# Eagle Mountain - Woodfibre Gas Pipeline Project

# BCER Waste Discharge Permit Weekly Report

# Contents

# Preamble

This weekly report for the British Columbia Energy Regulator (BCER) Waste Discharge Permit (BCER number PE-110163) for the FortisBC Eagle Mountain – Woodfibre Gas Pipeline (