mg/L
Calcium, dissolved	7440-70-2	mg/L	--	--	<a8 mg/L	--	--	--	1000 mg/L
Cesium, dissolved	7440-46-2	mg/L	--	--	<a--	--	--	--	--
Chromium, dissolved	7440-47-3	mg/L	--	--	0.001 mg/L	--	0.005 mg/L	--	0.05 mg/L
Cobalt, dissolved	7440-48-4	mg/L	--	--	0.004 mg/L	0.11 mg/L	0.05 mg/L	--	1 mg/L
Copper, dissolved	7440-50-8	mg/L	--	--	0.0002 mg/L	0.0009 mg/L	--	0.2 mg/L	--
Dissolved mercury filtration location	----	-	--	--	<a--	--	--	--	--
Dissolved metals filtration location	----	-	--	--	<a--	--	--	--	--
Iron, dissolved	7439-89-6	mg/L	--	--	<a--	0.35 mg/L	--	--	--
Lead, dissolved	7439-92-1	mg/L	--	--	0.00344 mg/L	0.003 mg/L	--	0.2 mg/L	--
Lithium, dissolved	7439-93-2	mg/L	--	--	<a--	--	0.75 mg/L	--	--
Magnesium, dissolved	7439-95-4	mg/L	--	--	<a--	--	--	--	--
Manganese, dissolved	7439-96-5	mg/L	--	--	0.768 mg/L	0.816 mg/L	0.2 mg/L	--	--
Mercury, dissolved	7439-97-6	mg/L	--	--	1E-05 mg/L	--	--	0.002 mg/L	--



Analyte	CAS Number	Unit	BCAWWQG SDW AO	BCAWWQG SDW MAC	BCAWWQG FAL-LT	BCAWWQG FAL-ST	BCAWWQG I-LT	BCAWWQG I-ST	BCAWWQG L-LT
<b>Dissolved Metals - Continued</b>									
Molybdenum, dissolved	7439-98-7	mg/L	--	--	5.1 mg/L	46 mg/L	0.01 mg/L	0.05 mg/L	0.01 mg/L
Nickel, dissolved	7440-02-0	mg/L	--	--	0.025 mg/L	--	0.2 mg/L	--	1 mg/L
Phosphorus, dissolved	7723-14-0	mg/L	--	--	<a--	--	--	--	--
Potassium, dissolved	7440-09-7	mg/L	--	--	373 mg/L	--	--	--	--
Rubidium, dissolved	7440-17-7	mg/L	--	--	<a--	--	--	--	--
Selenium, dissolved	7782-49-2	mg/L	--	--	0.001 mg/L	--	0.01 mg/L	--	0.03 mg/L
Silicon, dissolved	7440-21-3	mg/L	--	--	<a--	--	--	--	--
Silver, dissolved	7440-22-4	mg/L	--	--	5E-05 mg/L	0.0001 mg/L	--	--	--
Sodium, dissolved	7440-23-5	mg/L	--	--	<a--	--	--	--	--
Strontium, dissolved	7440-24-6	mg/L	--	--	<a--	--	--	--	--
Sulfur, dissolved	7704-34-9	mg/L	--	--	<a--	--	--	--	--
Tellurium, dissolved	13494-80-9	mg/L	--	--	<a--	--	--	--	--
Thallium, dissolved	7440-28-0	mg/L	--	--	0.0008 mg/L	--	--	--	--
Thorium, dissolved	7440-29-1	mg/L	--	--	<a--	--	--	--	--
Tin, dissolved	7440-31-5	mg/L	--	--	<a--	--	--	--	--
Titanium, dissolved	7440-32-6	mg/L	--	--	2 mg/L	--	--	--	--
Tungsten, dissolved	7440-33-7	mg/L	--	--	<a--	--	--	--	--
Uranium, dissolved	7440-61-1	mg/L	--	--	0.0085 mg/L	--	0.01 mg/L	--	0.2 mg/L
Vanadium, dissolved	7440-62-2	mg/L	--	--	0.006 mg/L	--	0.1 mg/L	--	0.1 mg/L
Zinc, dissolved	7440-66-6	mg/L	--	--	0.00348 mg/L	0.0186 mg/L	1 mg/L	--	2 mg/L
Zirconium, dissolved	7440-67-7	mg/L	--	--	<a--	--	--	--	--
<b>Aggregate Organics</b>									
Chemical oxygen demand [COD]	----	mg/L	--	--	<a--	--	--	--	--
Phenols, total (4AAP)	----	mg/L	--	--	<a--	--	--	--	--

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



**Key:**

BCAWWQG	British Columbia Approved and Working Water Quality Guidelines (FEB, 2021)
FAL-LT	BC FAL - Freshwater Aquatic Life - Long-Term Chronic
FAL-ST	BC FAL - Freshwater Aquatic Life - Short-Term Acute
I-LT	BC I - Irrigation - Long-Term Chronic
I-ST	BC I - Irrigation - Short-Term Acute
L-LT	BC L - Livestock - Long-Term Chronic
L-ST	BC L - Livestock - Short-Term Acute
MAL-LT	BC MAL - Marinewater Aquatic Life - Long-Term Chronic
MAL-ST	BC MAL - Marinewater Aquatic Life - Short-Term Acute
SDW AO	BC DW - Source Drinking Water Quality Guidelines - No. WQG-01 - Aesthetic Objectives
SDW MAC	BC DW - Source Drinking Water Quality Guidelines - No. WQG-01 - Maximum Acceptable Concentrations
W-LT	BC W - Wildlife - Long-Term Chronic
W-ST	BC W - Wildlife - Short-Term Acute





## CERTIFICATE OF ANALYSIS

**Work Order** : **VA23C6077**  
**Client** : **Triton Environmental Consultants Ltd.**  
**Contact**  
**Address**  
 : Suite 650, 1040 West Georgia St  
 Vancouver BC Canada V6E 4H1  
**Telephone**  
**Project** : ----  
**PO** : ----  
**C-O-C number** : 20-1070612  
**Sampler** : ----  
**Site** : Water Analysis  
**Quote number** : VA23-TRIT100-012  
**No. of samples received** : 2  
**No. of samples analysed** : 2

**Page** : 1 of 6  
**Laboratory** : ALS Environmental - Vancouver  
**Account Manager**  
**Address**  
 : 8081 Lougheed Highway  
 Burnaby BC Canada V5A 1W9  
**Telephone** : +1 604 253 4188  
**Date Samples Received** : 30-Oct-2023 13:50  
**Date Analysis Commenced** : 31-Oct-2023  
**Issue Date** : 14-Nov-2023 11:27

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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anshim Anshim	Lab Assistant	Metals, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Inorganics, Edmonton, Alberta
Kate Dimitrova	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Administration, 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
-	no units
°C	degrees celsius
µS/cm	microsiemens per centimetre
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.

## Sample Comments

Sample	Client Id	Comment
VA23C6077-001	SQU DS1	Water samples for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.
VA23C6077-002	SQU US1	Water sample for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.
VA23C6077-002	SQU US1	Water samples for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.



## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU DS1	SQU US1	----	----	----
(Matrix: Water)					Client sampling date / time	30-Oct-2023 10:10	30-Oct-2023 10:45	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C6077-001	VA23C6077-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Field Tests</b>										
Conductivity, field	----	EF001/VA	0.10	µS/cm	74.700	74.200	----	----	----	
pH, field	----	EF001/VA	0.10	pH units	7.54	7.68	----	----	----	
Temperature, field	----	EF001/VA	0.10	°C	3.20	3.50	----	----	----	
<b>Physical Tests</b>										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	20.5	21.4	----	----	----	
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	22.7	21.7	----	----	----	
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	49	48	----	----	----	
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	3.8	----	----	----	
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0929	0.215	----	----	----	
Ammonia, un-ionized (as N), field	7664-41-7	EC298A/VA	0.0010	mg/L	<0.0010	0.0011	----	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	0.142	0.268	----	----	----	
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.221	0.418	----	----	----	
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0295	0.0522	----	----	----	
<b>Organic / Inorganic Carbon</b>										
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	0.91	1.22	----	----	----	
<b>Total Sulfides</b>										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	----	----	----	----	
Sulfide, un-ionized (as H2S), from total	7783-06-4	EC395/VA	0.0015	mg/L	<0.0015	----	----	----	----	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	----	----	----	----	
<b>Total Metals</b>										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.164	0.121	----	----	----	
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	0.00019	0.00020	----	----	----	
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.0122	0.0106	----	----	----	
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L	<0.000100	<0.000100	----	----	----	
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Boron, total	7440-42-8	E420/VA	0.010	mg/L	0.013	0.014	----	----	----	
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	0.0000086	0.0000061	----	----	----	



## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU DS1	SQU US1	----	----	----
(Matrix: Water)					Client sampling date / time	30-Oct-2023 10:10	30-Oct-2023 10:45	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C6077-001	VA23C6077-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Total Metals</b>										
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	7.54	7.08	----	----	----	
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000028	0.000028	----	----	----	
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L	0.00015	0.00012	----	----	----	
Copper, total	7440-50-8	E420/VA	0.00050	mg/L	0.00079	0.00068	----	----	----	
Iron, total	7439-89-6	E420/VA	0.010	mg/L	0.262	0.222	----	----	----	
Lead, total	7439-92-1	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	0.0018	0.0015	----	----	----	
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	0.934	0.969	----	----	----	
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.0181	0.0165	----	----	----	
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.000567	0.000527	----	----	----	
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L	<0.050	0.068	----	----	----	
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	0.966	1.05	----	----	----	
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.00149	0.00154	----	----	----	
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	5.30	5.54	----	----	----	
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Sodium, total	7440-23-5	E420/VA	0.050	mg/L	3.36	3.77	----	----	----	
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	0.0448	0.0429	----	----	----	
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	2.10	2.05	----	----	----	
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Tin, total	7440-31-5	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	0.00868	0.00620	----	----	----	
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.000035	0.000028	----	----	----	
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	0.00163	0.00159	----	----	----	



## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU DS1	SQU US1	----	----	----
(Matrix: Water)					Client sampling date / time	30-Oct-2023 10:10	30-Oct-2023 10:45	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C6077-001	VA23C6077-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Total Metals</b>										
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L	<0.0030	<0.0030	----	----	----	
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
<b>Dissolved Metals</b>										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.0280	0.0290	----	----	----	
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L	0.00014	0.00015	----	----	----	
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.0108	0.0103	----	----	----	
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L	<0.000020	<0.000020	----	----	----	
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L	0.013	0.015	----	----	----	
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	0.0000068	0.0000070	----	----	----	
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	6.81	7.03	----	----	----	
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	0.000021	0.000023	----	----	----	
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L	0.00011	<0.00010	----	----	----	
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L	0.00052	0.00053	----	----	----	
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L	0.116	0.121	----	----	----	
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	0.0015	0.0014	----	----	----	
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	0.848	0.943	----	----	----	
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.0156	0.0157	----	----	----	
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.000580	0.000605	----	----	----	
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L	<0.050	<0.050	----	----	----	
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	0.872	0.992	----	----	----	
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.00130	0.00152	----	----	----	
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	5.25	5.54	----	----	----	
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	



## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU DS1	SQU US1	----	----	----
(Matrix: Water)					Client sampling date / time	30-Oct-2023 10:10	30-Oct-2023 10:45	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C6077-001	VA23C6077-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Dissolved Metals</b>										
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	3.30	3.67	----	----	----	
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	0.0448	0.0497	----	----	----	
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	2.01	2.09	----	----	----	
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	0.00095	0.00090	----	----	----	
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	0.000026	0.000027	----	----	----	
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	0.00125	0.00142	----	----	----	
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	0.0014	0.0013	----	----	----	
Zirconium, dissolved	7440-67-7	E421/VA	0.00030	mg/L	<0.00030	<0.00030	----	----	----	
Dissolved mercury filtration location	----	EP509/VA	-	-	Field	Field	----	----	----	
Dissolved metals filtration location	----	EP421/VA	-	-	Field	Field	----	----	----	
<b>Aggregate Organics</b>										
Chemical oxygen demand [COD]	----	E559-L/VA	10	mg/L	<10	<10	----	----	----	
Phenols, total (4AAP)	----	E562/EO	0.0010	mg/L	<0.0010	<0.0010	----	----	----	

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.

## QUALITY CONTROL INTERPRETIVE REPORT

<p><b>Work Order</b> : <b>VA23C6077</b></p> <p><b>Client</b> : <b>Triton Environmental Consultants Ltd.</b></p> <p><b>Contact</b> : Miranda Lewis</p> <p><b>Address</b> : Suite 650, 1040 West Georgia St Vancouver BC Canada V6E 4H1</p> <p><b>Telephone</b> : 604 631 2213</p> <p><b>Project</b> : ----</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : 20-1070612</p> <p><b>Sampler</b> : ----</p> <p><b>Site</b> : Water Analysis</p> <p><b>Quote number</b> : VA23-TRIT100-012</p> <p><b>No. of samples received</b> : 2</p> <p><b>No. of samples analysed</b> : 2</p>	<p><b>Page</b> : 1 of 12</p> <p><b>Laboratory</b> : ALS Environmental - Vancouver</p> <p><b>Account Manager</b> : Can Dang</p> <p><b>Address</b> : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p><b>Telephone</b> : +1 604 253 4188</p> <p><b>Date Samples Received</b> : 30-Oct-2023 13:50</p> <p><b>Issue Date</b> : 14-Nov-2023 11:29</p>
--	--

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: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
<b>Duplicate (DUP) RPDs</b>								
Anions and Nutrients	Anonymous	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	46.6 % TKND	20%	Duplicate RPD does not meet the DQO for this test.

**Result Qualifiers**

Qualifier	Description
TKND	TKN duplication was poor due to interference from high nitrate, which causes negative bias on TKN.



## 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: **Water** 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	
<b>Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)</b>										
Amber glass total (sulfuric acid) SQU DS1	E559-L	30-Oct-2023	----	----	----		01-Nov-2023	28 days	2 days	✔
<b>Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)</b>										
Amber glass total (sulfuric acid) SQU US1	E559-L	30-Oct-2023	----	----	----		02-Nov-2023	28 days	3 days	✔
<b>Aggregate Organics : Phenols (4AAP) in Water by Colorimetry</b>										
Amber glass total (sulfuric acid) SQU DS1	E562	30-Oct-2023	02-Nov-2023	28 days	3 days	✔	03-Nov-2023	28 days	4 days	✔
<b>Aggregate Organics : Phenols (4AAP) in Water by Colorimetry</b>										
Amber glass total (sulfuric acid) SQU US1	E562	30-Oct-2023	02-Nov-2023	28 days	3 days	✔	03-Nov-2023	28 days	4 days	✔
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) SQU DS1	E298	30-Oct-2023	02-Nov-2023	28 days	3 days	✔	02-Nov-2023	28 days	3 days	✔
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) SQU US1	E298	30-Oct-2023	02-Nov-2023	28 days	3 days	✔	02-Nov-2023	28 days	3 days	✔
<b>Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)</b>										
Amber glass total (sulfuric acid) SQU DS1	E318	30-Oct-2023	02-Nov-2023	28 days	3 days	✔	03-Nov-2023	28 days	4 days	✔



Matrix: **Water** 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		
<b>Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)</b>											
Amber glass total (sulfuric acid) SQU US1	E318	30-Oct-2023	02-Nov-2023	28 days	3 days	✔	03-Nov-2023	28 days	4 days	✔	
<b>Anions and Nutrients : Total Nitrogen by Colourimetry</b>											
Amber glass total (sulfuric acid) SQU DS1	E366	30-Oct-2023	02-Nov-2023	28 days	3 days	✔	02-Nov-2023	28 days	3 days	✔	
<b>Anions and Nutrients : Total Nitrogen by Colourimetry</b>											
Amber glass total (sulfuric acid) SQU US1	E366	30-Oct-2023	02-Nov-2023	28 days	3 days	✔	03-Nov-2023	28 days	4 days	✔	
<b>Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)</b>											
Amber glass total (sulfuric acid) SQU DS1	E372-U	30-Oct-2023	02-Nov-2023	28 days	3 days	✔	03-Nov-2023	28 days	4 days	✔	
<b>Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)</b>											
Amber glass total (sulfuric acid) SQU US1	E372-U	30-Oct-2023	02-Nov-2023	28 days	3 days	✔	03-Nov-2023	28 days	4 days	✔	
<b>Dissolved Metals : Dissolved Mercury in Water by CVAAS</b>											
Glass vial dissolved (hydrochloric acid) SQU DS1	E509	30-Oct-2023	09-Nov-2023	28 days	10 days	✔	09-Nov-2023	28 days	10 days	✔	
<b>Dissolved Metals : Dissolved Mercury in Water by CVAAS</b>											
Glass vial dissolved (hydrochloric acid) SQU US1	E509	30-Oct-2023	09-Nov-2023	28 days	10 days	✔	09-Nov-2023	28 days	10 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) SQU DS1	E421	30-Oct-2023	03-Nov-2023	180 days	4 days	✔	07-Nov-2023	180 days	8 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) SQU US1	E421	30-Oct-2023	03-Nov-2023	180 days	4 days	✔	07-Nov-2023	180 days	8 days	✔	



Matrix: **Water** 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	
<b>Field Tests : Field pH,EC,Salinity,Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine</b>										
Amber glass (hydrochloric acid) SQU DS1	EF001	30-Oct-2023	----	----	----		31-Oct-2023	----	1 days	
<b>Field Tests : Field pH,EC,Salinity,Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine</b>										
Glass vial dissolved (hydrochloric acid) SQU US1	EF001	30-Oct-2023	----	----	----		14-Nov-2023	----	15 days	
<b>Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)</b>										
Amber glass total (sulfuric acid) SQU DS1	E355-L	30-Oct-2023	02-Nov-2023	28 days	3 days	✔	02-Nov-2023	28 days	3 days	✔
<b>Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)</b>										
Amber glass total (sulfuric acid) SQU US1	E355-L	30-Oct-2023	02-Nov-2023	28 days	3 days	✔	02-Nov-2023	28 days	3 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE SQU DS1	E162	30-Oct-2023	----	----	----		05-Nov-2023	7 days	6 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE SQU US1	E162	30-Oct-2023	----	----	----		05-Nov-2023	7 days	6 days	✔
<b>Physical Tests : TSS by Gravimetry</b>										
HDPE SQU DS1	E160	30-Oct-2023	----	----	----		05-Nov-2023	7 days	6 days	✔
<b>Physical Tests : TSS by Gravimetry</b>										
HDPE SQU US1	E160	30-Oct-2023	----	----	----		05-Nov-2023	7 days	6 days	✔
<b>Total Metals : Total Mercury in Water by CVAAS</b>										
Glass vial total (hydrochloric acid) SQU DS1	E508	30-Oct-2023	07-Nov-2023	28 days	9 days	✔	07-Nov-2023	28 days	9 days	✔



Matrix: **Water** 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	
<b>Total Metals : Total Mercury in Water by CVAAS</b>										
<b>Glass vial total (hydrochloric acid)</b> SQU US1	E508	30-Oct-2023	08-Nov-2023	28 days	9 days	✔	08-Nov-2023	28 days	9 days	✔
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>										
<b>HDPE total (nitric acid)</b> SQU US1	E420	30-Oct-2023	03-Nov-2023	180 days	4 days	✔	07-Nov-2023	180 days	8 days	✔
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>										
<b>HDPE total (nitric acid)</b> SQU DS1	E420	30-Oct-2023	03-Nov-2023	180 days	4 days	✔	07-Nov-2023	180 days	9 days	✔
<b>Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)</b>										
<b>HDPE total (zinc acetate+sodium hydroxide)</b> SQU DS1	E395	30-Oct-2023	----	----	----		31-Oct-2023	7 days	1 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: **Water** Evaluation: \* = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Ammonia by Fluorescence	E298	1218671	2	37	5.4	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1218247	2	37	5.4	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1229730	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1219972	1	20	5.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1219119	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1223721	1	18	5.5	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1218667	2	17	11.7	5.0	✓
Total Mercury in Water by CVAAS	E508	1227663	2	33	6.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1218162	2	20	10.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1218672	2	16	12.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1218669	2	34	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1218670	2	26	7.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1215268	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1223722	1	10	10.0	5.0	✓
<b>Laboratory Control Samples (LCS)</b>							
Ammonia by Fluorescence	E298	1218671	2	37	5.4	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1218247	2	37	5.4	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1229730	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1219972	1	20	5.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1219119	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1223721	1	18	5.5	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1218667	2	17	11.7	5.0	✓
Total Mercury in Water by CVAAS	E508	1227663	2	33	6.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1218162	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1218672	2	16	12.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1218669	2	34	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1218670	2	26	7.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1215268	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1223722	1	10	10.0	5.0	✓
<b>Method Blanks (MB)</b>							
Ammonia by Fluorescence	E298	1218671	2	37	5.4	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1218247	2	37	5.4	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1229730	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1219972	1	20	5.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1219119	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<b>Analytical Methods</b>							
<b>Method Blanks (MB) - Continued</b>							
TDS by Gravimetry	E162	1223721	1	18	5.5	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1218667	2	17	11.7	5.0	✔
Total Mercury in Water by CVAAS	E508	1227663	2	33	6.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1218162	1	20	5.0	5.0	✔
Total Nitrogen by Colourimetry	E366	1218672	2	16	12.5	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1218669	2	34	5.8	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1218670	2	26	7.6	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1215268	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	1223722	1	10	10.0	5.0	✔
<b>Matrix Spikes (MS)</b>							
Ammonia by Fluorescence	E298	1218671	2	37	5.4	5.0	✔
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1218247	2	37	5.4	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1229730	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1219972	1	20	5.0	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1219119	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1218667	2	17	11.7	5.0	✔
Total Mercury in Water by CVAAS	E508	1227663	2	33	6.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1218162	1	20	5.0	5.0	✔
Total Nitrogen by Colourimetry	E366	1218672	2	16	12.5	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1218669	2	34	5.8	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1218670	2	26	7.6	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1215268	1	20	5.0	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
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$ , with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Nitrogen by Colourimetry	E366 ALS Environmental - Vancouver	Water	Chinchilla Scientific Nitrate Method, 2011	Following digestion, total nitrogen is is determined colourimetrically using a discrete analyzer utilizing the vanadium chloride reduction method. This method of analysis is approved under US EPA 40 CFR Part 136 (May 2021).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H <sub>2</sub> S" if reported represent the maximum possible H <sub>2</sub> S concentration based on the total sulfide concentration in the sample. The H <sub>2</sub> S calculation converts Total Sulphide as (S <sub>2</sub> -) and reports it as Total Sulphide as (H <sub>2</sub> S)





Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L ALS Environmental - Vancouver	Water	APHA 5220 D (mod)	Samples are analyzed using the closed reflux colourimetric method.
Phenols (4AAP) in Water by Colorimetry	E562 ALS Environmental - Edmonton	Water	EPA 9066	This automated method is based on the distillation of phenol and subsequent reaction of the distillate with alkaline ferricyanide (K <sub>3</sub> Fe(CN) <sub>6</sub> ) and 4-amino-antipyrine (4-AAP) to form a red complex which is measured colorimetrically.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Un-ionized and Ionized Ammonia (Calculation) (Field Temperature and pH)	EC298A ALS Environmental - Vancouver	Water	CCME CWQG Ammonia	Un-ionized ammonia is calculated from test results for total ammonia, field temperature and pH, and is expressed in units of mg/L "as N".



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Un-ionized Total Hydrogen Sulfide (calculated)	EC395 ALS Environmental - Vancouver	Water	APHA 4500 -S H	Un-ionized sulfide is calculated using results from total sulfide analysis, pH, temperature, and ionic strength of the sample. Calculation of un-ionized sulfide using total sulfide concentrations may be biased high due to particulate forms of sulfide measured during total sulfide testing.
Field pH,EC,Salinity,Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity,Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3 or Chloramine measurements provided by client and recorded on ALS report may affect the validity of results.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Nitrogen in water	EP366 ALS Environmental - Vancouver	Water	APHA 4500-P J (mod)	Samples for total nitrogen analysis are digested using a heated persulfate digestion. Nitrogen compounds are converted to nitrate in this digestion.
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: VA23C6077</b>	<b>Page</b>	: 1 of 18
<b>Client</b>	: Triton Environmental Consultants Ltd.	<b>Laboratory</b>	: ALS Environmental - Vancouver
<b>Contact</b>	:	<b>Account Manager</b>	: 8081 Lougheed Highway
<b>Address</b>	: Suite 650, 1040 West Georgia St Vancouver BC Canada V6E 4H1	<b>Address</b>	: Burnaby, British Columbia Canada V5A 1W9
<b>Telephone</b>	:		: +1 604 253 4188
<b>Project</b>	: ----	<b>Telephone</b>	: 30-Oct-2023 13:50
<b>PO</b>	: ----	<b>Date Samples Received</b>	: 31-Oct-2023
<b>C-O-C number</b>	: 20-1070612	<b>Date Analysis Commenced</b>	: 14-Nov-2023 11:29
<b>Sampler</b>	: ---- 604 631 2213	<b>Issue Date</b>	
<b>Site</b>	: Water Analysis		
<b>Quote number</b>	: VA23-TRIT100-012		
<b>No. of samples received</b>	: 2		
<b>No. of samples analysed</b>	: 2		

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
- 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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anshim Anshim	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Kate Dimitrova	Supervisor - Inorganic	Vancouver Inorganics, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Vancouver Inorganics, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
Owen Cheng		Vancouver Metals, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia

Page : 2 of 18  
Work Order : VA23C6077  
Client : Triton Environmental Consultants Ltd.  
Project : ----



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## 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.

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## Workorder Comments

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

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### 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: <b>Water</b>					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
<b>Physical Tests (QC Lot: 1223721)</b>											
VA23C6077-001	SQU DS1	Solids, total dissolved [TDS]	----	E162	13	mg/L	49	43	6	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 1223722)</b>											
VA23C6077-001	SQU DS1	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1218667)</b>											
FJ2302913-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.125	0.115	0.010	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1218670)</b>											
FJ2302913-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0151	0.0188	0.0037	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1218671)</b>											
FJ2302913-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1218672)</b>											
KS2304175-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.086	0.083	0.003	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1218989)</b>											
VA23C6077-002	SQU US1	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.418	0.414	0.994%	20%	----
<b>Anions and Nutrients (QC Lot: 1218991)</b>											
VA23C5714-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1218994)</b>											
VA23C5714-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.859	0.534	46.6%	20%	TKND
<b>Anions and Nutrients (QC Lot: 1218995)</b>											
VA23C5714-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0638	0.0721	12.1%	20%	----
<b>Organic / Inorganic Carbon (QC Lot: 1218669)</b>											
FJ2302913-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.42	3.43	0.008	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 1218986)</b>											
VA23C5714-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	4.74	4.77	0.03	Diff <2x LOR	----
<b>Total Sulfides (QC Lot: 1215268)</b>											
CG2315315-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0075	mg/L	0.0325	0.0332	0.0007	Diff <2x LOR	----
<b>Total Metals (QC Lot: 1218162)</b>											
VA23C6014-001	Anonymous	Lead, total	7439-92-1	E420	0.000050	mg/L	0.000151	0.000148	0.000003	Diff <2x LOR	----
VA23C6014-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0049	0.0043	0.0006	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.0202	0.0204	1.43%	20%	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00111	0.00107	3.73%	20%	----



Sub-Matrix: Water					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
<b>Total Metals (QC Lot: 1218162) - continued</b>											
VA23C6014-001	Anonymous	Barium, total	7440-39-3	E420	0.00010	mg/L	0.0248	0.0233	5.95%	20%	---
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	---
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Boron, total	7440-42-8	E420	0.010	mg/L	0.366	0.360	1.63%	20%	---
		Cadmium, total	7440-43-9	E420	0.0000150	mg/L	<0.0000150	<0.0000150	0	Diff <2x LOR	---
		Calcium, total	7440-70-2	E420	0.050	mg/L	70.4	69.2	1.70%	20%	---
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.00626	0.00634	1.42%	20%	---
		Chromium, total	7440-47-3	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00085	0.00084	0.00001	Diff <2x LOR	---
		Copper, total	7440-50-8	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Iron, total	7439-89-6	E420	0.010	mg/L	0.089	0.088	0.0006	Diff <2x LOR	---
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.307	0.312	1.64%	20%	---
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	7.16	6.97	2.77%	20%	---
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0543	0.0545	0.344%	20%	---
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0255	0.0263	2.95%	20%	---
		Nickel, total	7440-02-0	E420	0.000050	mg/L	0.00128	0.00127	0.00001	Diff <2x LOR	---
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	---
		Potassium, total	7440-09-7	E420	0.050	mg/L	41.3	41.3	0.0499%	20%	---
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.0562	0.0555	1.24%	20%	---
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.00297	0.00278	6.72%	20%	---
		Silicon, total	7440-21-3	E420	0.10	mg/L	1.42	1.40	1.08%	20%	---
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Sodium, total	7440-23-5	E420	0.050	mg/L	144	140	2.58%	20%	---
		Strontium, total	7440-24-6	E420	0.00020	mg/L	1.13	1.17	3.67%	20%	---
		Sulfur, total	7704-34-9	E420	0.50	mg/L	138	134	2.53%	20%	---
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	---
		Thallium, total	7440-28-0	E420	0.000010	mg/L	0.000099	0.000094	0.000004	Diff <2x LOR	---
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.00048	0.00039	0.00009	Diff <2x LOR	---
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	0.00190	0.00182	4.39%	20%	---
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000447	0.000424	5.28%	20%	---
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	---
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	---



Sub-Matrix: Water					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
<b>Total Metals (QC Lot: 1218162) - continued</b>											
VA23C6014-001	Anonymous	Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
<b>Total Metals (QC Lot: 1227663)</b>											
KS2304198-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
<b>Total Metals (QC Lot: 1227724)</b>											
VA23C6058-025	Anonymous	Mercury, total	7439-97-6	E508	0.0000250	mg/L	<0.0000250	<0.0000250	0	Diff <2x LOR	----
<b>Dissolved Metals (QC Lot: 1219972)</b>											
VA23C6222-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0021	0.0022	0.0001	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00114	0.00113	0.880%	20%	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00405	0.00404	0.0932%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0218	0.0208	4.49%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000104	0.0000109	0.0000005	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	31.7	30.6	3.57%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000252	0.000246	2.62%	20%	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00030	0.00034	0.00004	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0095	0.0094	0.0001	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	1.74	1.74	0.253%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00311	0.00301	3.51%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00224	0.00225	0.618%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00442	0.00437	0.00004	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.720	0.723	0.377%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00125	0.00116	0.00009	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000371	0.000364	0.000007	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.45	1.40	3.34%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.17	3.05	3.94%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.371	0.373	0.405%	20%	----



Sub-Matrix: Water					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
<b>Dissolved Metals (QC Lot: 1219972) - continued</b>											
VA23C6222-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	11.8	11.8	0.407%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	0.00100	0.00103	2.43%	20%	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000039	0.000040	0.000001	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0019	0.0020	0.00002	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
<b>Dissolved Metals (QC Lot: 1229730)</b>											
FJ2302937-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
<b>Aggregate Organics (QC Lot: 1218247)</b>											
VA23C5062-001	Anonymous	Chemical oxygen demand [COD]	----	E559-L	10	mg/L	<10	<10	0	Diff <2x LOR	----
<b>Aggregate Organics (QC Lot: 1219119)</b>											
TY2311157-006	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	0.0072	0.0082	0.0011	Diff <2x LOR	----
<b>Aggregate Organics (QC Lot: 1219962)</b>											
KS2304171-008	Anonymous	Chemical oxygen demand [COD]	----	E559-L	10	mg/L	18	17	0.9	Diff <2x LOR	----

**Qualifiers**

Qualifier	Description
TKND	TKN duplication was poor due to interference from high nitrate, which causes negative bias on TKN.





## 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: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Physical Tests (QCLot: 1223721)</b>						
Solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
<b>Physical Tests (QCLot: 1223722)</b>						
Solids, total suspended [TSS]	---	E160	3	mg/L	<3.0	---
<b>Anions and Nutrients (QCLot: 1218667)</b>						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
<b>Anions and Nutrients (QCLot: 1218670)</b>						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
<b>Anions and Nutrients (QCLot: 1218671)</b>						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
<b>Anions and Nutrients (QCLot: 1218672)</b>						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	---
<b>Anions and Nutrients (QCLot: 1218989)</b>						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	---
<b>Anions and Nutrients (QCLot: 1218991)</b>						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
<b>Anions and Nutrients (QCLot: 1218994)</b>						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
<b>Anions and Nutrients (QCLot: 1218995)</b>						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
<b>Organic / Inorganic Carbon (QCLot: 1218669)</b>						
Carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
<b>Organic / Inorganic Carbon (QCLot: 1218986)</b>						
Carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
<b>Total Sulfides (QCLot: 1215268)</b>						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	---
<b>Total Metals (QCLot: 1218162)</b>						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (QCLot: 1218162) - continued</b>						
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	---
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	---
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	---
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	---
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	---
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	---
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	---
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	---
<b>Total Metals (QCLot: 1227663)</b>						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (QCLot: 1227724)</b>						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
<b>Dissolved Metals (QCLot: 1219972)</b>						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	---
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	---
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	---
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	---
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	---
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	---
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Dissolved Metals (QCLot: 1219972) - continued</b>						
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
<b>Dissolved Metals (QCLot: 1229730)</b>						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
<b>Aggregate Organics (QCLot: 1218247)</b>						
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	<10	----
<b>Aggregate Organics (QCLot: 1219119)</b>						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
<b>Aggregate Organics (QCLot: 1219962)</b>						
Chemical oxygen demand [COD]	----	E559-L	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: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				Qualifier
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	
<b>Physical Tests (QCLot: 1223721)</b>									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	89.6	85.0	115	----
<b>Physical Tests (QCLot: 1223722)</b>									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	97.3	85.0	115	----
<b>Anions and Nutrients (QCLot: 1218667)</b>									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	96.0	75.0	125	----
<b>Anions and Nutrients (QCLot: 1218670)</b>									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	91.5	80.0	120	----
<b>Anions and Nutrients (QCLot: 1218671)</b>									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	95.6	85.0	115	----
<b>Anions and Nutrients (QCLot: 1218672)</b>									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	93.4	75.0	125	----
<b>Anions and Nutrients (QCLot: 1218989)</b>									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	97.9	75.0	125	----
<b>Anions and Nutrients (QCLot: 1218991)</b>									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.4	85.0	115	----
<b>Anions and Nutrients (QCLot: 1218994)</b>									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	98.8	75.0	125	----
<b>Anions and Nutrients (QCLot: 1218995)</b>									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	89.4	80.0	120	----
<b>Organic / Inorganic Carbon (QCLot: 1218669)</b>									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	99.0	80.0	120	----
<b>Organic / Inorganic Carbon (QCLot: 1218986)</b>									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	104	80.0	120	----
<b>Total Sulfides (QCLot: 1215268)</b>									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	97.1	80.0	120	----
<b>Total Metals (QCLot: 1218162)</b>									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	110	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	102	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Total Metals (QCLot: 1218162) - continued</b>									
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	111	80.0	120	---
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	112	80.0	120	---
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	102	80.0	120	---
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	100.0	80.0	120	---
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	99.8	80.0	120	---
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	105	80.0	120	---
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	107	80.0	120	---
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	102	80.0	120	---
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	104	80.0	120	---
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	---
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	104	80.0	120	---
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	99.3	80.0	120	---
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	106	80.0	120	---
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	99.4	80.0	120	---
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	106	80.0	120	---
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	106	80.0	120	---
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	99.8	80.0	120	---
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	104	80.0	120	---
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	108	80.0	120	---
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	106	80.0	120	---
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	108	80.0	120	---
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	105	80.0	120	---
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	109	80.0	120	---
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	95.3	80.0	120	---
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	106	80.0	120	---
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	104	80.0	120	---
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	91.4	80.0	120	---
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	100	80.0	120	---
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	99.7	80.0	120	---
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	98.0	80.0	120	---
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	103	80.0	120	---
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	100	80.0	120	---
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	101	80.0	120	---
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	100	80.0	120	---
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	107	80.0	120	---
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	105	80.0	120	---



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Total Metals (QCLot: 1218162) - continued</b>									
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	103	80.0	120	---
<b>Total Metals (QCLot: 1227663)</b>									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	101	80.0	120	---
<b>Total Metals (QCLot: 1227724)</b>									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	101	80.0	120	---
<b>Dissolved Metals (QCLot: 1219972)</b>									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	102	80.0	120	---
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	115	80.0	120	---
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	107	80.0	120	---
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	107	80.0	120	---
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	95.1	80.0	120	---
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	100	80.0	120	---
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	102	80.0	120	---
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	106	80.0	120	---
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	103	80.0	120	---
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	112	80.0	120	---
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	102	80.0	120	---
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	---
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.5	80.0	120	---
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	101	80.0	120	---
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	105	80.0	120	---
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	---
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	107	80.0	120	---
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	---
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	109	80.0	120	---
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	---
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	99.8	80.0	120	---
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.7	80.0	120	---
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	104	80.0	120	---
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	104	80.0	120	---
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	99.6	80.0	120	---
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	104	80.0	120	---
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	104	80.0	120	---
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	114	80.0	120	---
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	91.5	80.0	120	---



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1219972) - continued</b>									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	112	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	101	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	104	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	108	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	94.3	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	105	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	102	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	111	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	96.8	80.0	120	----
<b>Aggregate Organics (QCLot: 1218247)</b>									
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	100 mg/L	103	85.0	115	----
<b>Aggregate Organics (QCLot: 1219119)</b>									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	101	85.0	115	----
<b>Aggregate Organics (QCLot: 1219962)</b>									
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	100 mg/L	103	85.0	115	----





## 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: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Anions and Nutrients (QCLot: 1218667)</b>										
FJ2302913-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.56 mg/L	2.5 mg/L	102	70.0	130	----
<b>Anions and Nutrients (QCLot: 1218670)</b>										
FJ2302913-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0459 mg/L	0.05 mg/L	91.8	70.0	130	----
<b>Anions and Nutrients (QCLot: 1218671)</b>										
FJ2302913-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0965 mg/L	0.1 mg/L	96.5	75.0	125	----
<b>Anions and Nutrients (QCLot: 1218672)</b>										
KS2304175-002	Anonymous	Nitrogen, total	7727-37-9	E366	0.395 mg/L	0.4 mg/L	98.8	70.0	130	----
<b>Anions and Nutrients (QCLot: 1218989)</b>										
VA23C6226-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.382 mg/L	0.4 mg/L	95.6	70.0	130	----
<b>Anions and Nutrients (QCLot: 1218991)</b>										
VA23C5714-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.101 mg/L	0.1 mg/L	101	75.0	125	----
<b>Anions and Nutrients (QCLot: 1218994)</b>										
VA23C5714-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	ND mg/L	2.5 mg/L	ND	70.0	130	----
<b>Anions and Nutrients (QCLot: 1218995)</b>										
VA23C5714-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	ND mg/L	0.05 mg/L	ND	70.0	130	----
<b>Organic / Inorganic Carbon (QCLot: 1218669)</b>										
FJ2302913-002	Anonymous	Carbon, total organic [TOC]	----	E355-L	5.22 mg/L	5 mg/L	104	70.0	130	----
<b>Organic / Inorganic Carbon (QCLot: 1218986)</b>										
VA23C5714-002	Anonymous	Carbon, total organic [TOC]	----	E355-L	ND mg/L	5 mg/L	ND	70.0	130	----
<b>Total Sulfides (QCLot: 1215268)</b>										
CG2315315-003	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.208 mg/L	0.2 mg/L	104	75.0	125	----
<b>Total Metals (QCLot: 1218162)</b>										
VA23C6014-002	Anonymous	Aluminum, total	7429-90-5	E420	0.206 mg/L	0.2 mg/L	103	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0196 mg/L	0.02 mg/L	98.1	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Barium, total	7440-39-3	E420	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0406 mg/L	0.04 mg/L	101	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0101 mg/L	0.01 mg/L	101	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Total Metals (QCLot: 1218162) - continued</b>										
VA23C6014-002	Anonymous	Boron, total	7440-42-8	E420	0.096 mg/L	0.1 mg/L	95.9	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00408 mg/L	0.004 mg/L	102	70.0	130	----
		Calcium, total	7440-70-2	E420	4.18 mg/L	4 mg/L	104	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0104 mg/L	0.01 mg/L	104	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0412 mg/L	0.04 mg/L	103	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0199 mg/L	0.02 mg/L	99.7	70.0	130	----
		Copper, total	7440-50-8	E420	0.0200 mg/L	0.02 mg/L	99.8	70.0	130	----
		Iron, total	7439-89-6	E420	2.05 mg/L	2 mg/L	102	70.0	130	----
		Lead, total	7439-92-1	E420	0.0201 mg/L	0.02 mg/L	101	70.0	130	----
		Lithium, total	7439-93-2	E420	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		Magnesium, total	7439-95-4	E420	1.03 mg/L	1 mg/L	103	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0408 mg/L	0.04 mg/L	102	70.0	130	----
		Phosphorus, total	7723-14-0	E420	9.92 mg/L	10 mg/L	99.2	70.0	130	----
		Potassium, total	7440-09-7	E420	4.03 mg/L	4 mg/L	101	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0209 mg/L	0.02 mg/L	104	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0416 mg/L	0.04 mg/L	104	70.0	130	----
		Silicon, total	7440-21-3	E420	9.55 mg/L	10 mg/L	95.5	70.0	130	----
		Silver, total	7440-22-4	E420	0.00387 mg/L	0.004 mg/L	96.8	70.0	130	----
		Sodium, total	7440-23-5	E420	2.03 mg/L	2 mg/L	102	70.0	130	----
		Strontium, total	7440-24-6	E420	0.0200 mg/L	0.02 mg/L	99.8	70.0	130	----
		Sulfur, total	7704-34-9	E420	19.3 mg/L	20 mg/L	96.4	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0405 mg/L	0.04 mg/L	101	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00376 mg/L	0.004 mg/L	93.9	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0212 mg/L	0.02 mg/L	106	70.0	130	----
		Tin, total	7440-31-5	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0396 mg/L	0.04 mg/L	99.1	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0194 mg/L	0.02 mg/L	96.9	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00387 mg/L	0.004 mg/L	96.8	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		Zinc, total	7440-66-6	E420	0.422 mg/L	0.4 mg/L	105	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0415 mg/L	0.04 mg/L	104	70.0	130	----
<b>Total Metals (QCLot: 1227663)</b>										
KS2304198-002	Anonymous	Mercury, total	7439-97-6	E508	0.000105 mg/L	0.0001 mg/L	105	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Total Metals (QCLot: 1227724)</b>										
VA23C6058-026	Anonymous	Mercury, total	7439-97-6	E508	0.000439 mg/L	0.0005 mg/L	87.9	70.0	130	----
<b>Dissolved Metals (QCLot: 1219972)</b>										
VA23C6222-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.195 mg/L	0.2 mg/L	97.7	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0225 mg/L	0.02 mg/L	112	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0394 mg/L	0.04 mg/L	98.5	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.0100 mg/L	0.01 mg/L	100	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.098 mg/L	0.1 mg/L	98.5	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00404 mg/L	0.004 mg/L	101	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.0112 mg/L	0.01 mg/L	112	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0196 mg/L	0.02 mg/L	97.9	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0188 mg/L	0.02 mg/L	94.1	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.98 mg/L	2 mg/L	98.9	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0200 mg/L	0.02 mg/L	99.8	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0968 mg/L	0.1 mg/L	96.8	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0199 mg/L	0.02 mg/L	99.5	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0215 mg/L	0.02 mg/L	108	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0395 mg/L	0.04 mg/L	98.7	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	9.59 mg/L	10 mg/L	95.9	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.83 mg/L	4 mg/L	95.8	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.41 mg/L	10 mg/L	94.1	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00420 mg/L	0.004 mg/L	105	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	19.9 mg/L	20 mg/L	99.7	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0436 mg/L	0.04 mg/L	109	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00367 mg/L	0.004 mg/L	91.7	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0189 mg/L	0.02 mg/L	94.4	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0201 mg/L	0.02 mg/L	100	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1219972) - continued</b>										
VA23C6222-002	Anonymous	Titanium, dissolved	7440-32-6	E421	0.0383 mg/L	0.04 mg/L	95.9	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00410 mg/L	0.004 mg/L	102	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.402 mg/L	0.4 mg/L	100	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0446 mg/L	0.04 mg/L	111	70.0	130	----
<b>Dissolved Metals (QCLot: 1229730)</b>										
FJ2302937-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000989 mg/L	0.0001 mg/L	98.9	70.0	130	----
<b>Aggregate Organics (QCLot: 1218247)</b>										
VA23C5062-002	Anonymous	Chemical oxygen demand [COD]	----	E559-L	114 mg/L	100 mg/L	114	75.0	125	----
<b>Aggregate Organics (QCLot: 1219119)</b>										
TY2311157-007	Anonymous	Phenols, total (4AAP)	----	E562	0.0191 mg/L	0.02 mg/L	95.4	75.0	125	----
<b>Aggregate Organics (QCLot: 1219962)</b>										
KS2304171-009	Anonymous	Chemical oxygen demand [COD]	----	E559-L	98 mg/L	100 mg/L	98.0	75.0	125	----



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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

COC Number: 20 - 1070612

Page of

<b>Report To</b> Company: TRITON ENVIRONMENTAL Contact: Phone: Company address below will appear on the final report Street: City/Province: Postal Code:		<b>Reports / Recipients</b> Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL) Merge QC/QCI Reports with COA <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A <input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: 1 Email 2: Email 3:		<b>Turnaround Time (TAT) Requested</b> <input type="checkbox"/> Routine [R] if received by 3pm M-F - no surcharges apply <input type="checkbox"/> 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum <input type="checkbox"/> 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum <input type="checkbox"/> 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum <input type="checkbox"/> 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum <input type="checkbox"/> Same day [E2] if received by 10am M-S - 200% rush surcharge. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests Date and Time Required for all E&P-TATs: dd-mm-yy hh:mm am/pm		AFFIX ALS BARCODE LABEL HERE (ALS use only)											
<b>Invoice To</b> Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		<b>Invoice Recipients</b> Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: Email 2:		<b>Analysis Request</b> For all tests with rush TATs requested, please contact your AM to confirm availability.													
<b>Project Information</b> ALS Account # / Quote #: BR414066 Job #: PO / AFE: LSD:		<b>Oil and Gas Required Fields (client use)</b> AFE/Cost Center: PO# Major/Minor Code: Routing Code: Requisitioner: Location:		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below		NUMBER OF CONTAINERS Metals Total Metals dissolved Mercury TSS TDS NUT / TOC / COD / TN / TP / NH4 / PHEN Sulphides Total		SAMPLES ON HOLD EXTENDED STORAGE REQUIRED SUSPECTED HAZARD (see notes)									
ALS Lab Work Order # (ALS use only): C6077		ALS Contact:		Sampler:													
ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type													
	SQU DS1 PH 7.54 temperature 3.2°C conductivity - 74.7	30-10-2023	10:10		7	✓	F	✓	✓	P	P						
	SQU US1 please run total metals + mercury from 'general' bottle - labelled as US1 sample not preserved. PH 7.68 temperature 3.5°C conductivity - 74.2	30-10-2023	10:45		3	✓	F	✓	✓	✓	✓						

Environmental Division  
Vancouver  
Work Order Reference  
VA23C6077



Telephone: +1 604 253 4188

<b>Drinking Water (DW) Samples (client use)</b> Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		<b>Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)</b>		<b>SAMPLE RECEIPT DETAILS (ALS use only)</b> Cooling Method: <input type="checkbox"/> NONE <input checked="" type="checkbox"/> ICE <input type="checkbox"/> ICE PACKS <input type="checkbox"/> FROZEN <input type="checkbox"/> COOLING INITIATED Submission Comments identified on Sample Receipt Notification: <input type="checkbox"/> YES <input type="checkbox"/> NO Cooler Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A Sample Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A INITIAL COOLER TEMPERATURES °C: FINAL COOLER TEMPERATURES °C:			
<b>SHIPMENT RELEASE (client use)</b> Released by: Date: Time:		<b>INITIAL SHIPMENT RECEPTION (ALS use only)</b> Received by: Date: Time:		<b>FINAL SHIPMENT RECEPTION (ALS use only)</b> Received by: Date: Time:			



## CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

<p><b>Work Order</b> : <b>VA23C6722</b></p> <p><b>Client</b> : <b>Triton Environmental Consultants Ltd.</b></p> <p><b>Contact</b> :</p> <p><b>Address</b> : Suite 650, 1040 West Georgia St Vancouver BC Canada V6E 4H1</p> <p><b>Telephone</b> : 604 631 2213</p> <p><b>Project</b> : ----</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : 20-1070292</p> <p><b>Sampler</b> : ----</p> <p><b>Site</b> : Water Analysis</p> <p><b>Quote number</b> : VA23-TRIT100-012</p> <p><b>No. of samples received</b> : 2</p> <p><b>No. of samples analysed</b> : 2</p>	<p><b>Page</b> : 1 of 16</p> <p><b>Laboratory</b> : ALS Environmental - Vancouver</p> <p><b>Account Manager</b> : Can Dang</p> <p><b>Address</b> : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p><b>Telephone</b> : +1 604 253 4188</p> <p><b>Date Samples Received</b> : 06-Nov-2023 17:15</p> <p><b>Date Analysis Commenced</b> : 07-Nov-2023</p> <p><b>Issue Date</b> : 18-Nov-2023 10:41</p>
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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
- Guideline Comparison

**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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Alicia Chandra	Analyst	Inorganics, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Inorganics, Edmonton, Alberta
Ghazaleh Khanmirzaei	Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Leon Yang	Analyst	Inorganics, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Ophelia Chiu	Department Manager - Organics	Organics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Administration, Burnaby, British Columbia



### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
SQU US 1	Water	Phosphorus, total		BCAWWQG	SDW AO	0.0246 mg/L	0.01 mg/L
	Water	Iron, total		BCAWWQG	SDW AO	0.615 mg/L	0.3 mg/L
	Water	Phosphorus, total		BCAWWQG	SDW AO	<0.050	0.01 mg/L
	Water	Carbon, total organic [TOC]		BCAWWQG	SDW MAC	4.37 mg/L	4 mg/L
	Water	Aluminum, total	Guideline limit based on $WQG = \{[0.645 \ln(\text{pH}) + 2.255 \ln(\text{TOC})] + [1.995 \text{Hardness}] - 0.284\} / (\ln(\text{TOC}) - 9.898) / 3$ and Hardness = 10, pH = 6 and DOC = 0.08	BCAWWQG	FAL-LT	0.817 mg/L	0.00185 mg/L
	Water	Calcium, dissolved	Sensitivity to acid inputs can be determined by the concentration of dissolved calcium: < 4 mg/L is High; 4-8 mg/L is Moderate; >8 mg/L is Low.	BCAWWQG	FAL-LT	4.22 mg/L	8 mg/L
	Water	Copper, dissolved	0.2 ug/L is considered to be the lowest concentration routinely measured. Refer to <a href="https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/copper/bc_blm_users_manual.pdf">https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/copper/bc_blm_users_manual.pdf</a> for calculation of site specific WQG.	BCAWWQG	FAL-LT	0.00106 mg/L	0.0002 mg/L
	Water	Copper, total	WQG applies to dissolved metal result. WQG based on T = 15, hardness = 30 mg/L, DOC = 3 mg/L and pH = 6.5 using the BC BLM.	BCAWWQG	FAL-ST	0.00223 mg/L	0.0009 mg/L
	Water	Copper, dissolved	WQG based on T = 15, hardness = 30 mg/L, DOC = 3 mg/L and pH = 6.5 using the BC BLM.	BCAWWQG	FAL-ST	0.00106 mg/L	0.0009 mg/L
	Water	Mercury, total		BCAWWQG	W-LT	<0.0000050	0 mg/L
	Water	Mercury, dissolved		BCAWWQG	W-LT	<0.0000050	0 mg/L
SQU DS 1	Water	Phosphorus, total		BCAWWQG	SDW AO	0.0405 mg/L	0.01 mg/L
	Water	Iron, total		BCAWWQG	SDW AO	1.06 mg/L	0.3 mg/L
	Water	Manganese, total		BCAWWQG	SDW AO	0.0272 mg/L	0.02 mg/L
	Water	Phosphorus, total		BCAWWQG	SDW AO	<0.050	0.01 mg/L
	Water	Aluminum, total	Guideline limit based on $WQG = \{[0.645 \ln(\text{pH}) + 2.255 \ln(\text{TOC})] + [1.995 \text{Hardness}] - 0.284\} / (\ln(\text{TOC}) - 9.898) / 3$ and Hardness = 10, pH = 6 and DOC = 0.08	BCAWWQG	FAL-LT	1.30 mg/L	0.00185 mg/L
	Water	Zinc, total	Chronic long-term WQG ( $\mu\text{g/L}$ ) = $\exp(0.947[\ln(\text{hardness})] - 0.815[\text{pH}] + 0.398[\ln(\text{DOC})] + 4.625) / 2$ . Based on Hardness = 50 mg/L, pH = 7.5 and DOC = 0.5 mg/L	BCAWWQG	FAL-LT	0.0046 mg/L	0.00348 mg/L
	Water	Calcium, dissolved	Sensitivity to acid inputs can be determined by the concentration of dissolved calcium: < 4 mg/L is High; 4-8 mg/L is Moderate; >8 mg/L is Low.	BCAWWQG	FAL-LT	3.98 mg/L	8 mg/L



SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
	Water	Copper, dissolved	0.2 ug/L is considered to be the lowest concentration routinely measured. Refer to <a href="https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/copper/bc_blm_users_manual.pdf">https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/copper/bc_blm_users_manual.pdf</a> for calculation of site specific WQG.	BCAWWQG	FAL-LT	0.00102 mg/L	0.0002 mg/L
	Water	Copper, total	WQG applies to dissolved metal result. WQG based on T = 15, hardness = 30 mg/L, DOC = 3 mg/L and pH = 6.5 using the BC BLM.	BCAWWQG	FAL-ST	0.00306 mg/L	0.0009 mg/L
	Water	Iron, total		BCAWWQG	FAL-ST	1.06 mg/L	1 mg/L
	Water	Copper, dissolved	WQG based on T = 15, hardness = 30 mg/L, DOC = 3 mg/L and pH = 6.5 using the BC BLM.	BCAWWQG	FAL-ST	0.00102 mg/L	0.0009 mg/L
	Water	Copper, total		BCAWWQG	MAL-ST	0.00306 mg/L	0.003 mg/L
	Water	Mercury, total		BCAWWQG	W-LT	<0.0000050	0 mg/L
	Water	Mercury, dissolved		BCAWWQG	W-LT	<0.0000050	0 mg/L

### 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.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key : LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
°C	degrees celsius
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
pH units	pH units





>: greater than.  
<: less than.

Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).

For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit.

### Sample Comments

Sample	Client Id	Comment
VA23C6722-001	SQU US 1	VA23C6722-1: Low level DCM result; LOR raised to lowest BC CSR standard.
VA23C6722-002	SQU DS 1	VA23C6722-2: Low level DCM result; LOR raised to lowest BC CSR standard.



## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU US 1	SQU DS 1	----	----	----	----	----
				Sampling date/time	06-Nov-2023 11:18	06-Nov-2023 10:00	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C6722-001	VA23C6722-002	-----	-----	-----	-----	-----	-----
<b>Field Tests</b>											
Conductivity, field	----	EF001/VA	µS/cm	53.000	55.000	----	----	----	----	----	----
pH, field	----	EF001/VA	pH units	7.64	7.73	----	----	----	----	----	----
Temperature, field	----	EF001/VA	°C	7.20	7.30	----	----	----	----	----	----
<b>Physical Tests</b>											
Hardness (as CaCO <sub>3</sub> ), dissolved	----	EC100/VA	mg/L	12.3	11.6	----	----	----	----	----	----
Hardness (as CaCO <sub>3</sub> ), from total Ca/Mg	----	EC100A/VA	mg/L	14.0	14.8	----	----	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	mg/L	36	34	----	----	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	mg/L	13.9	22.9	----	----	----	----	----	----
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	7664-41-7	E298/VA	mg/L	0.0370	0.0381	----	----	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	mg/L	0.104	0.118	----	----	----	----	----	----
Nitrogen, total	7727-37-9	E366/VA	mg/L	0.159	0.166	----	----	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	mg/L	0.0246	0.0405	----	----	----	----	----	----
<b>Organic / Inorganic Carbon</b>											
Carbon, total organic [TOC]	----	E355-L/VA	mg/L	4.37	3.82	----	----	----	----	----	----
<b>Total Sulfides</b>											
Sulfide, total (as S)	18496-25-8	E395/VA	mg/L	<0.0015	<0.0015	----	----	----	----	----	----
Sulfide, un-ionized (as H <sub>2</sub> S), from total	7783-06-4	EC395/VA	mg/L	<0.0015	<0.0015	----	----	----	----	----	----
Sulfide, total (as H <sub>2</sub> S)	7783-06-4	E395/VA	mg/L	<0.0016	<0.0016	----	----	----	----	----	----
<b>Total Metals</b>											
Aluminum, total	7429-90-5	E420/VA	mg/L	0.817	1.30	----	----	----	----	----	----
Antimony, total	7440-36-0	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Arsenic, total	7440-38-2	E420/VA	mg/L	0.00017	0.00023	----	----	----	----	----	----
Barium, total	7440-39-3	E420/VA	mg/L	0.0156	0.0213	----	----	----	----	----	----
Beryllium, total	7440-41-7	E420/VA	mg/L	<0.000100	<0.000100	----	----	----	----	----	----
Bismuth, total	7440-69-9	E420/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Boron, total	7440-42-8	E420/VA	mg/L	<0.010	<0.010	----	----	----	----	----	----



## Analytical Results Evaluation

				Client sample ID	SQU US 1	SQU DS 1	----	----	----	----	----
Matrix: Water											
				Sampling date/time	06-Nov-2023 11:18	06-Nov-2023 10:00	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C6722-001	VA23C6722-002	-----	-----	-----	-----	-----	-----
<b>Total Metals</b>											
<b>Cadmium, total</b>	7440-43-9	E420/VA	mg/L	0.0000127	0.0000114	----	----	----	----	----	----
<b>Calcium, total</b>	7440-70-2	E420/VA	mg/L	4.49	4.50	----	----	----	----	----	----
<b>Cesium, total</b>	7440-46-2	E420/VA	mg/L	0.000038	0.000057	----	----	----	----	----	----
<b>Chromium, total</b>	7440-47-3	E420/VA	mg/L	<0.00050	0.00092	----	----	----	----	----	----
<b>Cobalt, total</b>	7440-48-4	E420/VA	mg/L	0.00029	0.00052	----	----	----	----	----	----
<b>Copper, total</b>	7440-50-8	E420/VA	mg/L	0.00223	0.00306	----	----	----	----	----	----
<b>Iron, total</b>	7439-89-6	E420/VA	mg/L	0.615	1.06	----	----	----	----	----	----
<b>Lead, total</b>	7439-92-1	E420/VA	mg/L	0.000150	0.000223	----	----	----	----	----	----
<b>Lithium, total</b>	7439-93-2	E420/VA	mg/L	<0.0010	<0.0010	----	----	----	----	----	----
<b>Magnesium, total</b>	7439-95-4	E420/VA	mg/L	0.665	0.855	----	----	----	----	----	----
<b>Manganese, total</b>	7439-96-5	E420/VA	mg/L	0.0160	0.0272	----	----	----	----	----	----
<b>Mercury, total</b>	7439-97-6	E508/VA	mg/L	<0.0000050	<0.0000050	----	----	----	----	----	----
<b>Molybdenum, total</b>	7439-98-7	E420/VA	mg/L	0.000450	0.000461	----	----	----	----	----	----
<b>Nickel, total</b>	7440-02-0	E420/VA	mg/L	<0.00050	0.00061	----	----	----	----	----	----
<b>Phosphorus, total</b>	7723-14-0	E420/VA	mg/L	<0.050	<0.050	----	----	----	----	----	----
<b>Potassium, total</b>	7440-09-7	E420/VA	mg/L	0.554	0.732	----	----	----	----	----	----
<b>Rubidium, total</b>	7440-17-7	E420/VA	mg/L	0.00119	0.00184	----	----	----	----	----	----
<b>Selenium, total</b>	7782-49-2	E420/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
<b>Silicon, total</b>	7440-21-3	E420/VA	mg/L	4.00	4.67	----	----	----	----	----	----
<b>Silver, total</b>	7440-22-4	E420/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
<b>Sodium, total</b>	7440-23-5	E420/VA	mg/L	1.42	1.52	----	----	----	----	----	----
<b>Strontium, total</b>	7440-24-6	E420/VA	mg/L	0.0285	0.0298	----	----	----	----	----	----
<b>Sulfur, total</b>	7704-34-9	E420/VA	mg/L	0.91	0.87	----	----	----	----	----	----
<b>Tellurium, total</b>	13494-80-9	E420/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
<b>Thallium, total</b>	7440-28-0	E420/VA	mg/L	<0.000010	0.000010	----	----	----	----	----	----
<b>Thorium, total</b>	7440-29-1	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
<b>Tin, total</b>	7440-31-5	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
<b>Titanium, total</b>	7440-32-6	E420/VA	mg/L	0.0342	0.0641	----	----	----	----	----	----
<b>Tungsten, total</b>	7440-33-7	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----



## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU US 1	SQU DS 1	----	----	----	----	----
				Sampling date/time	06-Nov-2023 11:18	06-Nov-2023 10:00	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C6722-001	VA23C6722-002	-----	-----	-----	-----	-----	-----
<b>Total Metals</b>											
Uranium, total	7440-61-1	E420/VA	mg/L	0.000061	0.000079	----	----	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	mg/L	0.00198	0.00294	----	----	----	----	----	----
Zinc, total	7440-66-6	E420/VA	mg/L	0.0031	0.0046	----	----	----	----	----	----
Zirconium, total	7440-67-7	E420/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
<b>Dissolved Metals</b>											
Aluminum, dissolved	7429-90-5	E421/VA	mg/L	0.106	0.0958	----	----	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	mg/L	<0.00010	0.00011	----	----	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	mg/L	0.00650	0.00794	----	----	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	mg/L	<0.000100	<0.000100	----	----	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Boron, dissolved	7440-42-8	E421/VA	mg/L	<0.010	<0.010	----	----	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	mg/L	0.0000106	0.0000082	----	----	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	mg/L	4.22	3.98	----	----	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Copper, dissolved	7440-50-8	E421/VA	mg/L	0.00106	0.00102	----	----	----	----	----	----
Iron, dissolved	7439-89-6	E421/VA	mg/L	0.051	0.056	----	----	----	----	----	----
Lead, dissolved	7439-92-1	E421/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	mg/L	<0.0010	<0.0010	----	----	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	mg/L	0.428	0.413	----	----	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	mg/L	0.00306	0.00404	----	----	----	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	mg/L	<0.0000050	<0.0000050	----	----	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	mg/L	0.000414	0.000388	----	----	----	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	mg/L	<0.050	<0.050	----	----	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	mg/L	0.412	0.456	----	----	----	----	----	----



## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU US 1	SQU DS 1	----	----	----	----	----
				Sampling date/time	06-Nov-2023 11:18	06-Nov-2023 10:00	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C6722-001	VA23C6722-002	-----	-----	-----	-----	-----	-----
<b>Dissolved Metals</b>											
Rubidium, dissolved	7440-17-7	E421/VA	mg/L	0.00050	0.00065	----	----	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	mg/L	3.20	2.99	----	----	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	mg/L	1.33	1.33	----	----	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	mg/L	0.0253	0.0239	----	----	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	mg/L	0.87	0.83	----	----	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Tin, dissolved	7440-31-5	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	mg/L	0.00193	0.00190	----	----	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	mg/L	0.000039	0.000043	----	----	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	mg/L	0.00079	0.00070	----	----	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	mg/L	<0.0010	<0.0010	----	----	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	Field	Field	----	----	----	----	----	----
<b>Aggregate Organics</b>											
Chemical oxygen demand [COD]	----	E559-L/VA	mg/L	<10	15	----	----	----	----	----	----
Phenols, total (4AAP)	----	E562/EO	mg/L	<0.0010	<0.0010	----	----	----	----	----	----
<b>Hydrocarbons Surrogates</b>											
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	%	92.6	95.6	----	----	----	----	----	----
<b>Volatile Organic Compounds Surrogates</b>											
Bromofluorobenzene, 4-	460-00-4	E611C/VA	%	82.2	82.2	----	----	----	----	----	----
Diffuorobenzene, 1,4-	540-36-3	E611C/VA	%	99.6	99.1	----	----	----	----	----	----
<b>Polycyclic Aromatic Hydrocarbons Surrogates</b>											
Chrysene-d12	1719-03-5	E641A/VA	%	83.9	87.7	----	----	----	----	----	----



## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU US 1	SQU DS 1	----	----	----	----	----
				Sampling date/time	06-Nov-2023 11:18	06-Nov-2023 10:00	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C6722-001	VA23C6722-002	-----	-----	-----	-----	-----	-----
<b>Polycyclic Aromatic Hydrocarbons Surrogates</b>											
<b>Naphthalene-d8</b>	1146-65-2	E641A/VA	%	91.5	98.3	----	----	----	----	----	----
<b>Phenanthrene-d10</b>	1517-22-2	E641A/VA	%	105	115	----	----	----	----	----	----
<b>Glycols Surrogates</b>											
<b>Propanediol, 1,3-</b>	504-63-2	E680E/VA	%	101	102	----	----	----	----	----	----

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.



### Summary of Guideline Limits

Analyte	CAS Number	Unit	BCAWWQG L-ST	BCAWWQG MAL-LT	BCAWWQG MAL-ST	BCAWWQG W-LT	BCAWWQG W-ST		
<b>Field Tests</b>									
Conductivity, field	----	µS/cm	--	--	<a--	--	--		
pH, field	----	pH units	--	--	<a--	--	--		
Temperature, field	----	°C	--	--	<a--	--	--		
<b>Physical Tests</b>									
Hardness (as CaCO3), dissolved	----	mg/L	--	--	<a--	--	--		
Hardness (as CaCO3), from total Ca/Mg	----	mg/L	--	--	<a--	--	--		
Solids, total dissolved [TDS]	----	mg/L	--	--	<a--	3000 mg/L	--		
Solids, total suspended [TSS]	----	mg/L	--	25 mg/L	<a--	--	--		
<b>Anions and Nutrients</b>									
Ammonia, total (as N)	7664-41-7	mg/L	--	0.1 mg/L	0.67 mg/L	--	--		
Kjeldahl nitrogen, total [TKN]	----	mg/L	--	--	<a--	--	--		
Nitrogen, total	7727-37-9	mg/L	--	--	<a--	--	--		
Phosphorus, total	7723-14-0	mg/L	--	--	<a--	--	--		
<b>Organic / Inorganic Carbon</b>									
Carbon, total organic [TOC]	----	mg/L	--	--	<a--	--	--		
<b>Total Sulfides</b>									
Sulfide, total (as H2S)	7783-06-4	mg/L	--	0.002 mg/L	<a--	0.05 mg/L	--		
Sulfide, total (as S)	18496-25-8	mg/L	--	--	<a--	--	--		
Sulfide, un-ionized (as H2S), from total	7783-06-4	mg/L	--	--	<a--	--	--		
<b>Total Metals</b>									
Aluminum, total	7429-90-5	mg/L	5 mg/L	--	<a--	--	5 mg/L		
Antimony, total	7440-36-0	mg/L	--	--	<a--	--	--		
Arsenic, total	7440-38-2	mg/L	--	0.0125 mg/L	<a--	0.025 mg/L	--		
Barium, total	7440-39-3	mg/L	--	--	<a--	--	--		
Beryllium, total	7440-41-7	mg/L	--	0.1 mg/L	<a--	--	--		
Bismuth, total	7440-69-9	mg/L	--	--	<a--	--	--		
Boron, total	7440-42-8	mg/L	--	1.2 mg/L	<a--	5 mg/L	--		
Cadmium, total	7440-43-9	mg/L	--	0.00012 mg/L	<a--	--	--		
Calcium, total	7440-70-2	mg/L	--	--	<a--	--	--		
Cesium, total	7440-46-2	mg/L	--	--	<a--	--	--		
Chromium, total	7440-47-3	mg/L	--	0.0015 mg/L	<a--	--	--		
Cobalt, total	7440-48-4	mg/L	--	--	<a--	--	--		
Copper, total	7440-50-8	mg/L	0.3 mg/L	--	0.003 mg/L	--	0.3 mg/L		
Iron, total	7439-89-6	mg/L	--	--	<a--	--	--		
Lead, total	7439-92-1	mg/L	0.1 mg/L	0.002 mg/L	0.14 mg/L	--	0.1 mg/L		
Lithium, total	7439-93-2	mg/L	--	--	<a--	5 mg/L	--		
Magnesium, total	7439-95-4	mg/L	--	--	<a--	100 mg/L	--		



Analyte	CAS Number	Unit	BCAWWQG L-ST	BCAWWQG MAL-LT	BCAWWQG MAL-ST	BCAWWQG W-LT	BCAWWQG W-ST		
<b>Total Metals - Continued</b>									
Manganese, total	7439-96-5	mg/L	--	0.1 mg/L	<a--	--	--		
Mercury, total	7439-97-6	mg/L	0.003 mg/L	1E-05 mg/L	<a--	1E-06 mg/L	--		
Molybdenum, total	7439-98-7	mg/L	--	--	<a--	0.016 mg/L	--		
Nickel, total	7440-02-0	mg/L	--	0.0083 mg/L	<a--	1 mg/L	--		
Phosphorus, total	7723-14-0	mg/L	--	--	<a--	--	--		
Potassium, total	7440-09-7	mg/L	--	--	<a--	--	--		
Rubidium, total	7440-17-7	mg/L	--	--	<a--	--	--		
Selenium, total	7782-49-2	mg/L	--	0.002 mg/L	<a--	0.002 mg/L	--		
Silicon, total	7440-21-3	mg/L	--	--	<a--	--	--		
Silver, total	7440-22-4	mg/L	--	0.0015 mg/L	<a--	--	--		
Sodium, total	7440-23-5	mg/L	--	--	<a--	200 mg/L	--		
Strontium, total	7440-24-6	mg/L	--	--	<a--	--	--		
Sulfur, total	7704-34-9	mg/L	--	--	<a--	--	--		
Tellurium, total	13494-80-9	mg/L	--	--	<a--	--	--		
Thallium, total	7440-28-0	mg/L	--	--	<a--	--	--		
Thorium, total	7440-29-1	mg/L	--	--	<a--	--	--		
Tin, total	7440-31-5	mg/L	--	--	<a--	--	--		
Titanium, total	7440-32-6	mg/L	--	--	<a--	--	--		
Tungsten, total	7440-33-7	mg/L	--	--	<a--	--	--		
Uranium, total	7440-61-1	mg/L	--	0.1 mg/L	<a--	0.2 mg/L	--		
Vanadium, total	7440-62-2	mg/L	--	0.05 mg/L	<a--	0.1 mg/L	--		
Zinc, total	7440-66-6	mg/L	--	0.01 mg/L	0.055 mg/L	--	--		
Zirconium, total	7440-67-7	mg/L	--	--	<a--	--	--		
<b>Dissolved Metals</b>									
Aluminum, dissolved	7429-90-5	mg/L	5 mg/L	--	<a--	--	5 mg/L		
Antimony, dissolved	7440-36-0	mg/L	--	--	<a--	--	--		
Arsenic, dissolved	7440-38-2	mg/L	--	0.0125 mg/L	<a--	0.025 mg/L	--		
Barium, dissolved	7440-39-3	mg/L	--	--	<a--	--	--		
Beryllium, dissolved	7440-41-7	mg/L	--	0.1 mg/L	<a--	--	--		
Bismuth, dissolved	7440-69-9	mg/L	--	--	<a--	--	--		
Boron, dissolved	7440-42-8	mg/L	--	1.2 mg/L	<a--	5 mg/L	--		
Cadmium, dissolved	7440-43-9	mg/L	--	0.00012 mg/L	<a--	--	--		
Calcium, dissolved	7440-70-2	mg/L	--	--	<a--	--	--		
Cesium, dissolved	7440-46-2	mg/L	--	--	<a--	--	--		
Chromium, dissolved	7440-47-3	mg/L	--	0.0015 mg/L	<a--	--	--		
Cobalt, dissolved	7440-48-4	mg/L	--	--	<a--	--	--		
Copper, dissolved	7440-50-8	mg/L	0.3 mg/L	--	0.003 mg/L	--	0.3 mg/L		
Dissolved mercury filtration location	----	-	--	--	<a--	--	--		
Iron, dissolved	7439-89-6	mg/L	--	--	<a--	--	--		





Analyte	CAS Number	Unit	BCAWWQG L-ST	BCAWWQG MAL-LT	BCAWWQG MAL-ST	BCAWWQG W-LT	BCAWWQG W-ST		
<b>Dissolved Metals - Continued</b>									
Lead, dissolved	7439-92-1	mg/L	0.1 mg/L	0.002 mg/L	0.14 mg/L	--	0.1 mg/L		
Lithium, dissolved	7439-93-2	mg/L	--	--	<a--	5 mg/L	--		
Magnesium, dissolved	7439-95-4	mg/L	--	--	<a--	100 mg/L	--		
Manganese, dissolved	7439-96-5	mg/L	--	0.1 mg/L	<a--	--	--		
Mercury, dissolved	7439-97-6	mg/L	0.003 mg/L	1E-05 mg/L	<a--	1E-06 mg/L	--		
Molybdenum, dissolved	7439-98-7	mg/L	--	--	<a--	0.016 mg/L	--		
Nickel, dissolved	7440-02-0	mg/L	--	0.0083 mg/L	<a--	1 mg/L	--		
Phosphorus, dissolved	7723-14-0	mg/L	--	--	<a--	--	--		
Potassium, dissolved	7440-09-7	mg/L	--	--	<a--	--	--		
Rubidium, dissolved	7440-17-7	mg/L	--	--	<a--	--	--		
Selenium, dissolved	7782-49-2	mg/L	--	0.002 mg/L	<a--	0.002 mg/L	--		
Silicon, dissolved	7440-21-3	mg/L	--	--	<a--	--	--		
Silver, dissolved	7440-22-4	mg/L	--	0.0015 mg/L	<a--	--	--		
Sodium, dissolved	7440-23-5	mg/L	--	--	<a--	200 mg/L	--		
Strontium, dissolved	7440-24-6	mg/L	--	--	<a--	--	--		
Sulfur, dissolved	7704-34-9	mg/L	--	--	<a--	--	--		
Tellurium, dissolved	13494-80-9	mg/L	--	--	<a--	--	--		
Thallium, dissolved	7440-28-0	mg/L	--	--	<a--	--	--		
Thorium, dissolved	7440-29-1	mg/L	--	--	<a--	--	--		
Tin, dissolved	7440-31-5	mg/L	--	--	<a--	--	--		
Titanium, dissolved	7440-32-6	mg/L	--	--	<a--	--	--		
Tungsten, dissolved	7440-33-7	mg/L	--	--	<a--	--	--		
Uranium, dissolved	7440-61-1	mg/L	--	0.1 mg/L	<a--	0.2 mg/L	--		
Vanadium, dissolved	7440-62-2	mg/L	--	0.05 mg/L	<a--	0.1 mg/L	--		
Zinc, dissolved	7440-66-6	mg/L	--	0.01 mg/L	0.055 mg/L	--	--		
Zirconium, dissolved	7440-67-7	mg/L	--	--	<a--	--	--		
<b>Aggregate Organics</b>									
Chemical oxygen demand [COD]	----	mg/L	--	--	<a--	--	--		
Phenols, total (4AAP)	----	mg/L	--	--	<a--	0.002 mg/L	--		
<b>Hydrocarbons Surrogates</b>									
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	%							
Bromofluorobenzene, 4-	460-00-4	%							
Difluorobenzene, 1,4-	540-36-3	%							
<b>Polycyclic Aromatic Hydrocarbons Surrogates</b>									
Chrysene-d12	1719-03-5	%							
Naphthalene-d8	1146-65-2	%							
Phenanthrene-d10	1517-22-2	%							
<b>Glycols Surrogates</b>									
Propanediol, 1,3-	504-63-2	%							



Analyte	CAS Number	Unit	BCAWWQG SDW AO	BCAWWQG SDW MAC	BCAWWQG FAL-LT	BCAWWQG FAL-ST	BCAWWQG I-LT	BCAWWQG I-ST	BCAWWQG L-LT
<b>Field Tests</b>									
Conductivity, field	----	µS/cm	--	--	<a--	--	--	--	--
pH, field	----	pH units	--	--	<a--	--	--	--	--
Temperature, field	----	°C	--	--	<a--	--	--	--	--
<b>Physical Tests</b>									
Hardness (as CaCO3), dissolved	----	mg/L	--	--	<a--	--	--	--	--
Hardness (as CaCO3), from total Ca/Mg	----	mg/L	--	--	<a--	--	--	--	--
Solids, total dissolved [TDS]	----	mg/L	--	--	<a--	--	500 mg/L	--	1000 mg/L
Solids, total suspended [TSS]	----	mg/L	--	--	<a--	--	--	--	--
<b>Anions and Nutrients</b>									
Ammonia, total (as N)	7664-41-7	mg/L	--	--	0.102 mg/L	0.752 mg/L	--	--	--
Kjeldahl nitrogen, total [TKN]	----	mg/L	--	--	<a--	--	--	--	--
Nitrogen, total	7727-37-9	mg/L	--	--	<a--	--	--	--	--
Phosphorus, total	7723-14-0	mg/L	0.01 mg/L	--	<a--	--	--	--	--
<b>Organic / Inorganic Carbon</b>									
Carbon, total organic [TOC]	----	mg/L	--	4 mg/L	<a--	--	--	--	--
<b>Total Sulfides</b>									
Sulfide, total (as H2S)	7783-06-4	mg/L	--	--	0.002 mg/L	--	--	--	--
Sulfide, total (as S)	18496-25-8	mg/L	--	--	<a--	--	--	--	--
Sulfide, un-ionized (as H2S), from total	7783-06-4	mg/L	--	--	<a--	--	--	--	--
<b>Total Metals</b>									
Aluminum, total	7429-90-5	mg/L	--	9.5 mg/L	0.00185 mg/L	--	--	5 mg/L	--
Antimony, total	7440-36-0	mg/L	--	0.006 mg/L	0.009 mg/L	--	--	--	--
Arsenic, total	7440-38-2	mg/L	--	0.01 mg/L	0.005 mg/L	--	0.1 mg/L	--	0.025 mg/L
Barium, total	7440-39-3	mg/L	--	--	1 mg/L	--	--	--	--
Beryllium, total	7440-41-7	mg/L	--	--	0.00013 mg/L	--	0.1 mg/L	--	0.1 mg/L
Bismuth, total	7440-69-9	mg/L	--	--	<a--	--	--	--	--
Boron, total	7440-42-8	mg/L	--	5 mg/L	1.2 mg/L	--	0.5 mg/L	--	5 mg/L
Cadmium, total	7440-43-9	mg/L	--	0.005 mg/L	1.8E-05 mg/L	3E-05 mg/L	0.0051 mg/L	--	0.08 mg/L
Calcium, total	7440-70-2	mg/L	--	--	<a--	--	--	--	--
Cesium, total	7440-46-2	mg/L	--	--	<a--	--	--	--	--
Chromium, total	7440-47-3	mg/L	--	0.05 mg/L	0.001 mg/L	--	0.005 mg/L	--	0.05 mg/L
Cobalt, total	7440-48-4	mg/L	--	0.001 mg/L	0.004 mg/L	0.11 mg/L	0.05 mg/L	--	1 mg/L
Copper, total	7440-50-8	mg/L	1 mg/L	2 mg/L	<a--	0.0009 mg/L	--	0.2 mg/L	--
Iron, total	7439-89-6	mg/L	0.3 mg/L	--	<a--	1 mg/L	--	--	--
Lead, total	7439-92-1	mg/L	--	0.005 mg/L	0.00344 mg/L	0.003 mg/L	--	0.2 mg/L	--
Lithium, total	7439-93-2	mg/L	--	--	<a--	--	0.75 mg/L	--	--
Magnesium, total	7439-95-4	mg/L	--	--	<a--	--	--	--	--
Manganese, total	7439-96-5	mg/L	0.02 mg/L	0.12 mg/L	0.768 mg/L	0.816 mg/L	0.2 mg/L	--	--
Mercury, total	7439-97-6	mg/L	--	0.001 mg/L	1E-05 mg/L	--	--	0.002 mg/L	--



Analyte	CAS Number	Unit	BCAWWQG SDW AO	BCAWWQG SDW MAC	BCAWWQG FAL-LT	BCAWWQG FAL-ST	BCAWWQG I-LT	BCAWWQG I-ST	BCAWWQG L-LT
<b>Total Metals - Continued</b>									
Molybdenum, total	7439-98-7	mg/L	--	0.088 mg/L	5.1 mg/L	46 mg/L	0.01 mg/L	0.05 mg/L	0.01 mg/L
Nickel, total	7440-02-0	mg/L	--	0.08 mg/L	0.025 mg/L	--	0.2 mg/L	--	1 mg/L
Phosphorus, total	7723-14-0	mg/L	0.01 mg/L	--	<a--	--	--	--	--
Potassium, total	7440-09-7	mg/L	--	--	373 mg/L	--	--	--	--
Rubidium, total	7440-17-7	mg/L	--	--	<a--	--	--	--	--
Selenium, total	7782-49-2	mg/L	--	0.01 mg/L	0.001 mg/L	--	0.01 mg/L	--	0.03 mg/L
Silicon, total	7440-21-3	mg/L	--	--	<a--	--	--	--	--
Silver, total	7440-22-4	mg/L	--	--	5E-05 mg/L	0.0001 mg/L	--	--	--
Sodium, total	7440-23-5	mg/L	--	--	<a--	--	--	--	--
Strontium, total	7440-24-6	mg/L	--	7 mg/L	<a--	--	--	--	--
Sulfur, total	7704-34-9	mg/L	--	--	<a--	--	--	--	--
Tellurium, total	13494-80-9	mg/L	--	--	<a--	--	--	--	--
Thallium, total	7440-28-0	mg/L	--	--	0.0008 mg/L	--	--	--	--
Thorium, total	7440-29-1	mg/L	--	--	<a--	--	--	--	--
Tin, total	7440-31-5	mg/L	--	--	<a--	--	--	--	--
Titanium, total	7440-32-6	mg/L	--	--	2 mg/L	--	--	--	--
Tungsten, total	7440-33-7	mg/L	--	--	<a--	--	--	--	--
Uranium, total	7440-61-1	mg/L	--	0.02 mg/L	0.0085 mg/L	--	0.01 mg/L	--	0.2 mg/L
Vanadium, total	7440-62-2	mg/L	--	--	0.006 mg/L	--	0.1 mg/L	--	0.1 mg/L
Zinc, total	7440-66-6	mg/L	5 mg/L	3 mg/L	0.00348 mg/L	0.0186 mg/L	1 mg/L	--	2 mg/L
Zirconium, total	7440-67-7	mg/L	--	--	<a--	--	--	--	--
<b>Dissolved Metals</b>									
Aluminum, dissolved	7429-90-5	mg/L	--	--	<a--	--	--	5 mg/L	--
Antimony, dissolved	7440-36-0	mg/L	--	--	0.009 mg/L	--	--	--	--
Arsenic, dissolved	7440-38-2	mg/L	--	--	0.005 mg/L	--	0.1 mg/L	--	0.025 mg/L
Barium, dissolved	7440-39-3	mg/L	--	--	1 mg/L	--	--	--	--
Beryllium, dissolved	7440-41-7	mg/L	--	--	0.00013 mg/L	--	0.1 mg/L	--	0.1 mg/L
Bismuth, dissolved	7440-69-9	mg/L	--	--	<a--	--	--	--	--
Boron, dissolved	7440-42-8	mg/L	--	--	1.2 mg/L	--	0.5 mg/L	--	5 mg/L
Cadmium, dissolved	7440-43-9	mg/L	--	--	1.8E-05 mg/L	3E-05 mg/L	0.0051 mg/L	--	0.08 mg/L
Calcium, dissolved	7440-70-2	mg/L	--	--	<a8 mg/L	--	--	--	1000 mg/L
Cesium, dissolved	7440-46-2	mg/L	--	--	<a--	--	--	--	--
Chromium, dissolved	7440-47-3	mg/L	--	--	0.001 mg/L	--	0.005 mg/L	--	0.05 mg/L
Cobalt, dissolved	7440-48-4	mg/L	--	--	0.004 mg/L	0.11 mg/L	0.05 mg/L	--	1 mg/L
Copper, dissolved	7440-50-8	mg/L	--	--	0.0002 mg/L	0.0009 mg/L	--	0.2 mg/L	--
Dissolved mercury filtration location	----	-	--	--	<a--	--	--	--	--
Iron, dissolved	7439-89-6	mg/L	--	--	<a--	0.35 mg/L	--	--	--
Lead, dissolved	7439-92-1	mg/L	--	--	0.00344 mg/L	0.003 mg/L	--	0.2 mg/L	--
Lithium, dissolved	7439-93-2	mg/L	--	--	<a--	--	0.75 mg/L	--	--



Analyte	CAS Number	Unit	BCAWWQG SDW AO	BCAWWQG SDW MAC	BCAWWQG FAL-LT	BCAWWQG FAL-ST	BCAWWQG I-LT	BCAWWQG I-ST	BCAWWQG L-LT
<b>Dissolved Metals - Continued</b>									
Magnesium, dissolved	7439-95-4	mg/L	--	--	<a--	--	--	--	--
Manganese, dissolved	7439-96-5	mg/L	--	--	0.768 mg/L	0.816 mg/L	0.2 mg/L	--	--
Mercury, dissolved	7439-97-6	mg/L	--	--	1E-05 mg/L	--	--	0.002 mg/L	--
Molybdenum, dissolved	7439-98-7	mg/L	--	--	5.1 mg/L	46 mg/L	0.01 mg/L	0.05 mg/L	0.01 mg/L
Nickel, dissolved	7440-02-0	mg/L	--	--	0.025 mg/L	--	0.2 mg/L	--	1 mg/L
Phosphorus, dissolved	7723-14-0	mg/L	--	--	<a--	--	--	--	--
Potassium, dissolved	7440-09-7	mg/L	--	--	373 mg/L	--	--	--	--
Rubidium, dissolved	7440-17-7	mg/L	--	--	<a--	--	--	--	--
Selenium, dissolved	7782-49-2	mg/L	--	--	0.001 mg/L	--	0.01 mg/L	--	0.03 mg/L
Silicon, dissolved	7440-21-3	mg/L	--	--	<a--	--	--	--	--
Silver, dissolved	7440-22-4	mg/L	--	--	5E-05 mg/L	0.0001 mg/L	--	--	--
Sodium, dissolved	7440-23-5	mg/L	--	--	<a--	--	--	--	--
Strontium, dissolved	7440-24-6	mg/L	--	--	<a--	--	--	--	--
Sulfur, dissolved	7704-34-9	mg/L	--	--	<a--	--	--	--	--
Tellurium, dissolved	13494-80-9	mg/L	--	--	<a--	--	--	--	--
Thallium, dissolved	7440-28-0	mg/L	--	--	0.0008 mg/L	--	--	--	--
Thorium, dissolved	7440-29-1	mg/L	--	--	<a--	--	--	--	--
Tin, dissolved	7440-31-5	mg/L	--	--	<a--	--	--	--	--
Titanium, dissolved	7440-32-6	mg/L	--	--	2 mg/L	--	--	--	--
Tungsten, dissolved	7440-33-7	mg/L	--	--	<a--	--	--	--	--
Uranium, dissolved	7440-61-1	mg/L	--	--	0.0085 mg/L	--	0.01 mg/L	--	0.2 mg/L
Vanadium, dissolved	7440-62-2	mg/L	--	--	0.006 mg/L	--	0.1 mg/L	--	0.1 mg/L
Zinc, dissolved	7440-66-6	mg/L	--	--	0.00348 mg/L	0.0186 mg/L	1 mg/L	--	2 mg/L
Zirconium, dissolved	7440-67-7	mg/L	--	--	<a--	--	--	--	--
<b>Aggregate Organics</b>									
Chemical oxygen demand [COD]	----	mg/L	--	--	<a--	--	--	--	--
Phenols, total (4AAP)	----	mg/L	--	--	<a--	--	--	--	--
<b>Hydrocarbons Surrogates</b>									
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	%							
Bromofluorobenzene, 4-	460-00-4	%							
Difluorobenzene, 1,4-	540-36-3	%							
<b>Polycyclic Aromatic Hydrocarbons Surrogates</b>									
Chrysene-d12	1719-03-5	%							
Naphthalene-d8	1146-65-2	%							
Phenanthrene-d10	1517-22-2	%							
<b>Glycols Surrogates</b>									
Propanediol, 1,3-	504-63-2	%							

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



**Key:**

BCAWWQG	British Columbia Approved and Working Water Quality Guidelines (FEB, 2021)
FAL-LT	BC FAL - Freshwater Aquatic Life - Long-Term Chronic
FAL-ST	BC FAL - Freshwater Aquatic Life - Short-Term Acute
I-LT	BC I - Irrigation - Long-Term Chronic
I-ST	BC I - Irrigation - Short-Term Acute
L-LT	BC L - Livestock - Long-Term Chronic
L-ST	BC L - Livestock - Short-Term Acute
MAL-LT	BC MAL - Marinewater Aquatic Life - Long-Term Chronic
MAL-ST	BC MAL - Marinewater Aquatic Life - Short-Term Acute
SDW AO	BC DW - Source Drinking Water Quality Guidelines - No. WQG-01 - Aesthetic Objectives
SDW MAC	BC DW - Source Drinking Water Quality Guidelines - No. WQG-01 - Maximum Acceptable Concentrations
W-LT	BC W - Wildlife - Long-Term Chronic
W-ST	BC W - Wildlife - Short-Term Acute

## CERTIFICATE OF ANALYSIS

<p><b>Work Order</b> : <b>VA23C6722</b></p> <p><b>Client</b> : <b>Triton Environmental Consultants Ltd.</b></p> <p><b>Contact</b> : Miranda Lewis</p> <p><b>Address</b> : Suite 650, 1040 West Georgia St Vancouver BC Canada V6E 4H1</p> <p><b>Telephone</b> : 604 631 2213</p> <p><b>Project</b> : ----</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : 20-1070292</p> <p><b>Sampler</b> : ----</p> <p><b>Site</b> : Water Analysis</p> <p><b>Quote number</b> : VA23-TRIT100-012</p> <p><b>No. of samples received</b> : 2</p> <p><b>No. of samples analysed</b> : 2</p>	<p><b>Page</b> : 1 of 7</p> <p><b>Laboratory</b> : ALS Environmental - Vancouver</p> <p><b>Account Manager</b> : Can Dang</p> <p><b>Address</b> : 8081 Lougheed Highway Burnaby BC Canada V5A 1W9</p> <p><b>Telephone</b> : +1 604 253 4188</p> <p><b>Date Samples Received</b> : 06-Nov-2023 17:15</p> <p><b>Date Analysis Commenced</b> : 07-Nov-2023</p> <p><b>Issue Date</b> : 18-Nov-2023 10:40</p>
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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
- Surrogate Control Limits

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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Alicia Chandra	Analyst	Inorganics, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Inorganics, Edmonton, Alberta
Ghazaleh Khanmirzaei	Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Leon Yang	Analyst	Inorganics, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Ophelia Chiu	Department Manager - Organics	Organics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Administration, 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).

<i>Unit</i>	<i>Description</i>
-	no units
°C	degrees celsius
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
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.

## Sample Comments

<i>Sample</i>	<i>Client Id</i>	<i>Comment</i>
VA23C6722-001	SQU US 1	VA23C6722-1: Low level DCM result; LOR raised to lowest BC CSR standard.
VA23C6722-002	SQU DS 1	VA23C6722-2: Low level DCM result; LOR raised to lowest BC CSR standard.



## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU US 1	SQU DS 1	----	----	----
(Matrix: Water)					Client sampling date / time	06-Nov-2023 11:18	06-Nov-2023 10:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C6722-001	VA23C6722-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Field Tests</b>										
Conductivity, field	----	EF001/VA	0.10	µS/cm	53.000	55.000	----	----	----	
pH, field	----	EF001/VA	0.10	pH units	7.64	7.73	----	----	----	
Temperature, field	----	EF001/VA	0.10	°C	7.20	7.30	----	----	----	
<b>Physical Tests</b>										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	12.3	11.6	----	----	----	
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	14.0	14.8	----	----	----	
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	36	34	----	----	----	
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	13.9	22.9	----	----	----	
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0370	0.0381	----	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	0.104	0.118	----	----	----	
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.159	0.166	----	----	----	
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0246	0.0405	----	----	----	
<b>Organic / Inorganic Carbon</b>										
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	4.37	3.82	----	----	----	
<b>Total Sulfides</b>										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	<0.0015	----	----	----	
Sulfide, un-ionized (as H2S), from total	7783-06-4	EC395/VA	0.0015	mg/L	<0.0015	<0.0015	----	----	----	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	<0.0016	----	----	----	
<b>Total Metals</b>										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.817	1.30	----	----	----	
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	0.00017	0.00023	----	----	----	
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.0156	0.0213	----	----	----	
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L	<0.000100	<0.000100	----	----	----	
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Boron, total	7440-42-8	E420/VA	0.010	mg/L	<0.010	<0.010	----	----	----	
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	0.0000127	0.0000114	----	----	----	
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	4.49	4.50	----	----	----	





## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU US 1	SQU DS 1	----	----	----
(Matrix: Water)					Client sampling date / time	06-Nov-2023 11:18	06-Nov-2023 10:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C6722-001	VA23C6722-002	-----	-----	-----	
					Result	Result	---	---	---	
<b>Total Metals</b>										
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000038	0.000057	---	---	---	
Chromium, total	7440-47-3	E420/VA	0.000050	mg/L	<0.000050	0.000092	---	---	---	
Cobalt, total	7440-48-4	E420/VA	0.000010	mg/L	0.000029	0.000052	---	---	---	
Copper, total	7440-50-8	E420/VA	0.000050	mg/L	0.00223	0.00306	---	---	---	
Iron, total	7439-89-6	E420/VA	0.010	mg/L	0.615	1.06	---	---	---	
Lead, total	7439-92-1	E420/VA	0.000050	mg/L	0.000150	0.000223	---	---	---	
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	<0.0010	<0.0010	---	---	---	
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	0.665	0.855	---	---	---	
Manganese, total	7439-96-5	E420/VA	0.000010	mg/L	0.0160	0.0272	---	---	---	
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	<0.0000050	---	---	---	
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.000450	0.000461	---	---	---	
Nickel, total	7440-02-0	E420/VA	0.000050	mg/L	<0.000050	0.00061	---	---	---	
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L	<0.050	<0.050	---	---	---	
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	0.554	0.732	---	---	---	
Rubidium, total	7440-17-7	E420/VA	0.000020	mg/L	0.00119	0.00184	---	---	---	
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	<0.000050	<0.000050	---	---	---	
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	4.00	4.67	---	---	---	
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	<0.000010	---	---	---	
Sodium, total	7440-23-5	E420/VA	0.050	mg/L	1.42	1.52	---	---	---	
Strontium, total	7440-24-6	E420/VA	0.000020	mg/L	0.0285	0.0298	---	---	---	
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	0.91	0.87	---	---	---	
Tellurium, total	13494-80-9	E420/VA	0.000020	mg/L	<0.000020	<0.000020	---	---	---	
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	<0.000010	0.000010	---	---	---	
Thorium, total	7440-29-1	E420/VA	0.000010	mg/L	<0.000010	<0.000010	---	---	---	
Tin, total	7440-31-5	E420/VA	0.000010	mg/L	<0.000010	<0.000010	---	---	---	
Titanium, total	7440-32-6	E420/VA	0.000030	mg/L	0.0342	0.0641	---	---	---	
Tungsten, total	7440-33-7	E420/VA	0.000010	mg/L	<0.000010	<0.000010	---	---	---	
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.000061	0.000079	---	---	---	
Vanadium, total	7440-62-2	E420/VA	0.000050	mg/L	0.00198	0.00294	---	---	---	
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L	0.0031	0.0046	---	---	---	



## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU US 1	SQU DS 1	----	----	----
(Matrix: Water)					Client sampling date / time	06-Nov-2023 11:18	06-Nov-2023 10:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C6722-001	VA23C6722-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Total Metals</b>										
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
<b>Dissolved Metals</b>										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.106	0.0958	----	----	----	
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L	<0.00010	0.00011	----	----	----	
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.00650	0.00794	----	----	----	
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L	<0.000100	<0.000100	----	----	----	
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L	<0.010	<0.010	----	----	----	
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	0.0000106	0.0000082	----	----	----	
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	4.22	3.98	----	----	----	
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L	0.00106	0.00102	----	----	----	
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L	0.051	0.056	----	----	----	
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	0.428	0.413	----	----	----	
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.00306	0.00404	----	----	----	
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.000414	0.000388	----	----	----	
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L	<0.050	<0.050	----	----	----	
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	0.412	0.456	----	----	----	
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.00050	0.00065	----	----	----	
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	3.20	2.99	----	----	----	
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	1.33	1.33	----	----	----	



## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU US 1	SQU DS 1	----	----	----
(Matrix: Water)					Client sampling date / time	06-Nov-2023 11:18	06-Nov-2023 10:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C6722-001	VA23C6722-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Dissolved Metals</b>										
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	0.0253	0.0239	----	----	----	
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	0.87	0.83	----	----	----	
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	0.00193	0.00190	----	----	----	
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	0.000039	0.000043	----	----	----	
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	0.00079	0.00070	----	----	----	
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
Dissolved mercury filtration location	----	EP509/VA	-	-	Field	Field	----	----	----	
<b>Aggregate Organics</b>										
Chemical oxygen demand [COD]	----	E559-LVA	10	mg/L	<10	15	----	----	----	
Phenols, total (4AAP)	----	E562/EO	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
<b>Hydrocarbons Surrogates</b>										
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	1.0	%	92.6	95.6	----	----	----	
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%	82.2	82.2	----	----	----	
Difluorobenzene, 1,4-	540-36-3	E611C/VA	1.0	%	99.6	99.1	----	----	----	
<b>Polycyclic Aromatic Hydrocarbons Surrogates</b>										
Chrysene-d12	1719-03-5	E641A/VA	0.1	%	83.9	87.7	----	----	----	
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%	91.5	98.3	----	----	----	
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%	105	115	----	----	----	
<b>Glycols Surrogates</b>										
Propanediol, 1,3-	504-63-2	E680E/VA	1.0	%	101	102	----	----	----	

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.



## QUALITY CONTROL INTERPRETIVE REPORT

<p><b>Work Order</b> : <b>VA23C6722</b></p> <p><b>Client</b> : <b>Triton Environmental Consultants Ltd.</b></p> <p><b>Contact</b> : Miranda Lewis</p> <p><b>Address</b> : Suite 650, 1040 West Georgia St Vancouver BC Canada V6E 4H1</p> <p><b>Telephone</b> : 604 631 2213</p> <p><b>Project</b> : ----</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : 20-1070292</p> <p><b>Sampler</b> : ----</p> <p><b>Site</b> : Water Analysis</p> <p><b>Quote number</b> : VA23-TRIT100-012</p> <p><b>No. of samples received</b> : 2</p> <p><b>No. of samples analysed</b> : 2</p>	<p><b>Page</b> : 1 of 12</p> <p><b>Laboratory</b> : ALS Environmental - Vancouver</p> <p><b>Account Manager</b> : Can Dang</p> <p><b>Address</b> : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p><b>Telephone</b> : +1 604 253 4188</p> <p><b>Date Samples Received</b> : 06-Nov-2023 17:15</p> <p><b>Issue Date</b> : 18-Nov-2023 10:42</p>
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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: **Water** 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	
<b>Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)</b>										
Amber glass total (sulfuric acid) SQU DS 1	E559-L	06-Nov-2023	----	----	----		17-Nov-2023	28 days	11 days	✔
<b>Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)</b>										
Amber glass total (sulfuric acid) SQU US 1	E559-L	06-Nov-2023	----	----	----		17-Nov-2023	28 days	11 days	✔
<b>Aggregate Organics : Phenols (4AAP) in Water by Colorimetry</b>										
Amber glass total (sulfuric acid) SQU DS 1	E562	06-Nov-2023	16-Nov-2023	28 days	10 days	✔	16-Nov-2023	28 days	10 days	✔
<b>Aggregate Organics : Phenols (4AAP) in Water by Colorimetry</b>										
Amber glass total (sulfuric acid) SQU US 1	E562	06-Nov-2023	16-Nov-2023	28 days	10 days	✔	16-Nov-2023	28 days	10 days	✔
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) SQU DS 1	E298	06-Nov-2023	14-Nov-2023	28 days	8 days	✔	15-Nov-2023	28 days	9 days	✔
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) SQU US 1	E298	06-Nov-2023	14-Nov-2023	28 days	8 days	✔	15-Nov-2023	28 days	9 days	✔
<b>Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)</b>										
Amber glass total (sulfuric acid) SQU DS 1	E318	06-Nov-2023	14-Nov-2023	28 days	8 days	✔	16-Nov-2023	28 days	10 days	✔



Matrix: **Water** 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	
<b>Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)</b>										
Amber glass total (sulfuric acid) SQU US 1	E318	06-Nov-2023	14-Nov-2023	28 days	8 days	✓	16-Nov-2023	28 days	10 days	✓
<b>Anions and Nutrients : Total Nitrogen by Colourimetry</b>										
Amber glass total (sulfuric acid) SQU DS 1	E366	06-Nov-2023	14-Nov-2023	28 days	8 days	✓	15-Nov-2023	28 days	9 days	✓
<b>Anions and Nutrients : Total Nitrogen by Colourimetry</b>										
Amber glass total (sulfuric acid) SQU US 1	E366	06-Nov-2023	14-Nov-2023	28 days	8 days	✓	15-Nov-2023	28 days	9 days	✓
<b>Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)</b>										
Amber glass total (sulfuric acid) SQU US 1	E372-U	06-Nov-2023	14-Nov-2023	28 days	8 days	✓	14-Nov-2023	28 days	8 days	✓
<b>Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)</b>										
Amber glass total (sulfuric acid) SQU DS 1	E372-U	06-Nov-2023	14-Nov-2023	28 days	8 days	✓	14-Nov-2023	28 days	9 days	✓
<b>Dissolved Metals : Dissolved Mercury in Water by CVAAS</b>										
Glass vial - dissolved (lab preserved) SQU DS 1	E509	06-Nov-2023	15-Nov-2023	28 days	9 days	✓	15-Nov-2023	28 days	0 days	✓
<b>Dissolved Metals : Dissolved Mercury in Water by CVAAS</b>										
Glass vial - dissolved (lab preserved) SQU US 1	E509	06-Nov-2023	15-Nov-2023	28 days	9 days	✓	15-Nov-2023	28 days	0 days	✓
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>										
HDPE - dissolved (lab preserved) SQU DS 1	E421	06-Nov-2023	09-Nov-2023	180 days	3 days	✓	13-Nov-2023	180 days	7 days	✓
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>										
HDPE - dissolved (lab preserved) SQU US 1	E421	06-Nov-2023	09-Nov-2023	180 days	3 days	✓	13-Nov-2023	180 days	7 days	✓





Matrix: **Water** 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	
<b>Field Tests : Field pH,EC,Salinity,Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine</b>										
Glass vial - total (lab preserved) SQU DS 1	EF001	06-Nov-2023	----	----	----		07-Nov-2023	----	1 days	
<b>Field Tests : Field pH,EC,Salinity,Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine</b>										
Glass vial - total (lab preserved) SQU US 1	EF001	06-Nov-2023	----	----	----		07-Nov-2023	----	1 days	
<b>Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)</b>										
Amber glass total (sulfuric acid) SQU DS 1	E355-L	06-Nov-2023	14-Nov-2023	28 days	8 days	✔	14-Nov-2023	28 days	8 days	✔
<b>Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)</b>										
Amber glass total (sulfuric acid) SQU US 1	E355-L	06-Nov-2023	14-Nov-2023	28 days	8 days	✔	14-Nov-2023	28 days	8 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE SQU DS 1	E162	06-Nov-2023	----	----	----		09-Nov-2023	7 days	4 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE SQU US 1	E162	06-Nov-2023	----	----	----		09-Nov-2023	7 days	4 days	✔
<b>Physical Tests : TSS by Gravimetry</b>										
HDPE SQU DS 1	E160	06-Nov-2023	----	----	----		10-Nov-2023	7 days	4 days	✔
<b>Physical Tests : TSS by Gravimetry</b>										
HDPE SQU US 1	E160	06-Nov-2023	----	----	----		10-Nov-2023	7 days	4 days	✔
<b>Total Metals : Total Mercury in Water by CVAAS</b>										
Glass vial - total (lab preserved) SQU US 1	E508	06-Nov-2023	10-Nov-2023	28 days	4 days	✔	10-Nov-2023	28 days	0 days	✔



Matrix: **Water** 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	
<b>Total Metals : Total Mercury in Water by CVAAS</b>										
Glass vial - total (lab preserved) SQU DS 1	E508	06-Nov-2023	10-Nov-2023	28 days	5 days	✔	10-Nov-2023	28 days	0 days	✔
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>										
HDPE - total (lab preserved) SQU DS 1	E420	06-Nov-2023	09-Nov-2023	180 days	3 days	✔	12-Nov-2023	180 days	6 days	✔
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>										
HDPE - total (lab preserved) SQU US 1	E420	06-Nov-2023	09-Nov-2023	180 days	3 days	✔	12-Nov-2023	180 days	6 days	✔
<b>Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)</b>										
HDPE total (zinc acetate+sodium hydroxide) SQU DS 1	E395	06-Nov-2023	----	----	----		08-Nov-2023	7 days	2 days	✔
<b>Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)</b>										
HDPE total (zinc acetate+sodium hydroxide) SQU US 1	E395	06-Nov-2023	----	----	----		08-Nov-2023	7 days	2 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: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Ammonia by Fluorescence	E298	1235439	1	20	5.0	5.0	✔
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1242637	1	2	50.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1237530	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1225709	1	19	5.2	5.0	✔
Glycols (4 analytes) by GC-FID	E680E	1226302	1	13	7.6	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1239257	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	1231684	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1235442	1	6	16.6	5.0	✔
Total Mercury in Water by CVAAS	E508	1233586	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1227093	1	19	5.2	5.0	✔
Total Nitrogen by Colourimetry	E366	1235445	1	6	16.6	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1235444	1	6	16.6	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1235440	1	9	11.1	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1229004	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	1231688	1	20	5.0	5.0	✔
VOCs (BC List) by Headspace GC-MS	E611C	1237692	1	7	14.2	5.0	✔
<b>Laboratory Control Samples (LCS)</b>							
Ammonia by Fluorescence	E298	1235439	1	20	5.0	5.0	✔
BC PHCs - EPH by GC-FID	E601A	1239042	2	28	7.1	5.0	✔
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1242637	1	2	50.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1237530	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1225709	1	19	5.2	5.0	✔
Glycols (4 analytes) by GC-FID	E680E	1226302	1	13	7.6	5.0	✔
PAHs by Hexane LVI GC-MS	E641A	1239043	2	30	6.6	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1239257	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	1231684	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1235442	1	6	16.6	5.0	✔
Total Mercury in Water by CVAAS	E508	1233586	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1227093	1	19	5.2	5.0	✔
Total Nitrogen by Colourimetry	E366	1235445	1	6	16.6	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1235444	1	6	16.6	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1235440	1	9	11.1	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1229004	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	1231688	1	20	5.0	5.0	✔
VOCs (BC List) by Headspace GC-MS	E611C	1237692	1	7	14.2	5.0	✔



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<b>Analytical Methods</b>							
<b>Method Blanks (MB)</b>							
Ammonia by Fluorescence	E298	1235439	1	20	5.0	5.0	✔
BC PHCs - EPH by GC-FID	E601A	1239042	2	28	7.1	5.0	✔
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1242637	1	2	50.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1237530	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1225709	1	19	5.2	5.0	✔
Glycols (4 analytes) by GC-FID	E680E	1226302	1	13	7.6	5.0	✔
PAHs by Hexane LVI GC-MS	E641A	1239043	2	30	6.6	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1239257	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	1231684	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1235442	1	6	16.6	5.0	✔
Total Mercury in Water by CVAAS	E508	1233586	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1227093	1	19	5.2	5.0	✔
Total Nitrogen by Colourimetry	E366	1235445	1	6	16.6	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1235444	1	6	16.6	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1235440	1	9	11.1	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1229004	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	1231688	1	20	5.0	5.0	✔
VOCs (BC List) by Headspace GC-MS	E611C	1237692	1	7	14.2	5.0	✔
<b>Matrix Spikes (MS)</b>							
Ammonia by Fluorescence	E298	1235439	1	20	5.0	5.0	✔
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1242637	1	2	50.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1237530	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1225709	1	19	5.2	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1239257	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1235442	1	6	16.6	5.0	✔
Total Mercury in Water by CVAAS	E508	1233586	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1227093	1	19	5.2	5.0	✔
Total Nitrogen by Colourimetry	E366	1235445	1	6	16.6	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1235444	1	6	16.6	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1235440	1	9	11.1	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1229004	1	20	5.0	5.0	✔
VOCs (BC List) by Headspace GC-MS	E611C	1237692	1	7	14.2	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
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$ , with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Nitrogen by Colourimetry	E366 ALS Environmental - Vancouver	Water	Chinchilla Scientific Nitrate Method, 2011	Following digestion, total nitrogen is is determined colourimetrically using a discrete analyzer utilizing the vanadium chloride reduction method. This method of analysis is approved under US EPA 40 CFR Part 136 (May 2021).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H <sub>2</sub> S" if reported represent the maximum possible H <sub>2</sub> S concentration based on the total sulfide concentration in the sample. The H <sub>2</sub> S calculation converts Total Sulphide as (S <sub>2</sub> -) and reports it as Total Sulphide as (H <sub>2</sub> S)



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L ALS Environmental - Vancouver	Water	APHA 5220 D (mod)	Samples are analyzed using the closed reflux colourimetric method.
Phenols (4AAP) in Water by Colorimetry	E562 ALS Environmental - Edmonton	Water	EPA 9066	This automated method is based on the distillation of phenol and subsequent reaction of the distillate with alkaline ferricyanide (K <sub>3</sub> Fe(CN) <sub>6</sub> ) and 4-amino-antipyrine (4-AAP) to form a red complex which is measured colorimetrically.
BC PHCs - EPH by GC-FID	E601A ALS Environmental - Vancouver	Water	BC MOE Lab Manual	Sample extracts are analyzed by GC-FID for BC hydrocarbon fractions.
VOCs (BC List) by Headspace GC-MS	E611C ALS Environmental - Vancouver	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
PAHs by Hexane LVI GC-MS	E641A ALS Environmental - Vancouver	Water	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by large volume injection (LVI) GC-MS.
Glycols (4 analytes) by GC-FID	E680E ALS Environmental - Vancouver	Water	EPA 8015D (mod)	Derivatized glycols are analyzed by GC-FID.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Un-ionized Total Hydrogen Sulfide (calculated)	EC395 ALS Environmental - Vancouver	Water	APHA 4500 -S H	Un-ionized sulfide is calculated using results from total sulfide analysis, pH, temperature, and ionic strength of the sample. Calculation of un-ionized sulfide using total sulfide concentrations may be biased high due to particulate forms of sulfide measured during total sulfide testing.
Field pH,EC,Salinity,Cl <sub>2</sub> ,ClO <sub>2</sub> ,ORP,DO, Turbidity,T,T-P,o-PO <sub>4</sub> ,NH <sub>3</sub> ,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity,Cl <sub>2</sub> ,ClO <sub>2</sub> ,ORP,DO, Turbidity,T,T-P,o-PO <sub>4</sub> ,NH <sub>3</sub> or Chloramine measurements provided by client and recorded on ALS report may affect the validity of results.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Nitrogen in water	EP366 ALS Environmental - Vancouver	Water	APHA 4500-P J (mod)	Samples for total nitrogen analysis are digested using a heated persulfate digestion. Nitrogen compounds are converted to nitrate in this digestion.
Digestion for Total Phosphorus in water	EP372	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
	ALS Environmental - Vancouver			
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Vancouver	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into the GC/MS-FID system.
PHCs and PAHs Hexane Extraction	EP601 ALS Environmental - Vancouver	Water	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.
Glycols Extraction and Derivatization (BC Only)	EP680E ALS Environmental - Vancouver	Water	EPA 8015D (mod)	Aqueous sample is derivatized and extracted with organic solvent.



## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: VA23C6722</b>	<b>Page</b>	: 1 of 18
<b>Client</b>	: Triton Environmental Consultants Ltd.	<b>Laboratory</b>	: ALS Environmental - Vancouver
<b>Contact</b>	: Miranda Lewis	<b>Account Manager</b>	: Can Dang
<b>Address</b>	: Suite 650, 1040 West Georgia St Vancouver BC Canada V6E 4H1	<b>Address</b>	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
<b>Telephone</b>	:	<b>Telephone</b>	: +1 604 253 4188
<b>Project</b>	: ----	<b>Date Samples Received</b>	: 06-Nov-2023 17:15
<b>PO</b>	: ----	<b>Date Analysis Commenced</b>	: 07-Nov-2023
<b>C-O-C number</b>	: 20-1070292	<b>Issue Date</b>	: 18-Nov-2023 10:42
<b>Sampler</b>	: ---- 604 631 2213		
<b>Site</b>	: Water Analysis		
<b>Quote number</b>	: VA23-TRIT100-012		
<b>No. of samples received</b>	: 2		
<b>No. of samples analysed</b>	: 2		

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
- 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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Thornton	Analyst	Vancouver Metals, Burnaby, British Columbia
Alicia Chandra	Analyst	Vancouver Inorganics, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Ghazaleh Khanmirzaei	Analyst	Vancouver Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Leon Yang	Analyst	Vancouver Inorganics, Burnaby, British Columbia
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Ophelia Chiu	Department Manager - Organics	Vancouver Organics, Burnaby, British Columbia
Owen Cheng		Vancouver Metals, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia

Page : 2 of 18  
Work Order : VA23C6722  
Client : Triton Environmental Consultants Ltd.  
Project : ----



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## 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: <b>Water</b>					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
<b>Physical Tests (QC Lot: 1231684)</b>											
KS2304284-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	632	622	1.51%	20%	----
<b>Physical Tests (QC Lot: 1231688)</b>											
VA23C6722-001	SQU US 1	Solids, total suspended [TSS]	----	E160	3.0	mg/L	13.9	14.7	0.8	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1235439)</b>											
VA23C6856-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1235440)</b>											
VA23C6856-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0217	0.0220	1.60%	20%	----
<b>Anions and Nutrients (QC Lot: 1235442)</b>											
VA23C6856-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1235445)</b>											
VA23C6856-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.348	0.343	1.54%	20%	----
<b>Organic / Inorganic Carbon (QC Lot: 1235444)</b>											
VA23C6856-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	0.56	0.94	0.38	Diff <2x LOR	----
<b>Total Sulfides (QC Lot: 1229004)</b>											
CG2315711-009	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
<b>Total Metals (QC Lot: 1227093)</b>											
VA23C6699-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0031	0.0039	0.0007	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00092	0.00091	0.00001	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.0147	0.0141	4.01%	20%	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0151	0.0151	0.141%	20%	----
		Beryllium, total	7440-41-7	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	0.232	0.224	3.95%	20%	----
		Cadmium, total	7440-43-9	E420	0.0000300	mg/L	<0.0000300	<0.0000300	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	188	190	0.702%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000075	0.000073	0.000002	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00040	0.00037	0.00003	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.129	0.128	0.544%	20%	----



Sub-Matrix: Water					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
<b>Total Metals (QC Lot: 1227093) - continued</b>											
VA23C6699-001	Anonymous	Lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0048	0.0047	0.00003	Diff <2x LOR	---
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	48.1	46.1	4.24%	20%	---
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0682	0.0670	1.79%	20%	---
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0451	0.0450	0.293%	20%	---
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.00434	0.00428	0.00006	Diff <2x LOR	---
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	---
		Potassium, total	7440-09-7	E420	0.050	mg/L	0.511	0.479	0.032	Diff <2x LOR	---
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00135	0.00122	0.00014	Diff <2x LOR	---
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.00195	0.00200	2.37%	20%	---
		Silicon, total	7440-21-3	E420	0.10	mg/L	14.1	14.2	0.469%	20%	---
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Sodium, total	7440-23-5	E420	0.050	mg/L	9.12	8.88	2.77%	20%	---
		Strontium, total	7440-24-6	E420	0.00020	mg/L	1.04	1.05	1.47%	20%	---
		Sulfur, total	7704-34-9	E420	0.50	mg/L	177	171	3.30%	20%	---
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	---
		Thallium, total	7440-28-0	E420	0.000010	mg/L	0.000014	0.000012	0.000002	Diff <2x LOR	---
		Thorium, total	7440-29-1	E420	0.00010	mg/L	0.00011	<0.00010	0.000007	Diff <2x LOR	---
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	---
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.00438	0.00413	5.88%	20%	---
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00109	0.00109	0.0000005	Diff <2x LOR	---
		Zinc, total	7440-66-6	E420	0.0030	mg/L	0.0041	0.0038	0.0003	Diff <2x LOR	---
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	---
<b>Total Metals (QC Lot: 1233586)</b>											
VA23C6722-001	SQU US 1	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	---
<b>Dissolved Metals (QC Lot: 1225709)</b>											
VA23C6391-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.102	0.103	1.18%	20%	---
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00035	0.00037	0.00002	Diff <2x LOR	---
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00611	0.00612	0.136%	20%	---
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	---
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---



Sub-Matrix: Water					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
<b>Dissolved Metals (QC Lot: 1225709) - continued</b>											
VA23C6391-001	Anonymous	Boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	---
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000063	0.0000059	0.0000004	Diff <2x LOR	---
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	1.56	1.53	1.81%	20%	---
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Chromium, dissolved	7440-47-3	E421	0.000050	mg/L	0.00423	0.00440	0.00016	Diff <2x LOR	---
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00011	0.00011	0.000006	Diff <2x LOR	---
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00090	0.00089	0.00001	Diff <2x LOR	---
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.242	0.236	2.55%	20%	---
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	---
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	21.0	20.8	1.21%	20%	---
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00196	0.00190	2.92%	20%	---
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000065	0.000064	0.000001	Diff <2x LOR	---
		Nickel, dissolved	7440-02-0	E421	0.000050	mg/L	0.0660	0.0654	0.812%	20%	---
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	---
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.262	0.256	0.006	Diff <2x LOR	---
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00024	0.00024	0.000002	Diff <2x LOR	---
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000073	0.000069	0.000004	Diff <2x LOR	---
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	9.36	9.24	1.31%	20%	---
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	0.814	0.812	0.237%	20%	---
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0123	0.0122	0.511%	20%	---
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	---
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00561	0.00597	6.26%	20%	---
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000029	0.000029	0.0000002	Diff <2x LOR	---
		Vanadium, dissolved	7440-62-2	E421	0.000050	mg/L	0.00052	0.00052	0.000009	Diff <2x LOR	---
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	---
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	0.00086	0.00069	0.00017	Diff <2x LOR	---

**Dissolved Metals (QC Lot: 1237530)**



Sub-Matrix: <b>Water</b>					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
<b>Dissolved Metals (QC Lot: 1237530) - continued</b>											
VA23C6702-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
<b>Aggregate Organics (QC Lot: 1239257)</b>											
CG2315729-042	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	0.0040	0.0046	0.0006	Diff <2x LOR	----
<b>Aggregate Organics (QC Lot: 1242637)</b>											
VA23C6722-001	SQU US 1	Chemical oxygen demand [COD]	----	E559-L	10	mg/L	<10	<10	0	Diff <2x LOR	----



## Method Blank (MB) Report

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

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Physical Tests (QCLot: 1231684)</b>						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
<b>Physical Tests (QCLot: 1231688)</b>						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
<b>Anions and Nutrients (QCLot: 1235439)</b>						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 1235440)</b>						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
<b>Anions and Nutrients (QCLot: 1235442)</b>						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 1235445)</b>						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
<b>Organic / Inorganic Carbon (QCLot: 1235444)</b>						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
<b>Total Sulfides (QCLot: 1229004)</b>						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
<b>Total Metals (QCLot: 1227093)</b>						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (QCLot: 1227093) - continued</b>						
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	---
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	---
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	---
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	---
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	---
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	---
<b>Total Metals (QCLot: 1233586)</b>						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
<b>Dissolved Metals (QCLot: 1225709)</b>						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---





Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Dissolved Metals (QCLot: 1225709) - continued</b>						
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	---
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	---
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	---
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	---
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	---
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	---
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	---
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	---
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	---
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	---
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	---
<b>Dissolved Metals (QCLot: 1237530)</b>						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	---
<b>Aggregate Organics (QCLot: 1239257)</b>						
Phenols, total (4AAP)	---	E562	0.001	mg/L	<0.0010	---
<b>Aggregate Organics (QCLot: 1242637)</b>						



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
<b>Aggregate Organics (QCLot: 1242637) - continued</b>						
Chemical oxygen demand [COD]	---	E559-L	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: Water

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
<b>Physical Tests (QCLot: 1231684)</b>									
Solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	113	85.0	115	---
<b>Physical Tests (QCLot: 1231688)</b>									
Solids, total suspended [TSS]	---	E160	3	mg/L	150 mg/L	98.8	85.0	115	---
<b>Anions and Nutrients (QCLot: 1235439)</b>									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	96.0	85.0	115	---
<b>Anions and Nutrients (QCLot: 1235440)</b>									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	91.7	80.0	120	---
<b>Anions and Nutrients (QCLot: 1235442)</b>									
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	4 mg/L	91.5	75.0	125	---
<b>Anions and Nutrients (QCLot: 1235445)</b>									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	99.2	75.0	125	---
<b>Organic / Inorganic Carbon (QCLot: 1235444)</b>									
Carbon, total organic [TOC]	---	E355-L	0.5	mg/L	8.57 mg/L	111	80.0	120	---
<b>Total Sulfides (QCLot: 1229004)</b>									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	97.8	80.0	120	---
<b>Total Metals (QCLot: 1227093)</b>									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	103	80.0	120	---
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	100	80.0	120	---
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	108	80.0	120	---
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	111	80.0	120	---
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	93.3	80.0	120	---
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	102	80.0	120	---
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	87.6	80.0	120	---
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	101	80.0	120	---
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	96.8	80.0	120	---
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	102	80.0	120	---
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	102	80.0	120	---
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	99.1	80.0	120	---
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	99.8	80.0	120	---



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Total Metals (QCLot: 1227093) - continued</b>									
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	104	80.0	120	---
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	105	80.0	120	---
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	93.0	80.0	120	---
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	95.8	80.0	120	---
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	97.4	80.0	120	---
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	106	80.0	120	---
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	---
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	107	80.0	120	---
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	101	80.0	120	---
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	105	80.0	120	---
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	103	80.0	120	---
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	104	80.0	120	---
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	98.7	80.0	120	---
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	97.1	80.0	120	---
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	102	80.0	120	---
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	102	80.0	120	---
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	105	80.0	120	---
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	108	80.0	120	---
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	106	80.0	120	---
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	102	80.0	120	---
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	102	80.0	120	---
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	101	80.0	120	---
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	110	80.0	120	---
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	---
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	103	80.0	120	---
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	---
<b>Total Metals (QCLot: 1233586)</b>									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	96.9	80.0	120	---
<b>Dissolved Metals (QCLot: 1225709)</b>									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	104	80.0	120	---
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	107	80.0	120	---
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	108	80.0	120	---
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	106	80.0	120	---
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	102	80.0	120	---
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	106	80.0	120	---



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1225709) - continued</b>									
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	108	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	105	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	104	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	100	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	106	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	106	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	101	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	103	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	108	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	111	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	108	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	106	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	109	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	105	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	95.3	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	114	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	103	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	104	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	99.2	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	104	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	107	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	103	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	106	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	103	80.0	120	----
<b>Aggregate Organics (QCLot: 1239257)</b>									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Aggregate Organics (QCLot: 1239257) - continued</b>									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	102	85.0	115	----
<b>Aggregate Organics (QCLot: 1242637)</b>									
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	100 mg/L	109	85.0	115	----



### 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: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Anions and Nutrients (QCLot: 1235439)</b>										
VA23C6856-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0922 mg/L	0.1 mg/L	92.2	75.0	125	----
<b>Anions and Nutrients (QCLot: 1235440)</b>										
VA23C6856-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	ND mg/L	0.05 mg/L	ND	70.0	130	----
<b>Anions and Nutrients (QCLot: 1235442)</b>										
VA23C6856-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.35 mg/L	2.5 mg/L	94.0	70.0	130	----
<b>Anions and Nutrients (QCLot: 1235445)</b>										
VA23C6856-002	Anonymous	Nitrogen, total	7727-37-9	E366	2.01 mg/L	2 mg/L	100	70.0	130	----
<b>Organic / Inorganic Carbon (QCLot: 1235444)</b>										
VA23C6856-002	Anonymous	Carbon, total organic [TOC]	----	E355-L	5.52 mg/L	5 mg/L	110	70.0	130	----
<b>Total Sulfides (QCLot: 1229004)</b>										
CG2315711-010	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.451 mg/L	0.4 mg/L	113	75.0	125	----
<b>Total Metals (QCLot: 1227093)</b>										
VA23C6699-002	Anonymous	Aluminum, total	7429-90-5	E420	0.995 mg/L	1 mg/L	99.5	70.0	130	----
		Antimony, total	7440-36-0	E420	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0990 mg/L	0.1 mg/L	99.0	70.0	130	----
		Barium, total	7440-39-3	E420	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.182 mg/L	0.2 mg/L	91.0	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0479 mg/L	0.05 mg/L	95.8	70.0	130	----
		Boron, total	7440-42-8	E420	0.426 mg/L	0.5 mg/L	85.1	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	20 mg/L	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0505 mg/L	0.05 mg/L	101	70.0	130	----
		Chromium, total	7440-47-3	E420	0.200 mg/L	0.2 mg/L	100	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0962 mg/L	0.1 mg/L	96.2	70.0	130	----
		Copper, total	7440-50-8	E420	0.0926 mg/L	0.1 mg/L	92.6	70.0	130	----
		Iron, total	7439-89-6	E420	9.55 mg/L	10 mg/L	95.5	70.0	130	----
		Lead, total	7439-92-1	E420	0.0943 mg/L	0.1 mg/L	94.3	70.0	130	----
		Lithium, total	7439-93-2	E420	0.459 mg/L	0.5 mg/L	91.9	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	5 mg/L	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	0.1 mg/L	ND	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Total Metals (QCLot: 1227093) - continued</b>										
VA23C6699-002	Anonymous	Molybdenum, total	7439-98-7	E420	ND mg/L	0.1 mg/L	ND	70.0	130	----
		Nickel, total	7440-02-0	E420	0.194 mg/L	0.2 mg/L	97.3	70.0	130	----
		Phosphorus, total	7723-14-0	E420	50.5 mg/L	50 mg/L	101	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	20 mg/L	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0996 mg/L	0.1 mg/L	99.6	70.0	130	----
		Selenium, total	7782-49-2	E420	0.200 mg/L	0.2 mg/L	99.8	70.0	130	----
		Silicon, total	7440-21-3	E420	46.7 mg/L	50 mg/L	93.4	70.0	130	----
		Silver, total	7440-22-4	E420	0.0196 mg/L	0.02 mg/L	97.9	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	0.1 mg/L	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	ND mg/L	100 mg/L	ND	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.208 mg/L	0.2 mg/L	104	70.0	130	----
		Thallium, total	7440-28-0	E420	0.0189 mg/L	0.02 mg/L	94.3	70.0	130	----
		Thorium, total	7440-29-1	E420	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Tin, total	7440-31-5	E420	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Titanium, total	7440-32-6	E420	0.211 mg/L	0.2 mg/L	105	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0976 mg/L	0.1 mg/L	97.6	70.0	130	----
		Uranium, total	7440-61-1	E420	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.509 mg/L	0.5 mg/L	102	70.0	130	----
		Zinc, total	7440-66-6	E420	1.92 mg/L	2 mg/L	96.3	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.211 mg/L	0.2 mg/L	105	70.0	130	----
<b>Total Metals (QCLot: 1233586)</b>										
VA23C6722-002	SQU DS 1	Mercury, total	7439-97-6	E508	0.0000974 mg/L	0.0001 mg/L	97.4	70.0	130	----
<b>Dissolved Metals (QCLot: 1225709)</b>										
VA23C6391-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.198 mg/L	0.2 mg/L	98.9	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0195 mg/L	0.02 mg/L	97.5	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0390 mg/L	0.04 mg/L	97.6	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00944 mg/L	0.01 mg/L	94.4	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00400 mg/L	0.004 mg/L	100	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.0100 mg/L	0.01 mg/L	100	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0386 mg/L	0.04 mg/L	96.5	70.0	130	----





Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1225709) - continued</b>										
VA23C6391-002	Anonymous	Cobalt, dissolved	7440-48-4	E421	0.0187 mg/L	0.02 mg/L	93.6	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0188 mg/L	0.02 mg/L	93.9	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.93 mg/L	2 mg/L	96.4	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0200 mg/L	0.02 mg/L	99.8	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0930 mg/L	0.1 mg/L	93.0	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0190 mg/L	0.02 mg/L	95.0	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0372 mg/L	0.04 mg/L	93.1	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	10.3 mg/L	10 mg/L	103	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	4.03 mg/L	4 mg/L	101	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0197 mg/L	0.02 mg/L	98.7	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.24 mg/L	10 mg/L	92.4	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00404 mg/L	0.004 mg/L	101	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	1.88 mg/L	2 mg/L	94.0	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	19.5 mg/L	20 mg/L	97.6	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0431 mg/L	0.04 mg/L	108	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00391 mg/L	0.004 mg/L	97.7	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0196 mg/L	0.02 mg/L	98.2	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0382 mg/L	0.04 mg/L	95.4	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0201 mg/L	0.02 mg/L	101	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00400 mg/L	0.004 mg/L	100	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0981 mg/L	0.1 mg/L	98.1	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.393 mg/L	0.4 mg/L	98.3	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
<b>Dissolved Metals (QCLot: 1237530)</b>										
VA23C6702-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.000113 mg/L	0.0001 mg/L	113	70.0	130	----
<b>Aggregate Organics (QCLot: 1239257)</b>										
CG2315729-043	Anonymous	Phenols, total (4AAP)	----	E562	0.0213 mg/L	0.02 mg/L	107	75.0	125	----
<b>Aggregate Organics (QCLot: 1242637)</b>										
VA23C6722-002	SQU DS 1	Chemical oxygen demand [COD]	----	E559-L	110 mg/L	100 mg/L	110	75.0	125	----



<b>Report To</b> Contact and company name below will appear on the final report			<b>Report Format / Distribution</b>				<b>Select Service Level Below - Contact your AM to confirm all E&amp;P TATs (surcharges may apply)</b>																																																																																																																																																																																						
Company: Triton Environmental			Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)				Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																																																																																																																																																																																						
Contact: [redacted]			Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO				<b>PRIORITY (Business Days)</b> 4 day [P4-20%] <input type="checkbox"/> 3 day [P3-25%] <input type="checkbox"/> 2 day [P2-50%] <input type="checkbox"/>			<b>EMERGENCY</b> 1 Business day [E1 - 100%] Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] <input type="checkbox"/>																																																																																																																																																																																			
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Company address below will appear on the final report			Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX				Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm																																																																																																																																																																																						
Street: 1730-1111 West Georgia Street			Email 1 or Fax [redacted]				For tests that can not be performed according to the service level selected, you will be contacted.																																																																																																																																																																																						
City/Province: Vancouver/BC			Email 2 [redacted]				<b>Analysis Request</b>																																																																																																																																																																																						
Postal Code: V6E 4M3			Email 3 [redacted]				Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																																																																																																																																																																						
<b>Invoice To</b>			<b>INVOICE DISTRIBUTION</b>				<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2"></th> <th>Total metals</th> <th>Total mercury</th> <th>Dissolved metals</th> <th>Dissolved mercury</th> <th>TSS</th> <th>TDS</th> <th>Nutrients (ammonia, TKN, total nitrogen, total phosphorus, phenols, COD, TOC)</th> <th>Total sulfide</th> <th colspan="2"></th> <th colspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">SAMPLES ON HOLD</th> <th colspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Sample is hazardous (please provide further detail)</th> <th colspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</th> </tr> </thead> <tbody> <tr> <td colspan="2"></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td colspan="2">ALS Account # / Quote #:</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td colspan="2">Job #:</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td colspan="2">PO / AFE:</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td colspan="2">LSD:</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td colspan="2">ALS Lab Work Order # (lab use only):</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td colspan="2">ALS Contact:</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td colspan="2">Sampler:</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>															Total metals	Total mercury	Dissolved metals	Dissolved mercury	TSS	TDS	Nutrients (ammonia, TKN, total nitrogen, total phosphorus, phenols, COD, TOC)	Total sulfide			SAMPLES ON HOLD		Sample is hazardous (please provide further detail)		NUMBER OF CONTAINERS																					ALS Account # / Quote #:																			Job #:																			PO / AFE:																			LSD:																			ALS Lab Work Order # (lab use only):																			ALS Contact:																			Sampler:																		
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AFE/Cost Center:			Major/Minor Code:		Routing Code:																																																																																																																																																																																								
Requisitioner:			Location:																																																																																																																																																																																										
ALS Sample # (lab use only)			Sample Identification and/or Coordinates (This description will appear on the report)				Date (dd-mmm-yy)		Time (hh:mm)		Sample Type																																																																																																																																																																																		
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SQU US 1			pH:          cond:          temp:								Water										7																																																																																																																																																																								
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<b>Drinking Water (DW) Samples<sup>1</sup> (client use)</b>			<b>Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)</b>				<b>SAMPLE CONDITION AS RECEIVED (lab use only)</b>																																																																																																																																																																																						
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			British Columbia Approved and Working Water Quality Guidelines (MAY, 2015)				Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/> Ice Packs <input type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/> Cooling Initiated <input type="checkbox"/>																																																																																																																																																																																						
Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO							INITIAL COOLER TEMPERATURES °C						FINAL COOLER TEMPERATURES °C																																																																																																																																																																																
<b>SHIPMENT RELEASE (client use)</b>			<b>INITIAL SHIPMENT RECEPTION (lab use only)</b>						<b>FINAL SHIPMENT RECEPTION (lab use only)</b>																																																																																																																																																																																				
Released by: [redacted]			Time: [redacted]		Received by: [redacted]		Date: [redacted]		Time: [redacted]		Received by: [redacted]		Date: [redacted]		Time: [redacted]																																																																																																																																																																														



www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Environmental Division  
Vancouver  
Work Order Reference  
VA23C6722

Order: 20-1070292

Page of

**Report To** Contact and company name below will appear on the final report

**Company:** TRITON ENVIRONMENTAL

**Contact:**

**Phone:**

Company address below will appear on the final report

**Street:** 1730-1111 West Georgia Street

**City/Province:** Vancouver, BC

**Postal Code:** V6E 4M3

**Reports / Recipients**

Select Report Format:  PDF  EXCEL  EDD (DIGITAL)

Merge QC/QCI Reports with COA  YES  NO  N/A

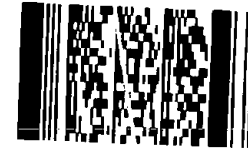
Compare Results to Criteria on Report - provide details below if box checked

Select Distribution:  EMAIL  MAIL  FAX

**Email 1 or Fax**

**Email 2**

**Email 3**



Telephone: +1 604 534 1866

**AFFIX ALS BARCODE LABEL HERE**  
(ALS use only)

Minimum  
Minimum  
Minimum  
Minimum  
Additional fees  
and non-routine tests

**Invoice To** Same as Report To  YES  NO

Copy of Invoice with Report  YES  NO

**Invoice Recipients**

Select Invoice Distribution:  EMAIL  MAIL  FAX

**Email 1 or Fax**

**Email 2**

**Project Information**

**ALS Account # / Quote #:** BR414066

**Job #:**

**PO / AFE:**

**LSD:**

**Oil and Gas Required Fields (client use)**

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

**ALS Lab Work Order # (ALS use only):**

**ALS Contact:**

**Sampler:**

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type
	SOU1S1 PH: 7.64 conductivity: 53 NTU: 29.1 °C: 7.2	06-11-2023	11:18	
	SOU1S1 PH: 7.73 conductivity: 55 NTU: 35.3 °C: 7.3	06-11-2023	10:00	

**Analysis Request**

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

NUMBER OF CONTAINERS	TSS/TDS	GLYCOLS	METALS	METALS	MERCURY	MERCURY	NUTRIENTS/TOC	NUTRIENTS/DOC	PAH/LEPH/EPH	PHEN	SULPHIDES	VOCs	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
13	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

**Drinking Water (DW) Samples (client use)**

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

Are samples taken from a Regulated DW System?  YES  NO

Are samples for human consumption/ use?  YES  NO

please also email ESdat\_CA+@tritonenv@ESdat  
LabSync.net

**SAMPLE RECEIPT DETAILS (ALS use only)**

Cooling Method:  NONE  ICE  ICE PACKS  FROZEN  COOLING INITIATED

Submission Comments identified on Sample Receipt Notification:  YES  NO

Cooler Custody Seals Intact:  YES  N/A Sample Custody Seals Intact:  YES  N/A

INITIAL COOLER TEMPERATURES °C: 6 FINAL COOLER TEMPERATURES °C: 6

**SHIPMENT RELEASE (client use)**

Released by: Sam Richards Date: Nov 6, 2023 Time: 17:11

**INITIAL SHIPMENT RECEPTION (ALS use only)**

Received by: Date: Time:

**FINAL SHIPMENT RECEPTION (ALS use only)**

Received by: Date: Nov 6



**CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)**

<b>Work Order</b>	: <b>VA23C7396</b>	<b>Page</b>	: 1 of 15
<b>Client</b>	: <b>Triton Environmental Consultants Ltd.</b>	<b>Laboratory</b>	: ALS Environmental - Vancouver
<b>Contact</b>	:	<b>Account Manager</b>	: Can Dang
<b>Address</b>	: Suite 650, 1040 West Georgia St Vancouver BC Canada V6E 4H1	<b>Address</b>	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
<b>Telephone</b>	:	<b>Telephone</b>	: +1 604 253 4188
<b>Project</b>	: ----	<b>Date Samples Received</b>	: 14-Nov-2023 14:30
<b>PO</b>	: ----	<b>Date Analysis Commenced</b>	: 15-Nov-2023
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 22-Nov-2023 17:16
<b>Sampler</b>	: ----		
<b>Site</b>	: Water Analysis		
<b>Quote number</b>	: VA23-TRIT100-012		
<b>No. of samples received</b>	: 2		
<b>No. of samples analysed</b>	: 2		

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
- Guideline Comparison

**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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Inorganics, Edmonton, Alberta
Chamoi Beckford	Lab Assistant	Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Administration, Burnaby, British Columbia
Sam Silveira	Lab Assistant	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia



### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
SQU DS 1	Water	Phosphorus, total		BCAWWQG	SDW AO	0.0221 mg/L	0.01 mg/L
	Water	Phosphorus, total		BCAWWQG	SDW AO	<0.050	0.01 mg/L
	Water	Alkalinity, total (as CaCO3)	Sensitivity to acid inputs can be determined by the concentration of dissolved calcium: < 4 mg/L is High; 4-8 mg/L is Moderate; >8 mg/L is Low	BCAWWQG	FAL-LT	14.6 mg/L	20 mg/L
	Water	Aluminum, total	Guideline limit based on $WQG = \ln(0.645 \ln(C)) + [2.255 \ln(C) + 1.995] + [-0.284 \ln(C) - 9.898] / 3$ and Hardness = 10, pH = 6 and DOC = 0.08	BCAWWQG	FAL-LT	0.279 mg/L	0.00185 mg/L
	Water	Calcium, dissolved	Sensitivity to acid inputs can be determined by the concentration of dissolved calcium: < 4 mg/L is High; 4-8 mg/L is Moderate; >8 mg/L is Low.	BCAWWQG	FAL-LT	5.88 mg/L	8 mg/L
	Water	Copper, dissolved	0.2 ug/L is considered to be the lowest concentration routinely measured. Refer to <a href="https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/copper/bc_blm_users_manual.pdf">https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/copper/bc_blm_users_manual.pdf</a> for calculation of site specific WQG.	BCAWWQG	FAL-LT	0.00080 mg/L	0.0002 mg/L
	Water	Copper, total	WQG applies to dissolved metal result. WQG based on T = 15, hardness = 30 mg/L, DOC = 3 mg/L and pH = 6.5 using the BC BLM.	BCAWWQG	FAL-ST	0.00117 mg/L	0.0009 mg/L
	Water	Mercury, total		BCAWWQG	W-LT	<0.0000050	0 mg/L
	Water	Mercury, dissolved		BCAWWQG	W-LT	<0.0000050	0 mg/L
SQU US 1	Water	Phosphorus, total		BCAWWQG	SDW AO	0.0209 mg/L	0.01 mg/L
	Water	Iron, total		BCAWWQG	SDW AO	0.339 mg/L	0.3 mg/L
	Water	Phosphorus, total		BCAWWQG	SDW AO	<0.050	0.01 mg/L
	Water	Alkalinity, total (as CaCO3)	Sensitivity to acid inputs can be determined by the concentration of dissolved calcium: < 4 mg/L is High; 4-8 mg/L is Moderate; >8 mg/L is Low	BCAWWQG	FAL-LT	14.9 mg/L	20 mg/L
	Water	Aluminum, total	Guideline limit based on $WQG = \ln(0.645 \ln(C)) + [2.255 \ln(C) + 1.995] + [-0.284 \ln(C) - 9.898] / 3$ and Hardness = 10, pH = 6 and DOC = 0.08	BCAWWQG	FAL-LT	0.279 mg/L	0.00185 mg/L
	Water	Calcium, dissolved	Sensitivity to acid inputs can be determined by the concentration of dissolved calcium: < 4 mg/L is High; 4-8 mg/L is Moderate; >8 mg/L is Low.	BCAWWQG	FAL-LT	6.04 mg/L	8 mg/L



SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
	Water	Copper, dissolved	0.2 ug/L is considered to be the lowest concentration routinely measured. Refer to <a href="https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/copper/bc_blm_users_manual.pdf">https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/copper/bc_blm_users_manual.pdf</a> for calculation of site specific WQG.	BCAWWQG	FAL-LT	0.00081 mg/L	0.0002 mg/L
	Water	Copper, total	WQG applies to dissolved metal result. WQG based on T = 15, hardness = 30 mg/L, DOC = 3 mg/L and pH = 6.5 using the BC BLM.	BCAWWQG	FAL-ST	0.00120 mg/L	0.0009 mg/L
	Water	Mercury, total		BCAWWQG	W-LT	<0.0000050	0 mg/L
	Water	Mercury, dissolved		BCAWWQG	W-LT	<0.0000050	0 mg/L

### 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.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key : LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
°C	degrees celsius
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
pH units	pH units

>: greater than.

<: less than.

Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).

For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit.



## Analytical Results Evaluation

				Client sample ID	SQU DS 1	SQU US 1	----	----	----	----	----
Matrix: Water				Sampling date/time	14-Nov-2023 09:40	14-Nov-2023 10:19	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C7396-001	VA23C7396-002	-----	-----	-----	-----	-----	-----
<b>Field Tests</b>											
Conductivity, field	----	EF001/VA	µS/cm	53.000	58.000	----	----	----	----	----	----
pH, field	----	EF001/VA	pH units	7.57	7.39	----	----	----	----	----	----
Temperature, field	----	EF001/VA	°C	5.40	5.40	----	----	----	----	----	----
<b>Physical Tests</b>											
Hardness (as CaCO3), dissolved	----	EC100/VA	mg/L	17.5	18.0	----	----	----	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	mg/L	17.4	17.8	----	----	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	mg/L	33	36	----	----	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	mg/L	5.6	5.6	----	----	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	mg/L	14.6	14.9	----	----	----	----	----	----
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	7664-41-7	E298/VA	mg/L	0.0703	0.0773	----	----	----	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	mg/L	<0.050	<0.050	----	----	----	----	----	----
Chloride	16887-00-6	E235.Cl/VA	mg/L	2.24	2.28	----	----	----	----	----	----
Fluoride	16984-48-8	E235.F/VA	mg/L	<0.020	<0.020	----	----	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	mg/L	0.154	0.160	----	----	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	mg/L	0.0941	0.0950	----	----	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	mg/L	0.0021	0.0023	----	----	----	----	----	----
Nitrogen, total	7727-37-9	E366/VA	mg/L	0.198	0.229	----	----	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	mg/L	0.0221	0.0209	----	----	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	mg/L	4.39	4.48	----	----	----	----	----	----
<b>Total Sulfides</b>											
Sulfide, total (as S)	18496-25-8	E395/VA	mg/L	<0.0015	<0.0015	----	----	----	----	----	----
Sulfide, un-ionized (as H2S), from total	7783-06-4	EC395/VA	mg/L	<0.0015	<0.0015	----	----	----	----	----	----
Sulfide, total (as H2S)	7783-06-4	E395/VA	mg/L	<0.0016	<0.0016	----	----	----	----	----	----
<b>Total Metals</b>											
Aluminum, total	7429-90-5	E420/VA	mg/L	0.279	0.279	----	----	----	----	----	----
Antimony, total	7440-36-0	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----





## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU DS 1	SQU US 1	----	----	----	----	----
				Sampling date/time	14-Nov-2023 09:40	14-Nov-2023 10:19	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C7396-001	VA23C7396-002	-----	-----	-----	-----	-----	-----
<b>Total Metals</b>											
Arsenic, total	7440-38-2	E420/VA	mg/L	0.00016	0.00017	----	----	----	----	----	----
Barium, total	7440-39-3	E420/VA	mg/L	0.0101	0.0101	----	----	----	----	----	----
Beryllium, total	7440-41-7	E420/VA	mg/L	<0.000100	<0.000100	----	----	----	----	----	----
Bismuth, total	7440-69-9	E420/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Boron, total	7440-42-8	E420/VA	mg/L	<0.010	<0.010	----	----	----	----	----	----
Cadmium, total	7440-43-9	E420/VA	mg/L	0.0000094	0.0000096	----	----	----	----	----	----
Calcium, total	7440-70-2	E420/VA	mg/L	5.75	5.87	----	----	----	----	----	----
Cesium, total	7440-46-2	E420/VA	mg/L	0.000019	0.000019	----	----	----	----	----	----
Chromium, total	7440-47-3	E420/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
Cobalt, total	7440-48-4	E420/VA	mg/L	0.00014	0.00014	----	----	----	----	----	----
Copper, total	7440-50-8	E420/VA	mg/L	0.00117	0.00120	----	----	----	----	----	----
Iron, total	7439-89-6	E420/VA	mg/L	0.284	0.339	----	----	----	----	----	----
Lead, total	7439-92-1	E420/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Lithium, total	7439-93-2	E420/VA	mg/L	0.0011	<0.0010	----	----	----	----	----	----
Magnesium, total	7439-95-4	E420/VA	mg/L	0.737	0.767	----	----	----	----	----	----
Manganese, total	7439-96-5	E420/VA	mg/L	0.0140	0.0157	----	----	----	----	----	----
Mercury, total	7439-97-6	E508/VA	mg/L	<0.0000050	<0.0000050	----	----	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	mg/L	0.000482	0.000491	----	----	----	----	----	----
Nickel, total	7440-02-0	E420/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
Phosphorus, total	7723-14-0	E420/VA	mg/L	<0.050	<0.050	----	----	----	----	----	----
Potassium, total	7440-09-7	E420/VA	mg/L	0.685	0.699	----	----	----	----	----	----
Rubidium, total	7440-17-7	E420/VA	mg/L	0.00104	0.00101	----	----	----	----	----	----
Selenium, total	7782-49-2	E420/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Silicon, total	7440-21-3	E420/VA	mg/L	4.77	5.11	----	----	----	----	----	----
Silver, total	7440-22-4	E420/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
Sodium, total	7440-23-5	E420/VA	mg/L	2.46	2.54	----	----	----	----	----	----
Strontium, total	7440-24-6	E420/VA	mg/L	0.0374	0.0376	----	----	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	mg/L	1.53	1.63	----	----	----	----	----	----
Tellurium, total	13494-80-9	E420/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----



## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU DS 1	SQU US 1	----	----	----	----	----
				Sampling date/time	14-Nov-2023 09:40	14-Nov-2023 10:19	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C7396-001	VA23C7396-002	-----	-----	-----	-----	-----	-----
<b>Total Metals</b>											
Thallium, total	7440-28-0	E420/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
Thorium, total	7440-29-1	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Tin, total	7440-31-5	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Titanium, total	7440-32-6	E420/VA	mg/L	0.00913	0.00897	----	----	----	----	----	----
Tungsten, total	7440-33-7	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Uranium, total	7440-61-1	E420/VA	mg/L	0.000041	0.000037	----	----	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	mg/L	0.00136	0.00140	----	----	----	----	----	----
Zinc, total	7440-66-6	E420/VA	mg/L	<0.0030	<0.0030	----	----	----	----	----	----
Zirconium, total	7440-67-7	E420/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
<b>Dissolved Metals</b>											
Aluminum, dissolved	7429-90-5	E421/VA	mg/L	0.0650	0.0669	----	----	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	mg/L	0.00014	0.00014	----	----	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	mg/L	0.00834	0.00839	----	----	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	mg/L	<0.000100	<0.000100	----	----	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Boron, dissolved	7440-42-8	E421/VA	mg/L	<0.010	<0.010	----	----	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	mg/L	0.0000080	0.0000081	----	----	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	mg/L	5.88	6.04	----	----	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	mg/L	0.000012	0.000013	----	----	----	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Copper, dissolved	7440-50-8	E421/VA	mg/L	0.00080	0.00081	----	----	----	----	----	----
Iron, dissolved	7439-89-6	E421/VA	mg/L	0.108	0.138	----	----	----	----	----	----
Lead, dissolved	7439-92-1	E421/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	mg/L	0.0011	0.0010	----	----	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	mg/L	0.684	0.699	----	----	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	mg/L	0.0103	0.0112	----	----	----	----	----	----



## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU DS 1	SQU US 1	----	----	----	----	----
				Sampling date/time	14-Nov-2023 09:40	14-Nov-2023 10:19	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C7396-001	VA23C7396-002	-----	-----	-----	-----	-----	-----
<b>Dissolved Metals</b>											
Mercury, dissolved	7439-97-6	E509/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	mg/L	0.000454	0.000495	----	----	----	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	mg/L	<0.050	<0.050	----	----	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	mg/L	0.693	0.674	----	----	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	mg/L	0.00096	0.00094	----	----	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	mg/L	4.50	4.87	----	----	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	mg/L	2.50	2.47	----	----	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	mg/L	0.0356	0.0371	----	----	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	mg/L	1.62	1.63	----	----	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Tin, dissolved	7440-31-5	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	mg/L	0.00095	0.00085	----	----	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	mg/L	0.000038	0.000034	----	----	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	mg/L	0.00089	0.00093	----	----	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	mg/L	<0.0010	<0.0010	----	----	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	Field	Field	----	----	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	Field	Field	----	----	----	----	----	----
<b>Aggregate Organics</b>											
Chemical oxygen demand [COD]	----	E559-L/VA	mg/L	<10	11	----	----	----	----	----	----
Phenols, total (4AAP)	----	E562/EO	mg/L	<0.0010	<0.0010	----	----	----	----	----	----



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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.



### Summary of Guideline Limits

Analyte	CAS Number	Unit	BCAWWQG L-ST	BCAWWQG MAL-LT	BCAWWQG MAL-ST	BCAWWQG W-LT	BCAWWQG W-ST		
<b>Field Tests</b>									
Conductivity, field	----	µS/cm	--	--	<a--	--	--		
pH, field	----	pH units	--	--	<a--	--	--		
Temperature, field	----	°C	--	--	<a--	--	--		
<b>Physical Tests</b>									
Alkalinity, total (as CaCO3)	----	mg/L	--	--	<a--	--	--		
Hardness (as CaCO3), dissolved	----	mg/L	--	--	<a--	--	--		
Hardness (as CaCO3), from total Ca/Mg	----	mg/L	--	--	<a--	--	--		
Solids, total dissolved [TDS]	----	mg/L	--	--	<a--	3000 mg/L	--		
Solids, total suspended [TSS]	----	mg/L	--	25 mg/L	<a--	--	--		
<b>Anions and Nutrients</b>									
Ammonia, total (as N)	7664-41-7	mg/L	--	0.1 mg/L	0.67 mg/L	--	--		
Bromide	24959-67-9	mg/L	--	--	<a--	--	--		
Chloride	16887-00-6	mg/L	--	--	<a--	600 mg/L	--		
Fluoride	16984-48-8	mg/L	1.5 mg/L	1.5 mg/L	1.5 mg/L	1 mg/L	1.5 mg/L		
Kjeldahl nitrogen, total [TKN]	----	mg/L	--	--	<a--	--	--		
Nitrate (as N)	14797-55-8	mg/L	100 mg/L	3.7 mg/L	<a--	--	100 mg/L		
Nitrite (as N)	14797-65-0	mg/L	10 mg/L	--	<a--	--	10 mg/L		
Nitrogen, total	7727-37-9	mg/L	--	--	<a--	--	--		
Phosphorus, total	7723-14-0	mg/L	--	--	<a--	--	--		
Sulfate (as SO4)	14808-79-8	mg/L	--	--	<a--	1000 mg/L	--		
<b>Total Sulfides</b>									
Sulfide, total (as H2S)	7783-06-4	mg/L	--	0.002 mg/L	<a--	0.05 mg/L	--		
Sulfide, total (as S)	18496-25-8	mg/L	--	--	<a--	--	--		
Sulfide, un-ionized (as H2S), from total	7783-06-4	mg/L	--	--	<a--	--	--		
<b>Total Metals</b>									
Aluminum, total	7429-90-5	mg/L	5 mg/L	--	<a--	--	5 mg/L		
Antimony, total	7440-36-0	mg/L	--	--	<a--	--	--		
Arsenic, total	7440-38-2	mg/L	--	0.0125 mg/L	<a--	0.025 mg/L	--		
Barium, total	7440-39-3	mg/L	--	--	<a--	--	--		
Beryllium, total	7440-41-7	mg/L	--	0.1 mg/L	<a--	--	--		
Bismuth, total	7440-69-9	mg/L	--	--	<a--	--	--		
Boron, total	7440-42-8	mg/L	--	1.2 mg/L	<a--	5 mg/L	--		
Cadmium, total	7440-43-9	mg/L	--	0.00012 mg/L	<a--	--	--		
Calcium, total	7440-70-2	mg/L	--	--	<a--	--	--		
Cesium, total	7440-46-2	mg/L	--	--	<a--	--	--		
Chromium, total	7440-47-3	mg/L	--	0.0015 mg/L	<a--	--	--		
Cobalt, total	7440-48-4	mg/L	--	--	<a--	--	--		



Analyte	CAS Number	Unit	BCAWWQG L-ST	BCAWWQG MAL-LT	BCAWWQG MAL-ST	BCAWWQG W-LT	BCAWWQG W-ST		
<b>Total Metals - Continued</b>									
Copper, total	7440-50-8	mg/L	0.3 mg/L	--	0.003 mg/L	--	0.3 mg/L		
Iron, total	7439-89-6	mg/L	--	--	<a--	--	--		
Lead, total	7439-92-1	mg/L	0.1 mg/L	0.002 mg/L	0.14 mg/L	--	0.1 mg/L		
Lithium, total	7439-93-2	mg/L	--	--	<a--	5 mg/L	--		
Magnesium, total	7439-95-4	mg/L	--	--	<a--	100 mg/L	--		
Manganese, total	7439-96-5	mg/L	--	0.1 mg/L	<a--	--	--		
Mercury, total	7439-97-6	mg/L	0.003 mg/L	1E-05 mg/L	<a--	1E-06 mg/L	--		
Molybdenum, total	7439-98-7	mg/L	--	--	<a--	0.016 mg/L	--		
Nickel, total	7440-02-0	mg/L	--	0.0083 mg/L	<a--	1 mg/L	--		
Phosphorus, total	7723-14-0	mg/L	--	--	<a--	--	--		
Potassium, total	7440-09-7	mg/L	--	--	<a--	--	--		
Rubidium, total	7440-17-7	mg/L	--	--	<a--	--	--		
Selenium, total	7782-49-2	mg/L	--	0.002 mg/L	<a--	0.002 mg/L	--		
Silicon, total	7440-21-3	mg/L	--	--	<a--	--	--		
Silver, total	7440-22-4	mg/L	--	0.0015 mg/L	<a--	--	--		
Sodium, total	7440-23-5	mg/L	--	--	<a--	200 mg/L	--		
Strontium, total	7440-24-6	mg/L	--	--	<a--	--	--		
Sulfur, total	7704-34-9	mg/L	--	--	<a--	--	--		
Tellurium, total	13494-80-9	mg/L	--	--	<a--	--	--		
Thallium, total	7440-28-0	mg/L	--	--	<a--	--	--		
Thorium, total	7440-29-1	mg/L	--	--	<a--	--	--		
Tin, total	7440-31-5	mg/L	--	--	<a--	--	--		
Titanium, total	7440-32-6	mg/L	--	--	<a--	--	--		
Tungsten, total	7440-33-7	mg/L	--	--	<a--	--	--		
Uranium, total	7440-61-1	mg/L	--	0.1 mg/L	<a--	0.2 mg/L	--		
Vanadium, total	7440-62-2	mg/L	--	0.05 mg/L	<a--	0.1 mg/L	--		
Zinc, total	7440-66-6	mg/L	--	0.01 mg/L	0.055 mg/L	--	--		
Zirconium, total	7440-67-7	mg/L	--	--	<a--	--	--		
<b>Dissolved Metals</b>									
Aluminum, dissolved	7429-90-5	mg/L	5 mg/L	--	<a--	--	5 mg/L		
Antimony, dissolved	7440-36-0	mg/L	--	--	<a--	--	--		
Arsenic, dissolved	7440-38-2	mg/L	--	0.0125 mg/L	<a--	0.025 mg/L	--		
Barium, dissolved	7440-39-3	mg/L	--	--	<a--	--	--		
Beryllium, dissolved	7440-41-7	mg/L	--	0.1 mg/L	<a--	--	--		
Bismuth, dissolved	7440-69-9	mg/L	--	--	<a--	--	--		
Boron, dissolved	7440-42-8	mg/L	--	1.2 mg/L	<a--	5 mg/L	--		
Cadmium, dissolved	7440-43-9	mg/L	--	0.00012 mg/L	<a--	--	--		
Calcium, dissolved	7440-70-2	mg/L	--	--	<a--	--	--		
Cesium, dissolved	7440-46-2	mg/L	--	--	<a--	--	--		



Analyte	CAS Number	Unit	BCAWWQG L-ST	BCAWWQG MAL-LT	BCAWWQG MAL-ST	BCAWWQG W-LT	BCAWWQG W-ST		
<b>Dissolved Metals - Continued</b>									
Chromium, dissolved	7440-47-3	mg/L	--	0.0015 mg/L	<a--	--	--		
Cobalt, dissolved	7440-48-4	mg/L	--	--	<a--	--	--		
Copper, dissolved	7440-50-8	mg/L	0.3 mg/L	--	0.003 mg/L	--	0.3 mg/L		
Dissolved mercury filtration location	----	-	--	--	<a--	--	--		
Dissolved metals filtration location	----	-	--	--	<a--	--	--		
Iron, dissolved	7439-89-6	mg/L	--	--	<a--	--	--		
Lead, dissolved	7439-92-1	mg/L	0.1 mg/L	0.002 mg/L	0.14 mg/L	--	0.1 mg/L		
Lithium, dissolved	7439-93-2	mg/L	--	--	<a--	5 mg/L	--		
Magnesium, dissolved	7439-95-4	mg/L	--	--	<a--	100 mg/L	--		
Manganese, dissolved	7439-96-5	mg/L	--	0.1 mg/L	<a--	--	--		
Mercury, dissolved	7439-97-6	mg/L	0.003 mg/L	1E-05 mg/L	<a--	1E-06 mg/L	--		
Molybdenum, dissolved	7439-98-7	mg/L	--	--	<a--	0.016 mg/L	--		
Nickel, dissolved	7440-02-0	mg/L	--	0.0083 mg/L	<a--	1 mg/L	--		
Phosphorus, dissolved	7723-14-0	mg/L	--	--	<a--	--	--		
Potassium, dissolved	7440-09-7	mg/L	--	--	<a--	--	--		
Rubidium, dissolved	7440-17-7	mg/L	--	--	<a--	--	--		
Selenium, dissolved	7782-49-2	mg/L	--	0.002 mg/L	<a--	0.002 mg/L	--		
Silicon, dissolved	7440-21-3	mg/L	--	--	<a--	--	--		
Silver, dissolved	7440-22-4	mg/L	--	0.0015 mg/L	<a--	--	--		
Sodium, dissolved	7440-23-5	mg/L	--	--	<a--	200 mg/L	--		
Strontium, dissolved	7440-24-6	mg/L	--	--	<a--	--	--		
Sulfur, dissolved	7704-34-9	mg/L	--	--	<a--	--	--		
Tellurium, dissolved	13494-80-9	mg/L	--	--	<a--	--	--		
Thallium, dissolved	7440-28-0	mg/L	--	--	<a--	--	--		
Thorium, dissolved	7440-29-1	mg/L	--	--	<a--	--	--		
Tin, dissolved	7440-31-5	mg/L	--	--	<a--	--	--		
Titanium, dissolved	7440-32-6	mg/L	--	--	<a--	--	--		
Tungsten, dissolved	7440-33-7	mg/L	--	--	<a--	--	--		
Uranium, dissolved	7440-61-1	mg/L	--	0.1 mg/L	<a--	0.2 mg/L	--		
Vanadium, dissolved	7440-62-2	mg/L	--	0.05 mg/L	<a--	0.1 mg/L	--		
Zinc, dissolved	7440-66-6	mg/L	--	0.01 mg/L	0.055 mg/L	--	--		
Zirconium, dissolved	7440-67-7	mg/L	--	--	<a--	--	--		
<b>Aggregate Organics</b>									
Chemical oxygen demand [COD]	----	mg/L	--	--	<a--	--	--		
Phenols, total (4AAP)	----	mg/L	--	--	<a--	0.002 mg/L	--		
Analyte	CAS Number	Unit	BCAWWQG SDW AO	BCAWWQG SDW MAC	BCAWWQG FAL-LT	BCAWWQG FAL-ST	BCAWWQG I-LT	BCAWWQG I-ST	BCAWWQG L-LT
<b>Field Tests</b>									
Conductivity, field	----	µS/cm	--	--	<a--	--	--	--	--



Analyte	CAS Number	Unit	BCAWWQG SDW AO	BCAWWQG SDW MAC	BCAWWQG FAL-LT	BCAWWQG FAL-ST	BCAWWQG I-LT	BCAWWQG I-ST	BCAWWQG L-LT
<b>Field Tests - Continued</b>									
pH, field	----	pH units	--	--	<a--	--	--	--	--
Temperature, field	----	°C	--	--	<a--	--	--	--	--
<b>Physical Tests</b>									
Alkalinity, total (as CaCO3)	----	mg/L	--	--	<a20 mg/L	--	--	--	--
Hardness (as CaCO3), dissolved	----	mg/L	--	--	<a--	--	--	--	--
Hardness (as CaCO3), from total Ca/Mg	----	mg/L	--	--	<a--	--	--	--	--
Solids, total dissolved [TDS]	----	mg/L	--	--	<a--	--	500 mg/L	--	1000 mg/L
Solids, total suspended [TSS]	----	mg/L	--	--	<a--	--	--	--	--
<b>Anions and Nutrients</b>									
Ammonia, total (as N)	7664-41-7	mg/L	--	--	0.102 mg/L	0.752 mg/L	--	--	--
Bromide	24959-67-9	mg/L	--	--	<a--	--	--	--	--
Chloride	16887-00-6	mg/L	250 mg/L	--	150 mg/L	600 mg/L	100 mg/L	--	600 mg/L
Fluoride	16984-48-8	mg/L	--	1.5 mg/L	<a--	0.4 mg/L	1 mg/L	--	1 mg/L
Kjeldahl nitrogen, total [TKN]	----	mg/L	--	--	<a--	--	--	--	--
Nitrate (as N)	14797-55-8	mg/L	--	10 mg/L	3 mg/L	32.8 mg/L	--	--	--
Nitrite (as N)	14797-65-0	mg/L	--	1 mg/L	0.02 mg/L	0.06 mg/L	--	--	--
Nitrogen, total	7727-37-9	mg/L	--	--	<a--	--	--	--	--
Phosphorus, total	7723-14-0	mg/L	0.01 mg/L	--	<a--	--	--	--	--
Sulfate (as SO4)	14808-79-8	mg/L	500 mg/L	--	128 mg/L	--	--	--	1000 mg/L
<b>Total Sulfides</b>									
Sulfide, total (as H2S)	7783-06-4	mg/L	--	--	0.002 mg/L	--	--	--	--
Sulfide, total (as S)	18496-25-8	mg/L	--	--	<a--	--	--	--	--
Sulfide, un-ionized (as H2S), from total	7783-06-4	mg/L	--	--	<a--	--	--	--	--
<b>Total Metals</b>									
Aluminum, total	7429-90-5	mg/L	--	9.5 mg/L	0.00185 mg/L	--	--	5 mg/L	--
Antimony, total	7440-36-0	mg/L	--	0.006 mg/L	0.009 mg/L	--	--	--	--
Arsenic, total	7440-38-2	mg/L	--	0.01 mg/L	0.005 mg/L	--	0.1 mg/L	--	0.025 mg/L
Barium, total	7440-39-3	mg/L	--	--	1 mg/L	--	--	--	--
Beryllium, total	7440-41-7	mg/L	--	--	0.00013 mg/L	--	0.1 mg/L	--	0.1 mg/L
Bismuth, total	7440-69-9	mg/L	--	--	<a--	--	--	--	--
Boron, total	7440-42-8	mg/L	--	5 mg/L	1.2 mg/L	--	0.5 mg/L	--	5 mg/L
Cadmium, total	7440-43-9	mg/L	--	0.005 mg/L	1.8E-05 mg/L	3E-05 mg/L	0.0051 mg/L	--	0.08 mg/L
Calcium, total	7440-70-2	mg/L	--	--	<a--	--	--	--	--
Cesium, total	7440-46-2	mg/L	--	--	<a--	--	--	--	--
Chromium, total	7440-47-3	mg/L	--	0.05 mg/L	0.001 mg/L	--	0.005 mg/L	--	0.05 mg/L
Cobalt, total	7440-48-4	mg/L	--	0.001 mg/L	0.004 mg/L	0.11 mg/L	0.05 mg/L	--	1 mg/L
Copper, total	7440-50-8	mg/L	1 mg/L	2 mg/L	<a--	0.0009 mg/L	--	0.2 mg/L	--
Iron, total	7439-89-6	mg/L	0.3 mg/L	--	<a--	1 mg/L	--	--	--
Lead, total	7439-92-1	mg/L	--	0.005 mg/L	0.00344 mg/L	0.003 mg/L	--	0.2 mg/L	--





Analyte	CAS Number	Unit	BCAWWQG SDW AO	BCAWWQG SDW MAC	BCAWWQG FAL-LT	BCAWWQG FAL-ST	BCAWWQG I-LT	BCAWWQG I-ST	BCAWWQG L-LT
<b>Total Metals - Continued</b>									
Lithium, total	7439-93-2	mg/L	--	--	<a--	--	0.75 mg/L	--	--
Magnesium, total	7439-95-4	mg/L	--	--	<a--	--	--	--	--
Manganese, total	7439-96-5	mg/L	0.02 mg/L	0.12 mg/L	0.768 mg/L	0.816 mg/L	0.2 mg/L	--	--
Mercury, total	7439-97-6	mg/L	--	0.001 mg/L	1E-05 mg/L	--	--	0.002 mg/L	--
Molybdenum, total	7439-98-7	mg/L	--	0.088 mg/L	5.1 mg/L	46 mg/L	0.01 mg/L	0.05 mg/L	0.01 mg/L
Nickel, total	7440-02-0	mg/L	--	0.08 mg/L	0.025 mg/L	--	0.2 mg/L	--	1 mg/L
Phosphorus, total	7723-14-0	mg/L	0.01 mg/L	--	<a--	--	--	--	--
Potassium, total	7440-09-7	mg/L	--	--	373 mg/L	--	--	--	--
Rubidium, total	7440-17-7	mg/L	--	--	<a--	--	--	--	--
Selenium, total	7782-49-2	mg/L	--	0.01 mg/L	0.001 mg/L	--	0.01 mg/L	--	0.03 mg/L
Silicon, total	7440-21-3	mg/L	--	--	<a--	--	--	--	--
Silver, total	7440-22-4	mg/L	--	--	5E-05 mg/L	0.0001 mg/L	--	--	--
Sodium, total	7440-23-5	mg/L	--	--	<a--	--	--	--	--
Strontium, total	7440-24-6	mg/L	--	7 mg/L	<a--	--	--	--	--
Sulfur, total	7704-34-9	mg/L	--	--	<a--	--	--	--	--
Tellurium, total	13494-80-9	mg/L	--	--	<a--	--	--	--	--
Thallium, total	7440-28-0	mg/L	--	--	0.0008 mg/L	--	--	--	--
Thorium, total	7440-29-1	mg/L	--	--	<a--	--	--	--	--
Tin, total	7440-31-5	mg/L	--	--	<a--	--	--	--	--
Titanium, total	7440-32-6	mg/L	--	--	2 mg/L	--	--	--	--
Tungsten, total	7440-33-7	mg/L	--	--	<a--	--	--	--	--
Uranium, total	7440-61-1	mg/L	--	0.02 mg/L	0.0085 mg/L	--	0.01 mg/L	--	0.2 mg/L
Vanadium, total	7440-62-2	mg/L	--	--	0.006 mg/L	--	0.1 mg/L	--	0.1 mg/L
Zinc, total	7440-66-6	mg/L	5 mg/L	3 mg/L	0.00348 mg/L	0.0186 mg/L	1 mg/L	--	2 mg/L
Zirconium, total	7440-67-7	mg/L	--	--	<a--	--	--	--	--
<b>Dissolved Metals</b>									
Aluminum, dissolved	7429-90-5	mg/L	--	--	<a--	--	--	5 mg/L	--
Antimony, dissolved	7440-36-0	mg/L	--	--	0.009 mg/L	--	--	--	--
Arsenic, dissolved	7440-38-2	mg/L	--	--	0.005 mg/L	--	0.1 mg/L	--	0.025 mg/L
Barium, dissolved	7440-39-3	mg/L	--	--	1 mg/L	--	--	--	--
Beryllium, dissolved	7440-41-7	mg/L	--	--	0.00013 mg/L	--	0.1 mg/L	--	0.1 mg/L
Bismuth, dissolved	7440-69-9	mg/L	--	--	<a--	--	--	--	--
Boron, dissolved	7440-42-8	mg/L	--	--	1.2 mg/L	--	0.5 mg/L	--	5 mg/L
Cadmium, dissolved	7440-43-9	mg/L	--	--	1.8E-05 mg/L	3E-05 mg/L	0.0051 mg/L	--	0.08 mg/L
Calcium, dissolved	7440-70-2	mg/L	--	--	<a8 mg/L	--	--	--	1000 mg/L
Cesium, dissolved	7440-46-2	mg/L	--	--	<a--	--	--	--	--
Chromium, dissolved	7440-47-3	mg/L	--	--	0.001 mg/L	--	0.005 mg/L	--	0.05 mg/L
Cobalt, dissolved	7440-48-4	mg/L	--	--	0.004 mg/L	0.11 mg/L	0.05 mg/L	--	1 mg/L
Copper, dissolved	7440-50-8	mg/L	--	--	0.0002 mg/L	0.0009 mg/L	--	0.2 mg/L	--



Analyte	CAS Number	Unit	BCAWWQG SDW AO	BCAWWQG SDW MAC	BCAWWQG FAL-LT	BCAWWQG FAL-ST	BCAWWQG I-LT	BCAWWQG I-ST	BCAWWQG L-LT
<b>Dissolved Metals - Continued</b>									
Dissolved mercury filtration location	----	-	--	--	<a--	--	--	--	--
Dissolved metals filtration location	----	-	--	--	<a--	--	--	--	--
Iron, dissolved	7439-89-6	mg/L	--	--	<a--	0.35 mg/L	--	--	--
Lead, dissolved	7439-92-1	mg/L	--	--	0.00344 mg/L	0.003 mg/L	--	0.2 mg/L	--
Lithium, dissolved	7439-93-2	mg/L	--	--	<a--	--	0.75 mg/L	--	--
Magnesium, dissolved	7439-95-4	mg/L	--	--	<a--	--	--	--	--
Manganese, dissolved	7439-96-5	mg/L	--	--	0.768 mg/L	0.816 mg/L	0.2 mg/L	--	--
Mercury, dissolved	7439-97-6	mg/L	--	--	1E-05 mg/L	--	--	0.002 mg/L	--
Molybdenum, dissolved	7439-98-7	mg/L	--	--	5.1 mg/L	46 mg/L	0.01 mg/L	0.05 mg/L	0.01 mg/L
Nickel, dissolved	7440-02-0	mg/L	--	--	0.025 mg/L	--	0.2 mg/L	--	1 mg/L
Phosphorus, dissolved	7723-14-0	mg/L	--	--	<a--	--	--	--	--
Potassium, dissolved	7440-09-7	mg/L	--	--	373 mg/L	--	--	--	--
Rubidium, dissolved	7440-17-7	mg/L	--	--	<a--	--	--	--	--
Selenium, dissolved	7782-49-2	mg/L	--	--	0.001 mg/L	--	0.01 mg/L	--	0.03 mg/L
Silicon, dissolved	7440-21-3	mg/L	--	--	<a--	--	--	--	--
Silver, dissolved	7440-22-4	mg/L	--	--	5E-05 mg/L	0.0001 mg/L	--	--	--
Sodium, dissolved	7440-23-5	mg/L	--	--	<a--	--	--	--	--
Strontium, dissolved	7440-24-6	mg/L	--	--	<a--	--	--	--	--
Sulfur, dissolved	7704-34-9	mg/L	--	--	<a--	--	--	--	--
Tellurium, dissolved	13494-80-9	mg/L	--	--	<a--	--	--	--	--
Thallium, dissolved	7440-28-0	mg/L	--	--	0.0008 mg/L	--	--	--	--
Thorium, dissolved	7440-29-1	mg/L	--	--	<a--	--	--	--	--
Tin, dissolved	7440-31-5	mg/L	--	--	<a--	--	--	--	--
Titanium, dissolved	7440-32-6	mg/L	--	--	2 mg/L	--	--	--	--
Tungsten, dissolved	7440-33-7	mg/L	--	--	<a--	--	--	--	--
Uranium, dissolved	7440-61-1	mg/L	--	--	0.0085 mg/L	--	0.01 mg/L	--	0.2 mg/L
Vanadium, dissolved	7440-62-2	mg/L	--	--	0.006 mg/L	--	0.1 mg/L	--	0.1 mg/L
Zinc, dissolved	7440-66-6	mg/L	--	--	0.00348 mg/L	0.0186 mg/L	1 mg/L	--	2 mg/L
Zirconium, dissolved	7440-67-7	mg/L	--	--	<a--	--	--	--	--
<b>Aggregate Organics</b>									
Chemical oxygen demand [COD]	----	mg/L	--	--	<a--	--	--	--	--
Phenols, total (4AAP)	----	mg/L	--	--	<a--	--	--	--	--

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



**Key:**

BCAWWQG	British Columbia Approved and Working Water Quality Guidelines (FEB, 2021)
FAL-LT	BC FAL - Freshwater Aquatic Life - Long-Term Chronic
FAL-ST	BC FAL - Freshwater Aquatic Life - Short-Term Acute
I-LT	BC I - Irrigation - Long-Term Chronic
I-ST	BC I - Irrigation - Short-Term Acute
L-LT	BC L - Livestock - Long-Term Chronic
L-ST	BC L - Livestock - Short-Term Acute
MAL-LT	BC MAL - Marinewater Aquatic Life - Long-Term Chronic
MAL-ST	BC MAL - Marinewater Aquatic Life - Short-Term Acute
SDW AO	BC DW - Source Drinking Water Quality Guidelines - No. WQG-01 - Aesthetic Objectives
SDW MAC	BC DW - Source Drinking Water Quality Guidelines - No. WQG-01 - Maximum Acceptable Concentrations
W-LT	BC W - Wildlife - Long-Term Chronic
W-ST	BC W - Wildlife - Short-Term Acute



## CERTIFICATE OF ANALYSIS

<p><b>Work Order</b> : <b>VA23C7396</b></p> <p><b>Client</b> : <b>Triton Environmental Consultants Ltd.</b></p> <p><b>Contact</b> : Miranda Lewis</p> <p><b>Address</b> : Suite 650, 1040 West Georgia St Vancouver BC Canada V6E 4H1</p> <p><b>Telephone</b> : 604 631 2213</p> <p><b>Project</b> : ----</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : ----</p> <p><b>Sampler</b> : ----</p> <p><b>Site</b> : Water Analysis</p> <p><b>Quote number</b> : VA23-TRIT100-012</p> <p><b>No. of samples received</b> : 2</p> <p><b>No. of samples analysed</b> : 2</p>	<p><b>Page</b> : 1 of 6</p> <p><b>Laboratory</b> : ALS Environmental - Vancouver</p> <p><b>Account Manager</b> : Can Dang</p> <p><b>Address</b> : 8081 Lougheed Highway Burnaby BC Canada V5A 1W9</p> <p><b>Telephone</b> : +1 604 253 4188</p> <p><b>Date Samples Received</b> : 14-Nov-2023 14:30</p> <p><b>Date Analysis Commenced</b> : 15-Nov-2023</p> <p><b>Issue Date</b> : 22-Nov-2023 17:16</p>
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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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Inorganics, Edmonton, Alberta
Chamoi Beckford	Lab Assistant	Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Administration, Burnaby, British Columbia
Sam Silveira	Lab Assistant	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, 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).

<i>Unit</i>	<i>Description</i>
-	no units
°C	degrees celsius
µS/cm	microsiemens per centimetre
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: Water					Client sample ID	SQU DS 1	SQU US 1	----	----	----
(Matrix: Water)					Client sampling date / time	14-Nov-2023 09:40	14-Nov-2023 10:19	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C7396-001	VA23C7396-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Field Tests</b>										
Conductivity, field	----	EF001/VA	0.10	µS/cm	53.000	58.000	----	----	----	
pH, field	----	EF001/VA	0.10	pH units	7.57	7.39	----	----	----	
Temperature, field	----	EF001/VA	0.10	°C	5.40	5.40	----	----	----	
<b>Physical Tests</b>										
Hardness (as CaCO <sub>3</sub> ), dissolved	----	EC100/VA	0.60	mg/L	17.5	18.0	----	----	----	
Hardness (as CaCO <sub>3</sub> ), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	17.4	17.8	----	----	----	
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	33	36	----	----	----	
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	5.6	5.6	----	----	----	
Alkalinity, total (as CaCO <sub>3</sub> )	----	E290/VA	2.0	mg/L	14.6	14.9	----	----	----	
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0703	0.0773	----	----	----	
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	----	----	----	
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	2.24	2.28	----	----	----	
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	<0.020	<0.020	----	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	0.154	0.160	----	----	----	
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.0941	0.0950	----	----	----	
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	0.0021	0.0023	----	----	----	
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.198	0.229	----	----	----	
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0221	0.0209	----	----	----	
Sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4/VA	0.30	mg/L	4.39	4.48	----	----	----	
<b>Total Sulfides</b>										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	<0.0015	----	----	----	
Sulfide, un-ionized (as H <sub>2</sub> S), from total	7783-06-4	EC395/VA	0.0015	mg/L	<0.0015	<0.0015	----	----	----	
Sulfide, total (as H <sub>2</sub> S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	<0.0016	----	----	----	
<b>Total Metals</b>										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.279	0.279	----	----	----	
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	0.00016	0.00017	----	----	----	



## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU DS 1	SQU US 1	----	----	----
(Matrix: Water)					Client sampling date / time	14-Nov-2023 09:40	14-Nov-2023 10:19	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C7396-001	VA23C7396-002	-----	-----	-----	
					Result	Result	---	---	---	
<b>Total Metals</b>										
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.0101	0.0101	---	---	---	
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L	<0.000100	<0.000100	---	---	---	
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	<0.000050	---	---	---	
Boron, total	7440-42-8	E420/VA	0.010	mg/L	<0.010	<0.010	---	---	---	
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	0.0000094	0.0000096	---	---	---	
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	5.75	5.87	---	---	---	
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000019	0.000019	---	---	---	
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L	<0.00050	<0.00050	---	---	---	
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L	0.00014	0.00014	---	---	---	
Copper, total	7440-50-8	E420/VA	0.00050	mg/L	0.00117	0.00120	---	---	---	
Iron, total	7439-89-6	E420/VA	0.010	mg/L	0.284	0.339	---	---	---	
Lead, total	7439-92-1	E420/VA	0.000050	mg/L	<0.000050	<0.000050	---	---	---	
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	0.0011	<0.0010	---	---	---	
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	0.737	0.767	---	---	---	
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.0140	0.0157	---	---	---	
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	<0.0000050	---	---	---	
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.000482	0.000491	---	---	---	
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L	<0.00050	<0.00050	---	---	---	
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L	<0.050	<0.050	---	---	---	
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	0.685	0.699	---	---	---	
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.00104	0.00101	---	---	---	
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	<0.000050	<0.000050	---	---	---	
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	4.77	5.11	---	---	---	
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	<0.000010	---	---	---	
Sodium, total	7440-23-5	E420/VA	0.050	mg/L	2.46	2.54	---	---	---	
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	0.0374	0.0376	---	---	---	
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	1.53	1.63	---	---	---	
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	<0.00020	<0.00020	---	---	---	
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	<0.000010	<0.000010	---	---	---	
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00010	<0.00010	---	---	---	



## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU DS 1	SQU US 1	----	----	----
(Matrix: Water)					Client sampling date / time	14-Nov-2023 09:40	14-Nov-2023 10:19	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C7396-001	VA23C7396-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Total Metals</b>										
Tin, total	7440-31-5	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	0.00913	0.00897	----	----	----	
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.000041	0.000037	----	----	----	
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	0.00136	0.00140	----	----	----	
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L	<0.0030	<0.0030	----	----	----	
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
<b>Dissolved Metals</b>										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.0650	0.0669	----	----	----	
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L	0.00014	0.00014	----	----	----	
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.00834	0.00839	----	----	----	
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L	<0.000100	<0.000100	----	----	----	
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L	<0.010	<0.010	----	----	----	
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	0.0000080	0.0000081	----	----	----	
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	5.88	6.04	----	----	----	
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	0.000012	0.000013	----	----	----	
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L	0.00080	0.00081	----	----	----	
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L	0.108	0.138	----	----	----	
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	0.0011	0.0010	----	----	----	
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	0.684	0.699	----	----	----	
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.0103	0.0112	----	----	----	
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.000454	0.000495	----	----	----	
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L	<0.050	<0.050	----	----	----	





## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU DS 1	SQU US 1	----	----	----
(Matrix: Water)					Client sampling date / time	14-Nov-2023 09:40	14-Nov-2023 10:19	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C7396-001	VA23C7396-002	-----	-----	-----	
					Result	Result	---	---	---	
<b>Dissolved Metals</b>										
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	0.693	0.674	---	---	---	
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.00096	0.00094	---	---	---	
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	<0.000050	<0.000050	---	---	---	
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	4.50	4.87	---	---	---	
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	<0.000010	---	---	---	
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	2.50	2.47	---	---	---	
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	0.0356	0.0371	---	---	---	
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	1.62	1.63	---	---	---	
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	<0.00020	<0.00020	---	---	---	
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	<0.000010	<0.000010	---	---	---	
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00010	<0.00010	---	---	---	
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L	<0.00010	<0.00010	---	---	---	
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	0.00095	0.00085	---	---	---	
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	<0.00010	<0.00010	---	---	---	
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	0.000038	0.000034	---	---	---	
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	0.00089	0.00093	---	---	---	
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	<0.0010	<0.0010	---	---	---	
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L	<0.00020	<0.00020	---	---	---	
Dissolved mercury filtration location	----	EP509/VA	-	-	Field	Field	---	---	---	
Dissolved metals filtration location	----	EP421/VA	-	-	Field	Field	---	---	---	
<b>Aggregate Organics</b>										
Chemical oxygen demand [COD]	----	E559-L/VA	10	mg/L	<10	11	---	---	---	
Phenols, total (4AAP)	----	E562/EO	0.0010	mg/L	<0.0010	<0.0010	---	---	---	

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

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<p><b>Work Order</b> : <b>VA23C7396</b></p> <p><b>Client</b> : <b>Triton Environmental Consultants Ltd.</b></p> <p><b>Contact</b> : Miranda Lewis</p> <p><b>Address</b> : Suite 650, 1040 West Georgia St Vancouver BC Canada V6E 4H1</p> <p><b>Telephone</b> : 604 631 2213</p> <p><b>Project</b> : ----</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : ----</p> <p><b>Sampler</b> : ----</p> <p><b>Site</b> : Water Analysis</p> <p><b>Quote number</b> : VA23-TRIT100-012</p> <p><b>No. of samples received</b> : 2</p> <p><b>No. of samples analysed</b> : 2</p>	<p><b>Page</b> : 1 of 15</p> <p><b>Laboratory</b> : ALS Environmental - Vancouver</p> <p><b>Account Manager</b> : Can Dang</p> <p><b>Address</b> : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p><b>Telephone</b> : +1 604 253 4188</p> <p><b>Date Samples Received</b> : 14-Nov-2023 14:30</p> <p><b>Issue Date</b> : 22-Nov-2023 17:18</p>
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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.

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### ***Workorder Comments***

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

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### ***Summary of Outliers***

#### ***Outliers : Quality Control Samples***

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- Matrix Spike 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: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
<b>Matrix Spike (MS) Recoveries</b>								
Dissolved Metals	Anonymous	Anonymous	Silver, dissolved	7440-22-4	E421	56.0 % <sup>MS-Ag</sup>	70.0-130%	Recovery less than lower data quality objective

**Result Qualifiers**

Qualifier	Description
MS-Ag	<i>MS-Ag: Matrix Spike recovery for silver was marginally below DQO (40 to &lt;60%) due to its instability in the sample matrix. Silver was not detected. Reported result (&lt; LOR) is reliable</i>



## 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: **Water** 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	
<b>Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)</b>										
Amber glass total (sulfuric acid) SQU DS 1	E559-L	14-Nov-2023	----	----	----		21-Nov-2023	28 days	7 days	✔
<b>Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)</b>										
Amber glass total (sulfuric acid) SQU US 1	E559-L	14-Nov-2023	----	----	----		21-Nov-2023	28 days	7 days	✔
<b>Aggregate Organics : Phenols (4AAP) in Water by Colorimetry</b>										
Amber glass total (sulfuric acid) SQU DS 1	E562	14-Nov-2023	20-Nov-2023	28 days	6 days	✔	20-Nov-2023	28 days	6 days	✔
<b>Aggregate Organics : Phenols (4AAP) in Water by Colorimetry</b>										
Amber glass total (sulfuric acid) SQU US 1	E562	14-Nov-2023	20-Nov-2023	28 days	6 days	✔	20-Nov-2023	28 days	6 days	✔
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) SQU US 1	E298	14-Nov-2023	18-Nov-2023	28 days	4 days	✔	21-Nov-2023	28 days	7 days	✔
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) SQU DS 1	E298	14-Nov-2023	18-Nov-2023	28 days	4 days	✔	22-Nov-2023	28 days	8 days	✔
<b>Anions and Nutrients : Bromide in Water by IC (Low Level)</b>										
HDPE SQU DS 1	E235.Br-L	14-Nov-2023	17-Nov-2023	28 days	3 days	✔	17-Nov-2023	28 days	3 days	✔



Matrix: **Water** 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		
<b>Anions and Nutrients : Bromide in Water by IC (Low Level)</b>											
HDPE SQU US 1	E235.Br-L	14-Nov-2023	17-Nov-2023	28 days	3 days	✓	17-Nov-2023	28 days	3 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE SQU DS 1	E235.Cl	14-Nov-2023	17-Nov-2023	28 days	3 days	✓	17-Nov-2023	28 days	3 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE SQU US 1	E235.Cl	14-Nov-2023	17-Nov-2023	28 days	3 days	✓	17-Nov-2023	28 days	3 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE SQU DS 1	E235.F	14-Nov-2023	17-Nov-2023	28 days	3 days	✓	17-Nov-2023	28 days	3 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE SQU US 1	E235.F	14-Nov-2023	17-Nov-2023	28 days	3 days	✓	17-Nov-2023	28 days	3 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC (Low Level)</b>											
HDPE SQU DS 1	E235.NO3-L	14-Nov-2023	17-Nov-2023	3 days	3 days	✓	17-Nov-2023	3 days	3 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC (Low Level)</b>											
HDPE SQU US 1	E235.NO3-L	14-Nov-2023	17-Nov-2023	3 days	3 days	✓	17-Nov-2023	3 days	3 days	✓	
<b>Anions and Nutrients : Nitrite in Water by IC (Low Level)</b>											
HDPE SQU DS 1	E235.NO2-L	14-Nov-2023	17-Nov-2023	3 days	3 days	✓	17-Nov-2023	3 days	3 days	✓	
<b>Anions and Nutrients : Nitrite in Water by IC (Low Level)</b>											
HDPE SQU US 1	E235.NO2-L	14-Nov-2023	17-Nov-2023	3 days	3 days	✓	17-Nov-2023	3 days	3 days	✓	



Matrix: **Water** 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		
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE SQU DS 1	E235.SO4	14-Nov-2023	17-Nov-2023	28 days	3 days	✓	17-Nov-2023	28 days	3 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE SQU US 1	E235.SO4	14-Nov-2023	17-Nov-2023	28 days	3 days	✓	17-Nov-2023	28 days	3 days	✓	
<b>Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)</b>											
Amber glass total (sulfuric acid) SQU DS 1	E318	14-Nov-2023	18-Nov-2023	28 days	4 days	✓	20-Nov-2023	28 days	6 days	✓	
<b>Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)</b>											
Amber glass total (sulfuric acid) SQU US 1	E318	14-Nov-2023	18-Nov-2023	28 days	4 days	✓	20-Nov-2023	28 days	6 days	✓	
<b>Anions and Nutrients : Total Nitrogen by Colourimetry</b>											
Amber glass total (sulfuric acid) SQU DS 1	E366	14-Nov-2023	18-Nov-2023	28 days	4 days	✓	22-Nov-2023	28 days	8 days	✓	
<b>Anions and Nutrients : Total Nitrogen by Colourimetry</b>											
Amber glass total (sulfuric acid) SQU US 1	E366	14-Nov-2023	18-Nov-2023	28 days	4 days	✓	22-Nov-2023	28 days	8 days	✓	
<b>Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)</b>											
Amber glass total (sulfuric acid) SQU DS 1	E372-U	14-Nov-2023	18-Nov-2023	28 days	4 days	✓	21-Nov-2023	28 days	7 days	✓	
<b>Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)</b>											
Amber glass total (sulfuric acid) SQU US 1	E372-U	14-Nov-2023	18-Nov-2023	28 days	4 days	✓	21-Nov-2023	28 days	7 days	✓	
<b>Dissolved Metals : Dissolved Mercury in Water by CVAAS</b>											
Glass vial - dissolved (lab preserved) SQU DS 1	E509	14-Nov-2023	16-Nov-2023	28 days	2 days	✓	16-Nov-2023	28 days	0 days	✓	



Matrix: **Water** 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		
<b>Dissolved Metals : Dissolved Mercury in Water by CVAAS</b>											
Glass vial - dissolved (lab preserved) SQU US 1	E509	14-Nov-2023	16-Nov-2023	28 days	2 days	✔	16-Nov-2023	28 days	0 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE - dissolved (lab preserved) SQU DS 1	E421	14-Nov-2023	16-Nov-2023	180 days	2 days	✔	17-Nov-2023	180 days	3 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE - dissolved (lab preserved) SQU US 1	E421	14-Nov-2023	16-Nov-2023	180 days	2 days	✔	17-Nov-2023	180 days	3 days	✔	
<b>Field Tests : Field pH,EC,Salinity,Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine</b>											
Glass vial - total (lab preserved) SQU DS 1	EF001	14-Nov-2023	----	----	----		15-Nov-2023	----	1 days		
<b>Field Tests : Field pH,EC,Salinity,Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine</b>											
Glass vial - total (lab preserved) SQU US 1	EF001	14-Nov-2023	----	----	----		15-Nov-2023	----	1 days		
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE SQU DS 1	E290	14-Nov-2023	17-Nov-2023	14 days	3 days	✔	17-Nov-2023	14 days	3 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE SQU US 1	E290	14-Nov-2023	17-Nov-2023	14 days	3 days	✔	17-Nov-2023	14 days	3 days	✔	
<b>Physical Tests : TDS by Gravimetry</b>											
HDPE SQU DS 1	E162	14-Nov-2023	----	----	----		18-Nov-2023	7 days	4 days	✔	
<b>Physical Tests : TDS by Gravimetry</b>											
HDPE SQU US 1	E162	14-Nov-2023	----	----	----		18-Nov-2023	7 days	4 days	✔	





Matrix: **Water** 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	
<b>Physical Tests : TSS by Gravimetry</b>										
HDPE SQU DS 1	E160	14-Nov-2023	----	----	----		18-Nov-2023	7 days	4 days	✓
<b>Physical Tests : TSS by Gravimetry</b>										
HDPE SQU US 1	E160	14-Nov-2023	----	----	----		18-Nov-2023	7 days	4 days	✓
<b>Total Metals : Total Mercury in Water by CVAAS</b>										
Glass vial - total (lab preserved) SQU DS 1	E508	14-Nov-2023	21-Nov-2023	28 days	7 days	✓	21-Nov-2023	28 days	0 days	✓
<b>Total Metals : Total Mercury in Water by CVAAS</b>										
Glass vial - total (lab preserved) SQU US 1	E508	14-Nov-2023	21-Nov-2023	28 days	7 days	✓	21-Nov-2023	28 days	0 days	✓
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>										
HDPE - total (lab preserved) SQU DS 1	E420	14-Nov-2023	16-Nov-2023	180 days	2 days	✓	18-Nov-2023	180 days	4 days	✓
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>										
HDPE - total (lab preserved) SQU US 1	E420	14-Nov-2023	16-Nov-2023	180 days	2 days	✓	18-Nov-2023	180 days	4 days	✓
<b>Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)</b>										
HDPE total (zinc acetate+sodium hydroxide) SQU DS 1	E395	14-Nov-2023	----	----	----		15-Nov-2023	7 days	1 days	✓
<b>Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)</b>										
HDPE total (zinc acetate+sodium hydroxide) SQU US 1	E395	14-Nov-2023	----	----	----		15-Nov-2023	7 days	1 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: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity Species by Titration	E290	1241168	1	17	5.8	5.0	✔
Ammonia by Fluorescence	E298	1243392	1	18	5.5	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1241172	1	3	33.3	5.0	✔
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1246730	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	1241171	1	15	6.6	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1240908	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1238497	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	1241170	1	12	8.3	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1241173	1	16	6.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1241174	1	19	5.2	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1244628	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1241175	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	1242923	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1243393	1	4	25.0	5.0	✔
Total Mercury in Water by CVAAS	E508	1245811	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1238514	1	20	5.0	5.0	✔
Total Nitrogen by Colourimetry	E366	1243395	1	7	14.2	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1243394	1	8	12.5	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1238339	1	17	5.8	5.0	✔
TSS by Gravimetry	E160	1242928	1	20	5.0	5.0	✔
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity Species by Titration	E290	1241168	1	17	5.8	5.0	✔
Ammonia by Fluorescence	E298	1243392	1	18	5.5	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1241172	1	3	33.3	5.0	✔
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1246730	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	1241171	1	15	6.6	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1240908	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1238497	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	1241170	1	12	8.3	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1241173	1	16	6.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1241174	1	19	5.2	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1244628	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1241175	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	1242923	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1243393	1	4	25.0	5.0	✔
Total Mercury in Water by CVAAS	E508	1245811	1	20	5.0	5.0	✔



Matrix: **Water**

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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Total Metals in Water by CRC ICPMS	E420	1238514	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1243395	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1243394	1	8	12.5	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1238339	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	1242928	1	20	5.0	5.0	✓
<b>Method Blanks (MB)</b>							
Alkalinity Species by Titration	E290	1241168	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	1243392	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1241172	1	3	33.3	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1246730	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1241171	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1240908	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1238497	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1241170	1	12	8.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1241173	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1241174	1	19	5.2	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1244628	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1241175	1	17	5.8	5.0	✓
TDS by Gravimetry	E162	1242923	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1243393	1	4	25.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1245811	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1238514	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1243395	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1243394	1	8	12.5	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1238339	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	1242928	1	20	5.0	5.0	✓
<b>Matrix Spikes (MS)</b>							
Ammonia by Fluorescence	E298	1243392	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1241172	1	3	33.3	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1246730	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1241171	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1240908	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1238497	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1241170	1	12	8.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1241173	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1241174	1	19	5.2	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1244628	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1241175	1	17	5.8	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1243393	1	4	25.0	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
<b>Matrix Spikes (MS) - Continued</b>							
Total Mercury in Water by CVAAS	E508	1245811	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1238514	1	20	5.0	5.0	✔
Total Nitrogen by Colourimetry	E366	1243395	1	7	14.2	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1243394	1	8	12.5	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1238339	1	17	5.8	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
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$ , with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Nitrogen by Colourimetry	E366 ALS Environmental - Vancouver	Water	Chinchilla Scientific Nitrate Method, 2011	Following digestion, total nitrogen is is determined colourimetrically using a discrete analyzer utilizing the vanadium chloride reduction method. This method of analysis is approved under US EPA 40 CFR Part 136 (May 2021).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H <sub>2</sub> S" if reported represent the maximum possible H <sub>2</sub> S concentration based on the total sulfide concentration in the sample. The H <sub>2</sub> S calculation converts Total Sulphide as (S <sub>2</sub> <sup>-</sup> ) and reports it as Total Sulphide as (H <sub>2</sub> S)
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L ALS Environmental - Vancouver	Water	APHA 5220 D (mod)	Samples are analyzed using the closed reflux colourimetric method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Phenols (4AAP) in Water by Colorimetry	E562 ALS Environmental - Edmonton	Water	EPA 9066	This automated method is based on the distillation of phenol and subsequent reaction of the distillate with alkaline ferricyanide (K <sub>3</sub> Fe(CN) <sub>6</sub> ) and 4-amino-antipyrine (4-AAP) to form a red complex which is measured colorimetrically.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Un-ionized Total Hydrogen Sulfide (calculated)	EC395 ALS Environmental - Vancouver	Water	APHA 4500 -S H	Un-ionized sulfide is calculated using results from total sulfide analysis, pH, temperature, and ionic strength of the sample. Calculation of un-ionized sulfide using total sulfide concentrations may be biased high due to particulate forms of sulfide measured during total sulfide testing.
Field pH,EC,Salinity,Cl <sub>2</sub> ,ClO <sub>2</sub> ,ORP,DO, Turbidity,T,T-P,o-PO <sub>4</sub> ,NH <sub>3</sub> ,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity,Cl <sub>2</sub> ,ClO <sub>2</sub> ,ORP,DO, Turbidity,T,T-P,o-PO <sub>4</sub> ,NH <sub>3</sub> or Chloramine measurements provided by client and recorded on ALS report may affect the validity of results.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Digestion for Total Nitrogen in water	EP366 ALS Environmental - Vancouver	Water	APHA 4500-P J (mod)	Samples for total nitrogen analysis are digested using a heated persulfate digestion. Nitrogen compounds are converted to nitrate in this digestion.
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO <sub>3</sub> .

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<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
	ALS Environmental - Vancouver			
Dissolved Mercury Water Filtration	EP509	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.
	ALS Environmental - Vancouver			



## QUALITY CONTROL REPORT

<p><b>Work Order</b> : <b>VA23C7396</b></p> <p><b>Client</b> : Triton Environmental Consultants Ltd.</p> <p><b>Contact</b> : Miranda Lewis</p> <p><b>Address</b> : Suite 650, 1040 West Georgia St Vancouver BC Canada V6E 4H1</p> <p><b>Telephone</b> :</p> <p><b>Project</b> : ----</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : ----</p> <p><b>Sampler</b> : ---- 604 631 2213</p> <p><b>Site</b> : Water Analysis</p> <p><b>Quote number</b> : VA23-TRIT100-012</p> <p><b>No. of samples received</b> : 2</p> <p><b>No. of samples analysed</b> : 2</p>	<p><b>Page</b> : 1 of 18</p> <p><b>Laboratory</b> : ALS Environmental - Vancouver</p> <p><b>Account Manager</b> : Can Dang</p> <p><b>Address</b> : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p><b>Telephone</b> : +1 604 253 4188</p> <p><b>Date Samples Received</b> : 14-Nov-2023 14:30</p> <p><b>Date Analysis Commenced</b> : 15-Nov-2023</p> <p><b>Issue Date</b> : 22-Nov-2023 17:18</p>
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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
- 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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Thornton	Analyst	Vancouver Metals, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Chamoi Beckford	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Vancouver Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
Sam Silveira	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia

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Project : ----



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## 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

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

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### 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: <b>Water</b>					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
<b>Physical Tests (QC Lot: 1241168)</b>											
KS2304362-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 1242923)</b>											
FJ2303030-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	5350	5150	3.83%	20%	----
<b>Physical Tests (QC Lot: 1242928)</b>											
FJ2303030-001	Anonymous	Solids, total suspended [TSS]	----	E160	15.0	mg/L	1880	1990	5.99%	20%	----
<b>Anions and Nutrients (QC Lot: 1241170)</b>											
KS2304362-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1241171)</b>											
KS2304362-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1241172)</b>											
KS2304362-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1241173)</b>											
KS2304362-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1241174)</b>											
KS2304362-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1241175)</b>											
KS2304362-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	<0.30	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1243392)</b>											
FJ2303063-004	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1243393)</b>											
FJ2303063-004	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1243394)</b>											
FJ2303063-004	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1243395)</b>											
VA23C7311-021	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	<0.030	<0.030	0	Diff <2x LOR	----
<b>Total Sulfides (QC Lot: 1238339)</b>											
VA23C7311-015	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
<b>Total Metals (QC Lot: 1238514)</b>											
VA23C7349-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0050	0.0050	0.00004	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----



Sub-Matrix: Water					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
<b>Total Metals (QC Lot: 1238514) - continued</b>											
VA23C7349-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.194	0.192	1.13%	20%	---
		Beryllium, total	7440-41-7	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	---
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	---
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000238	0.0000263	0.0000025	Diff <2x LOR	---
		Calcium, total	7440-70-2	E420	0.050	mg/L	42.1	43.6	3.44%	20%	---
		Cesium, total	7440-46-2	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Chromium, total	7440-47-3	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Copper, total	7440-50-8	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	---
		Lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0086	0.0089	0.0003	Diff <2x LOR	---
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	11.2	11.2	0.0913%	20%	---
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00014	0.00013	0.00001	Diff <2x LOR	---
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000428	0.000425	0.000003	Diff <2x LOR	---
		Nickel, total	7440-02-0	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	---
		Potassium, total	7440-09-7	E420	0.050	mg/L	0.470	0.469	0.0002	Diff <2x LOR	---
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	---
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000341	0.000333	0.000008	Diff <2x LOR	---
		Silicon, total	7440-21-3	E420	0.10	mg/L	1.64	1.64	0.0554%	20%	---
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Sodium, total	7440-23-5	E420	0.050	mg/L	6.93	6.97	0.593%	20%	---
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.111	0.111	0.351%	20%	---
		Sulfur, total	7704-34-9	E420	0.50	mg/L	1.29	1.31	0.02	Diff <2x LOR	---
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	---
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	---
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000286	0.000286	0.254%	20%	---



Sub-Matrix: Water					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
<b>Total Metals (QC Lot: 1238514) - continued</b>											
VA23C7349-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
<b>Total Metals (QC Lot: 1245811)</b>											
VA23C7349-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
<b>Dissolved Metals (QC Lot: 1238497)</b>											
FJ2303031-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0025	0.0026	0.0001	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00012	0.00012	0.000003	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00059	0.00061	0.00002	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0827	0.0766	7.63%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.018	0.019	0.0008	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	69.2	67.8	2.01%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000021	0.000024	0.000002	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	0.00010	0.000003	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00233	0.00233	0.0839%	20%	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.027	0.027	0.00008	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0096	0.0097	0.00007	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	18.8	18.4	1.77%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00840	0.00808	3.98%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000926	0.000918	0.786%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00167	0.00169	0.00002	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	0.866	0.919	5.99%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	10.2	10.2	0.0306%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00857	0.00830	3.28%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000214	0.000169	0.000045	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.84	2.85	0.606%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	19.2	18.8	1.88%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.167	0.171	2.25%	20%	----



Sub-Matrix: Water					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
<b>Dissolved Metals (QC Lot: 1238497) - continued</b>											
FJ2303031-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	10.3	10.7	4.09%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000223	0.000211	5.30%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0247	0.0251	1.59%	20%	----
		Zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
<b>Dissolved Metals (QC Lot: 1240908)</b>											
VA23C7311-019	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
<b>Aggregate Organics (QC Lot: 1244628)</b>											
EO2310523-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
<b>Aggregate Organics (QC Lot: 1246730)</b>											
VA23C7036-001	Anonymous	Chemical oxygen demand [COD]	----	E559-L	10	mg/L	<10	<10	0	Diff <2x LOR	----



## Method Blank (MB) Report

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

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Physical Tests (QCLot: 1241168)</b>						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
<b>Physical Tests (QCLot: 1242923)</b>						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
<b>Physical Tests (QCLot: 1242928)</b>						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
<b>Anions and Nutrients (QCLot: 1241170)</b>						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
<b>Anions and Nutrients (QCLot: 1241171)</b>						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 1241172)</b>						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 1241173)</b>						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 1241174)</b>						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 1241175)</b>						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
<b>Anions and Nutrients (QCLot: 1243392)</b>						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 1243393)</b>						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 1243394)</b>						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
<b>Anions and Nutrients (QCLot: 1243395)</b>						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
<b>Total Sulfides (QCLot: 1238339)</b>						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
<b>Total Metals (QCLot: 1238514)</b>						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (QCLot: 1238514) - continued</b>						
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	---
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	---
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	---
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	---
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	---
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	---
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	---
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	---





Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (QCLot: 1245811)</b>						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
<b>Dissolved Metals (QCLot: 1238497)</b>						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	---
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	---
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	---
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	---
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	---
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	---
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Dissolved Metals (QCLot: 1238497) - continued</b>						
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
<b>Dissolved Metals (QCLot: 1240908)</b>						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
<b>Aggregate Organics (QCLot: 1244628)</b>						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
<b>Aggregate Organics (QCLot: 1246730)</b>						
Chemical oxygen demand [COD]	----	E559-L	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: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
<b>Physical Tests (QCLot: 1241168)</b>									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	107	85.0	115	----
<b>Physical Tests (QCLot: 1242923)</b>									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	106	85.0	115	----
<b>Physical Tests (QCLot: 1242928)</b>									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	91.3	85.0	115	----
<b>Anions and Nutrients (QCLot: 1241170)</b>									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.8	90.0	110	----
<b>Anions and Nutrients (QCLot: 1241171)</b>									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.8	90.0	110	----
<b>Anions and Nutrients (QCLot: 1241172)</b>									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	107	85.0	115	----
<b>Anions and Nutrients (QCLot: 1241173)</b>									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.5	90.0	110	----
<b>Anions and Nutrients (QCLot: 1241174)</b>									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.4	90.0	110	----
<b>Anions and Nutrients (QCLot: 1241175)</b>									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	99.7	90.0	110	----
<b>Anions and Nutrients (QCLot: 1243392)</b>									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	98.8	85.0	115	----
<b>Anions and Nutrients (QCLot: 1243393)</b>									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	100	75.0	125	----
<b>Anions and Nutrients (QCLot: 1243394)</b>									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	94.5	80.0	120	----
<b>Anions and Nutrients (QCLot: 1243395)</b>									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	98.3	75.0	125	----
<b>Total Sulfides (QCLot: 1238339)</b>									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	106	80.0	120	----
<b>Total Metals (QCLot: 1238514)</b>									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	106	80.0	120	----



Sub-Matrix: **Water**

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
<b>Total Metals (QCLot: 1238514) - continued</b>									
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	107	80.0	120	---
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	107	80.0	120	---
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	---
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	104	80.0	120	---
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	102	80.0	120	---
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	88.7	80.0	120	---
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	103	80.0	120	---
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	106	80.0	120	---
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	99.2	80.0	120	---
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	101	80.0	120	---
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	---
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	100	80.0	120	---
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	100	80.0	120	---
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	102	80.0	120	---
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	106	80.0	120	---
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	111	80.0	120	---
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	---
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	101	80.0	120	---
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	---
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	107	80.0	120	---
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	106	80.0	120	---
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	100	80.0	120	---
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	103	80.0	120	---
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	105	80.0	120	---
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	91.3	80.0	120	---
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	101	80.0	120	---
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	102	80.0	120	---
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	98.6	80.0	120	---
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	100.0	80.0	120	---
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	105	80.0	120	---
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	102	80.0	120	---
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	96.5	80.0	120	---
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	99.5	80.0	120	---
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	95.8	80.0	120	---
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	101	80.0	120	---
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	---



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Total Metals (QCLot: 1238514) - continued</b>									
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	97.3	80.0	120	---
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	98.3	80.0	120	---
<b>Total Metals (QCLot: 1245811)</b>									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	99.0	80.0	120	---
<b>Dissolved Metals (QCLot: 1238497)</b>									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	108	80.0	120	---
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	99.7	80.0	120	---
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	109	80.0	120	---
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	106	80.0	120	---
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	104	80.0	120	---
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	98.2	80.0	120	---
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	98.5	80.0	120	---
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	107	80.0	120	---
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	104	80.0	120	---
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	102	80.0	120	---
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	108	80.0	120	---
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	---
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	---
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	98.8	80.0	120	---
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	100	80.0	120	---
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	103	80.0	120	---
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	107	80.0	120	---
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	---
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	96.9	80.0	120	---
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	104	80.0	120	---
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	106	80.0	120	---
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	105	80.0	120	---
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	110	80.0	120	---
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	103	80.0	120	---
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	111	80.0	120	---
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	92.9	80.0	120	---
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	107	80.0	120	---
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	106	80.0	120	---
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	114	80.0	120	---
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	96.7	80.0	120	---



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1238497) - continued</b>									
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	101	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	88.5	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	98.6	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	103	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	100	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	104	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	106	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	98.3	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	93.4	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	103	80.0	120	----
<b>Aggregate Organics (QCLot: 1244628)</b>									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	99.8	85.0	115	----
<b>Aggregate Organics (QCLot: 1246730)</b>									
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	100 mg/L	103	85.0	115	----



## 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: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Anions and Nutrients (QCLot: 1241170)</b>										
VA23C7396-001	SQU DS 1	Fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
<b>Anions and Nutrients (QCLot: 1241171)</b>										
VA23C7361-001	Anonymous	Chloride	16887-00-6	E235.Cl	102 mg/L	100 mg/L	102	75.0	125	----
<b>Anions and Nutrients (QCLot: 1241172)</b>										
VA23C7396-001	SQU DS 1	Bromide	24959-67-9	E235.Br-L	0.550 mg/L	0.5 mg/L	110	75.0	125	----
<b>Anions and Nutrients (QCLot: 1241173)</b>										
VA23C7396-001	SQU DS 1	Nitrate (as N)	14797-55-8	E235.NO3-L	2.53 mg/L	2.5 mg/L	101	75.0	125	----
<b>Anions and Nutrients (QCLot: 1241174)</b>										
VA23C7396-001	SQU DS 1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.505 mg/L	0.5 mg/L	101	75.0	125	----
<b>Anions and Nutrients (QCLot: 1241175)</b>										
VA23C7396-001	SQU DS 1	Sulfate (as SO4)	14808-79-8	E235.SO4	101 mg/L	100 mg/L	101	75.0	125	----
<b>Anions and Nutrients (QCLot: 1243392)</b>										
VA23C7093-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
<b>Anions and Nutrients (QCLot: 1243393)</b>										
VA23C7358-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	ND mg/L	2.5 mg/L	ND	70.0	130	----
<b>Anions and Nutrients (QCLot: 1243394)</b>										
VA23C7311-021	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0479 mg/L	0.05 mg/L	95.8	70.0	130	----
<b>Anions and Nutrients (QCLot: 1243395)</b>										
VA23C7311-022	Anonymous	Nitrogen, total	7727-37-9	E366	0.390 mg/L	0.4 mg/L	97.5	70.0	130	----
<b>Total Sulfides (QCLot: 1238339)</b>										
VA23C7311-016	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.217 mg/L	0.2 mg/L	108	75.0	125	----
<b>Total Metals (QCLot: 1238514)</b>										
VA23C7349-002	Anonymous	Aluminum, total	7429-90-5	E420	0.189 mg/L	0.2 mg/L	94.4	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0353 mg/L	0.04 mg/L	88.4	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00885 mg/L	0.01 mg/L	88.5	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Total Metals (QCLot: 1238514) - continued</b>										
VA23C7349-002	Anonymous	Boron, total	7440-42-8	E420	0.095 mg/L	0.1 mg/L	95.1	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00397 mg/L	0.004 mg/L	99.2	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00970 mg/L	0.01 mg/L	97.0	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0385 mg/L	0.04 mg/L	96.2	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0188 mg/L	0.02 mg/L	93.9	70.0	130	----
		Copper, total	7440-50-8	E420	0.0186 mg/L	0.02 mg/L	93.1	70.0	130	----
		Iron, total	7439-89-6	E420	1.86 mg/L	2 mg/L	93.0	70.0	130	----
		Lead, total	7439-92-1	E420	0.0176 mg/L	0.02 mg/L	88.2	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0910 mg/L	0.1 mg/L	91.0	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0190 mg/L	0.02 mg/L	94.9	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0200 mg/L	0.02 mg/L	99.8	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0377 mg/L	0.04 mg/L	94.2	70.0	130	----
		Phosphorus, total	7723-14-0	E420	9.52 mg/L	10 mg/L	95.2	70.0	130	----
		Potassium, total	7440-09-7	E420	3.77 mg/L	4 mg/L	94.3	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0190 mg/L	0.02 mg/L	95.1	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0397 mg/L	0.04 mg/L	99.3	70.0	130	----
		Silicon, total	7440-21-3	E420	9.40 mg/L	10 mg/L	94.0	70.0	130	----
		Silver, total	7440-22-4	E420	0.00376 mg/L	0.004 mg/L	94.0	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	18.9 mg/L	20 mg/L	94.7	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0398 mg/L	0.04 mg/L	99.6	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00351 mg/L	0.004 mg/L	87.7	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Tin, total	7440-31-5	E420	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0386 mg/L	0.04 mg/L	96.5	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0180 mg/L	0.02 mg/L	89.8	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00358 mg/L	0.004 mg/L	89.5	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0970 mg/L	0.1 mg/L	97.0	70.0	130	----
		Zinc, total	7440-66-6	E420	0.362 mg/L	0.4 mg/L	90.4	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
<b>Total Metals (QCLot: 1245811)</b>										
VA23C7349-002	Anonymous	Mercury, total	7439-97-6	E508	0.000103 mg/L	0.0001 mg/L	103	70.0	130	----





Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1238497)</b>										
FJ2303031-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.211 mg/L	0.2 mg/L	105	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0405 mg/L	0.04 mg/L	101	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00923 mg/L	0.01 mg/L	92.3	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.094 mg/L	0.1 mg/L	93.8	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00401 mg/L	0.004 mg/L	100	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.0102 mg/L	0.01 mg/L	102	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0408 mg/L	0.04 mg/L	102	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0189 mg/L	0.02 mg/L	94.6	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0186 mg/L	0.02 mg/L	92.9	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.89 mg/L	2 mg/L	94.6	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0188 mg/L	0.02 mg/L	93.8	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0195 mg/L	0.02 mg/L	97.5	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0389 mg/L	0.04 mg/L	97.2	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	10.1 mg/L	10 mg/L	101	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0207 mg/L	0.02 mg/L	103	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.94 mg/L	10 mg/L	99.4	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00224 mg/L	0.004 mg/L	56.0	70.0	130	MS-Ag
		Sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	19.4 mg/L	20 mg/L	96.8	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0392 mg/L	0.04 mg/L	98.1	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00366 mg/L	0.004 mg/L	91.6	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0178 mg/L	0.02 mg/L	89.2	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0196 mg/L	0.02 mg/L	98.2	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1238497) - continued</b>										
FJ2303031-002	Anonymous	Uranium, dissolved	7440-61-1	E421	0.00394 mg/L	0.004 mg/L	98.4	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.104 mg/L	0.1 mg/L	104	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.372 mg/L	0.4 mg/L	93.0	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0398 mg/L	0.04 mg/L	99.4	70.0	130	----
<b>Dissolved Metals (QCLot: 1240908)</b>										
VA23C7337-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.000103 mg/L	0.0001 mg/L	103	70.0	130	----
<b>Aggregate Organics (QCLot: 1244628)</b>										
EO2310523-002	Anonymous	Phenols, total (4AAP)	----	E562	0.0204 mg/L	0.02 mg/L	102	75.0	125	----
<b>Aggregate Organics (QCLot: 1246730)</b>										
VA23C7139-001	Anonymous	Chemical oxygen demand [COD]	----	E559-L	104 mg/L	100 mg/L	104	75.0	125	----

**Qualifiers**

Qualifier	Description
MS-Ag	MS-Ag: Matrix Spike recovery for silver was marginally below DQO (40 to <60%) due to its instability in the sample matrix. Silver was not detected. Reported result (< LOR) is reliable



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17 -

Environmental Division Vancouver Work Order Reference VA23C7396



Telephone : + 1 604 253 4168

Report To: Triton Environmental; Report Format: PDF, EXCEL; Select Service Level: Regular [R]; Invoice Distribution: EMAIL, MAIL, FAX; Project Information: VA23-TRIT100-012; ALS Lab Work Order #: C7396; Sample Identification: SQU DS 1, SQU US 1, Duplicate, Field Blank, Trip Blank; Drinking Water (DW) Samples: Are samples taken from a Regulated DW System? YES; Special Instructions: British Columbia Approved and Working Water Quality Guidelines (MAY, 2015); Sample Condition: SIF Observations Yes, Custody seal intact Yes; SHIPMENT RELEASE: Nov 14, 2023 14:30; INITIAL SHIPMENT RECEPTION: Received by: [Signature], Date: Nov 14; FINAL SHIPMENT RECEPTION: Received by: RK, Date: Nov 14, 2023



## CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

<p><b>Work Order</b> : <b>VA23C7906</b></p> <p><b>Client</b> : <b>Triton Environmental Consultants Ltd.</b></p> <p><b>Contact</b> :</p> <p><b>Address</b> : Suite 650, 1040 West Georgia St Vancouver BC Canada V6E 4H1</p> <p><b>Telephone</b> :</p> <p><b>Project</b> : ----</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : ----</p> <p><b>Sampler</b> : ----</p> <p><b>Site</b> : Water Analysis</p> <p><b>Quote number</b> : VA23-TRIT100-012</p> <p><b>No. of samples received</b> : 2</p> <p><b>No. of samples analysed</b> : 2</p>	<p><b>Page</b> : 1 of 15</p> <p><b>Laboratory</b> : ALS Environmental - Vancouver</p> <p><b>Account Manager</b> :</p> <p><b>Address</b> : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p><b>Telephone</b> :</p> <p><b>Date Samples Received</b> : 20-Nov-2023 13:45</p> <p><b>Date Analysis Commenced</b> : 21-Nov-2023</p> <p><b>Issue Date</b> : 27-Nov-2023 16:33</p>
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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
- Guideline Comparison

**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.

<u>Signatories</u>	<u>Position</u>	<u>Laboratory Department</u>
Brianna Allen	Production/Validation Manager	Inorganics, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Inorganics, Edmonton, Alberta
Chamoi Beckford	Lab Assistant	Metals, Burnaby, British Columbia
Ghazaleh Khanmirzaei	Analyst	Metals, Burnaby, British Columbia
Kate Dimitrova	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Administration, Burnaby, British Columbia
Sam Silveira	Lab Assistant	Metals, Burnaby, British Columbia



### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
SQU DS1	Water	Phosphorus, total		BCAWWQG	SDW AO	0.0187 mg/L	0.01 mg/L
	Water	Iron, total		BCAWWQG	SDW AO	0.328 mg/L	0.3 mg/L
	Water	Phosphorus, total		BCAWWQG	SDW AO	<0.050	0.01 mg/L
	Water	Alkalinity, total (as CaCO3)	Sensitivity to acid inputs can be determined by the concentration of dissolved calcium: < 4 mg/L is High; 4-8 mg/L is Moderate; >8 mg/L is Low	BCAWWQG	FAL-LT	14.0 mg/L	20 mg/L
	Water	Aluminum, total	Guideline limit based on $WQG = \ln(\frac{Ca}{10}) + 2.255 \ln(\frac{Ca}{10}) + 1.995 \ln(\frac{Ca}{10}) - 0.284$ $\ln(\frac{Ca}{10}) - 9.898 / 3$ and Hardness = 10, pH = 6 and DOC = 0.08	BCAWWQG	FAL-LT	0.254 mg/L	0.00185 mg/L
	Water	Calcium, dissolved	Sensitivity to acid inputs can be determined by the concentration of dissolved calcium: < 4 mg/L is High; 4-8 mg/L is Moderate; >8 mg/L is Low.	BCAWWQG	FAL-LT	5.28 mg/L	8 mg/L
	Water	Copper, dissolved	0.2 ug/L is considered to be the lowest concentration routinely measured. Refer to <a href="https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/copper/bc_blm_users_manual.pdf">https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/copper/bc_blm_users_manual.pdf</a> for calculation of site specific WQG.	BCAWWQG	FAL-LT	0.00068 mg/L	0.0002 mg/L
	Water	Copper, total	WQG applies to dissolved metal result. WQG based on T = 15, hardness = 30 mg/L, DOC = 3 mg/L and pH = 6.5 using the BC BLM.	BCAWWQG	FAL-ST	0.00116 mg/L	0.0009 mg/L
	Water	Mercury, total		BCAWWQG	W-LT	<0.0000050	0 mg/L
	Water	Mercury, dissolved		BCAWWQG	W-LT	<0.0000050	0 mg/L
SQU US1	Water	Phosphorus, total		BCAWWQG	SDW AO	0.0139 mg/L	0.01 mg/L
	Water	Phosphorus, total		BCAWWQG	SDW AO	<0.050	0.01 mg/L
	Water	Alkalinity, total (as CaCO3)	Sensitivity to acid inputs can be determined by the concentration of dissolved calcium: < 4 mg/L is High; 4-8 mg/L is Moderate; >8 mg/L is Low	BCAWWQG	FAL-LT	14.0 mg/L	20 mg/L
	Water	Aluminum, total	Guideline limit based on $WQG = \ln(\frac{Ca}{10}) + 2.255 \ln(\frac{Ca}{10}) + 1.995 \ln(\frac{Ca}{10}) - 0.284$ $\ln(\frac{Ca}{10}) - 9.898 / 3$ and Hardness = 10, pH = 6 and DOC = 0.08	BCAWWQG	FAL-LT	0.199 mg/L	0.00185 mg/L
	Water	Calcium, dissolved	Sensitivity to acid inputs can be determined by the concentration of dissolved calcium: < 4 mg/L is High; 4-8 mg/L is Moderate; >8 mg/L is Low.	BCAWWQG	FAL-LT	5.38 mg/L	8 mg/L



SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
	Water	Copper, dissolved	0.2 ug/L is considered to be the lowest concentration routinely measured. Refer to <a href="https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/copper/bc_blm_users_manual.pdf">https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-guidelines/approved-wqgs/copper/bc_blm_users_manual.pdf</a> for calculation of site specific WQG.	BCAWWQG	FAL-LT	0.00067 mg/L	0.0002 mg/L
	Water	Copper, total	WQG applies to dissolved metal result. WQG based on T = 15, hardness = 30 mg/L, DOC = 3 mg/L and pH = 6.5 using the BC BLM.	BCAWWQG	FAL-ST	0.00105 mg/L	0.0009 mg/L
	Water	Mercury, total		BCAWWQG	W-LT	<0.0000050	0 mg/L
	Water	Mercury, dissolved		BCAWWQG	W-LT	<0.0000050	0 mg/L

### 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.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key : LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
°C	degrees celsius
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
pH units	pH units

>: greater than.

<: less than.

Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).

For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit.



## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU DS1	SQU US1	----	----	----	----	----
				Sampling date/time	20-Nov-2023 09:03	20-Nov-2023 09:45	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C7906-001	VA23C7906-002	-----	-----	-----	-----	-----	-----
<b>Field Tests</b>											
Conductivity, field	----	EF001/VA	µS/cm	54.000	50.000	----	----	----	----	----	----
pH, field	----	EF001/VA	pH units	6.80	6.62	----	----	----	----	----	----
Temperature, field	----	EF001/VA	°C	4.80	4.70	----	----	----	----	----	----
<b>Physical Tests</b>											
Hardness (as CaCO <sub>3</sub> ), dissolved	----	EC100/VA	mg/L	15.8	16.1	----	----	----	----	----	----
Hardness (as CaCO <sub>3</sub> ), from total Ca/Mg	----	EC100A/VA	mg/L	17.0	16.9	----	----	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	mg/L	27	34	----	----	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	mg/L	5.6	<3.0	----	----	----	----	----	----
Alkalinity, total (as CaCO <sub>3</sub> )	----	E290/VA	mg/L	14.0	14.0	----	----	----	----	----	----
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	7664-41-7	E298/VA	mg/L	0.0295	0.0183	----	----	----	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	mg/L	<0.050	<0.050	----	----	----	----	----	----
Chloride	16887-00-6	E235.Cl/VA	mg/L	2.32	2.18	----	----	----	----	----	----
Fluoride	16984-48-8	E235.F/VA	mg/L	<0.020	<0.020	----	----	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	mg/L	0.087	0.072	----	----	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	mg/L	0.0621	0.0547	----	----	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	mg/L	0.0010	<0.0010	----	----	----	----	----	----
Nitrogen, total	7727-37-9	E366/VA	mg/L	0.135	0.114	----	----	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	mg/L	0.0187	0.0139	----	----	----	----	----	----
Sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4/VA	mg/L	4.95	4.91	----	----	----	----	----	----
<b>Total Sulfides</b>											
Sulfide, total (as S)	18496-25-8	E395/VA	mg/L	<0.0015	<0.0015	----	----	----	----	----	----
Sulfide, un-ionized (as H <sub>2</sub> S), from total	7783-06-4	EC395/VA	mg/L	<0.0015	<0.0015	----	----	----	----	----	----
Sulfide, total (as H <sub>2</sub> S)	7783-06-4	E395/VA	mg/L	<0.0016	<0.0016	----	----	----	----	----	----
<b>Total Metals</b>											
Aluminum, total	7429-90-5	E420/VA	mg/L	0.254	0.199	----	----	----	----	----	----
Antimony, total	7440-36-0	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----



## Analytical Results Evaluation

				Client sample ID	SQU DS1	SQU US1	----	----	----	----	----
Matrix: Water											
				Sampling date/time	20-Nov-2023 09:03	20-Nov-2023 09:45	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C7906-001	VA23C7906-002	-----	-----	-----	-----	-----	-----
<b>Total Metals</b>											
Arsenic, total	7440-38-2	E420/VA	mg/L	0.00018	0.00016	----	----	----	----	----	----
Barium, total	7440-39-3	E420/VA	mg/L	0.0109	0.0105	----	----	----	----	----	----
Beryllium, total	7440-41-7	E420/VA	mg/L	<0.000100	<0.000100	----	----	----	----	----	----
Bismuth, total	7440-69-9	E420/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Boron, total	7440-42-8	E420/VA	mg/L	0.011	<0.010	----	----	----	----	----	----
Cadmium, total	7440-43-9	E420/VA	mg/L	0.0000080	0.0000058	----	----	----	----	----	----
Calcium, total	7440-70-2	E420/VA	mg/L	5.57	5.57	----	----	----	----	----	----
Cesium, total	7440-46-2	E420/VA	mg/L	0.000026	0.000023	----	----	----	----	----	----
Chromium, total	7440-47-3	E420/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
Cobalt, total	7440-48-4	E420/VA	mg/L	0.00017	0.00013	----	----	----	----	----	----
Copper, total	7440-50-8	E420/VA	mg/L	0.00116	0.00105	----	----	----	----	----	----
Iron, total	7439-89-6	E420/VA	mg/L	0.328	0.288	----	----	----	----	----	----
Lead, total	7439-92-1	E420/VA	mg/L	0.000053	<0.000050	----	----	----	----	----	----
Lithium, total	7439-93-2	E420/VA	mg/L	0.0014	0.0013	----	----	----	----	----	----
Magnesium, total	7439-95-4	E420/VA	mg/L	0.765	0.734	----	----	----	----	----	----
Manganese, total	7439-96-5	E420/VA	mg/L	0.0144	0.0124	----	----	----	----	----	----
Mercury, total	7439-97-6	E508/VA	mg/L	<0.0000050	<0.0000050	----	----	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	mg/L	0.000532	0.000535	----	----	----	----	----	----
Nickel, total	7440-02-0	E420/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
Phosphorus, total	7723-14-0	E420/VA	mg/L	<0.050	<0.050	----	----	----	----	----	----
Potassium, total	7440-09-7	E420/VA	mg/L	0.767	0.713	----	----	----	----	----	----
Rubidium, total	7440-17-7	E420/VA	mg/L	0.00124	0.00111	----	----	----	----	----	----
Selenium, total	7782-49-2	E420/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Silicon, total	7440-21-3	E420/VA	mg/L	4.87	4.82	----	----	----	----	----	----
Silver, total	7440-22-4	E420/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
Sodium, total	7440-23-5	E420/VA	mg/L	2.54	2.40	----	----	----	----	----	----
Strontium, total	7440-24-6	E420/VA	mg/L	0.0373	0.0374	----	----	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	mg/L	1.60	1.52	----	----	----	----	----	----
Tellurium, total	13494-80-9	E420/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----





## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU DS1	SQU US1	----	----	----	----	----
				Sampling date/time	20-Nov-2023 09:03	20-Nov-2023 09:45	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C7906-001	VA23C7906-002	-----	-----	-----	-----	-----	-----
<b>Total Metals</b>											
<b>Thallium, total</b>	7440-28-0	E420/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
<b>Thorium, total</b>	7440-29-1	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
<b>Tin, total</b>	7440-31-5	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
<b>Titanium, total</b>	7440-32-6	E420/VA	mg/L	0.0121	0.00884	----	----	----	----	----	----
<b>Tungsten, total</b>	7440-33-7	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
<b>Uranium, total</b>	7440-61-1	E420/VA	mg/L	0.000057	0.000052	----	----	----	----	----	----
<b>Vanadium, total</b>	7440-62-2	E420/VA	mg/L	0.00138	0.00131	----	----	----	----	----	----
<b>Zinc, total</b>	7440-66-6	E420/VA	mg/L	<0.0030	<0.0030	----	----	----	----	----	----
<b>Zirconium, total</b>	7440-67-7	E420/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
<b>Dissolved Metals</b>											
<b>Aluminum, dissolved</b>	7429-90-5	E421/VA	mg/L	0.0451	0.0455	----	----	----	----	----	----
<b>Antimony, dissolved</b>	7440-36-0	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
<b>Arsenic, dissolved</b>	7440-38-2	E421/VA	mg/L	0.00014	0.00013	----	----	----	----	----	----
<b>Barium, dissolved</b>	7440-39-3	E421/VA	mg/L	0.00826	0.00816	----	----	----	----	----	----
<b>Beryllium, dissolved</b>	7440-41-7	E421/VA	mg/L	<0.000100	<0.000100	----	----	----	----	----	----
<b>Bismuth, dissolved</b>	7440-69-9	E421/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
<b>Boron, dissolved</b>	7440-42-8	E421/VA	mg/L	<0.010	<0.010	----	----	----	----	----	----
<b>Cadmium, dissolved</b>	7440-43-9	E421/VA	mg/L	0.0000063	0.0000060	----	----	----	----	----	----
<b>Calcium, dissolved</b>	7440-70-2	E421/VA	mg/L	5.28	5.38	----	----	----	----	----	----
<b>Cesium, dissolved</b>	7440-46-2	E421/VA	mg/L	0.000015	0.000013	----	----	----	----	----	----
<b>Chromium, dissolved</b>	7440-47-3	E421/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
<b>Cobalt, dissolved</b>	7440-48-4	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
<b>Copper, dissolved</b>	7440-50-8	E421/VA	mg/L	0.00068	0.00067	----	----	----	----	----	----
<b>Iron, dissolved</b>	7439-89-6	E421/VA	mg/L	0.106	0.112	----	----	----	----	----	----
<b>Lead, dissolved</b>	7439-92-1	E421/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
<b>Lithium, dissolved</b>	7439-93-2	E421/VA	mg/L	0.0012	0.0011	----	----	----	----	----	----
<b>Magnesium, dissolved</b>	7439-95-4	E421/VA	mg/L	0.646	0.649	----	----	----	----	----	----
<b>Manganese, dissolved</b>	7439-96-5	E421/VA	mg/L	0.00945	0.00936	----	----	----	----	----	----



## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU DS1	SQU US1	----	----	----	----	----
				Sampling date/time	20-Nov-2023 09:03	20-Nov-2023 09:45	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C7906-001	VA23C7906-002	-----	-----	-----	-----	-----	-----
<b>Dissolved Metals</b>											
Mercury, dissolved	7439-97-6	E509/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	mg/L	0.000510	0.000507	----	----	----	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	mg/L	<0.050	<0.050	----	----	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	mg/L	0.670	0.648	----	----	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	mg/L	0.00101	0.00100	----	----	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	mg/L	4.06	4.09	----	----	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	mg/L	2.46	2.47	----	----	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	mg/L	0.0350	0.0356	----	----	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	mg/L	1.32	1.27	----	----	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Tin, dissolved	7440-31-5	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	mg/L	0.00069	0.00063	----	----	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	mg/L	0.000043	0.000040	----	----	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	mg/L	0.00082	0.00088	----	----	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	mg/L	<0.0010	<0.0010	----	----	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	Field	Field	----	----	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	Field	Field	----	----	----	----	----	----
<b>Aggregate Organics</b>											
Chemical oxygen demand [COD]	----	E559-L/VA	mg/L	<10	<10	----	----	----	----	----	----
Phenols, total (4AAP)	----	E562/EO	mg/L	<0.0010	<0.0010	----	----	----	----	----	----



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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.



### Summary of Guideline Limits

Analyte	CAS Number	Unit	BCAWWQG L-ST	BCAWWQG MAL-LT	BCAWWQG MAL-ST	BCAWWQG W-LT	BCAWWQG W-ST		
<b>Field Tests</b>									
Conductivity, field	----	µS/cm	--	--	<a--	--	--		
pH, field	----	pH units	--	--	<a--	--	--		
Temperature, field	----	°C	--	--	<a--	--	--		
<b>Physical Tests</b>									
Alkalinity, total (as CaCO3)	----	mg/L	--	--	<a--	--	--		
Hardness (as CaCO3), dissolved	----	mg/L	--	--	<a--	--	--		
Hardness (as CaCO3), from total Ca/Mg	----	mg/L	--	--	<a--	--	--		
Solids, total dissolved [TDS]	----	mg/L	--	--	<a--	3000 mg/L	--		
Solids, total suspended [TSS]	----	mg/L	--	25 mg/L	<a--	--	--		
<b>Anions and Nutrients</b>									
Ammonia, total (as N)	7664-41-7	mg/L	--	0.1 mg/L	0.67 mg/L	--	--		
Bromide	24959-67-9	mg/L	--	--	<a--	--	--		
Chloride	16887-00-6	mg/L	--	--	<a--	600 mg/L	--		
Fluoride	16984-48-8	mg/L	1.5 mg/L	1.5 mg/L	1.5 mg/L	1 mg/L	1.5 mg/L		
Kjeldahl nitrogen, total [TKN]	----	mg/L	--	--	<a--	--	--		
Nitrate (as N)	14797-55-8	mg/L	100 mg/L	3.7 mg/L	<a--	--	100 mg/L		
Nitrite (as N)	14797-65-0	mg/L	10 mg/L	--	<a--	--	10 mg/L		
Nitrogen, total	7727-37-9	mg/L	--	--	<a--	--	--		
Phosphorus, total	7723-14-0	mg/L	--	--	<a--	--	--		
Sulfate (as SO4)	14808-79-8	mg/L	--	--	<a--	1000 mg/L	--		
<b>Total Sulfides</b>									
Sulfide, total (as H2S)	7783-06-4	mg/L	--	0.002 mg/L	<a--	0.05 mg/L	--		
Sulfide, total (as S)	18496-25-8	mg/L	--	--	<a--	--	--		
Sulfide, un-ionized (as H2S), from total	7783-06-4	mg/L	--	--	<a--	--	--		
<b>Total Metals</b>									
Aluminum, total	7429-90-5	mg/L	5 mg/L	--	<a--	--	5 mg/L		
Antimony, total	7440-36-0	mg/L	--	--	<a--	--	--		
Arsenic, total	7440-38-2	mg/L	--	0.0125 mg/L	<a--	0.025 mg/L	--		
Barium, total	7440-39-3	mg/L	--	--	<a--	--	--		
Beryllium, total	7440-41-7	mg/L	--	0.1 mg/L	<a--	--	--		
Bismuth, total	7440-69-9	mg/L	--	--	<a--	--	--		
Boron, total	7440-42-8	mg/L	--	1.2 mg/L	<a--	5 mg/L	--		
Cadmium, total	7440-43-9	mg/L	--	0.0012 mg/L	<a--	--	--		
Calcium, total	7440-70-2	mg/L	--	--	<a--	--	--		
Cesium, total	7440-46-2	mg/L	--	--	<a--	--	--		
Chromium, total	7440-47-3	mg/L	--	0.0015 mg/L	<a--	--	--		
Cobalt, total	7440-48-4	mg/L	--	--	<a--	--	--		



Analyte	CAS Number	Unit	BCAWWQG L-ST	BCAWWQG MAL-LT	BCAWWQG MAL-ST	BCAWWQG W-LT	BCAWWQG W-ST		
<b>Total Metals - Continued</b>									
Copper, total	7440-50-8	mg/L	0.3 mg/L	--	0.003 mg/L	--	0.3 mg/L		
Iron, total	7439-89-6	mg/L	--	--	<a--	--	--		
Lead, total	7439-92-1	mg/L	0.1 mg/L	0.002 mg/L	0.14 mg/L	--	0.1 mg/L		
Lithium, total	7439-93-2	mg/L	--	--	<a--	5 mg/L	--		
Magnesium, total	7439-95-4	mg/L	--	--	<a--	100 mg/L	--		
Manganese, total	7439-96-5	mg/L	--	0.1 mg/L	<a--	--	--		
Mercury, total	7439-97-6	mg/L	0.003 mg/L	1E-05 mg/L	<a--	1E-06 mg/L	--		
Molybdenum, total	7439-98-7	mg/L	--	--	<a--	0.016 mg/L	--		
Nickel, total	7440-02-0	mg/L	--	0.0083 mg/L	<a--	1 mg/L	--		
Phosphorus, total	7723-14-0	mg/L	--	--	<a--	--	--		
Potassium, total	7440-09-7	mg/L	--	--	<a--	--	--		
Rubidium, total	7440-17-7	mg/L	--	--	<a--	--	--		
Selenium, total	7782-49-2	mg/L	--	0.002 mg/L	<a--	0.002 mg/L	--		
Silicon, total	7440-21-3	mg/L	--	--	<a--	--	--		
Silver, total	7440-22-4	mg/L	--	0.0015 mg/L	<a--	--	--		
Sodium, total	7440-23-5	mg/L	--	--	<a--	200 mg/L	--		
Strontium, total	7440-24-6	mg/L	--	--	<a--	--	--		
Sulfur, total	7704-34-9	mg/L	--	--	<a--	--	--		
Tellurium, total	13494-80-9	mg/L	--	--	<a--	--	--		
Thallium, total	7440-28-0	mg/L	--	--	<a--	--	--		
Thorium, total	7440-29-1	mg/L	--	--	<a--	--	--		
Tin, total	7440-31-5	mg/L	--	--	<a--	--	--		
Titanium, total	7440-32-6	mg/L	--	--	<a--	--	--		
Tungsten, total	7440-33-7	mg/L	--	--	<a--	--	--		
Uranium, total	7440-61-1	mg/L	--	0.1 mg/L	<a--	0.2 mg/L	--		
Vanadium, total	7440-62-2	mg/L	--	0.05 mg/L	<a--	0.1 mg/L	--		
Zinc, total	7440-66-6	mg/L	--	0.01 mg/L	0.055 mg/L	--	--		
Zirconium, total	7440-67-7	mg/L	--	--	<a--	--	--		
<b>Dissolved Metals</b>									
Aluminum, dissolved	7429-90-5	mg/L	5 mg/L	--	<a--	--	5 mg/L		
Antimony, dissolved	7440-36-0	mg/L	--	--	<a--	--	--		
Arsenic, dissolved	7440-38-2	mg/L	--	0.0125 mg/L	<a--	0.025 mg/L	--		
Barium, dissolved	7440-39-3	mg/L	--	--	<a--	--	--		
Beryllium, dissolved	7440-41-7	mg/L	--	0.1 mg/L	<a--	--	--		
Bismuth, dissolved	7440-69-9	mg/L	--	--	<a--	--	--		
Boron, dissolved	7440-42-8	mg/L	--	1.2 mg/L	<a--	5 mg/L	--		
Cadmium, dissolved	7440-43-9	mg/L	--	0.00012 mg/L	<a--	--	--		
Calcium, dissolved	7440-70-2	mg/L	--	--	<a--	--	--		
Cesium, dissolved	7440-46-2	mg/L	--	--	<a--	--	--		



Analyte	CAS Number	Unit	BCAWWQG L-ST	BCAWWQG MAL-LT	BCAWWQG MAL-ST	BCAWWQG W-LT	BCAWWQG W-ST		
<b>Dissolved Metals - Continued</b>									
Chromium, dissolved	7440-47-3	mg/L	--	0.0015 mg/L	<a--	--	--		
Cobalt, dissolved	7440-48-4	mg/L	--	--	<a--	--	--		
Copper, dissolved	7440-50-8	mg/L	0.3 mg/L	--	0.003 mg/L	--	0.3 mg/L		
Dissolved mercury filtration location	----	-	--	--	<a--	--	--		
Dissolved metals filtration location	----	-	--	--	<a--	--	--		
Iron, dissolved	7439-89-6	mg/L	--	--	<a--	--	--		
Lead, dissolved	7439-92-1	mg/L	0.1 mg/L	0.002 mg/L	0.14 mg/L	--	0.1 mg/L		
Lithium, dissolved	7439-93-2	mg/L	--	--	<a--	5 mg/L	--		
Magnesium, dissolved	7439-95-4	mg/L	--	--	<a--	100 mg/L	--		
Manganese, dissolved	7439-96-5	mg/L	--	0.1 mg/L	<a--	--	--		
Mercury, dissolved	7439-97-6	mg/L	0.003 mg/L	1E-05 mg/L	<a--	1E-06 mg/L	--		
Molybdenum, dissolved	7439-98-7	mg/L	--	--	<a--	0.016 mg/L	--		
Nickel, dissolved	7440-02-0	mg/L	--	0.0083 mg/L	<a--	1 mg/L	--		
Phosphorus, dissolved	7723-14-0	mg/L	--	--	<a--	--	--		
Potassium, dissolved	7440-09-7	mg/L	--	--	<a--	--	--		
Rubidium, dissolved	7440-17-7	mg/L	--	--	<a--	--	--		
Selenium, dissolved	7782-49-2	mg/L	--	0.002 mg/L	<a--	0.002 mg/L	--		
Silicon, dissolved	7440-21-3	mg/L	--	--	<a--	--	--		
Silver, dissolved	7440-22-4	mg/L	--	0.0015 mg/L	<a--	--	--		
Sodium, dissolved	7440-23-5	mg/L	--	--	<a--	200 mg/L	--		
Strontium, dissolved	7440-24-6	mg/L	--	--	<a--	--	--		
Sulfur, dissolved	7704-34-9	mg/L	--	--	<a--	--	--		
Tellurium, dissolved	13494-80-9	mg/L	--	--	<a--	--	--		
Thallium, dissolved	7440-28-0	mg/L	--	--	<a--	--	--		
Thorium, dissolved	7440-29-1	mg/L	--	--	<a--	--	--		
Tin, dissolved	7440-31-5	mg/L	--	--	<a--	--	--		
Titanium, dissolved	7440-32-6	mg/L	--	--	<a--	--	--		
Tungsten, dissolved	7440-33-7	mg/L	--	--	<a--	--	--		
Uranium, dissolved	7440-61-1	mg/L	--	0.1 mg/L	<a--	0.2 mg/L	--		
Vanadium, dissolved	7440-62-2	mg/L	--	0.05 mg/L	<a--	0.1 mg/L	--		
Zinc, dissolved	7440-66-6	mg/L	--	0.01 mg/L	0.055 mg/L	--	--		
Zirconium, dissolved	7440-67-7	mg/L	--	--	<a--	--	--		
<b>Aggregate Organics</b>									
Chemical oxygen demand [COD]	----	mg/L	--	--	<a--	--	--		
Phenols, total (4AAP)	----	mg/L	--	--	<a--	0.002 mg/L	--		
Analyte	CAS Number	Unit	BCAWWQG SDW AO	BCAWWQG SDW MAC	BCAWWQG FAL-LT	BCAWWQG FAL-ST	BCAWWQG I-LT	BCAWWQG I-ST	BCAWWQG L-LT
<b>Field Tests</b>									
Conductivity, field	----	µS/cm	--	--	<a--	--	--	--	--



Analyte	CAS Number	Unit	BCAWWQG SDW AO	BCAWWQG SDW MAC	BCAWWQG FAL-LT	BCAWWQG FAL-ST	BCAWWQG I-LT	BCAWWQG I-ST	BCAWWQG L-LT
<b>Field Tests - Continued</b>									
pH, field	----	pH units	--	--	<a--	--	--	--	--
Temperature, field	----	°C	--	--	<a--	--	--	--	--
<b>Physical Tests</b>									
Alkalinity, total (as CaCO3)	----	mg/L	--	--	<a20 mg/L	--	--	--	--
Hardness (as CaCO3), dissolved	----	mg/L	--	--	<a--	--	--	--	--
Hardness (as CaCO3), from total Ca/Mg	----	mg/L	--	--	<a--	--	--	--	--
Solids, total dissolved [TDS]	----	mg/L	--	--	<a--	--	500 mg/L	--	1000 mg/L
Solids, total suspended [TSS]	----	mg/L	--	--	<a--	--	--	--	--
<b>Anions and Nutrients</b>									
Ammonia, total (as N)	7664-41-7	mg/L	--	--	0.102 mg/L	0.752 mg/L	--	--	--
Bromide	24959-67-9	mg/L	--	--	<a--	--	--	--	--
Chloride	16887-00-6	mg/L	250 mg/L	--	150 mg/L	600 mg/L	100 mg/L	--	600 mg/L
Fluoride	16984-48-8	mg/L	--	1.5 mg/L	<a--	0.4 mg/L	1 mg/L	--	1 mg/L
Kjeldahl nitrogen, total [TKN]	----	mg/L	--	--	<a--	--	--	--	--
Nitrate (as N)	14797-55-8	mg/L	--	10 mg/L	3 mg/L	32.8 mg/L	--	--	--
Nitrite (as N)	14797-65-0	mg/L	--	1 mg/L	0.02 mg/L	0.06 mg/L	--	--	--
Nitrogen, total	7727-37-9	mg/L	--	--	<a--	--	--	--	--
Phosphorus, total	7723-14-0	mg/L	0.01 mg/L	--	<a--	--	--	--	--
Sulfate (as SO4)	14808-79-8	mg/L	500 mg/L	--	128 mg/L	--	--	--	1000 mg/L
<b>Total Sulfides</b>									
Sulfide, total (as H2S)	7783-06-4	mg/L	--	--	0.002 mg/L	--	--	--	--
Sulfide, total (as S)	18496-25-8	mg/L	--	--	<a--	--	--	--	--
Sulfide, un-ionized (as H2S), from total	7783-06-4	mg/L	--	--	<a--	--	--	--	--
<b>Total Metals</b>									
Aluminum, total	7429-90-5	mg/L	--	9.5 mg/L	0.00185 mg/L	--	--	5 mg/L	--
Antimony, total	7440-36-0	mg/L	--	0.006 mg/L	0.009 mg/L	--	--	--	--
Arsenic, total	7440-38-2	mg/L	--	0.01 mg/L	0.005 mg/L	--	0.1 mg/L	--	0.025 mg/L
Barium, total	7440-39-3	mg/L	--	--	1 mg/L	--	--	--	--
Beryllium, total	7440-41-7	mg/L	--	--	0.00013 mg/L	--	0.1 mg/L	--	0.1 mg/L
Bismuth, total	7440-69-9	mg/L	--	--	<a--	--	--	--	--
Boron, total	7440-42-8	mg/L	--	5 mg/L	1.2 mg/L	--	0.5 mg/L	--	5 mg/L
Cadmium, total	7440-43-9	mg/L	--	0.005 mg/L	1.8E-05 mg/L	3E-05 mg/L	0.0051 mg/L	--	0.08 mg/L
Calcium, total	7440-70-2	mg/L	--	--	<a--	--	--	--	--
Cesium, total	7440-46-2	mg/L	--	--	<a--	--	--	--	--
Chromium, total	7440-47-3	mg/L	--	0.05 mg/L	0.001 mg/L	--	0.005 mg/L	--	0.05 mg/L
Cobalt, total	7440-48-4	mg/L	--	0.001 mg/L	0.004 mg/L	0.11 mg/L	0.05 mg/L	--	1 mg/L
Copper, total	7440-50-8	mg/L	1 mg/L	2 mg/L	<a--	0.0009 mg/L	--	0.2 mg/L	--
Iron, total	7439-89-6	mg/L	0.3 mg/L	--	<a--	1 mg/L	--	--	--
Lead, total	7439-92-1	mg/L	--	0.005 mg/L	0.00344 mg/L	0.003 mg/L	--	0.2 mg/L	--



Analyte	CAS Number	Unit	BCAWWQG SDW AO	BCAWWQG SDW MAC	BCAWWQG FAL-LT	BCAWWQG FAL-ST	BCAWWQG I-LT	BCAWWQG I-ST	BCAWWQG L-LT
<b>Total Metals - Continued</b>									
Lithium, total	7439-93-2	mg/L	--	--	<a--	--	0.75 mg/L	--	--
Magnesium, total	7439-95-4	mg/L	--	--	<a--	--	--	--	--
Manganese, total	7439-96-5	mg/L	0.02 mg/L	0.12 mg/L	0.768 mg/L	0.816 mg/L	0.2 mg/L	--	--
Mercury, total	7439-97-6	mg/L	--	0.001 mg/L	1E-05 mg/L	--	--	0.002 mg/L	--
Molybdenum, total	7439-98-7	mg/L	--	0.088 mg/L	5.1 mg/L	46 mg/L	0.01 mg/L	0.05 mg/L	0.01 mg/L
Nickel, total	7440-02-0	mg/L	--	0.08 mg/L	0.025 mg/L	--	0.2 mg/L	--	1 mg/L
Phosphorus, total	7723-14-0	mg/L	0.01 mg/L	--	<a--	--	--	--	--
Potassium, total	7440-09-7	mg/L	--	--	373 mg/L	--	--	--	--
Rubidium, total	7440-17-7	mg/L	--	--	<a--	--	--	--	--
Selenium, total	7782-49-2	mg/L	--	0.01 mg/L	0.001 mg/L	--	0.01 mg/L	--	0.03 mg/L
Silicon, total	7440-21-3	mg/L	--	--	<a--	--	--	--	--
Silver, total	7440-22-4	mg/L	--	--	5E-05 mg/L	0.0001 mg/L	--	--	--
Sodium, total	7440-23-5	mg/L	--	--	<a--	--	--	--	--
Strontium, total	7440-24-6	mg/L	--	7 mg/L	<a--	--	--	--	--
Sulfur, total	7704-34-9	mg/L	--	--	<a--	--	--	--	--
Tellurium, total	13494-80-9	mg/L	--	--	<a--	--	--	--	--
Thallium, total	7440-28-0	mg/L	--	--	0.0008 mg/L	--	--	--	--
Thorium, total	7440-29-1	mg/L	--	--	<a--	--	--	--	--
Tin, total	7440-31-5	mg/L	--	--	<a--	--	--	--	--
Titanium, total	7440-32-6	mg/L	--	--	2 mg/L	--	--	--	--
Tungsten, total	7440-33-7	mg/L	--	--	<a--	--	--	--	--
Uranium, total	7440-61-1	mg/L	--	0.02 mg/L	0.0085 mg/L	--	0.01 mg/L	--	0.2 mg/L
Vanadium, total	7440-62-2	mg/L	--	--	0.006 mg/L	--	0.1 mg/L	--	0.1 mg/L
Zinc, total	7440-66-6	mg/L	5 mg/L	3 mg/L	0.00348 mg/L	0.0186 mg/L	1 mg/L	--	2 mg/L
Zirconium, total	7440-67-7	mg/L	--	--	<a--	--	--	--	--
<b>Dissolved Metals</b>									
Aluminum, dissolved	7429-90-5	mg/L	--	--	<a--	--	--	5 mg/L	--
Antimony, dissolved	7440-36-0	mg/L	--	--	0.009 mg/L	--	--	--	--
Arsenic, dissolved	7440-38-2	mg/L	--	--	0.005 mg/L	--	0.1 mg/L	--	0.025 mg/L
Barium, dissolved	7440-39-3	mg/L	--	--	1 mg/L	--	--	--	--
Beryllium, dissolved	7440-41-7	mg/L	--	--	0.00013 mg/L	--	0.1 mg/L	--	0.1 mg/L
Bismuth, dissolved	7440-69-9	mg/L	--	--	<a--	--	--	--	--
Boron, dissolved	7440-42-8	mg/L	--	--	1.2 mg/L	--	0.5 mg/L	--	5 mg/L
Cadmium, dissolved	7440-43-9	mg/L	--	--	1.8E-05 mg/L	3E-05 mg/L	0.0051 mg/L	--	0.08 mg/L
Calcium, dissolved	7440-70-2	mg/L	--	--	<a8 mg/L	--	--	--	1000 mg/L
Cesium, dissolved	7440-46-2	mg/L	--	--	<a--	--	--	--	--
Chromium, dissolved	7440-47-3	mg/L	--	--	0.001 mg/L	--	0.005 mg/L	--	0.05 mg/L
Cobalt, dissolved	7440-48-4	mg/L	--	--	0.004 mg/L	0.11 mg/L	0.05 mg/L	--	1 mg/L
Copper, dissolved	7440-50-8	mg/L	--	--	0.0002 mg/L	0.0009 mg/L	--	0.2 mg/L	--





Analyte	CAS Number	Unit	BCAWWQG SDW AO	BCAWWQG SDW MAC	BCAWWQG FAL-LT	BCAWWQG FAL-ST	BCAWWQG I-LT	BCAWWQG I-ST	BCAWWQG L-LT
<b>Dissolved Metals - Continued</b>									
Dissolved mercury filtration location	----	-	--	--	<a--	--	--	--	--
Dissolved metals filtration location	----	-	--	--	<a--	--	--	--	--
Iron, dissolved	7439-89-6	mg/L	--	--	<a--	0.35 mg/L	--	--	--
Lead, dissolved	7439-92-1	mg/L	--	--	0.00344 mg/L	0.003 mg/L	--	0.2 mg/L	--
Lithium, dissolved	7439-93-2	mg/L	--	--	<a--	--	0.75 mg/L	--	--
Magnesium, dissolved	7439-95-4	mg/L	--	--	<a--	--	--	--	--
Manganese, dissolved	7439-96-5	mg/L	--	--	0.768 mg/L	0.816 mg/L	0.2 mg/L	--	--
Mercury, dissolved	7439-97-6	mg/L	--	--	1E-05 mg/L	--	--	0.002 mg/L	--
Molybdenum, dissolved	7439-98-7	mg/L	--	--	5.1 mg/L	46 mg/L	0.01 mg/L	0.05 mg/L	0.01 mg/L
Nickel, dissolved	7440-02-0	mg/L	--	--	0.025 mg/L	--	0.2 mg/L	--	1 mg/L
Phosphorus, dissolved	7723-14-0	mg/L	--	--	<a--	--	--	--	--
Potassium, dissolved	7440-09-7	mg/L	--	--	373 mg/L	--	--	--	--
Rubidium, dissolved	7440-17-7	mg/L	--	--	<a--	--	--	--	--
Selenium, dissolved	7782-49-2	mg/L	--	--	0.001 mg/L	--	0.01 mg/L	--	0.03 mg/L
Silicon, dissolved	7440-21-3	mg/L	--	--	<a--	--	--	--	--
Silver, dissolved	7440-22-4	mg/L	--	--	5E-05 mg/L	0.0001 mg/L	--	--	--
Sodium, dissolved	7440-23-5	mg/L	--	--	<a--	--	--	--	--
Strontium, dissolved	7440-24-6	mg/L	--	--	<a--	--	--	--	--
Sulfur, dissolved	7704-34-9	mg/L	--	--	<a--	--	--	--	--
Tellurium, dissolved	13494-80-9	mg/L	--	--	<a--	--	--	--	--
Thallium, dissolved	7440-28-0	mg/L	--	--	0.0008 mg/L	--	--	--	--
Thorium, dissolved	7440-29-1	mg/L	--	--	<a--	--	--	--	--
Tin, dissolved	7440-31-5	mg/L	--	--	<a--	--	--	--	--
Titanium, dissolved	7440-32-6	mg/L	--	--	2 mg/L	--	--	--	--
Tungsten, dissolved	7440-33-7	mg/L	--	--	<a--	--	--	--	--
Uranium, dissolved	7440-61-1	mg/L	--	--	0.0085 mg/L	--	0.01 mg/L	--	0.2 mg/L
Vanadium, dissolved	7440-62-2	mg/L	--	--	0.006 mg/L	--	0.1 mg/L	--	0.1 mg/L
Zinc, dissolved	7440-66-6	mg/L	--	--	0.00348 mg/L	0.0186 mg/L	1 mg/L	--	2 mg/L
Zirconium, dissolved	7440-67-7	mg/L	--	--	<a--	--	--	--	--
<b>Aggregate Organics</b>									
Chemical oxygen demand [COD]	----	mg/L	--	--	<a--	--	--	--	--
Phenols, total (4AAP)	----	mg/L	--	--	<a--	--	--	--	--

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



**Key:**

BCAWWQG	British Columbia Approved and Working Water Quality Guidelines (FEB, 2021)
FAL-LT	BC FAL - Freshwater Aquatic Life - Long-Term Chronic
FAL-ST	BC FAL - Freshwater Aquatic Life - Short-Term Acute
I-LT	BC I - Irrigation - Long-Term Chronic
I-ST	BC I - Irrigation - Short-Term Acute
L-LT	BC L - Livestock - Long-Term Chronic
L-ST	BC L - Livestock - Short-Term Acute
MAL-LT	BC MAL - Marinewater Aquatic Life - Long-Term Chronic
MAL-ST	BC MAL - Marinewater Aquatic Life - Short-Term Acute
SDW AO	BC DW - Source Drinking Water Quality Guidelines - No. WQG-01 - Aesthetic Objectives
SDW MAC	BC DW - Source Drinking Water Quality Guidelines - No. WQG-01 - Maximum Acceptable Concentrations
W-LT	BC W - Wildlife - Long-Term Chronic
W-ST	BC W - Wildlife - Short-Term Acute

## CERTIFICATE OF ANALYSIS

<p><b>Work Order</b> : <b>VA23C7906</b></p> <p><b>Client</b> : <b>Triton Environmental Consultants Ltd.</b></p> <p><b>Contact</b> : Miranda Lewis</p> <p><b>Address</b> : Suite 650, 1040 West Georgia St Vancouver BC Canada V6E 4H1</p> <p><b>Telephone</b> : 604 631 2213</p> <p><b>Project</b> : ----</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : ----</p> <p><b>Sampler</b> : ----</p> <p><b>Site</b> : Water Analysis</p> <p><b>Quote number</b> : VA23-TRIT100-012</p> <p><b>No. of samples received</b> : 2</p> <p><b>No. of samples analysed</b> : 2</p>	<p><b>Page</b> : 1 of 6</p> <p><b>Laboratory</b> : ALS Environmental - Vancouver</p> <p><b>Account Manager</b> : Can Dang</p> <p><b>Address</b> : 8081 Lougheed Highway Burnaby BC Canada V5A 1W9</p> <p><b>Telephone</b> : +1 604 253 4188</p> <p><b>Date Samples Received</b> : 20-Nov-2023 13:45</p> <p><b>Date Analysis Commenced</b> : 21-Nov-2023</p> <p><b>Issue Date</b> : 27-Nov-2023 16:33</p>
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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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Brianna Allen	Production/Validation Manager	Inorganics, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Inorganics, Edmonton, Alberta
Chamoi Beckford	Lab Assistant	Metals, Burnaby, British Columbia
Ghazaleh Khanmirzaei	Analyst	Metals, Burnaby, British Columbia
Kate Dimitrova	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Administration, Burnaby, British Columbia
Sam Silveira	Lab Assistant	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).

<i>Unit</i>	<i>Description</i>
-	no units
°C	degrees celsius
µS/cm	microsiemens per centimetre
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: Water					Client sample ID	SQU DS1	SQU US1	----	----	----
(Matrix: Water)					Client sampling date / time	20-Nov-2023 09:03	20-Nov-2023 09:45	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C7906-001	VA23C7906-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Field Tests</b>										
Conductivity, field	----	EF001/VA	0.10	µS/cm	54.000	50.000	----	----	----	
pH, field	----	EF001/VA	0.10	pH units	6.80	6.62	----	----	----	
Temperature, field	----	EF001/VA	0.10	°C	4.80	4.70	----	----	----	
<b>Physical Tests</b>										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	15.8	16.1	----	----	----	
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	17.0	16.9	----	----	----	
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	27	34	----	----	----	
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	5.6	<3.0	----	----	----	
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	14.0	14.0	----	----	----	
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0295	0.0183	----	----	----	
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	----	----	----	
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	2.32	2.18	----	----	----	
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	<0.020	<0.020	----	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	0.087	0.072	----	----	----	
Nitrate (as N)	14797-55-8	E235.NO3-LV A	0.0050	mg/L	0.0621	0.0547	----	----	----	
Nitrite (as N)	14797-65-0	E235.NO2-LV A	0.0010	mg/L	0.0010	<0.0010	----	----	----	
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.135	0.114	----	----	----	
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0187	0.0139	----	----	----	
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	4.95	4.91	----	----	----	
<b>Total Sulfides</b>										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	<0.0015	----	----	----	
Sulfide, un-ionized (as H2S), from total	7783-06-4	EC395/VA	0.0015	mg/L	<0.0015	<0.0015	----	----	----	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	<0.0016	----	----	----	
<b>Total Metals</b>										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.254	0.199	----	----	----	
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	0.00018	0.00016	----	----	----	



## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU DS1	SQU US1	----	----	----
(Matrix: Water)					Client sampling date / time	20-Nov-2023 09:03	20-Nov-2023 09:45	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C7906-001	VA23C7906-002	-----	-----	-----	
					Result	Result	---	---	---	
<b>Total Metals</b>										
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.0109	0.0105	---	---	---	
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L	<0.000100	<0.000100	---	---	---	
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	<0.000050	---	---	---	
Boron, total	7440-42-8	E420/VA	0.010	mg/L	0.011	<0.010	---	---	---	
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	0.0000080	0.0000058	---	---	---	
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	5.57	5.57	---	---	---	
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000026	0.000023	---	---	---	
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L	<0.00050	<0.00050	---	---	---	
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L	0.00017	0.00013	---	---	---	
Copper, total	7440-50-8	E420/VA	0.00050	mg/L	0.00116	0.00105	---	---	---	
Iron, total	7439-89-6	E420/VA	0.010	mg/L	0.328	0.288	---	---	---	
Lead, total	7439-92-1	E420/VA	0.000050	mg/L	0.000053	<0.000050	---	---	---	
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	0.0014	0.0013	---	---	---	
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	0.765	0.734	---	---	---	
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.0144	0.0124	---	---	---	
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	<0.0000050	---	---	---	
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.000532	0.000535	---	---	---	
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L	<0.00050	<0.00050	---	---	---	
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L	<0.050	<0.050	---	---	---	
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	0.767	0.713	---	---	---	
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.00124	0.00111	---	---	---	
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	<0.000050	<0.000050	---	---	---	
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	4.87	4.82	---	---	---	
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	<0.000010	---	---	---	
Sodium, total	7440-23-5	E420/VA	0.050	mg/L	2.54	2.40	---	---	---	
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	0.0373	0.0374	---	---	---	
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	1.60	1.52	---	---	---	
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	<0.00020	<0.00020	---	---	---	
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	<0.000010	<0.000010	---	---	---	
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00010	<0.00010	---	---	---	



## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU DS1	SQU US1	----	----	----
(Matrix: Water)					Client sampling date / time	20-Nov-2023 09:03	20-Nov-2023 09:45	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C7906-001	VA23C7906-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Total Metals</b>										
Tin, total	7440-31-5	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	0.0121	0.00884	----	----	----	
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.000057	0.000052	----	----	----	
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	0.00138	0.00131	----	----	----	
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L	<0.0030	<0.0030	----	----	----	
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
<b>Dissolved Metals</b>										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.0451	0.0455	----	----	----	
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L	0.00014	0.00013	----	----	----	
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.00826	0.00816	----	----	----	
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L	<0.000100	<0.000100	----	----	----	
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L	<0.010	<0.010	----	----	----	
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	0.0000063	0.0000060	----	----	----	
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	5.28	5.38	----	----	----	
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	0.000015	0.000013	----	----	----	
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L	0.00068	0.00067	----	----	----	
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L	0.106	0.112	----	----	----	
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	0.0012	0.0011	----	----	----	
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	0.646	0.649	----	----	----	
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.00945	0.00936	----	----	----	
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.000510	0.000507	----	----	----	
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L	<0.050	<0.050	----	----	----	



## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU DS1	SQU US1	----	----	----
(Matrix: Water)					Client sampling date / time	20-Nov-2023 09:03	20-Nov-2023 09:45	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C7906-001	VA23C7906-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Dissolved Metals</b>										
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	0.670	0.648	----	----	----	
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.00101	0.00100	----	----	----	
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	4.06	4.09	----	----	----	
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	2.46	2.47	----	----	----	
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	0.0350	0.0356	----	----	----	
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	1.32	1.27	----	----	----	
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	0.00069	0.00063	----	----	----	
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	0.000043	0.000040	----	----	----	
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	0.00082	0.00088	----	----	----	
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
Dissolved mercury filtration location	----	EP509/VA	-	-	Field	Field	----	----	----	
Dissolved metals filtration location	----	EP421/VA	-	-	Field	Field	----	----	----	
<b>Aggregate Organics</b>										
Chemical oxygen demand [COD]	----	E559-L/VA	10	mg/L	<10	<10	----	----	----	
Phenols, total (4AAP)	----	E562/EO	0.0010	mg/L	<0.0010	<0.0010	----	----	----	

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.



## QUALITY CONTROL INTERPRETIVE REPORT

<p><b>Work Order</b> : <b>VA23C7906</b></p> <p><b>Client</b> : <b>Triton Environmental Consultants Ltd.</b></p> <p><b>Contact</b> : Miranda Lewis</p> <p><b>Address</b> : Suite 650, 1040 West Georgia St Vancouver BC Canada V6E 4H1</p> <p><b>Telephone</b> : 604 631 2213</p> <p><b>Project</b> : ----</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : ----</p> <p><b>Sampler</b> : ----</p> <p><b>Site</b> : Water Analysis</p> <p><b>Quote number</b> : VA23-TRIT100-012</p> <p><b>No. of samples received</b> : 2</p> <p><b>No. of samples analysed</b> : 2</p>	<p><b>Page</b> : 1 of 14</p> <p><b>Laboratory</b> : ALS Environmental - Vancouver</p> <p><b>Account Manager</b> : Can Dang</p> <p><b>Address</b> : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p><b>Telephone</b> : +1 604 253 4188</p> <p><b>Date Samples Received</b> : 20-Nov-2023 13:45</p> <p><b>Issue Date</b> : 27-Nov-2023 16:35</p>
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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: **Water** 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	
<b>Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)</b>										
Amber glass total (sulfuric acid) SQU DS1	E559-L	20-Nov-2023	----	----	----		24-Nov-2023	28 days	4 days	✔
<b>Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)</b>										
Amber glass total (sulfuric acid) SQU US1	E559-L	20-Nov-2023	----	----	----		24-Nov-2023	28 days	4 days	✔
<b>Aggregate Organics : Phenols (4AAP) in Water by Colorimetry</b>										
Amber glass total (sulfuric acid) SQU DS1	E562	20-Nov-2023	27-Nov-2023	28 days	7 days	✔	27-Nov-2023	28 days	7 days	✔
<b>Aggregate Organics : Phenols (4AAP) in Water by Colorimetry</b>										
Amber glass total (sulfuric acid) SQU US1	E562	20-Nov-2023	27-Nov-2023	28 days	7 days	✔	27-Nov-2023	28 days	7 days	✔
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) SQU DS1	E298	20-Nov-2023	23-Nov-2023	28 days	3 days	✔	24-Nov-2023	28 days	5 days	✔
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) SQU US1	E298	20-Nov-2023	23-Nov-2023	28 days	3 days	✔	25-Nov-2023	28 days	5 days	✔
<b>Anions and Nutrients : Bromide in Water by IC (Low Level)</b>										
HDPE SQU DS1	E235.Br-L	20-Nov-2023	23-Nov-2023	28 days	3 days	✔	23-Nov-2023	28 days	3 days	✔



Matrix: **Water** 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	
<b>Anions and Nutrients : Bromide in Water by IC (Low Level)</b>										
HDPE SQU US1	E235.Br-L	20-Nov-2023	23-Nov-2023	28 days	3 days	✓	23-Nov-2023	28 days	3 days	✓
<b>Anions and Nutrients : Chloride in Water by IC</b>										
HDPE SQU DS1	E235.Cl	20-Nov-2023	23-Nov-2023	28 days	3 days	✓	23-Nov-2023	28 days	3 days	✓
<b>Anions and Nutrients : Chloride in Water by IC</b>										
HDPE SQU US1	E235.Cl	20-Nov-2023	23-Nov-2023	28 days	3 days	✓	23-Nov-2023	28 days	3 days	✓
<b>Anions and Nutrients : Fluoride in Water by IC</b>										
HDPE SQU DS1	E235.F	20-Nov-2023	23-Nov-2023	28 days	3 days	✓	23-Nov-2023	28 days	3 days	✓
<b>Anions and Nutrients : Fluoride in Water by IC</b>										
HDPE SQU US1	E235.F	20-Nov-2023	23-Nov-2023	28 days	3 days	✓	23-Nov-2023	28 days	3 days	✓
<b>Anions and Nutrients : Nitrate in Water by IC (Low Level)</b>										
HDPE SQU DS1	E235.NO3-L	20-Nov-2023	23-Nov-2023	3 days	3 days	✓	23-Nov-2023	3 days	3 days	✓
<b>Anions and Nutrients : Nitrate in Water by IC (Low Level)</b>										
HDPE SQU US1	E235.NO3-L	20-Nov-2023	23-Nov-2023	3 days	3 days	✓	23-Nov-2023	3 days	3 days	✓
<b>Anions and Nutrients : Nitrite in Water by IC (Low Level)</b>										
HDPE SQU DS1	E235.NO2-L	20-Nov-2023	23-Nov-2023	3 days	3 days	✓	23-Nov-2023	3 days	3 days	✓
<b>Anions and Nutrients : Nitrite in Water by IC (Low Level)</b>										
HDPE SQU US1	E235.NO2-L	20-Nov-2023	23-Nov-2023	3 days	3 days	✓	23-Nov-2023	3 days	3 days	✓



Matrix: **Water** 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		
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE SQU DS1	E235.SO4	20-Nov-2023	23-Nov-2023	28 days	3 days	✓	23-Nov-2023	28 days	3 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE SQU US1	E235.SO4	20-Nov-2023	23-Nov-2023	28 days	3 days	✓	23-Nov-2023	28 days	3 days	✓	
<b>Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)</b>											
Amber glass total (sulfuric acid) SQU DS1	E318	20-Nov-2023	23-Nov-2023	28 days	3 days	✓	24-Nov-2023	28 days	4 days	✓	
<b>Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)</b>											
Amber glass total (sulfuric acid) SQU US1	E318	20-Nov-2023	23-Nov-2023	28 days	3 days	✓	24-Nov-2023	28 days	4 days	✓	
<b>Anions and Nutrients : Total Nitrogen by Colourimetry</b>											
Amber glass total (sulfuric acid) SQU DS1	E366	20-Nov-2023	23-Nov-2023	28 days	3 days	✓	24-Nov-2023	28 days	4 days	✓	
<b>Anions and Nutrients : Total Nitrogen by Colourimetry</b>											
Amber glass total (sulfuric acid) SQU US1	E366	20-Nov-2023	23-Nov-2023	28 days	3 days	✓	24-Nov-2023	28 days	4 days	✓	
<b>Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)</b>											
Amber glass total (sulfuric acid) SQU DS1	E372-U	20-Nov-2023	23-Nov-2023	28 days	3 days	✓	24-Nov-2023	28 days	4 days	✓	
<b>Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)</b>											
Amber glass total (sulfuric acid) SQU US1	E372-U	20-Nov-2023	23-Nov-2023	28 days	3 days	✓	24-Nov-2023	28 days	4 days	✓	
<b>Dissolved Metals : Dissolved Mercury in Water by CVAAS</b>											
Glass vial - dissolved (lab preserved) SQU DS1	E509	20-Nov-2023	24-Nov-2023	28 days	4 days	✓	24-Nov-2023	28 days	0 days	✓	



Matrix: **Water** 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		
<b>Dissolved Metals : Dissolved Mercury in Water by CVAAS</b>											
Glass vial - dissolved (lab preserved) SQU US1	E509	20-Nov-2023	24-Nov-2023	28 days	4 days	✔	24-Nov-2023	28 days	0 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE - dissolved (lab preserved) SQU DS1	E421	20-Nov-2023	22-Nov-2023	180 days	2 days	✔	23-Nov-2023	180 days	3 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE - dissolved (lab preserved) SQU US1	E421	20-Nov-2023	22-Nov-2023	180 days	2 days	✔	23-Nov-2023	180 days	3 days	✔	
<b>Field Tests : Field pH,EC,Salinity,Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine</b>											
Glass vial - total (lab preserved) SQU DS1	EF001	20-Nov-2023	----	----	----		21-Nov-2023	----	1 days		
<b>Field Tests : Field pH,EC,Salinity,Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine</b>											
Glass vial - total (lab preserved) SQU US1	EF001	20-Nov-2023	----	----	----		21-Nov-2023	----	1 days		
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE SQU DS1	E290	20-Nov-2023	23-Nov-2023	14 days	3 days	✔	23-Nov-2023	14 days	3 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE SQU US1	E290	20-Nov-2023	23-Nov-2023	14 days	3 days	✔	23-Nov-2023	14 days	3 days	✔	
<b>Physical Tests : TDS by Gravimetry</b>											
HDPE SQU DS1	E162	20-Nov-2023	----	----	----		23-Nov-2023	7 days	3 days	✔	
<b>Physical Tests : TDS by Gravimetry</b>											
HDPE SQU US1	E162	20-Nov-2023	----	----	----		23-Nov-2023	7 days	3 days	✔	



Matrix: **Water** 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	
<b>Physical Tests : TSS by Gravimetry</b>										
HDPE SQU DS1	E160	20-Nov-2023	----	----	----		23-Nov-2023	7 days	3 days	✓
<b>Physical Tests : TSS by Gravimetry</b>										
HDPE SQU US1	E160	20-Nov-2023	----	----	----		23-Nov-2023	7 days	3 days	✓
<b>Total Metals : Total Mercury in Water by CVAAS</b>										
Glass vial - total (lab preserved) SQU DS1	E508	20-Nov-2023	25-Nov-2023	28 days	5 days	✓	25-Nov-2023	28 days	0 days	✓
<b>Total Metals : Total Mercury in Water by CVAAS</b>										
Glass vial - total (lab preserved) SQU US1	E508	20-Nov-2023	25-Nov-2023	28 days	5 days	✓	25-Nov-2023	28 days	0 days	✓
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>										
HDPE - total (lab preserved) SQU DS1	E420	20-Nov-2023	22-Nov-2023	180 days	2 days	✓	22-Nov-2023	180 days	2 days	✓
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>										
HDPE - total (lab preserved) SQU US1	E420	20-Nov-2023	22-Nov-2023	180 days	2 days	✓	22-Nov-2023	180 days	2 days	✓
<b>Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)</b>										
HDPE total (zinc acetate+sodium hydroxide) SQU DS1	E395	20-Nov-2023	----	----	----		23-Nov-2023	7 days	3 days	✓
<b>Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)</b>										
HDPE total (zinc acetate+sodium hydroxide) SQU US1	E395	20-Nov-2023	----	----	----		23-Nov-2023	7 days	3 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: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity Species by Titration	E290	1249226	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	1249279	1	16	6.2	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1249231	1	20	5.0	5.0	✔
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1252273	1	18	5.5	5.0	✔
Chloride in Water by IC	E235.Cl	1249230	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1251880	2	39	5.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1246268	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	1249229	1	20	5.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1249232	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1249233	1	20	5.0	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1254225	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1249234	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	1250758	1	9	11.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1249276	1	12	8.3	5.0	✔
Total Mercury in Water by CVAAS	E508	1252570	1	14	7.1	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1246239	1	19	5.2	5.0	✔
Total Nitrogen by Colourimetry	E366	1249277	1	12	8.3	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1249278	1	16	6.2	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1250080	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	1250757	1	9	11.1	5.0	✔
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity Species by Titration	E290	1249226	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	1249279	1	16	6.2	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1249231	1	20	5.0	5.0	✔
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1252273	1	18	5.5	5.0	✔
Chloride in Water by IC	E235.Cl	1249230	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1251880	2	39	5.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1246268	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	1249229	1	20	5.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1249232	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1249233	1	20	5.0	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1254225	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1249234	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	1250758	1	9	11.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1249276	1	12	8.3	5.0	✔
Total Mercury in Water by CVAAS	E508	1252570	1	14	7.1	5.0	✔





Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Total Metals in Water by CRC ICPMS	E420	1246239	1	19	5.2	5.0	✔
Total Nitrogen by Colourimetry	E366	1249277	1	12	8.3	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1249278	1	16	6.2	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1250080	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	1250757	1	9	11.1	5.0	✔
<b>Method Blanks (MB)</b>							
Alkalinity Species by Titration	E290	1249226	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	1249279	1	16	6.2	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1249231	1	20	5.0	5.0	✔
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1252273	1	18	5.5	5.0	✔
Chloride in Water by IC	E235.Cl	1249230	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1251880	2	39	5.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1246268	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	1249229	1	20	5.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1249232	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1249233	1	20	5.0	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1254225	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1249234	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	1250758	1	9	11.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1249276	1	12	8.3	5.0	✔
Total Mercury in Water by CVAAS	E508	1252570	1	14	7.1	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1246239	1	19	5.2	5.0	✔
Total Nitrogen by Colourimetry	E366	1249277	1	12	8.3	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1249278	1	16	6.2	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1250080	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	1250757	1	9	11.1	5.0	✔
<b>Matrix Spikes (MS)</b>							
Ammonia by Fluorescence	E298	1249279	1	16	6.2	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1249231	1	20	5.0	5.0	✔
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1252273	1	18	5.5	5.0	✔
Chloride in Water by IC	E235.Cl	1249230	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1251880	2	39	5.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1246268	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	1249229	1	20	5.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1249232	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1249233	1	20	5.0	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1254225	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1249234	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1249276	1	12	8.3	5.0	✔



Matrix: **Water** Evaluation: \* = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
<b>Matrix Spikes (MS) - Continued</b>							
Total Mercury in Water by CVAAS	E508	1252570	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1246239	1	19	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	1249277	1	12	8.3	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1249278	1	16	6.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1250080	1	20	5.0	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
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$ , with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Nitrogen by Colourimetry	E366 ALS Environmental - Vancouver	Water	Chinchilla Scientific Nitrate Method, 2011	Following digestion, total nitrogen is is determined colourimetrically using a discrete analyzer utilizing the vanadium chloride reduction method. This method of analysis is approved under US EPA 40 CFR Part 136 (May 2021).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H <sub>2</sub> S" if reported represent the maximum possible H <sub>2</sub> S concentration based on the total sulfide concentration in the sample. The H <sub>2</sub> S calculation converts Total Sulphide as (S <sub>2</sub> <sup>-</sup> ) and reports it as Total Sulphide as (H <sub>2</sub> S)
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L ALS Environmental - Vancouver	Water	APHA 5220 D (mod)	Samples are analyzed using the closed reflux colourimetric method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Phenols (4AAP) in Water by Colorimetry	E562 ALS Environmental - Edmonton	Water	EPA 9066	This automated method is based on the distillation of phenol and subsequent reaction of the distillate with alkaline ferricyanide (K <sub>3</sub> Fe(CN) <sub>6</sub> ) and 4-amino-antipyrine (4-AAP) to form a red complex which is measured colorimetrically.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Un-ionized Total Hydrogen Sulfide (calculated)	EC395 ALS Environmental - Vancouver	Water	APHA 4500 -S H	Un-ionized sulfide is calculated using results from total sulfide analysis, pH, temperature, and ionic strength of the sample. Calculation of un-ionized sulfide using total sulfide concentrations may be biased high due to particulate forms of sulfide measured during total sulfide testing.
Field pH,EC,Salinity,Cl <sub>2</sub> ,ClO <sub>2</sub> ,ORP,DO, Turbidity,T,T-P,o-PO <sub>4</sub> ,NH <sub>3</sub> ,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity,Cl <sub>2</sub> ,ClO <sub>2</sub> ,ORP,DO, Turbidity,T,T-P,o-PO <sub>4</sub> ,NH <sub>3</sub> or Chloramine measurements provided by client and recorded on ALS report may affect the validity of results.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Digestion for Total Nitrogen in water	EP366 ALS Environmental - Vancouver	Water	APHA 4500-P J (mod)	Samples for total nitrogen analysis are digested using a heated persulfate digestion. Nitrogen compounds are converted to nitrate in this digestion.
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO <sub>3</sub> .

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Client : Triton Environmental Consultants Ltd.  
Project : ---



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
	ALS Environmental - Vancouver			
Dissolved Mercury Water Filtration	EP509	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.
	ALS Environmental - Vancouver			

## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: VA23C7906</b>	<b>Page</b>	<b>: 1 of 18</b>
<b>Client</b>	: Triton Environmental Consultants Ltd.	<b>Laboratory</b>	: ALS Environmental - Vancouver
<b>Contact</b>	: Miranda Lewis	<b>Account Manager</b>	: Can Dang
<b>Address</b>	: Suite 650, 1040 West Georgia St Vancouver BC Canada V6E 4H1	<b>Address</b>	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
<b>Telephone</b>	:	<b>Telephone</b>	: +1 604 253 4188
<b>Project</b>	: ----	<b>Date Samples Received</b>	: 20-Nov-2023 13:45
<b>PO</b>	: ----	<b>Date Analysis Commenced</b>	: 21-Nov-2023
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 27-Nov-2023 16:35
<b>Sampler</b>	: ---- 604 631 2213		
<b>Site</b>	: Water Analysis		
<b>Quote number</b>	: VA23-TRIT100-012		
<b>No. of samples received</b>	: 2		
<b>No. of samples analysed</b>	: 2		

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
- 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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Brianna Allen	Production/Validation Manager	Vancouver Inorganics, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Chamoi Beckford	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Ghazaleh Khanmirzaei	Analyst	Vancouver Metals, Burnaby, British Columbia
Kate Dimitrova	Supervisor - Inorganic	Vancouver Inorganics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Owen Cheng		Vancouver Metals, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
Sam Silveira	Lab Assistant	Vancouver Metals, Burnaby, British Columbia

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Work Order : VA23C7906  
Client : Triton Environmental Consultants Ltd.  
Project : ----



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## 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

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

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### 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: <b>Water</b>					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
<b>Physical Tests (QC Lot: 1249226)</b>											
VA23C8121-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	50.3	50.0	0.598%	20%	----
<b>Physical Tests (QC Lot: 1250757)</b>											
VA23C7906-002	SQU US1	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	3.6	0.6	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 1250758)</b>											
VA23C7906-002	SQU US1	Solids, total dissolved [TDS]	----	E162	10	mg/L	34	34	0.5	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1249229)</b>											
VA23C7906-001	SQU DS1	Fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1249230)</b>											
VA23C7906-001	SQU DS1	Chloride	16887-00-6	E235.Cl	0.50	mg/L	2.32	2.30	0.02	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1249231)</b>											
VA23C7906-001	SQU DS1	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1249232)</b>											
VA23C7906-001	SQU DS1	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0621	0.0614	1.04%	20%	----
<b>Anions and Nutrients (QC Lot: 1249233)</b>											
VA23C7906-001	SQU DS1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0010	<0.0010	0.000001	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1249234)</b>											
VA23C7906-001	SQU DS1	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	4.95	4.84	2.11%	20%	----
<b>Anions and Nutrients (QC Lot: 1249276)</b>											
VA23C7865-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.476	0.395	0.081	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1249277)</b>											
VA23C7865-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.150	mg/L	4.34	4.39	1.07%	20%	----
<b>Anions and Nutrients (QC Lot: 1249278)</b>											
VA23C7793-016	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0044	0.0045	0.0001	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1249279)</b>											
VA23C7793-016	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0746	0.0752	0.844%	20%	----
<b>Total Sulfides (QC Lot: 1250080)</b>											
CG2316467-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
<b>Total Metals (QC Lot: 1246239)</b>											
FJ2303067-012	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----



Sub-Matrix: Water					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
<b>Total Metals (QC Lot: 1246239) - continued</b>											
FJ2303067-012	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Barium, total	7440-39-3	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	---
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	---
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	---
		Calcium, total	7440-70-2	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	---
		Cesium, total	7440-46-2	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Chromium, total	7440-47-3	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Copper, total	7440-50-8	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	---
		Lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	---
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	---
		Manganese, total	7439-96-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Nickel, total	7440-02-0	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	---
		Potassium, total	7440-09-7	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	---
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	---
		Selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Silicon, total	7440-21-3	E420	0.10	mg/L	<0.10	<0.10	0	Diff <2x LOR	---
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Sodium, total	7440-23-5	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	---
		Strontium, total	7440-24-6	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	---
		Sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	---
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	---
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---



Sub-Matrix: Water					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
<b>Total Metals (QC Lot: 1246239) - continued</b>											
FJ2303067-012	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
<b>Total Metals (QC Lot: 1252570)</b>											
VA23C7906-001	SQU DS1	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
<b>Dissolved Metals (QC Lot: 1246268)</b>											
FJ2303068-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0044	0.0036	0.0008	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0569	0.0576	1.18%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	0.0000075	0.0000025	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	36.9	37.8	2.43%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.030	0.030	0.0001	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0045	0.0045	0.000008	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	10.5	10.3	2.19%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00281	0.00277	1.24%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000617	0.000605	1.98%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.389	0.396	0.007	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00031	0.00029	0.00002	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000204	0.000209	0.000006	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.29	1.30	0.851%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	1.49	1.46	2.07%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.113	0.112	0.735%	20%	----



Sub-Matrix: Water					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
<b>Dissolved Metals (QC Lot: 1246268) - continued</b>											
FJ2303068-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	4.14	4.40	0.26	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000212	0.000212	0.0571%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
<b>Dissolved Metals (QC Lot: 1251880)</b>											
FJ2303067-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
<b>Dissolved Metals (QC Lot: 1251881)</b>											
VA23C7906-002	SQU US1	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
<b>Aggregate Organics (QC Lot: 1252273)</b>											
VA23C7735-001	Anonymous	Chemical oxygen demand [COD]	----	E559-L	40	mg/L	1860	1830	1.63%	20%	----
<b>Aggregate Organics (QC Lot: 1254225)</b>											
EO2310683-004	Anonymous	Phenols, total (4AAP)	----	E562	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: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Physical Tests (QCLot: 1249226)</b>						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
<b>Physical Tests (QCLot: 1250757)</b>						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
<b>Physical Tests (QCLot: 1250758)</b>						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
<b>Anions and Nutrients (QCLot: 1249229)</b>						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
<b>Anions and Nutrients (QCLot: 1249230)</b>						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 1249231)</b>						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 1249232)</b>						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 1249233)</b>						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 1249234)</b>						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
<b>Anions and Nutrients (QCLot: 1249276)</b>						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 1249277)</b>						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
<b>Anions and Nutrients (QCLot: 1249278)</b>						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
<b>Anions and Nutrients (QCLot: 1249279)</b>						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
<b>Total Sulfides (QCLot: 1250080)</b>						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
<b>Total Metals (QCLot: 1246239)</b>						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (QCLot: 1246239) - continued</b>						
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	---
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	---
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	---
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	---
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	---
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	---
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	---
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (QCLot: 1252570)</b>						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
<b>Dissolved Metals (QCLot: 1246268)</b>						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	---
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	---
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	---
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	---
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	---
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	---
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
<b>Dissolved Metals (QCLot: 1246268) - continued</b>						
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
<b>Dissolved Metals (QCLot: 1251880)</b>						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
<b>Dissolved Metals (QCLot: 1251881)</b>						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
<b>Aggregate Organics (QCLot: 1252273)</b>						
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	<10	----
<b>Aggregate Organics (QCLot: 1254225)</b>						
Phenols, total (4AAP)	----	E562	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: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
<b>Physical Tests (QCLot: 1249226)</b>									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	109	85.0	115	----
<b>Physical Tests (QCLot: 1250757)</b>									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	92.3	85.0	115	----
<b>Physical Tests (QCLot: 1250758)</b>									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	94.6	85.0	115	----
<b>Anions and Nutrients (QCLot: 1249229)</b>									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.0	90.0	110	----
<b>Anions and Nutrients (QCLot: 1249230)</b>									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.0	90.0	110	----
<b>Anions and Nutrients (QCLot: 1249231)</b>									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	101	85.0	115	----
<b>Anions and Nutrients (QCLot: 1249232)</b>									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	98.1	90.0	110	----
<b>Anions and Nutrients (QCLot: 1249233)</b>									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.1	90.0	110	----
<b>Anions and Nutrients (QCLot: 1249234)</b>									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	100	90.0	110	----
<b>Anions and Nutrients (QCLot: 1249276)</b>									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	98.3	75.0	125	----
<b>Anions and Nutrients (QCLot: 1249277)</b>									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	99.4	75.0	125	----
<b>Anions and Nutrients (QCLot: 1249278)</b>									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	87.5	80.0	120	----
<b>Anions and Nutrients (QCLot: 1249279)</b>									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	95.9	85.0	115	----
<b>Total Sulfides (QCLot: 1250080)</b>									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	94.9	80.0	120	----
<b>Total Metals (QCLot: 1246239)</b>									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	104	80.0	120	----



Sub-Matrix: **Water**

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
<b>Total Metals (QCLot: 1246239) - continued</b>									
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	107	80.0	120	---
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	108	80.0	120	---
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	---
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	101	80.0	120	---
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	105	80.0	120	---
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	97.6	80.0	120	---
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	102	80.0	120	---
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	101	80.0	120	---
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	107	80.0	120	---
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	101	80.0	120	---
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	---
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	100	80.0	120	---
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	103	80.0	120	---
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	105	80.0	120	---
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	102	80.0	120	---
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	110	80.0	120	---
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	---
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	101	80.0	120	---
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	103	80.0	120	---
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	103	80.0	120	---
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	107	80.0	120	---
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	---
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	102	80.0	120	---
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	112	80.0	120	---
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	97.3	80.0	120	---
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	105	80.0	120	---
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	106	80.0	120	---
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	98.8	80.0	120	---
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	104	80.0	120	---
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	106	80.0	120	---
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	100	80.0	120	---
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	104	80.0	120	---
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	101	80.0	120	---
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	101	80.0	120	---
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	108	80.0	120	---
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	105	80.0	120	---



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Total Metals (QCLot: 1246239) - continued</b>									
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	106	80.0	120	---
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	107	80.0	120	---
<b>Total Metals (QCLot: 1252570)</b>									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	99.6	80.0	120	---
<b>Dissolved Metals (QCLot: 1246268)</b>									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	99.0	80.0	120	---
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	100	80.0	120	---
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	102	80.0	120	---
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	---
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	95.7	80.0	120	---
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	93.1	80.0	120	---
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	105	80.0	120	---
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	97.9	80.0	120	---
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.3	80.0	120	---
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	96.6	80.0	120	---
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	98.5	80.0	120	---
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	98.0	80.0	120	---
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	96.3	80.0	120	---
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	98.8	80.0	120	---
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	98.4	80.0	120	---
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	97.4	80.0	120	---
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	103	80.0	120	---
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	99.5	80.0	120	---
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	100	80.0	120	---
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	98.6	80.0	120	---
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	102	80.0	120	---
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	101	80.0	120	---
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	98.1	80.0	120	---
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	103	80.0	120	---
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	100	80.0	120	---
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	94.5	80.0	120	---
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	107	80.0	120	---
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	100	80.0	120	---
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	96.8	80.0	120	---
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	98.3	80.0	120	---



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1246268) - continued</b>									
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	98.2	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	87.4	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	99.1	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	96.4	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	94.1	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	96.2	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	99.1	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	103	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	96.1	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	104	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	106	80.0	120	----
<b>Aggregate Organics (QCLot: 1252273)</b>									
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	100 mg/L	105	85.0	115	----
<b>Aggregate Organics (QCLot: 1254225)</b>									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	99.0	85.0	115	----



### 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: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Anions and Nutrients (QCLot: 1249229)</b>										
VA23C7906-002	SQU US1	Fluoride	16984-48-8	E235.F	1.06 mg/L	1 mg/L	106	75.0	125	----
<b>Anions and Nutrients (QCLot: 1249230)</b>										
VA23C7906-002	SQU US1	Chloride	16887-00-6	E235.Cl	102 mg/L	100 mg/L	102	75.0	125	----
<b>Anions and Nutrients (QCLot: 1249231)</b>										
VA23C7906-002	SQU US1	Bromide	24959-67-9	E235.Br-L	0.524 mg/L	0.5 mg/L	105	75.0	125	----
<b>Anions and Nutrients (QCLot: 1249232)</b>										
VA23C7906-002	SQU US1	Nitrate (as N)	14797-55-8	E235.NO3-L	2.58 mg/L	2.5 mg/L	103	75.0	125	----
<b>Anions and Nutrients (QCLot: 1249233)</b>										
VA23C7906-002	SQU US1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.537 mg/L	0.5 mg/L	107	75.0	125	----
<b>Anions and Nutrients (QCLot: 1249234)</b>										
VA23C7906-002	SQU US1	Sulfate (as SO4)	14808-79-8	E235.SO4	106 mg/L	100 mg/L	106	75.0	125	----
<b>Anions and Nutrients (QCLot: 1249276)</b>										
VA23C7866-012	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.51 mg/L	2.5 mg/L	100	70.0	130	----
<b>Anions and Nutrients (QCLot: 1249277)</b>										
VA23C7867-001	Anonymous	Nitrogen, total	7727-37-9	E366	ND mg/L	0.4 mg/L	ND	70.0	130	----
<b>Anions and Nutrients (QCLot: 1249278)</b>										
VA23C7793-017	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0452 mg/L	0.05 mg/L	90.4	70.0	130	----
<b>Anions and Nutrients (QCLot: 1249279)</b>										
VA23C7793-017	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0913 mg/L	0.1 mg/L	91.3	75.0	125	----
<b>Total Sulfides (QCLot: 1250080)</b>										
CG2316467-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.523 mg/L	0.5 mg/L	105	75.0	125	----
<b>Total Metals (QCLot: 1246239)</b>										
FJ2303067-013	Anonymous	Aluminum, total	7429-90-5	E420	0.198 mg/L	0.2 mg/L	99.2	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0197 mg/L	0.02 mg/L	98.5	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0198 mg/L	0.02 mg/L	99.2	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0374 mg/L	0.04 mg/L	93.6	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00974 mg/L	0.01 mg/L	97.4	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Total Metals (QCLot: 1246239) - continued</b>										
FJ2303067-013	Anonymous	Boron, total	7440-42-8	E420	0.095 mg/L	0.1 mg/L	94.6	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00400 mg/L	0.004 mg/L	100	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0100 mg/L	0.01 mg/L	100	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0405 mg/L	0.04 mg/L	101	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Copper, total	7440-50-8	E420	0.0196 mg/L	0.02 mg/L	97.8	70.0	130	----
		Iron, total	7439-89-6	E420	2.02 mg/L	2 mg/L	101	70.0	130	----
		Lead, total	7439-92-1	E420	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0934 mg/L	0.1 mg/L	93.4	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0397 mg/L	0.04 mg/L	99.4	70.0	130	----
		Phosphorus, total	7723-14-0	E420	10.2 mg/L	10 mg/L	102	70.0	130	----
		Potassium, total	7440-09-7	E420	4.11 mg/L	4 mg/L	103	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0415 mg/L	0.04 mg/L	104	70.0	130	----
		Silicon, total	7440-21-3	E420	9.99 mg/L	10 mg/L	99.9	70.0	130	----
		Silver, total	7440-22-4	E420	0.00394 mg/L	0.004 mg/L	98.6	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	19.1 mg/L	20 mg/L	95.7	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0398 mg/L	0.04 mg/L	99.5	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00384 mg/L	0.004 mg/L	95.9	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0187 mg/L	0.02 mg/L	93.6	70.0	130	----
		Tin, total	7440-31-5	E420	0.0195 mg/L	0.02 mg/L	97.5	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00396 mg/L	0.004 mg/L	99.0	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		Zinc, total	7440-66-6	E420	0.395 mg/L	0.4 mg/L	98.8	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0398 mg/L	0.04 mg/L	99.5	70.0	130	----
<b>Total Metals (QCLot: 1252570)</b>										
VA23C7906-002	SQU US1	Mercury, total	7439-97-6	E508	0.000102 mg/L	0.0001 mg/L	102	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1246268)</b>										
FJ2303068-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.183 mg/L	0.2 mg/L	91.5	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0188 mg/L	0.02 mg/L	94.2	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0185 mg/L	0.02 mg/L	92.7	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0362 mg/L	0.04 mg/L	90.4	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00843 mg/L	0.01 mg/L	84.3	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.097 mg/L	0.1 mg/L	97.1	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00367 mg/L	0.004 mg/L	91.7	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00920 mg/L	0.01 mg/L	92.0	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0369 mg/L	0.04 mg/L	92.2	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0178 mg/L	0.02 mg/L	89.1	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0172 mg/L	0.02 mg/L	86.2	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.81 mg/L	2 mg/L	90.4	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0178 mg/L	0.02 mg/L	89.2	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0945 mg/L	0.1 mg/L	94.5	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0184 mg/L	0.02 mg/L	92.0	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0355 mg/L	0.04 mg/L	88.8	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	9.74 mg/L	10 mg/L	97.4	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.64 mg/L	4 mg/L	91.0	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0180 mg/L	0.02 mg/L	90.2	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0369 mg/L	0.04 mg/L	92.2	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	8.91 mg/L	10 mg/L	89.1	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00371 mg/L	0.004 mg/L	92.8	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0367 mg/L	0.04 mg/L	91.7	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00346 mg/L	0.004 mg/L	86.5	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0170 mg/L	0.02 mg/L	85.1	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0188 mg/L	0.02 mg/L	93.9	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0367 mg/L	0.04 mg/L	91.7	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0179 mg/L	0.02 mg/L	89.4	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1246268) - continued</b>										
FJ2303068-002	Anonymous	Uranium, dissolved	7440-61-1	E421	0.00353 mg/L	0.004 mg/L	88.3	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0942 mg/L	0.1 mg/L	94.2	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.367 mg/L	0.4 mg/L	91.6	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0394 mg/L	0.04 mg/L	98.4	70.0	130	----
<b>Dissolved Metals (QCLot: 1251880)</b>										
FJ2303067-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.000108 mg/L	0.0001 mg/L	108	70.0	130	----
<b>Dissolved Metals (QCLot: 1251881)</b>										
VA23C8112-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.000112 mg/L	0.0001 mg/L	112	70.0	130	----
<b>Aggregate Organics (QCLot: 1252273)</b>										
VA23C7892-001	Anonymous	Chemical oxygen demand [COD]	----	E559-L	115 mg/L	100 mg/L	115	75.0	125	----
<b>Aggregate Organics (QCLot: 1254225)</b>										
EO2310683-006	Anonymous	Phenols, total (4AAP)	----	E562	0.0193 mg/L	0.02 mg/L	96.5	75.0	125	----







## CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

<p><b>Work Order</b> : <b>VA23C8514</b></p> <p><b>Client</b> : <b>Triton Environmental Consultants Ltd.</b></p> <p><b>Contact</b></p> <p><b>Address</b> : Suite 1730, 1111 West Georgia St Vancouver BC Canada V6E 4M3</p> <p><b>Telephone</b> :</p> <p><b>Project</b> : ----</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : ----</p> <p><b>Sampler</b> : ----</p> <p><b>Site</b> : Water Analysis</p> <p><b>Quote number</b> : VA23-TRIT100-012</p> <p><b>No. of samples received</b> : 2</p> <p><b>No. of samples analysed</b> : 2</p>	<p><b>Page</b> : 1 of 8</p> <p><b>Laboratory</b> : ALS Environmental - Vancouver</p> <p><b>Account Manager</b> :</p> <p><b>Address</b> : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p><b>Telephone</b> : +1 604 253 4188</p> <p><b>Date Samples Received</b> : 27-Nov-2023 19:05</p> <p><b>Date Analysis Commenced</b> : 28-Nov-2023</p> <p><b>Issue Date</b> : 07-Dec-2023 12:15</p>
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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
- Guideline Comparison

**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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Brianna Allen	Production/Validation Manager	Inorganics, Burnaby, British Columbia
Cindy Tang	Team Leader - Inorganics	Inorganics, Burnaby, British Columbia
Erin Sanchez		Metals, Burnaby, British Columbia
Jing Liu	Lab Assistant	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Martina Gershon	Analyst	Inorganics, Burnaby, British Columbia
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Administration, Burnaby, British Columbia
Sam Silveira	Lab Assistant	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia





## No Breaches Found

### 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.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key : LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	no units
°C	degrees celsius
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
pH units	pH units

>: greater than.

<: less than.

Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).

For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit.



## Analytical Results Evaluation

				Client sample ID	SQU DS 1	SQU US 1	----	----	----	----	----
Matrix: Water				Sampling date/time	27-Nov-2023 11:15	27-Nov-2023 12:35	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C8514-001	VA23C8514-002	-----	-----	-----	-----	-----	-----
<b>Field Tests</b>											
Conductivity, field	----	EF001/VA	µS/cm	71.000	69.000	----	----	----	----	----	----
pH, field	----	EF001/VA	pH units	6.89	7.07	----	----	----	----	----	----
Temperature, field	----	EF001/VA	°C	3.50	3.70	----	----	----	----	----	----
<b>Physical Tests</b>											
Hardness (as CaCO <sub>3</sub> ), dissolved	----	EC100/VA	mg/L	20.5	20.6	----	----	----	----	----	----
Hardness (as CaCO <sub>3</sub> ), from total Ca/Mg	----	EC100A/VA	mg/L	21.3	22.0	----	----	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	mg/L	52	53	----	----	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	mg/L	<3.0	<3.0	----	----	----	----	----	----
Alkalinity, total (as CaCO <sub>3</sub> )	----	E290/VA	mg/L	18.5	19.0	----	----	----	----	----	----
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	7664-41-7	E298/VA	mg/L	0.0859	0.0864	----	----	----	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	mg/L	<0.050	<0.050	----	----	----	----	----	----
Chloride	16887-00-6	E235.Cl/VA	mg/L	4.15	4.16	----	----	----	----	----	----
Fluoride	16984-48-8	E235.F/VA	mg/L	0.028	0.027	----	----	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/VA	mg/L	0.118	0.124	----	----	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	mg/L	0.0993	0.109	----	----	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	mg/L	0.0046	0.0055	----	----	----	----	----	----
Nitrogen, total	7727-37-9	E366/VA	mg/L	0.248	0.240	----	----	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	mg/L	0.0283	0.0285	----	----	----	----	----	----
Sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4/VA	mg/L	6.41	6.55	----	----	----	----	----	----
<b>Organic / Inorganic Carbon</b>											
Carbon, dissolved organic [DOC]	----	E358-L/VA	mg/L	0.98	1.14	----	----	----	----	----	----
<b>Total Sulfides</b>											
Sulfide, total (as S)	18496-25-8	E395/VA	mg/L	<0.0015	<0.0015	----	----	----	----	----	----
Sulfide, un-ionized (as H <sub>2</sub> S), from total	7783-06-4	EC395/VA	mg/L	<0.0015	<0.0015	----	----	----	----	----	----
Sulfide, total (as H <sub>2</sub> S)	7783-06-4	E395/VA	mg/L	<0.0016	<0.0016	----	----	----	----	----	----
<b>Total Metals</b>											



## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU DS 1	SQU US 1	----	----	----	----	----
				Sampling date/time	27-Nov-2023 11:15	27-Nov-2023 12:35	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C8514-001	VA23C8514-002	-----	-----	-----	-----	-----	-----
<b>Total Metals</b>											
<b>Aluminum, total</b>	7429-90-5	E420/VA	mg/L	0.0940	0.0832	----	----	----	----	----	----
<b>Antimony, total</b>	7440-36-0	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
<b>Arsenic, total</b>	7440-38-2	E420/VA	mg/L	0.00020	0.00020	----	----	----	----	----	----
<b>Barium, total</b>	7440-39-3	E420/VA	mg/L	0.0113	0.0105	----	----	----	----	----	----
<b>Beryllium, total</b>	7440-41-7	E420/VA	mg/L	<0.000100	<0.000100	----	----	----	----	----	----
<b>Bismuth, total</b>	7440-69-9	E420/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
<b>Boron, total</b>	7440-42-8	E420/VA	mg/L	0.014	0.014	----	----	----	----	----	----
<b>Cadmium, total</b>	7440-43-9	E420/VA	mg/L	0.0000060	<0.0000050	----	----	----	----	----	----
<b>Calcium, total</b>	7440-70-2	E420/VA	mg/L	6.92	7.16	----	----	----	----	----	----
<b>Cesium, total</b>	7440-46-2	E420/VA	mg/L	0.000028	0.000027	----	----	----	----	----	----
<b>Chromium, total</b>	7440-47-3	E420/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
<b>Cobalt, total</b>	7440-48-4	E420/VA	mg/L	0.00014	0.00012	----	----	----	----	----	----
<b>Copper, total</b>	7440-50-8	E420/VA	mg/L	0.00075	0.00072	----	----	----	----	----	----
<b>Iron, total</b>	7439-89-6	E420/VA	mg/L	0.268	0.264	----	----	----	----	----	----
<b>Lead, total</b>	7439-92-1	E420/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
<b>Lithium, total</b>	7439-93-2	E420/VA	mg/L	0.0019	0.0017	----	----	----	----	----	----
<b>Magnesium, total</b>	7439-95-4	E420/VA	mg/L	0.980	0.992	----	----	----	----	----	----
<b>Manganese, total</b>	7439-96-5	E420/VA	mg/L	0.0185	0.0177	----	----	----	----	----	----
<b>Mercury, total</b>	7439-97-6	E508/VA	mg/L	<0.0000050	<0.0000050	----	----	----	----	----	----
<b>Molybdenum, total</b>	7439-98-7	E420/VA	mg/L	0.000606	0.000609	----	----	----	----	----	----
<b>Nickel, total</b>	7440-02-0	E420/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
<b>Phosphorus, total</b>	7723-14-0	E420/VA	mg/L	<0.050	<0.050	----	----	----	----	----	----
<b>Potassium, total</b>	7440-09-7	E420/VA	mg/L	0.975	0.946	----	----	----	----	----	----
<b>Rubidium, total</b>	7440-17-7	E420/VA	mg/L	0.00150	0.00145	----	----	----	----	----	----
<b>Selenium, total</b>	7782-49-2	E420/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
<b>Silicon, total</b>	7440-21-3	E420/VA	mg/L	5.72	5.91	----	----	----	----	----	----
<b>Silver, total</b>	7440-22-4	E420/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
<b>Sodium, total</b>	7440-23-5	E420/VA	mg/L	3.88	3.83	----	----	----	----	----	----
<b>Strontium, total</b>	7440-24-6	E420/VA	mg/L	0.0495	0.0488	----	----	----	----	----	----



## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU DS 1	SQU US 1	----	----	----	----	----
				Sampling date/time	27-Nov-2023 11:15	27-Nov-2023 12:35	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C8514-001	VA23C8514-002	-----	-----	-----	-----	-----	-----
<b>Total Metals</b>											
Sulfur, total	7704-34-9	E420/VA	mg/L	1.74	1.75	----	----	----	----	----	----
Tellurium, total	13494-80-9	E420/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
Thallium, total	7440-28-0	E420/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
Thorium, total	7440-29-1	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Tin, total	7440-31-5	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Titanium, total	7440-32-6	E420/VA	mg/L	0.00464	0.00355	----	----	----	----	----	----
Tungsten, total	7440-33-7	E420/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Uranium, total	7440-61-1	E420/VA	mg/L	0.000036	0.000034	----	----	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	mg/L	0.00150	0.00156	----	----	----	----	----	----
Zinc, total	7440-66-6	E420/VA	mg/L	<0.0030	<0.0030	----	----	----	----	----	----
Zirconium, total	7440-67-7	E420/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
<b>Dissolved Metals</b>											
Aluminum, dissolved	7429-90-5	E421/VA	mg/L	0.0233	0.0227	----	----	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	mg/L	0.00015	0.00017	----	----	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	mg/L	0.00983	0.0101	----	----	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	mg/L	<0.000100	<0.000100	----	----	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Boron, dissolved	7440-42-8	E421/VA	mg/L	0.013	0.013	----	----	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	mg/L	<0.0000050	<0.0000050	----	----	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	mg/L	6.69	6.73	----	----	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	mg/L	0.000022	0.000023	----	----	----	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	mg/L	0.00011	<0.00010	----	----	----	----	----	----
Copper, dissolved	7440-50-8	E421/VA	mg/L	0.00051	0.00050	----	----	----	----	----	----
Iron, dissolved	7439-89-6	E421/VA	mg/L	0.160	0.160	----	----	----	----	----	----
Lead, dissolved	7439-92-1	E421/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	mg/L	0.0017	0.0016	----	----	----	----	----	----



## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU DS 1	SQU US 1	----	----	----	----	----
				Sampling date/time	27-Nov-2023 11:15	27-Nov-2023 12:35	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C8514-001	VA23C8514-002	-----	-----	-----	-----	-----	-----
<b>Dissolved Metals</b>											
Magnesium, dissolved	7439-95-4	E421/VA	mg/L	0.916	0.934	----	----	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	mg/L	0.0166	0.0162	----	----	----	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	mg/L	0.000567	0.000604	----	----	----	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	mg/L	<0.00050	<0.00050	----	----	----	----	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	mg/L	<0.050	<0.050	----	----	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	mg/L	0.938	0.913	----	----	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	mg/L	0.00139	0.00138	----	----	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	mg/L	<0.000050	<0.000050	----	----	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	mg/L	5.42	5.66	----	----	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	mg/L	3.74	3.74	----	----	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	mg/L	0.0479	0.0474	----	----	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	mg/L	1.89	1.77	----	----	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	mg/L	<0.000010	<0.000010	----	----	----	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Tin, dissolved	7440-31-5	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	mg/L	0.00044	0.00037	----	----	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	mg/L	<0.00010	<0.00010	----	----	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	mg/L	0.000033	0.000030	----	----	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	mg/L	0.00119	0.00131	----	----	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	mg/L	<0.0010	0.0011	----	----	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	mg/L	<0.00020	<0.00020	----	----	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	Field	Field	----	----	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	Field	Field	----	----	----	----	----	----
<b>Aggregate Organics</b>											
Chemical oxygen demand [COD]	----	E559-L/VA	mg/L	<10	<10	----	----	----	----	----	----





## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU DS 1	SQU US 1	----	----	----	----	----
				Sampling date/time	27-Nov-2023 11:15	27-Nov-2023 12:35	----	----	----	----	----
				Sub-Matrix	Water	Water	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA23C8514-001	VA23C8514-002	-----	-----	-----	-----	-----	-----
<b>Aggregate Organics</b>											
Phenols, total (4AAP)	----	E562/EO	mg/L	<0.0010	<0.0010	----	----	----	----	----	----

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.

**Key:**

## CERTIFICATE OF ANALYSIS

<p><b>Work Order</b> : <b>VA23C8514</b></p> <p><b>Client</b> : <b>Triton Environmental Consultants Ltd.</b></p> <p><b>Contact</b></p> <p><b>Address</b> : Suite 1730, 1111 West Georgia St Vancouver BC Canada V6E 4M3</p> <p><b>Telephone</b></p> <p><b>Project</b></p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : ----</p> <p><b>Sampler</b> : ----</p> <p><b>Site</b> : ----</p> <p><b>Quote number</b> : Water Analysis</p> <p><b>No. of samples received</b> : VA23-TRIT100-012</p> <p><b>No. of samples analysed</b> : 2</p>	<p><b>Page</b> : 1 of 6</p> <p><b>Laboratory</b> : ALS Environmental - Vancouver</p> <p><b>Account Manager</b></p> <p><b>Address</b> : 8081 Lougheed Highway Burnaby BC Canada V5A 1W9</p> <p><b>Telephone</b></p> <p><b>Date Samples Received</b> :</p> <p><b>Date Analysis Commenced</b> : 27-Nov-2023 19:05</p> <p><b>Issue Date</b> : 28-Nov-2023</p> <p> : 07-Dec-2023 12:15</p>
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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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Thornton	Analyst	Metals, Burnaby, British Columbia
Brianna Allen	Production/Validation Manager	Inorganics, Burnaby, British Columbia
Cindy Tang	Team Leader - Inorganics	Inorganics, Burnaby, British Columbia
Erin Sanchez		Metals, Burnaby, British Columbia
Jing Liu	Lab Assistant	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Martina Gershon	Analyst	Inorganics, Burnaby, British Columbia
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Administration, Burnaby, British Columbia
Sam Silveira	Lab Assistant	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, 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).

<i>Unit</i>	<i>Description</i>
-	no units
°C	degrees celsius
µS/cm	microsiemens per centimetre
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: Water					Client sample ID	SQU DS 1	SQU US 1	----	----	----
(Matrix: Water)					Client sampling date / time	27-Nov-2023 11:15	27-Nov-2023 12:35	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C8514-001	VA23C8514-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Field Tests</b>										
Conductivity, field	----	EF001/VA	0.10	µS/cm	71.000	69.000	----	----	----	
pH, field	----	EF001/VA	0.10	pH units	6.89	7.07	----	----	----	
Temperature, field	----	EF001/VA	0.10	°C	3.50	3.70	----	----	----	
<b>Physical Tests</b>										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	20.5	20.6	----	----	----	
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	21.3	22.0	----	----	----	
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	52	53	----	----	----	
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	----	----	----	
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	18.5	19.0	----	----	----	
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0859	0.0864	----	----	----	
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	----	----	----	
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	4.15	4.16	----	----	----	
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.028	0.027	----	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318/VA	0.050	mg/L	0.118	0.124	----	----	----	
Nitrate (as N)	14797-55-8	E235.NO3-LV A	0.0050	mg/L	0.0993	0.109	----	----	----	
Nitrite (as N)	14797-65-0	E235.NO2-LV A	0.0010	mg/L	0.0046	0.0055	----	----	----	
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.248	0.240	----	----	----	
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0283	0.0285	----	----	----	
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	6.41	6.55	----	----	----	
<b>Organic / Inorganic Carbon</b>										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	0.98	1.14	----	----	----	
<b>Total Sulfides</b>										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	<0.0015	----	----	----	
Sulfide, un-ionized (as H2S), from total	7783-06-4	EC395/VA	0.0015	mg/L	<0.0015	<0.0015	----	----	----	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	<0.0016	----	----	----	
<b>Total Metals</b>										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.0940	0.0832	----	----	----	



## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU DS 1	SQU US 1	----	----	----
(Matrix: Water)					Client sampling date / time	27-Nov-2023 11:15	27-Nov-2023 12:35	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C8514-001	VA23C8514-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Total Metals</b>										
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	0.00020	0.00020	----	----	----	
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.0113	0.0105	----	----	----	
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L	<0.000100	<0.000100	----	----	----	
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Boron, total	7440-42-8	E420/VA	0.010	mg/L	0.014	0.014	----	----	----	
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	0.0000060	<0.0000050	----	----	----	
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	6.92	7.16	----	----	----	
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000028	0.000027	----	----	----	
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L	0.00014	0.00012	----	----	----	
Copper, total	7440-50-8	E420/VA	0.00050	mg/L	0.00075	0.00072	----	----	----	
Iron, total	7439-89-6	E420/VA	0.010	mg/L	0.268	0.264	----	----	----	
Lead, total	7439-92-1	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	0.0019	0.0017	----	----	----	
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	0.980	0.992	----	----	----	
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.0185	0.0177	----	----	----	
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.000606	0.000609	----	----	----	
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L	<0.050	<0.050	----	----	----	
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	0.975	0.946	----	----	----	
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.00150	0.00145	----	----	----	
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	5.72	5.91	----	----	----	
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Sodium, total	7440-23-5	E420/VA	0.050	mg/L	3.88	3.83	----	----	----	
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	0.0495	0.0488	----	----	----	
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	1.74	1.75	----	----	----	
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	



## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU DS 1	SQU US 1	----	----	----
(Matrix: Water)					Client sampling date / time	27-Nov-2023 11:15	27-Nov-2023 12:35	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C8514-001	VA23C8514-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Total Metals</b>										
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Tin, total	7440-31-5	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	0.00464	0.00355	----	----	----	
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.000036	0.000034	----	----	----	
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	0.00150	0.00156	----	----	----	
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L	<0.0030	<0.0030	----	----	----	
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
<b>Dissolved Metals</b>										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.0233	0.0227	----	----	----	
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L	0.00015	0.00017	----	----	----	
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.00983	0.0101	----	----	----	
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L	<0.000100	<0.000100	----	----	----	
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L	0.013	0.013	----	----	----	
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	6.69	6.73	----	----	----	
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	0.000022	0.000023	----	----	----	
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L	0.00011	<0.00010	----	----	----	
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L	0.00051	0.00050	----	----	----	
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L	0.160	0.160	----	----	----	
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	0.0017	0.0016	----	----	----	
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	0.916	0.934	----	----	----	
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.0166	0.0162	----	----	----	
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.000567	0.000604	----	----	----	



## Analytical Results

Sub-Matrix: Water					Client sample ID	SQU DS 1	SQU US 1	----	----	----
(Matrix: Water)					Client sampling date / time	27-Nov-2023 11:15	27-Nov-2023 12:35	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C8514-001	VA23C8514-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Dissolved Metals</b>										
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L	<0.050	<0.050	----	----	----	
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	0.938	0.913	----	----	----	
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.00139	0.00138	----	----	----	
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	5.42	5.66	----	----	----	
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	3.74	3.74	----	----	----	
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	0.0479	0.0474	----	----	----	
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	1.89	1.77	----	----	----	
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	0.00044	0.00037	----	----	----	
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	0.000033	0.000030	----	----	----	
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	0.00119	0.00131	----	----	----	
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	<0.0010	0.0011	----	----	----	
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
Dissolved mercury filtration location	----	EP509/VA	-	-	Field	Field	----	----	----	
Dissolved metals filtration location	----	EP421/VA	-	-	Field	Field	----	----	----	
<b>Aggregate Organics</b>										
Chemical oxygen demand [COD]	----	E559-L/VA	10	mg/L	<10	<10	----	----	----	
Phenols, total (4AAP)	----	E562/EO	0.0010	mg/L	<0.0010	<0.0010	----	----	----	

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.

## QUALITY CONTROL INTERPRETIVE REPORT

<p><b>Work Order</b> : <b>VA23C8514</b></p> <p><b>Client</b> : <b>Triton Environmental Consultants Ltd.</b></p> <p><b>Contact</b> :</p> <p><b>Address</b> : Suite 1730, 1111 West Georgia St Vancouver BC Canada V6E 4M3</p> <p><b>Telephone</b></p> <p><b>Project</b> : ----</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : ----</p> <p><b>Sampler</b> : Water Analysis</p> <p><b>Site</b> : VA23-TRIT100-012</p> <p><b>Quote number</b> : 2</p> <p><b>No. of samples received</b></p> <p><b>No. of samples analysed</b> : 2</p>	<p><b>Page</b> : 1 of 15</p> <p><b>Laboratory</b> : ALS Environmental - Vancouver</p> <p><b>Account Manager</b> : Can Dang</p> <p><b>Address</b> : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p><b>Telephone</b> : 27-Nov-2023 19:05</p> <p><b>Date Samples Received</b> : 07-Dec-2023 12:16</p> <p><b>Issue Date</b></p>
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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: **Water** 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	
<b>Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)</b>										
Amber glass total (sulfuric acid) SQU DS 1	E559-L	27-Nov-2023	----	----	----		05-Dec-2023	28 days	8 days	✔
<b>Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)</b>										
Amber glass total (sulfuric acid) SQU US 1	E559-L	27-Nov-2023	----	----	----		05-Dec-2023	28 days	8 days	✔
<b>Aggregate Organics : Phenols (4AAP) in Water by Colorimetry</b>										
Amber glass total (sulfuric acid) SQU DS 1	E562	27-Nov-2023	30-Nov-2023	28 days	3 days	✔	01-Dec-2023	28 days	4 days	✔
<b>Aggregate Organics : Phenols (4AAP) in Water by Colorimetry</b>										
Amber glass total (sulfuric acid) SQU US 1	E562	27-Nov-2023	30-Nov-2023	28 days	3 days	✔	01-Dec-2023	28 days	4 days	✔
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) SQU DS 1	E298	27-Nov-2023	02-Dec-2023	28 days	5 days	✔	05-Dec-2023	28 days	8 days	✔
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) SQU US 1	E298	27-Nov-2023	02-Dec-2023	28 days	5 days	✔	05-Dec-2023	28 days	8 days	✔
<b>Anions and Nutrients : Bromide in Water by IC (Low Level)</b>										
HDPE SQU DS 1	E235.Br-L	27-Nov-2023	28-Nov-2023	28 days	1 days	✔	28-Nov-2023	28 days	1 days	✔



Matrix: **Water** 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		
<b>Anions and Nutrients : Bromide in Water by IC (Low Level)</b>											
HDPE SQU US 1	E235.Br-L	27-Nov-2023	28-Nov-2023	28 days	1 days	✓	28-Nov-2023	28 days	1 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE SQU DS 1	E235.Cl	27-Nov-2023	28-Nov-2023	28 days	1 days	✓	28-Nov-2023	28 days	1 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE SQU US 1	E235.Cl	27-Nov-2023	28-Nov-2023	28 days	1 days	✓	28-Nov-2023	28 days	1 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE SQU DS 1	E235.F	27-Nov-2023	28-Nov-2023	28 days	1 days	✓	28-Nov-2023	28 days	1 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE SQU US 1	E235.F	27-Nov-2023	28-Nov-2023	28 days	1 days	✓	28-Nov-2023	28 days	1 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC (Low Level)</b>											
HDPE SQU DS 1	E235.NO3-L	27-Nov-2023	28-Nov-2023	3 days	1 days	✓	28-Nov-2023	3 days	1 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC (Low Level)</b>											
HDPE SQU US 1	E235.NO3-L	27-Nov-2023	28-Nov-2023	3 days	1 days	✓	28-Nov-2023	3 days	1 days	✓	
<b>Anions and Nutrients : Nitrite in Water by IC (Low Level)</b>											
HDPE SQU DS 1	E235.NO2-L	27-Nov-2023	28-Nov-2023	3 days	1 days	✓	28-Nov-2023	3 days	1 days	✓	
<b>Anions and Nutrients : Nitrite in Water by IC (Low Level)</b>											
HDPE SQU US 1	E235.NO2-L	27-Nov-2023	28-Nov-2023	3 days	1 days	✓	28-Nov-2023	3 days	1 days	✓	



Matrix: **Water** 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	
<b>Anions and Nutrients : Sulfate in Water by IC</b>										
HDPE SQU DS 1	E235.SO4	27-Nov-2023	28-Nov-2023	28 days	1 days	✔	28-Nov-2023	28 days	1 days	✔
<b>Anions and Nutrients : Sulfate in Water by IC</b>										
HDPE SQU US 1	E235.SO4	27-Nov-2023	28-Nov-2023	28 days	1 days	✔	28-Nov-2023	28 days	1 days	✔
<b>Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)</b>										
Amber glass total (sulfuric acid) SQU DS 1	E318	27-Nov-2023	02-Dec-2023	28 days	5 days	✔	04-Dec-2023	28 days	7 days	✔
<b>Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)</b>										
Amber glass total (sulfuric acid) SQU US 1	E318	27-Nov-2023	02-Dec-2023	28 days	5 days	✔	04-Dec-2023	28 days	7 days	✔
<b>Anions and Nutrients : Total Nitrogen by Colourimetry</b>										
Amber glass total (sulfuric acid) SQU DS 1	E366	27-Nov-2023	02-Dec-2023	28 days	5 days	✔	04-Dec-2023	28 days	7 days	✔
<b>Anions and Nutrients : Total Nitrogen by Colourimetry</b>										
Amber glass total (sulfuric acid) SQU US 1	E366	27-Nov-2023	02-Dec-2023	28 days	5 days	✔	04-Dec-2023	28 days	7 days	✔
<b>Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)</b>										
Amber glass total (sulfuric acid) SQU DS 1	E372-U	27-Nov-2023	02-Dec-2023	28 days	5 days	✔	06-Dec-2023	28 days	9 days	✔
<b>Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)</b>										
Amber glass total (sulfuric acid) SQU US 1	E372-U	27-Nov-2023	02-Dec-2023	28 days	5 days	✔	06-Dec-2023	28 days	9 days	✔
<b>Dissolved Metals : Dissolved Mercury in Water by CVAAS</b>										
Glass vial - dissolved (lab preserved) SQU DS 1	E509	27-Nov-2023	30-Nov-2023	28 days	3 days	✔	30-Nov-2023	28 days	0 days	✔



Matrix: **Water** 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		
<b>Dissolved Metals : Dissolved Mercury in Water by CVAAS</b>											
Glass vial - dissolved (lab preserved) SQU US 1	E509	27-Nov-2023	30-Nov-2023	28 days	3 days	✓	30-Nov-2023	28 days	0 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE - dissolved (lab preserved) SQU DS 1	E421	27-Nov-2023	29-Nov-2023	180 days	2 days	✓	30-Nov-2023	180 days	3 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE - dissolved (lab preserved) SQU US 1	E421	27-Nov-2023	29-Nov-2023	180 days	2 days	✓	30-Nov-2023	180 days	3 days	✓	
<b>Field Tests : Field pH,EC,Salinity,Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine</b>											
Glass vial - total (lab preserved) SQU DS 1	EF001	27-Nov-2023	----	----	----		28-Nov-2023	----	1 days		
<b>Field Tests : Field pH,EC,Salinity,Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine</b>											
Glass vial - total (lab preserved) SQU US 1	EF001	27-Nov-2023	----	----	----		28-Nov-2023	----	1 days		
<b>Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)</b>											
Amber glass dissolved (sulfuric acid) SQU DS 1	E358-L	27-Nov-2023	02-Dec-2023	28 days	5 days	✓	02-Dec-2023	28 days	5 days	✓	
<b>Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)</b>											
Amber glass dissolved (sulfuric acid) SQU US 1	E358-L	27-Nov-2023	02-Dec-2023	28 days	5 days	✓	02-Dec-2023	28 days	5 days	✓	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE SQU DS 1	E290	27-Nov-2023	28-Nov-2023	14 days	1 days	✓	29-Nov-2023	14 days	2 days	✓	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE SQU US 1	E290	27-Nov-2023	28-Nov-2023	14 days	1 days	✓	29-Nov-2023	14 days	2 days	✓	



Matrix: **Water** 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	
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE SQU US 1	E162	27-Nov-2023	----	----	----		30-Nov-2023	7 days	3 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE SQU DS 1	E162	27-Nov-2023	----	----	----		30-Nov-2023	7 days	4 days	✔
<b>Physical Tests : TSS by Gravimetry</b>										
HDPE SQU DS 1	E160	27-Nov-2023	----	----	----		03-Dec-2023	7 days	6 days	✔
<b>Physical Tests : TSS by Gravimetry</b>										
HDPE SQU US 1	E160	27-Nov-2023	----	----	----		03-Dec-2023	7 days	6 days	✔
<b>Total Metals : Total Mercury in Water by CVAAS</b>										
Glass vial - total (lab preserved) SQU DS 1	E508	27-Nov-2023	30-Nov-2023	28 days	3 days	✔	30-Nov-2023	28 days	0 days	✔
<b>Total Metals : Total Mercury in Water by CVAAS</b>										
Glass vial - total (lab preserved) SQU US 1	E508	27-Nov-2023	30-Nov-2023	28 days	3 days	✔	30-Nov-2023	28 days	0 days	✔
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>										
HDPE - total (lab preserved) SQU DS 1	E420	27-Nov-2023	29-Nov-2023	180 days	2 days	✔	30-Nov-2023	180 days	3 days	✔
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>										
HDPE - total (lab preserved) SQU US 1	E420	27-Nov-2023	29-Nov-2023	180 days	2 days	✔	30-Nov-2023	180 days	3 days	✔
<b>Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)</b>										
HDPE total (zinc acetate+sodium hydroxide) SQU DS 1	E395	27-Nov-2023	----	----	----		30-Nov-2023	7 days	3 days	✔



Matrix: **Water** 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	
<b>Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)</b>										
HDPE total (zinc acetate+sodium hydroxide) SQU US 1	E395	27-Nov-2023	----	----	----		30-Nov-2023	7 days	3 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: **Water** Evaluation: \* = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity Species by Titration	E290	1256289	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1261769	1	14	7.1	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1256286	1	8	12.5	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1264687	1	19	5.2	5.0	✓
Chloride in Water by IC	E235.Cl	1256281	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1259477	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1257126	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1261766	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1256285	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1256283	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1256284	1	20	5.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1259564	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1256282	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1260076	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1261765	1	3	33.3	5.0	✓
Total Mercury in Water by CVAAS	E508	1258532	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1256643	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1261770	1	2	50.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1261768	1	3	33.3	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1258733	1	18	5.5	5.0	✓
TSS by Gravimetry	E160	1260085	1	20	5.0	5.0	✓
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity Species by Titration	E290	1256289	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1261769	1	14	7.1	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1256286	1	8	12.5	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1264687	1	19	5.2	5.0	✓
Chloride in Water by IC	E235.Cl	1256281	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1259477	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1257126	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1261766	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1256285	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1256283	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1256284	1	20	5.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1259564	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1256282	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1260076	1	20	5.0	5.0	✓





Matrix: **Water**

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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1261765	1	3	33.3	5.0	✓
Total Mercury in Water by CVAAS	E508	1258532	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1256643	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1261770	1	2	50.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1261768	1	3	33.3	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1258733	1	18	5.5	5.0	✓
TSS by Gravimetry	E160	1260085	1	20	5.0	5.0	✓
<b>Method Blanks (MB)</b>							
Alkalinity Species by Titration	E290	1256289	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1261769	1	14	7.1	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1256286	1	8	12.5	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1264687	1	19	5.2	5.0	✓
Chloride in Water by IC	E235.Cl	1256281	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1259477	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1257126	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1261766	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1256285	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1256283	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1256284	1	20	5.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1259564	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1256282	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1260076	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1261765	1	3	33.3	5.0	✓
Total Mercury in Water by CVAAS	E508	1258532	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1256643	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1261770	1	2	50.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1261768	1	3	33.3	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1258733	1	18	5.5	5.0	✓
TSS by Gravimetry	E160	1260085	1	20	5.0	5.0	✓
<b>Matrix Spikes (MS)</b>							
Ammonia by Fluorescence	E298	1261769	1	14	7.1	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1256286	1	8	12.5	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1264687	1	19	5.2	5.0	✓
Chloride in Water by IC	E235.Cl	1256281	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1259477	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1257126	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1261766	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1256285	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1256283	1	20	5.0	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
<b>Matrix Spikes (MS) - Continued</b>							
Nitrite in Water by IC (Low Level)	E235.NO2-L	1256284	1	20	5.0	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1259564	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1256282	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1261765	1	3	33.3	5.0	✔
Total Mercury in Water by CVAAS	E508	1258532	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1256643	1	20	5.0	5.0	✔
Total Nitrogen by Colourimetry	E366	1261770	1	2	50.0	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1261768	1	3	33.3	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1258733	1	18	5.5	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
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$ , with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Nitrogen by Colourimetry	E366 ALS Environmental - Vancouver	Water	Chinchilla Scientific Nitrate Method, 2011	Following digestion, total nitrogen is is determined colourimetrically using a discrete analyzer utilizing the vanadium chloride reduction method. This method of analysis is approved under US EPA 40 CFR Part 136 (May 2021).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H <sub>2</sub> S" if reported represent the maximum possible H <sub>2</sub> S concentration based on the total sulfide concentration in the sample. The H <sub>2</sub> S calculation converts Total Sulphide as (S <sub>2</sub> <sup>-</sup> ) and reports it as Total Sulphide as (H <sub>2</sub> S)
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L ALS Environmental - Vancouver	Water	APHA 5220 D (mod)	Samples are analyzed using the closed reflux colourimetric method.
Phenols (4AAP) in Water by Colorimetry	E562 ALS Environmental - Edmonton	Water	EPA 9066	This automated method is based on the distillation of phenol and subsequent reaction of the distillate with alkaline ferricyanide (K <sub>3</sub> Fe(CN) <sub>6</sub> ) and 4-amino-antipyrine (4-AAP) to form a red complex which is measured colorimetrically.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> , dissolved)" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Un-ionized Total Hydrogen Sulfide (calculated)	EC395 ALS Environmental - Vancouver	Water	APHA 4500 -S H	Un-ionized sulfide is calculated using results from total sulfide analysis, pH, temperature, and ionic strength of the sample. Calculation of un-ionized sulfide using total sulfide concentrations may be biased high due to particulate forms of sulfide measured during total sulfide testing.
Field pH,EC,Salinity,Cl <sub>2</sub> ,ClO <sub>2</sub> ,ORP,DO, Turbidity,T,T-P,o-PO <sub>4</sub> ,NH <sub>3</sub> ,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity,Cl <sub>2</sub> ,ClO <sub>2</sub> ,ORP,DO, Turbidity,T,T-P,o-PO <sub>4</sub> ,NH <sub>3</sub> or Chloramine measurements provided by client and recorded on ALS report may affect the validity of results.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Vancouver	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Nitrogen in water	EP366 ALS Environmental - Vancouver	Water	APHA 4500-P J (mod)	Samples for total nitrogen analysis are digested using a heated persulfate digestion. Nitrogen compounds are converted to nitrate in this digestion.
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO <sub>3</sub> .
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: VA23C8514</b>	<b>Page</b>	: 1 of 18
<b>Client</b>	: Triton Environmental Consultants Ltd.	<b>Laboratory</b>	: ALS Environmental - Vancouver
<b>Contact</b>	: s	<b>Account Manager</b>	: 8081 Lougheed Highway
<b>Address</b>	: Suite 1730, 1111 West Georgia St Vancouver BC Canada V6E 4M3	<b>Address</b>	: Burnaby, British Columbia Canada V5A 1W9
<b>Telephone</b>	:	<b>Telephone</b>	: 27-Nov-2023 19:05
<b>Project</b>	: ----	<b>Date Samples Received</b>	: 28-Nov-2023
<b>PO</b>	: ----	<b>Date Analysis Commenced</b>	: 07-Dec-2023 12:16
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	:
<b>Sampler</b>	: ----		
<b>Site</b>	: Water Analysis		
<b>Quote number</b>	: VA23-TRIT100-012		
<b>No. of samples received</b>	: 2		
<b>No. of samples analysed</b>	: 2		

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
- 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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Thornton	Analyst	Vancouver Metals, Burnaby, British Columbia
Brieanna Allen	Production/Validation Manager	Vancouver Inorganics, Burnaby, British Columbia
Cindy Tang	Team Leader - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
Erin Sanchez		Vancouver Metals, Burnaby, British Columbia
Jing Liu	Lab Assistant	Edmonton Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Martina Gershon	Analyst	Vancouver Inorganics, Burnaby, British Columbia
Monica Ko	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
Sam Silveira	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia



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## 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.

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## Workorder Comments

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

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### 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: <b>Water</b>					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
<b>Physical Tests (QC Lot: 1256289)</b>											
VA23C8494-003	Anonymous	Alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	39.9	40.2	0.757%	20%	----
<b>Physical Tests (QC Lot: 1260076)</b>											
VA23C8514-001	SQU DS 1	Solids, total dissolved [TDS]	----	E162	13	mg/L	52	47	5	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 1260085)</b>											
VA23C8514-001	SQU DS 1	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1256281)</b>											
VA23C8514-001	SQU DS 1	Chloride	16887-00-6	E235.Cl	0.50	mg/L	4.15	4.16	0.009	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1256282)</b>											
VA23C8514-001	SQU DS 1	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	6.41	6.39	0.332%	20%	----
<b>Anions and Nutrients (QC Lot: 1256283)</b>											
VA23C8514-001	SQU DS 1	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0993	0.100	0.859%	20%	----
<b>Anions and Nutrients (QC Lot: 1256284)</b>											
VA23C8514-001	SQU DS 1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0046	0.0045	0.0001	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1256285)</b>											
VA23C8514-001	SQU DS 1	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.028	0.026	0.002	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1256286)</b>											
VA23C8514-001	SQU DS 1	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1261765)</b>											
FJ2303183-003	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1261768)</b>											
FJ2303183-003	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1261769)</b>											
FJ2303183-003	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1261770)</b>											
VA23C8514-001	SQU DS 1	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.248	0.243	0.005	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 1261766)</b>											
FJ2303183-003	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
<b>Total Sulfides (QC Lot: 1258733)</b>											
CG2316841-008	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
<b>Total Metals (QC Lot: 1256643)</b>											



Sub-Matrix: **Water**

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
<b>Total Metals (QC Lot: 1256643) - continued</b>											
VA23C8514-001	SQU DS 1	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0940	0.0950	0.982%	20%	---
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00020	0.00019	0.00002	Diff <2x LOR	---
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0113	0.0107	5.30%	20%	---
		Beryllium, total	7440-41-7	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	---
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Boron, total	7440-42-8	E420	0.010	mg/L	0.014	0.014	0.0002	Diff <2x LOR	---
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000060	0.0000065	0.0000005	Diff <2x LOR	---
		Calcium, total	7440-70-2	E420	0.050	mg/L	6.92	7.04	1.68%	20%	---
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000028	0.000026	0.000002	Diff <2x LOR	---
		Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	---
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00014	0.00014	0.000002	Diff <2x LOR	---
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00075	0.00075	0.000001	Diff <2x LOR	---
		Iron, total	7439-89-6	E420	0.010	mg/L	0.268	0.265	1.24%	20%	---
		Lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0019	0.0019	0.00004	Diff <2x LOR	---
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	0.980	0.962	1.83%	20%	---
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0185	0.0184	0.858%	20%	---
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000606	0.000556	8.71%	20%	---
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	---
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	---
		Potassium, total	7440-09-7	E420	0.050	mg/L	0.975	0.948	2.81%	20%	---
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00150	0.00143	0.00007	Diff <2x LOR	---
		Selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Silicon, total	7440-21-3	E420	0.10	mg/L	5.72	5.45	4.89%	20%	---
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Sodium, total	7440-23-5	E420	0.050	mg/L	3.88	3.85	0.621%	20%	---
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0495	0.0473	4.46%	20%	---
		Sulfur, total	7704-34-9	E420	0.50	mg/L	1.74	1.79	0.04	Diff <2x LOR	---
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	---
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.00464	0.00446	3.99%	20%	---



Sub-Matrix: Water					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
<b>Total Metals (QC Lot: 1256643) - continued</b>											
VA23C8514-001	SQU DS 1	Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000036	0.000041	0.000005	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00150	0.00147	0.00003	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
<b>Total Metals (QC Lot: 1258532)</b>											
KS2304552-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
<b>Dissolved Metals (QC Lot: 1257126)</b>											
VA23C8518-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0015	0.0012	0.0004	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00011	0.00011	0.0000005	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	0.00010	0.0000006	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0486	0.0493	1.37%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000481	0.0000442	0.0000039	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	51.3	50.7	1.29%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000020	0.000019	0.0000009	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00209	0.00208	0.516%	20%	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0012	0.0012	0.00004	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	5.58	5.75	3.07%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00031	0.00031	0.0000008	Diff <2x LOR	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000409	0.000404	0.000005	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00050	<0.00050	0.000005	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.585	0.596	1.92%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00043	0.00049	0.00006	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.00173	0.00171	1.11%	20%	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.61	2.58	1.28%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----



Sub-Matrix: Water					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
<b>Dissolved Metals (QC Lot: 1257126) - continued</b>											
VA23C8518-001	Anonymous	Sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.38	2.45	3.01%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.327	0.324	1.10%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	16.3	16.1	1.06%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.00010	mg/L	0.000043	0.000046	0.000003	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0114	0.0115	0.800%	20%	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
<b>Dissolved Metals (QC Lot: 1259477)</b>											
VA23C8514-001	SQU DS 1	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
<b>Aggregate Organics (QC Lot: 1259564)</b>											
VA23C8626-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
<b>Aggregate Organics (QC Lot: 1264687)</b>											
VA23C8624-007	Anonymous	Chemical oxygen demand [COD]	----	E559-L	10	mg/L	29	32	3	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: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Physical Tests (QCLot: 1256289)</b>						
Alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1	mg/L	<1.0	----
<b>Physical Tests (QCLot: 1260076)</b>						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
<b>Physical Tests (QCLot: 1260085)</b>						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
<b>Anions and Nutrients (QCLot: 1256281)</b>						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 1256282)</b>						
Sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
<b>Anions and Nutrients (QCLot: 1256283)</b>						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 1256284)</b>						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 1256285)</b>						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
<b>Anions and Nutrients (QCLot: 1256286)</b>						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 1261765)</b>						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 1261768)</b>						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
<b>Anions and Nutrients (QCLot: 1261769)</b>						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 1261770)</b>						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
<b>Organic / Inorganic Carbon (QCLot: 1261766)</b>						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
<b>Total Sulfides (QCLot: 1258733)</b>						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
<b>Total Metals (QCLot: 1256643)</b>						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (QCLot: 1256643) - continued</b>						
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	---
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	---
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	---
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	---
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	---
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	---
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	---
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (QCLot: 1256643) - continued</b>						
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	---
<b>Total Metals (QCLot: 1258532)</b>						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
<b>Dissolved Metals (QCLot: 1257126)</b>						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	---
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	---
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	---
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	---
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Dissolved Metals (QCLot: 1257126) - continued</b>						
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
<b>Dissolved Metals (QCLot: 1259477)</b>						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
<b>Aggregate Organics (QCLot: 1259564)</b>						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
<b>Aggregate Organics (QCLot: 1264687)</b>						
Chemical oxygen demand [COD]	----	E559-L	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: Water

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
<b>Physical Tests (QCLot: 1256289)</b>									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	111	85.0	115	----
<b>Physical Tests (QCLot: 1260076)</b>									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	111	85.0	115	----
<b>Physical Tests (QCLot: 1260085)</b>									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	101	85.0	115	----
<b>Anions and Nutrients (QCLot: 1256281)</b>									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
<b>Anions and Nutrients (QCLot: 1256282)</b>									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
<b>Anions and Nutrients (QCLot: 1256283)</b>									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
<b>Anions and Nutrients (QCLot: 1256284)</b>									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.0	90.0	110	----
<b>Anions and Nutrients (QCLot: 1256285)</b>									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	102	90.0	110	----
<b>Anions and Nutrients (QCLot: 1256286)</b>									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	107	85.0	115	----
<b>Anions and Nutrients (QCLot: 1261765)</b>									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	90.4	75.0	125	----
<b>Anions and Nutrients (QCLot: 1261768)</b>									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	93.9	80.0	120	----
<b>Anions and Nutrients (QCLot: 1261769)</b>									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	94.7	85.0	115	----
<b>Anions and Nutrients (QCLot: 1261770)</b>									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	99.8	75.0	125	----
<b>Organic / Inorganic Carbon (QCLot: 1261766)</b>									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	102	80.0	120	----
<b>Total Sulfides (QCLot: 1258733)</b>									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	102	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Total Metals (QCLot: 1256643)</b>									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	110	80.0	120	---
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	105	80.0	120	---
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	111	80.0	120	---
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	108	80.0	120	---
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	93.9	80.0	120	---
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	99.3	80.0	120	---
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	96.5	80.0	120	---
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	106	80.0	120	---
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	97.0	80.0	120	---
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	97.3	80.0	120	---
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	108	80.0	120	---
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	---
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	106	80.0	120	---
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	103	80.0	120	---
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	100	80.0	120	---
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	95.8	80.0	120	---
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	114	80.0	120	---
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	107	80.0	120	---
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	99.6	80.0	120	---
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	106	80.0	120	---
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	110	80.0	120	---
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	109	80.0	120	---
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	107	80.0	120	---
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	104	80.0	120	---
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	109	80.0	120	---
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	92.9	80.0	120	---
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	112	80.0	120	---
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	103	80.0	120	---
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	96.3	80.0	120	---
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	100	80.0	120	---
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	102	80.0	120	---
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	94.4	80.0	120	---
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	98.0	80.0	120	---
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	105	80.0	120	---
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	96.4	80.0	120	---



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Total Metals (QCLot: 1256643) - continued</b>									
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	101	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	108	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	107	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	98.2	80.0	120	----
<b>Total Metals (QCLot: 1258532)</b>									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	112	80.0	120	----
<b>Dissolved Metals (QCLot: 1257126)</b>									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	99.5	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	98.5	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	93.2	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	102	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	93.8	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	99.8	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	99.0	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	97.5	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	102	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	99.1	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	99.2	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	99.4	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	100	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	94.9	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	103	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	100.0	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	99.3	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	100	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	101	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	98.2	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	101	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	100	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	90.8	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	99.3	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	100	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1257126) - continued</b>									
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	92.6	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	95.5	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	105	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	94.2	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.4	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	96.0	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	94.5	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	98.0	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	97.7	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	95.7	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	111	80.0	120	----
<b>Aggregate Organics (QCLot: 1259564)</b>									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	96.2	85.0	115	----
<b>Aggregate Organics (QCLot: 1264687)</b>									
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	100 mg/L	107	85.0	115	----



## 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: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Anions and Nutrients (QCLot: 1256281)</b>										
VA23C8514-002	SQU US 1	Chloride	16887-00-6	E235.Cl	114 mg/L	100 mg/L	114	75.0	125	----
<b>Anions and Nutrients (QCLot: 1256282)</b>										
VA23C8514-002	SQU US 1	Sulfate (as SO4)	14808-79-8	E235.SO4	113 mg/L	100 mg/L	113	75.0	125	----
<b>Anions and Nutrients (QCLot: 1256283)</b>										
VA23C8514-002	SQU US 1	Nitrate (as N)	14797-55-8	E235.NO3-L	2.84 mg/L	2.5 mg/L	114	75.0	125	----
<b>Anions and Nutrients (QCLot: 1256284)</b>										
VA23C8514-002	SQU US 1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.547 mg/L	0.5 mg/L	109	75.0	125	----
<b>Anions and Nutrients (QCLot: 1256285)</b>										
VA23C8514-002	SQU US 1	Fluoride	16984-48-8	E235.F	1.14 mg/L	1 mg/L	114	75.0	125	----
<b>Anions and Nutrients (QCLot: 1256286)</b>										
VA23C8514-002	SQU US 1	Bromide	24959-67-9	E235.Br-L	0.606 mg/L	0.5 mg/L	121	75.0	125	----
<b>Anions and Nutrients (QCLot: 1261765)</b>										
VA23C8514-001	SQU DS 1	Kjeldahl nitrogen, total [TKN]	----	E318	2.24 mg/L	2.5 mg/L	89.4	70.0	130	----
<b>Anions and Nutrients (QCLot: 1261768)</b>										
VA23C8514-002	SQU US 1	Phosphorus, total	7723-14-0	E372-U	0.0471 mg/L	0.05 mg/L	94.2	70.0	130	----
<b>Anions and Nutrients (QCLot: 1261769)</b>										
VA23C8732-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0932 mg/L	0.1 mg/L	93.2	75.0	125	----
<b>Anions and Nutrients (QCLot: 1261770)</b>										
VA23C8514-002	SQU US 1	Nitrogen, total	7727-37-9	E366	0.379 mg/L	0.4 mg/L	94.8	70.0	130	----
<b>Organic / Inorganic Carbon (QCLot: 1261766)</b>										
VA23C8514-001	SQU DS 1	Carbon, dissolved organic [DOC]	----	E358-L	5.20 mg/L	5 mg/L	104	70.0	130	----
<b>Total Sulfides (QCLot: 1258733)</b>										
CG2316868-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.208 mg/L	0.2 mg/L	104	75.0	125	----
<b>Total Metals (QCLot: 1256643)</b>										
VA23C8514-002	SQU US 1	Aluminum, total	7429-90-5	E420	0.188 mg/L	0.2 mg/L	94.1	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0184 mg/L	0.02 mg/L	92.1	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		Barium, total	7440-39-3	E420	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Total Metals (QCLot: 1256643) - continued</b>										
VA23C8514-002	SQU US 1	Beryllium, total	7440-41-7	E420	0.0367 mg/L	0.04 mg/L	91.8	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00915 mg/L	0.01 mg/L	91.5	70.0	130	----
		Boron, total	7440-42-8	E420	0.099 mg/L	0.1 mg/L	98.9	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00395 mg/L	0.004 mg/L	98.8	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00914 mg/L	0.01 mg/L	91.4	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----
		Copper, total	7440-50-8	E420	0.0192 mg/L	0.02 mg/L	96.1	70.0	130	----
		Iron, total	7439-89-6	E420	1.90 mg/L	2 mg/L	94.9	70.0	130	----
		Lead, total	7439-92-1	E420	0.0190 mg/L	0.02 mg/L	94.8	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0936 mg/L	0.1 mg/L	93.6	70.0	130	----
		Magnesium, total	7439-95-4	E420	0.961 mg/L	1 mg/L	96.1	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0190 mg/L	0.02 mg/L	94.8	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0185 mg/L	0.02 mg/L	92.5	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0396 mg/L	0.04 mg/L	98.9	70.0	130	----
		Phosphorus, total	7723-14-0	E420	8.86 mg/L	10 mg/L	88.6	70.0	130	----
		Potassium, total	7440-09-7	E420	3.90 mg/L	4 mg/L	97.5	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0196 mg/L	0.02 mg/L	97.9	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0384 mg/L	0.04 mg/L	95.9	70.0	130	----
		Silicon, total	7440-21-3	E420	9.50 mg/L	10 mg/L	95.0	70.0	130	----
		Silver, total	7440-22-4	E420	0.00367 mg/L	0.004 mg/L	91.7	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	18.3 mg/L	20 mg/L	91.4	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0375 mg/L	0.04 mg/L	93.8	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00366 mg/L	0.004 mg/L	91.6	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Tin, total	7440-31-5	E420	0.0183 mg/L	0.02 mg/L	91.6	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0182 mg/L	0.02 mg/L	90.8	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00372 mg/L	0.004 mg/L	93.0	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0977 mg/L	0.1 mg/L	97.7	70.0	130	----
		Zinc, total	7440-66-6	E420	0.389 mg/L	0.4 mg/L	97.2	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0375 mg/L	0.04 mg/L	93.9	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Total Metals (QCLot: 1258532)</b>										
KS2304555-001	Anonymous	Mercury, total	7439-97-6	E508	0.000112 mg/L	0.0001 mg/L	112	70.0	130	----
<b>Dissolved Metals (QCLot: 1257126)</b>										
VA23C8518-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.195 mg/L	0.2 mg/L	97.6	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0183 mg/L	0.02 mg/L	91.5	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0195 mg/L	0.02 mg/L	97.5	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0193 mg/L	0.02 mg/L	96.5	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0360 mg/L	0.04 mg/L	90.0	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00910 mg/L	0.01 mg/L	91.0	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.096 mg/L	0.1 mg/L	95.9	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00392 mg/L	0.004 mg/L	98.0	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00924 mg/L	0.01 mg/L	92.4	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0399 mg/L	0.04 mg/L	99.8	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.82 mg/L	2 mg/L	91.0	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0911 mg/L	0.1 mg/L	91.1	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0197 mg/L	0.02 mg/L	98.7	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0391 mg/L	0.04 mg/L	97.8	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	9.80 mg/L	10 mg/L	98.0	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.92 mg/L	4 mg/L	98.1	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0198 mg/L	0.02 mg/L	99.2	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0383 mg/L	0.04 mg/L	95.8	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	8.97 mg/L	10 mg/L	89.7	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00363 mg/L	0.004 mg/L	90.8	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	19.1 mg/L	20 mg/L	95.4	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00372 mg/L	0.004 mg/L	93.0	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0197 mg/L	0.02 mg/L	98.3	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0182 mg/L	0.02 mg/L	91.2	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1257126) - continued</b>										
VA23C8518-002	Anonymous	Titanium, dissolved	7440-32-6	E421	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0183 mg/L	0.02 mg/L	91.7	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00387 mg/L	0.004 mg/L	96.6	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.402 mg/L	0.4 mg/L	100	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0373 mg/L	0.04 mg/L	93.3	70.0	130	----
<b>Dissolved Metals (QCLot: 1259477)</b>										
VA23C8514-002	SQU US 1	Mercury, dissolved	7439-97-6	E509	0.000104 mg/L	0.0001 mg/L	104	70.0	130	----
<b>Aggregate Organics (QCLot: 1259564)</b>										
VA23C8626-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0211 mg/L	0.02 mg/L	105	75.0	125	----
<b>Aggregate Organics (QCLot: 1264687)</b>										
VA23C8624-009	Anonymous	Chemical oxygen demand [COD]	----	E559-L	107 mg/L	100 mg/L	107	75.0	125	----





## Receiving Environment Field Notes and Logs

**EAGLE MOUNTAIN – WOODFIBRE GAS PIPELINE PROJECT**



**DAILY FIELD REPORT (DFR) - QUALIFIED PROFESSIONAL (QP) – ENVIRONMENTAL**

DAILY GENERAL INFORMATION				
Date	30-Oct-23	Version	Draft <input checked="" type="checkbox"/>	Final <input type="checkbox"/>
Component(s)	Tunnel <input checked="" type="checkbox"/>	Pipeline <input type="checkbox"/>	Facilities <input type="checkbox"/>	Other <input type="checkbox"/>
Weather Condition	Clear	Temperature Range (°C)	Minimum	Maximum
			0	11
Ground Conditions	Frost	Wind (Beaufort Scale)	Minimum	Maximum
			0 - Calm	1 - Light Air
Triton QP(s)	Karishma Shah (BIT), Sam Blanchard (BIT)			
Additional Personnel	Werner Beukes (E.I.)			
Additional Comments	-			

QUALIFIED PROFESSIONAL SERVICE SUMMARY		
<i>QP Scope(s)</i>		
<i>Primary Scope</i>	<i>Additional Scope</i>	<i>Additional Scope</i>
Water Quality	Choose an item.	Choose an item.
<i>Description if 'Other'</i>		
<i>Requested Location Description</i>		
<ul style="list-style-type: none"> <li>BC Rail Site</li> <li>Along the Squamish River, at the WDA monitoring locations (SQU US1 and SQU DS1)</li> </ul>		
<i>Notable Construction Activities</i>		N/A <input type="checkbox"/>
<u>Current</u>		
<ul style="list-style-type: none"> <li>FKM setting up tunneling bore. Our works not within FKM work area.</li> </ul>		
<u>Upcoming</u>		
<ul style="list-style-type: none"> <li>FKM to start tunneling and discharging from their water treatment plant.</li> </ul>		
<i>Results</i>		
<ul style="list-style-type: none"> <li>Collected baseline lab samples at both the upstream and downstream monitoring locations. These locations include:                             <ul style="list-style-type: none"> <li>SQU US1</li> <li>SQU DS1</li> </ul> </li> <li>Replaced buoy deployed at US1 with smaller buoy to deter entrapment and build up of debris.</li> </ul>		

QP Recommendation(s)		N/A <input type="checkbox"/>
<ul style="list-style-type: none"> <li>Follow-up to ensure good data collection from the sondes and data transmission from the telemetry units.</li> </ul>		
Incidental Feature Discovery or Changes		N/A <input checked="" type="checkbox"/>
<u>Temporary Field ID / Feature ID:</u> <u>Location(s):</u> <u>QP Follow-up Recommended?</u> Yes <input type="checkbox"/> No <input type="checkbox"/> <u>Observation(s):</u>		
Additional Deliverables		N/A <input checked="" type="checkbox"/>
<i>If applicable, choose all additional deliverables to be provided upon completion of the requested QP Scope. Applicable updates to the Project Web Map and Project Trackers (i.e., Master Stream Crossing Table, LRSMT) are expected and not described here. Water Quality Monitoring DFRs include Water Quality Summary Tables.</i>		
<i>Deliverable 1</i>	<i>Deliverable 2</i>	<i>Deliverable 3</i>
Choose an item.	Choose an item.	Choose an item.
Other <input type="checkbox"/>		

NOTABLE COLLABORATION AND COMMUNICATION SUMMARY		
QP – FortisBC		N/A <input type="checkbox"/>
<ul style="list-style-type: none"> <li>Met with FortisBC EI, Werner Beukes and dropped off YSI unit.</li> <li>Met FortisBC Security personnel on site and were informed that installation of cameras at both upstream and downstream sites should occur soon.</li> </ul>		
QP – Indigenous Monitors and Representatives		N/A <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li></li> </ul>		
Multi-disciplinary (e.g., meetings, kick-offs, audits, etc.)		N/A <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li></li> </ul>		
QP – General Construction Contractor		N/A <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li></li> </ul>		
Requested Construction Contractor Support for QP Services		N/A <input checked="" type="checkbox"/>
<u>Location(s):</u> <u>Support Type:</u> Choose an item. <u>Support Description:</u>		

REFERENCED PHOTOGRAPHS		N/A <input type="checkbox"/>
		
<p>Photo 1.  <u>Location:</u> Squamish River SQU US1  <u>View:</u> Upstream  <u>Caption:</u> Upstream view of buoy collecting debris. Buoy was replaced to mitigate this issue.</p>	<p>Photo 2.  <u>Location:</u> Squamish River SQU DS1  <u>View:</u> Upstream  <u>Caption:</u> Upstream view during WO sampling</p>	

AUTHENTICATION			
<i>Report Prepared By</i>	Karishma Shah		
<i>Report Reviewed?</i>	No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	
<i>Report Reviewer</i>	Miranda Lewis, PAg		
<i>Professional(s) of Record</i>	N/A <input type="checkbox"/>		
<ul style="list-style-type: none"> <li>Document authentication is conducted in accordance with the requirements of provincial regulations (as applicable), professional organizations to which our Professionals of Record belong, and Triton's Quality Management System.</li> <li>Document authentication is provided when/if recommendations are provided, beyond those that recommend adherence to Project commitments outlined in Project compliance documents</li> </ul>			
<i>Section(s)</i>	<i>Name</i>	<i>Designation</i>	<i>Designation #</i>
All	Miranda Lewis	PAg	3144
Choose an item.			
<i>Limitations</i>			
<ul style="list-style-type: none"> <li>We have attempted to identify and consider facts and documents relevant to the scope of work, accurate as of the time period during which we conducted this scope of work. However, the results, our opinions, or recommendations may change if new information becomes available or if information we have relied on is altered.</li> </ul>			

## EAGLE MOUNTAIN – WOODFIBRE GAS PIPELINE PROJECT

### DAILY FIELD REPORT (DFR) - QUALIFIED PROFESSIONAL (QP) – ENVIRONMENTAL

#### DAILY GENERAL INFORMATION

Date	6-Nov-23	Version	Draft <input type="checkbox"/>	Final <input checked="" type="checkbox"/>
Component(s)	Tunnel <input checked="" type="checkbox"/>	Pipeline <input type="checkbox"/>	Facilities <input type="checkbox"/>	Other <input type="checkbox"/>
Weather Condition	Light Rain	Temperature Range (°C)	Minimum	Maximum
			7	10
Ground Conditions	Wet	Wind (Beaufort Scale)	Minimum	Maximum
			0 - Calm	1 - Light Air
Triton QP(s)	Karishma Shah (BIT), Sam Blanchard (BIT)			
Additional Personnel	Werner Beukes (E.I.) Danielle Samels (FortisBC Environmental Specialist)			
Additional Comments	-			

#### QUALIFIED PROFESSIONAL SERVICE SUMMARY

QP Scope(s)		
Primary Scope	Additional Scope	Additional Scope
Water Quality	Choose an item.	Choose an item.
Description if 'Other'		
Requested Location Description		
<ul style="list-style-type: none"> <li>BC Rail Site</li> <li>Along the Squamish River, at the WDA monitoring locations (SQU US1 and SQU DS1)</li> </ul>		
Notable Construction Activities		N/A <input type="checkbox"/>
<u>Current</u>		
<ul style="list-style-type: none"> <li>FKM setting up tunneling bore. Triton works not within FKM work area.</li> </ul>		
<u>Upcoming</u>		
<ul style="list-style-type: none"> <li>FKM to start tunneling and discharging from their water treatment plant.</li> </ul>		
Results		
<ul style="list-style-type: none"> <li>Collected baseline lab samples at both the upstream and downstream monitoring locations. These locations include:                             <ul style="list-style-type: none"> <li>SQU US1</li> <li>SQU DS1</li> </ul> </li> <li>Replaced the battery in one telemetry unit at SQU US1.</li> </ul>		

<ul style="list-style-type: none"> <li>Relocated the solar panel and accompanying telemetry units at SQU US1 to an area with more direct sunlight (logger remains in the same location).</li> </ul>		
<i>QP Recommendation(s)</i>	N/A <input type="checkbox"/>	
<ul style="list-style-type: none"> <li>Follow-up to ensure the SQU US1 telemetry unit battery life is not decreasing.</li> </ul>		
<i>Incidental Feature Discovery or Changes</i>	N/A <input checked="" type="checkbox"/>	
<u>Temporary Field ID / Feature ID:</u> <u>Location(s):</u> <u>QP Follow-up Recommended?</u> Yes <input type="checkbox"/> No <input type="checkbox"/> <u>Observation(s):</u>		
<i>Additional Deliverables</i>	N/A <input checked="" type="checkbox"/>	
<i>If applicable, choose all additional deliverables to be provided upon completion of the requested QP Scope. Applicable updates to the Project Web Map and Project Trackers (i.e., Master Stream Crossing Table, LRSMT) are expected and not described here. Water Quality Monitoring DFRs include Water Quality Summary Tables.</i>		
<i>Deliverable 1</i>	<i>Deliverable 2</i>	<i>Deliverable 3</i>
Choose an item.	Choose an item.	Choose an item.
<i>Other</i> <input type="checkbox"/>		

NOTABLE COLLABORATION AND COMMUNICATION SUMMARY	
<i>QP – FortisBC</i>	N/A <input type="checkbox"/>
<ul style="list-style-type: none"> <li>Met with FortisBC Environmental Specialist, Danielle Samels, who accompanied the crew while collecting water samples at SQU US1 and SQU DS1.</li> </ul>	
<i>QP – Indigenous Monitors and Representatives</i>	N/A <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li></li> </ul>	
<i>Multi-disciplinary (e.g., meetings, kick-offs, audits, etc.)</i>	N/A <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li></li> </ul>	
<i>QP – General Construction Contractor</i>	N/A <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li></li> </ul>	
<i>Requested Construction Contractor Support for QP Services</i>	N/A <input checked="" type="checkbox"/>
<u>Location(s):</u> <u>Support Type:</u> Choose an item. <u>Support Description:</u>	



REFERENCED PHOTOGRAPHS

N/A



Photo 1.  
Location: Squamish River SQU DS1  
View: West  
Caption: View looking across Squamish River during WQ sampling. Increased flow and turbidity following recent rainfall.



Photo 2.  
Location: Squamish River SQU US1  
View: West  
Caption: View looking across Squamish River during WQ sampling. Increased flow and turbidity following recent rainfall.



Photo 3.  
Location: Squamish River SQU US1  
View: Northwest  
Caption: Solar panel setup moved to area with less vegetation for more direct sunlight.



AUTHENTICATION			
<i>Report Prepared By</i>	Sam Blanchard, BIT		
<i>Report Reviewed?</i>	No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	
<i>Report Reviewer</i>	Miranda Lewis, PAg		
<i>Professional(s) of Record</i>	N/A <input type="checkbox"/>		
<ul style="list-style-type: none"> <li>Document authentication is conducted in accordance with the requirements of provincial regulations (as applicable), professional organizations to which our Professionals of Record belong, and Triton's Quality Management System.</li> <li>Document authentication is provided when/if recommendations are provided, beyond those that recommend adherence to Project commitments outlined in Project compliance documents</li> </ul>			
<i>Section(s)</i>	<i>Name</i>	<i>Designation</i>	<i>Designation #</i>
<i>All</i>	<i>Miranda Lewis</i>	<i>PAg</i>	<i>3144</i>
Choose an item.			
<i>Limitations</i>			
<ul style="list-style-type: none"> <li>We have attempted to identify and consider facts and documents relevant to the scope of work, accurate as of the time period during which we conducted this scope of work. However, the results, our opinions, or recommendations may change if new information becomes available or if information we have relied on is altered.</li> </ul>			

## EAGLE MOUNTAIN – WOODFIBRE GAS PIPELINE PROJECT

### DAILY FIELD REPORT (DFR) - QUALIFIED PROFESSIONAL (QP) – ENVIRONMENTAL

#### DAILY GENERAL INFORMATION



Date	14-Nov-23	Version	Draft <input type="checkbox"/>	Final <input type="checkbox"/>
Component(s)	Tunnel <input checked="" type="checkbox"/>	Pipeline <input type="checkbox"/>	Facilities <input type="checkbox"/>	Other <input type="checkbox"/>
Weather Condition	Sun-cloud Mixed	Temperature Range (°C)	Minimum	Maximum
			0	6
Ground Conditions	Damp	Wind (Beaufort Scale)	Minimum	Maximum
			0 - Calm	1 - Light Air
Triton QP(s)	Karishma Shah (BIT), Sam Blanchard (BIT), Courtney Kellock (R.P.Bio)			
Additional Personnel	Werner Beukes (E.I.)			
Additional Comments	-			

#### QUALIFIED PROFESSIONAL SERVICE SUMMARY

QP Scope(s)		
Primary Scope	Additional Scope	Additional Scope
Water Quality	Choose an item.	Choose an item.
Description if 'Other'		
Requested Location Description		
<ul style="list-style-type: none"> <li>BC Rail Site</li> <li>Along the Squamish River, at the WDA monitoring locations (SQU US1 and SQU DS1)</li> </ul>		
Notable Construction Activities		N/A <input type="checkbox"/>
<u>Current</u>		
<ul style="list-style-type: none"> <li>FKM setting up tunneling bore. Triton works not within FKM work area.</li> </ul>		
<u>Upcoming</u>		
<ul style="list-style-type: none"> <li>FKM to start tunneling and discharging from their water treatment plant.</li> </ul>		
Results		
<ul style="list-style-type: none"> <li>Collected baseline lab samples at both the upstream and downstream monitoring locations. These locations include:                             <ul style="list-style-type: none"> <li>SQU US1</li> <li>SQU DS1</li> </ul> </li> <li>Added DO sensor to US &amp; DS loggers.</li> <li>Calibrated US &amp; DS loggers for DO and ORP.</li> </ul>		

<ul style="list-style-type: none"> <li>Added protective housing around US &amp; DS loggers.</li> </ul>		
<i>QP Recommendation(s)</i>	N/A <input type="checkbox"/>	
<ul style="list-style-type: none"> <li>Follow-up to ensure loggers are reading DO and ORP correctly following calibrations.</li> </ul>		
<i>Incidental Feature Discovery or Changes</i>	N/A <input checked="" type="checkbox"/>	
<u>Temporary Field ID / Feature ID:</u> <u>Location(s):</u> <u>QP Follow-up Recommended?</u> Yes <input type="checkbox"/> No <input type="checkbox"/> <u>Observation(s):</u>		
<i>Additional Deliverables</i>	N/A <input checked="" type="checkbox"/>	
<i>If applicable, choose all additional deliverables to be provided upon completion of the requested QP Scope. Applicable updates to the Project Web Map and Project Trackers (i.e., Master Stream Crossing Table, LRSMT) are expected and not described here. Water Quality Monitoring DFRs include Water Quality Summary Tables.</i>		
<i>Deliverable 1</i>	<i>Deliverable 2</i>	<i>Deliverable 3</i>
Choose an item.	Choose an item.	Choose an item.
Other <input type="checkbox"/>		

NOTABLE COLLABORATION AND COMMUNICATION SUMMARY	
<i>QP – FortisBC</i>	N/A <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li></li> </ul>	
<i>QP – Indigenous Monitors and Representatives</i>	N/A <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li></li> </ul>	
<i>Multi-disciplinary (e.g., meetings, kick-offs, audits, etc.)</i>	N/A <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li></li> </ul>	
<i>QP – General Construction Contractor</i>	N/A <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li></li> </ul>	
<i>Requested Construction Contractor Support for QP Services</i>	N/A <input checked="" type="checkbox"/>
<u>Location(s):</u> <u>Support Type:</u> Choose an item. <u>Support Description:</u>	

REFERENCED PHOTOGRAPHS		N/A <input type="checkbox"/>
		
<p>Photo 1.  <u>Location:</u> Squamish River SQU DS1  <u>View:</u> West  <u>Caption:</u> View looking across Squamish River during WO sampling.</p>	<p>Photo 2.  <u>Location:</u> Squamish River SQU US1  <u>View:</u> West  <u>Caption:</u> View looking across Squamish River during WO sampling.</p>	

AUTHENTICATION			
<i>Report Prepared By</i>	Sam Blanchard, BIT		
<i>Report Reviewed?</i>	No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	
<i>Report Reviewer</i>	Miranda Lewis, PAG		
<i>Professional(s) of Record</i>	N/A <input checked="" type="checkbox"/>		
<ul style="list-style-type: none"> <li>Document authentication is conducted in accordance with the requirements of provincial regulations (as applicable), professional organizations to which our Professionals of Record belong, and Triton's Quality Management System.</li> <li>Document authentication is provided when/if recommendations are provided, beyond those that recommend adherence to Project commitments outlined in Project compliance documents</li> </ul>			
<i>Section(s)</i>	<i>Name</i>	<i>Designation</i>	<i>Designation #</i>
Choose an item.			
<i>Limitations</i>			
<ul style="list-style-type: none"> <li>We have attempted to identify and consider facts and documents relevant to the scope of work, accurate as of the time period during which we conducted this scope of work. However, the results, our opinions, or recommendations may change if new information becomes available or if information we have relied on is altered.</li> </ul>			

## EAGLE MOUNTAIN – WOODFIBRE GAS PIPELINE PROJECT

### DAILY FIELD REPORT (DFR) - QUALIFIED PROFESSIONAL (QP) – ENVIRONMENTAL

#### DAILY GENERAL INFORMATION

Date	20-Nov-23	Version	Draft <input type="checkbox"/>	Final <input type="checkbox"/>
Component(s)	Tunnel <input checked="" type="checkbox"/>	Pipeline <input type="checkbox"/>	Facilities <input type="checkbox"/>	Other <input type="checkbox"/>
Weather Condition	Clear	Temperature Range (°C)	Minimum	Maximum
			0	8
Ground Conditions	Dry	Wind (Beaufort Scale)	Minimum	Maximum
			1 - Light Air	3 - Gentle Breeze
Triton QP(s)	Sam Blanchard (BIT), Aegean Chan (EIT)			
Additional Personnel	Werner Beukes (E.I.)			
Additional Comments	-			



#### QUALIFIED PROFESSIONAL SERVICE SUMMARY

QP Scope(s)		
Primary Scope	Additional Scope	Additional Scope
Water Quality	Choose an item.	Choose an item.
Description if 'Other'		
Requested Location Description		
<ul style="list-style-type: none"> <li>BC Rail Site</li> <li>Along the Squamish River, at the WDA monitoring locations (SQU US1 and SQU DS1)</li> </ul>		
Notable Construction Activities		N/A <input type="checkbox"/>
<u>Current</u>		
<ul style="list-style-type: none"> <li>FKM setting up tunneling bore. Triton works not within FKM work area.</li> </ul>		
<u>Upcoming</u>		
<ul style="list-style-type: none"> <li>FKM to start tunneling and discharging from their water treatment plant.</li> </ul>		
Results		
<ul style="list-style-type: none"> <li>Collected baseline lab samples at both the upstream and downstream monitoring locations. These locations include:                             <ul style="list-style-type: none"> <li>SQU US1</li> <li>SQU DS1</li> </ul> </li> </ul>		

<ul style="list-style-type: none"> <li>• Calibrated DS logger for pH. Readings were thrown off from previous week's ORP calibration (sensors on same cell).</li> <li>• Swapped battery in one telemetry unit at US setup as the battery level was decreasing.</li> </ul>		
<i>QP Recommendation(s)</i>		N/A <input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Follow-up to ensure DS logger is reading pH correctly following calibration.</li> </ul>		
<i>Incidental Feature Discovery or Changes</i>		N/A <input checked="" type="checkbox"/>
<u>Temporary Field ID / Feature ID:</u> <u>Location(s):</u> <u>QP Follow-up Recommended?</u> Yes <input type="checkbox"/> No <input type="checkbox"/> <u>Observation(s):</u>		
<i>Additional Deliverables</i>		N/A <input checked="" type="checkbox"/>
<i>If applicable, choose all additional deliverables to be provided upon completion of the requested QP Scope. Applicable updates to the Project Web Map and Project Trackers (i.e., Master Stream Crossing Table, LRSMT) are expected and not described here. Water Quality Monitoring DFRs include Water Quality Summary Tables.</i>		
<i>Deliverable 1</i>	<i>Deliverable 2</i>	<i>Deliverable 3</i>
Choose an item.	Choose an item.	Choose an item.
<i>Other</i> <input type="checkbox"/>		

NOTABLE COLLABORATION AND COMMUNICATION SUMMARY		
<i>QP – FortisBC</i>		N/A <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>•</li> </ul>		
<i>QP – Indigenous Monitors and Representatives</i>		N/A <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>•</li> </ul>		
<i>Multi-disciplinary (e.g., meetings, kick-offs, audits, etc.)</i>		N/A <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>•</li> </ul>		
<i>QP – General Construction Contractor</i>		N/A <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>•</li> </ul>		
<i>Requested Construction Contractor Support for QP Services</i>		N/A <input checked="" type="checkbox"/>
<u>Location(s):</u> <u>Support Type:</u> Choose an item. <u>Support Description:</u>		



REFERENCED PHOTOGRAPHS		N/A <input type="checkbox"/>
		
<p>Photo 1.  <u>Location:</u> Squamish River SQU DS1  <u>View:</u> West  <u>Caption:</u> View looking across Squamish River during WQ sampling.</p>	<p>Photo 2.  <u>Location:</u> Squamish River SQU US1  <u>View:</u> West  <u>Caption:</u> View looking across Squamish River during WQ sampling.</p>	

AUTHENTICATION			
<i>Report Prepared By</i>	Sam Blanchard, BIT		
<i>Report Reviewed?</i>	No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	
<i>Report Reviewer</i>	Miranda Lewis, PAg		
<i>Professional(s) of Record</i>	N/A <input checked="" type="checkbox"/>		
<ul style="list-style-type: none"> <li>Document authentication is conducted in accordance with the requirements of provincial regulations (as applicable), professional organizations to which our Professionals of Record belong, and Triton's Quality Management System.</li> <li>Document authentication is provided when/if recommendations are provided, beyond those that recommend adherence to Project commitments outlined in Project compliance documents</li> </ul>			
<i>Section(s)</i>	<i>Name</i>	<i>Designation</i>	<i>Designation #</i>
Choose an item.			
<i>Limitations</i>			
<ul style="list-style-type: none"> <li>We have attempted to identify and consider facts and documents relevant to the scope of work, accurate as of the time period during which we conducted this scope of work. However, the results, our opinions, or recommendations may change if new information becomes available or if information we have relied on is altered.</li> </ul>			

**EAGLE MOUNTAIN – WOODFIBRE GAS PIPELINE PROJECT**  
**DAILY FIELD REPORT (DFR) - QUALIFIED PROFESSIONAL (QP) – ENVIRONMENTAL**

**DAILY GENERAL INFORMATION**

Date	27-Nov-23	Version	Draft <input type="checkbox"/>	Final <input type="checkbox"/>
Component(s)	Tunnel <input checked="" type="checkbox"/>	Pipeline <input type="checkbox"/>	Facilities <input type="checkbox"/>	Other <input type="checkbox"/>
Weather Condition	Clear	Temperature Range (°C)	Minimum	Maximum
			0	11
Ground Conditions	Dry	Wind (Beaufort Scale)	Minimum	Maximum
			2 - Light Breeze	2 - Light Breeze
Triton QP(s)	Sam Blanchard (BIT), Aegean Chan (EIT)			
Additional Personnel	Werner Beukes (E.I.), Daniel Samels (Fortis Environmental Specialist), Fortis Security			
Additional Comments	<ul style="list-style-type: none"> <li>• Upon arrival, the crew noticed the telemetry unit setup at SQU DS1 had been tampered with.</li> <li>• The solar panel and one of two telemetry units had been stolen (the unit that connects to the solar panel and to the remaining unit). The cable connecting the solar panel to the stolen had also been stolen.</li> <li>• The remaining unit was left on the ground. The lock on the cover had been cut and the battery inside the unit had been removed/stolen. The cable that connected the two units together had been cut.</li> <li>• The logger stopped sending data between 03:10 – 03:20 on November 27<sup>th</sup>, 2023, suggesting that the vandalism/theft occurred within or around this timeframe.</li> <li>• The logger in the water and associated cable that was still connected to the remaining telemetry unit had not been tampered with.</li> <li>• The remaining telemetry unit was brought back to the Vancouver Warehouse.</li> <li>• The end of the cable connected to the logger was coiled up and hidden higher up in nearby tree branches.</li> <li>• The US logger setup had not been tampered with.</li> </ul>			

**QUALIFIED PROFESSIONAL SERVICE SUMMARY**



QP Scope(s)		
Primary Scope	Additional Scope	Additional Scope
Water Quality	Choose an item.	Choose an item.
Description if 'Other'		



Requested Location Description		
<ul style="list-style-type: none"> <li>• BC Rail Site</li> <li>• Along the Squamish River, at the WDA monitoring locations (SQU US1 and SQU DS1)</li> </ul>		
Notable Construction Activities		N/A <input type="checkbox"/>
<u>Current</u> <ul style="list-style-type: none"> <li>• FKM setting up tunneling bore. Triton works not within FKM work area.</li> </ul> <u>Upcoming</u> <ul style="list-style-type: none"> <li>• FKM to start tunneling and discharging from their water treatment plant.</li> </ul>		
Results		
<ul style="list-style-type: none"> <li>• Collected baseline lab samples at both the upstream and downstream monitoring locations. These locations include: <ul style="list-style-type: none"> <li>○ SQU US1</li> <li>○ SQU DS1</li> </ul> </li> </ul>		
QP Recommendation(s)		N/A <input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Following vandalism/theft of DS logger setup, upgraded security around logger setups or relocating telemetry units/solar panels to a less accessible location (e.g. higher up in trees) should be discussed.</li> </ul>		
Incidental Feature Discovery or Changes		N/A <input checked="" type="checkbox"/>
<u>Temporary Field ID / Feature ID:</u> <u>Location(s):</u> <u>QP Follow-up Recommended?</u> Yes <input type="checkbox"/> No <input type="checkbox"/> <u>Observation(s):</u>		
Additional Deliverables		N/A <input checked="" type="checkbox"/>
<i>If applicable, choose all additional deliverables to be provided upon completion of the requested QP Scope. Applicable updates to the Project Web Map and Project Trackers (i.e., Master Stream Crossing Table, LRSMT) are expected and not described here. Water Quality Monitoring DFRs include Water Quality Summary Tables.</i>		
<i>Deliverable 1</i>	<i>Deliverable 2</i>	<i>Deliverable 3</i>
Choose an item.	Choose an item.	Choose an item.
<i>Other</i> <input type="checkbox"/>		

NOTABLE COLLABORATION AND COMMUNICATION SUMMARY		
QP – FortisBC		N/A <input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Notified Fortis E.I. of theft of one telemetry unit and solar panel at SQU DS1 between 03:10 and 03:20 on November 27<sup>th</sup>, 2023 (time when logger stopped sending data).</li> <li>• Fortis E.I. notified Fortis Security who filed a police report with the RCMP.</li> <li>• Met with Environmental Specialist Daniel Samels at SQU DS1 to discuss the theft.</li> <li>• Met with Fortis Security at SQU DS1 to discuss the theft.</li> </ul>		

•	QP – Indigenous Monitors and Representatives	N/A ☒
•	Multi-disciplinary (e.g., meetings, kick-offs, audits, etc.)	N/A ☒
•	QP – General Construction Contractor	N/A ☒
•	Requested Construction Contractor Support for QP Services	N/A ☒
<u>Location(s):</u> <u>Support Type:</u> Choose an item. <u>Support Description:</u>		

REFERENCED PHOTOGRAPHS		N/A ☐
		
<p>Photo 1.  <u>Location:</u> Squamish River SQU DS1  <u>View:</u> West  <u>Caption:</u> View looking across Squamish River during WQ sampling.</p>	<p>Photo 2.  <u>Location:</u> Squamish River SQU US1  <u>View:</u> West  <u>Caption:</u> View looking across Squamish River during WQ sampling.</p>	



REFERENCED PHOTOGRAPHS

N/A



Photo 3.  
Location: Squamish River SQU DS1  
View: West  
Caption: View from upper trail of vandalized/stolen equipment.



Photo 4.  
Location: Squamish River SQU DS1  
View: Northwest  
Caption: Solar panel and one telemetry unit stolen. Remaining telemetry unit on ground.



Photo 5.  
Location: Squamish River SQU DS1  
View: Northwest  
Caption: Cable cut between stolen unit and remaining unit.



Photo 6.  
Location: Squamish River SQU US1  
View: Northwest  
Caption: US logger/solar panel setup not tampered with.



REFERENCED PHOTOGRAPHS

N/A ☐



Photo 7.  
Location: Squamish River SQU DS1  
View: West  
Caption: DS logger not tampered with.



Photo 8.  
Location: Squamish River SQU DS1  
View: West  
Caption: Lock cut on remaining telemetry unit cover.



Photo 9.  
Location: Squamish River SQU DS1  
View: Northwest  
Caption: Battery stolen from within remaining telemetry unit.



Photo 10.  
Location: Squamish River SQU DS1  
View: North  
Caption: Cut lock on remaining telemetry unit.

AUTHENTICATION			
<i>Report Prepared By</i>	Sam Blanchard, BIT		
<i>Report Reviewed?</i>	No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	
<i>Report Reviewer</i>	Miranda Lewis, PAg		
<i>Professional(s) of Record</i>	N/A <input checked="" type="checkbox"/>		
<ul style="list-style-type: none"> <li>Document authentication is conducted in accordance with the requirements of provincial regulations (as applicable), professional organizations to which our Professionals of Record belong, and Triton's Quality Management System.</li> <li>Document authentication is provided when/if recommendations are provided, beyond those that recommend adherence to Project commitments outlined in Project compliance documents</li> </ul>			
<i>Section(s)</i>	<i>Name</i>	<i>Designation</i>	<i>Designation #</i>
Choose an item.			
<i>Limitations</i>			
<ul style="list-style-type: none"> <li>We have attempted to identify and consider facts and documents relevant to the scope of work, accurate as of the time period during which we conducted this scope of work. However, the results, our opinions, or recommendations may change if new information becomes available or if information we have relied on is altered.</li> </ul>			

**EAGLE MOUNTAIN – WOODFIBRE GAS PIPELINE PROJECT**

**DAILY FIELD REPORT (DFR) - QUALIFIED PROFESSIONAL (QP) – ENVIRONMENTAL**

DAILY GENERAL INFORMATION				
Date	29-Nov-23	Version	Draft <input type="checkbox"/>	Final <input checked="" type="checkbox"/>
Component(s)	Tunnel <input checked="" type="checkbox"/>	Pipeline <input type="checkbox"/>	Facilities <input type="checkbox"/>	Other <input type="checkbox"/>
Weather Condition	Clear	Temperature Range (°C)	Minimum	Maximum
			-3	7
Ground Conditions	Dry	Wind (Beaufort Scale)	Minimum	Maximum
			1 - Light Air	2 - Light Breeze
Triton QP(s)	Sam Blanchard (BIT), Melissa Hebert (R.P.Bio)			
Additional Personnel	Werner Beukes (E.I.), Fortis Security			
Additional Comments	<ul style="list-style-type: none"> <li>Triton QP received a phone call from Fortis E.I. on November 28<sup>th</sup> at 17:02, notifying the QP that the solar panel at SQU US1 had been stolen. Fortis E.I. was notified by Fortis Security.</li> <li>Fortis E.I. sent QP a photo from the trail camera at SQU US1 showing the solar panel still in place at 15:52 on November 28<sup>th</sup>, meaning the solar panel had been stolen between 15:52 and just before 17:00, when security became aware of the theft.</li> <li>Triton crew went to SQU US1 the morning of November 29<sup>th</sup> to assess what had been stolen. The solar panel and metal support bracket had been stolen (Photo 1). The cable between the solar panel and battery unit had been cut (Photo 2).</li> <li>The telemetry unit and battery unit were still in place and untampered with (Photo 3). The locks on the telemetry and battery unit were still intact (Photo 4). The loggers in the water at SQU US1 and SQU DS1 were still in place (Photos 5 &amp; 6).</li> <li>Triton crew removed the battery and telemetry unit at SQU US1 to prevent further theft and brought them back to the Vancouver warehouse.</li> </ul>			



QUALIFIED PROFESSIONAL SERVICE SUMMARY		
QP Scope(s)		
Primary Scope	Additional Scope	Additional Scope
Other	Other	Choose an item.
Assess theft of stolen equipment/remove remaining equipment at SQU US1	Connect to US/DS loggers to begin logging/storing data.	

Requested Location Description		
<ul style="list-style-type: none"> <li>BC Rail Site</li> <li>Along the Squamish River, at the WDA monitoring locations (SQU US1 and SQU DS1)</li> </ul>		
Notable Construction Activities	N/A <input type="checkbox"/>	
<u>Current</u> <ul style="list-style-type: none"> <li>FKM setting up tunneling bore. Triton works not within FKM work area.</li> </ul> <u>Upcoming</u> <ul style="list-style-type: none"> <li>FKM to start tunneling and discharging from their water treatment plant.</li> </ul>		
Results		
<ul style="list-style-type: none"> <li>Set US and DS loggers to begin recording/storing data to allow for weekly field data downloads now that the telemetry setups are no longer in place.</li> </ul>		
QP Recommendation(s)	N/A <input type="checkbox"/>	
<ul style="list-style-type: none"> <li>Following repeated theft of telemetry unit setups, discussions should take place regarding increased security of future setups or altering the equipment used at each setup (e.g. marine batteries instead of solar panels).</li> </ul>		
Incidental Feature Discovery or Changes	N/A <input checked="" type="checkbox"/>	
<u>Temporary Field ID / Feature ID:</u> <u>Location(s):</u> <u>QP Follow-up Recommended?</u> Yes <input type="checkbox"/> No <input type="checkbox"/> <u>Observation(s):</u>		
Additional Deliverables	N/A <input checked="" type="checkbox"/>	
<i>If applicable, choose all additional deliverables to be provided upon completion of the requested QP Scope. Applicable updates to the Project Web Map and Project Trackers (i.e., Master Stream Crossing Table, LRSMT) are expected and not described here. Water Quality Monitoring DFRs include Water Quality Summary Tables.</i>		
<i>Deliverable 1</i>	<i>Deliverable 2</i>	<i>Deliverable 3</i>
Choose an item.	Choose an item.	Choose an item.
<i>Other</i> <input type="checkbox"/>		

NOTABLE COLLABORATION AND COMMUNICATION SUMMARY	
QP – FortisBC	N/A <input type="checkbox"/>
<ul style="list-style-type: none"> <li>Triton QP received a phone call from Fortis E.I. on November 28<sup>th</sup> at 17:02, notifying the QP that the solar panel at SQU US1 had been stolen. Fortis E.I. was notified by Fortis Security.</li> <li>Fortis E.I. sent QP a photo from the trail camera at SQU US1 showing the solar panel still in place at 15:52 on November 28<sup>th</sup>.</li> </ul>	
QP – Indigenous Monitors and Representatives	N/A <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li></li> </ul>	



Multi-disciplinary (e.g., meetings, kick-offs, audits, etc.)	N/A ☒
•	
QP – General Construction Contractor	N/A ☒
•	
Requested Construction Contractor Support for QP Services	N/A ☒
<u>Location(s):</u> <u>Support Type:</u> Choose an item. <u>Support Description:</u>	

REFERENCED PHOTOGRAPHS	N/A ☐
	
<p>Photo 1.  <u>Location:</u> Squamish River SQU US1  <u>View:</u> North  <u>Caption:</u> Solar panel and metal support stolen. Cable securing metal support to tree was cut.</p>	<p>Photo 2.  <u>Location:</u> Squamish River SQU US1  <u>View:</u> North  <u>Caption:</u> Cut electrical cable between stolen solar panel and battery unit.</p>



REFERENCED PHOTOGRAPHS

N/A



Photo 3.  
Location: Squamish River SQU US1  
View: Northwest  
Caption: Telemetry and battery unit still in place and untampered with after theft of solar panel (cables securing units to tree were removed by Triton crew prior to the picture being taken).



Photo 4.  
Location: Squamish River SQU US1  
View: Northwest  
Caption: Locks on telemetry and battery unit still intact.



Photo 5.  
Location: Squamish River SQU US1  
View: West  
Caption: US logger still in place.



Photo 6.  
Location: Squamish River SQU DS1  
View: West  
Caption: DS logger still in place.

AUTHENTICATION			
<i>Report Prepared By</i>	Sam Blanchard, BIT		
<i>Report Reviewed?</i>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	
<i>Report Reviewer</i>	Miranda Lewis, PAg		
<i>Professional(s) of Record</i>	N/A <input checked="" type="checkbox"/>		
<ul style="list-style-type: none"> <li>Document authentication is conducted in accordance with the requirements of provincial regulations (as applicable), professional organizations to which our Professionals of Record belong, and Triton's Quality Management System.</li> <li>Document authentication is provided when/if recommendations are provided, beyond those that recommend adherence to Project commitments outlined in Project compliance documents</li> </ul>			
<i>Section(s)</i>	<i>Name</i>	<i>Designation</i>	<i>Designation #</i>
Choose an item.			
<i>Limitations</i>			
<ul style="list-style-type: none"> <li>We have attempted to identify and consider facts and documents relevant to the scope of work, accurate as of the time period during which we conducted this scope of work. However, the results, our opinions, or recommendations may change if new information becomes available or if information we have relied on is altered.</li> </ul>			

# Calibration Report

Instrument	Aqua TROLL 600
Serial Number	463863
Created	2023-11-14

Sensor	pH/ORP
Serial Number	704245
Last Calibrated	2023-11-14

---

Calibration Details

Calibration Point 1

pH of Buffer	4.00 pH
pH mV	-53.6 mV
Temperature	20.21 °C

Pre Measurement

pH	3.98 pH
pH mV	-53.8 mV

Post Measurement

pH	4.00 pH
pH mV	-52.7 mV

Calibration Point 2

pH of Buffer	7.02 pH
pH mV	-219.5 mV
Temperature	20.46 °C

Pre Measurement

pH	6.84 pH
pH mV	-219.6 mV

Post Measurement

pH	7.02 pH
pH mV	-216.1 mV

Calibration Point 3

pH of Buffer	10.05 pH
pH mV	-388.4 mV
Temperature	20.18 °C

Pre Measurement

pH	9.92 pH
pH mV	-387.9 mV

Post Measurement

pH	10.05 pH
pH mV	-382.2 mV

Slope and Offset 1

Slope	-54.93 mV/pH
Offset	-218.4 mV

Slope and Offset 2

Slope	-55.77 mV/pH
Offset	-218.3 mV

ORP

---

ORP Solution	Zobell's
Offset	143.4 mV
Temperature	10.09 °C
Pre Measurement	234.5 mV
Post Measurement	248.6 mV

Sensor                    **Turbidity**

---

Serial Number	461166
Last Calibrated	2023-10-19

*Calibration Details*

---

Slope	1.0111675
Offset	-3.06 NTU

*Calibration Point 1*

---

Pre Measurement	0.00 NTU
Post Measurement	0.00 NTU

*Calibration Point 2*

---

Pre Measurement	8.34 NTU
Post Measurement	10.00 NTU

Sensor                    **Conductivity**

---

Serial Number	912824
Last Calibrated	2023-10-19

*Calibration Details*

---

TDS Conversion Factor (ppm)	0.65
Cell Constant	1.117
Reference Temperature	20.00 °C

*Pre Measurement*

---

Actual Conductivity	1,620.3 µS/cm
Specific Conductivity	1,534.8 µS/cm

*Post Measurement*

---

Actual Conductivity	1,356.8 µS/cm
Specific Conductivity	1,413.0 µS/cm

Sensor                    **RDO**

---

Serial Number	1011203
Last Calibrated	2023-11-14

*Calibration Details*

---

Slope	0.9842556
Offset	-0.00 mg/L

*Calibration point 100%*

---

Concentration	10.76 mg/L
Pre Measurement	101.59 %Sat
Post Measurement	100.00 %Sat
Temperature	7.99 °C
Barometric Pressure	907.40 mbar

Sensor **Barometric Pressure**

---

Serial Number 463863

Last Calibrated Factory Defaults

# Calibration Report

Instrument Aqua TROLL 600  
Serial Number 796845  
Created 2023-11-14

Sensor **Turbidity**

---

Serial Number 1006150  
Last Calibrated 2023-10-19

*Calibration Details*

---

Slope 1.0582342  
Offset 2.03 NTU

*Calibration Point 1*

---

Pre Measurement 0.00 NTU  
Post Measurement 0.00 NTU

*Calibration Point 2*

---

Pre Measurement 7.64 NTU  
Post Measurement 10.00 NTU

Sensor **RDO**

---

Serial Number 1022866  
Last Calibrated 2023-11-14

*Calibration Details*

---

Slope 1.1289766  
Offset -0.00 mg/L

*Calibration point 100%*

---

Concentration 8.99 mg/L  
Pre Measurement 102.00 %Sat  
Post Measurement 100.00 %Sat  
Temperature 8.88 °C  
Barometric Pressure 888.23 mbar

Sensor	Conductivity
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---

Serial Number	461802
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Last Calibrated	2023-10-19
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*Calibration Details*

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TDS Conversion Factor (ppm)	0.65
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Cell Constant	1.198
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Reference Temperature	20.00 °C
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*Pre Measurement*

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Actual Conductivity	1,618.8 $\mu\text{S}/\text{cm}$
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Specific Conductivity	1,526.0 $\mu\text{S}/\text{cm}$
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*Post Measurement*

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Actual Conductivity	1,364.0 $\mu\text{S}/\text{cm}$
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Specific Conductivity	1,413.0 $\mu\text{S}/\text{cm}$
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Sensor	pH/ORP
Serial Number	858374
Last Calibrated	2023-11-14

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### Calibration Details

#### Calibration Point 1

pH of Buffer	4.00 pH
pH mV	131.9 mV
Temperature	21.38 °C

#### Pre Measurement

pH	4.48 pH
pH mV	131.7 mV

#### Post Measurement

pH	4.00 pH
pH mV	130.3 mV

#### Calibration Point 2

pH of Buffer	7.02 pH
pH mV	-38.9 mV
Temperature	22.05 °C

#### Pre Measurement

pH	7.54 pH
pH mV	-39.1 mV

#### Post Measurement

pH	7.02 pH
pH mV	-38.5 mV

#### Calibration Point 3

pH of Buffer	10.05 pH
pH mV	-210.8 mV
Temperature	21.45 °C

#### Pre Measurement

pH	10.61 pH
pH mV	-210.2 mV

#### Post Measurement

pH	10.05 pH
pH mV	-208.3 mV

#### Slope and Offset 1

Slope	-56.54 mV/pH
Offset	-37.8 mV

#### Slope and Offset 2

Slope	-56.74 mV/pH
Offset	-37.7 mV

#### ORP

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ORP Solution	Zobell's
Offset	28.7 mV
Temperature	12.91 °C
Pre Measurement	215.5 mV
Post Measurement	244.8 mV

Sensor                    **Barometric Pressure**

---

Serial Number	796845
Last Calibrated	Factory Defaults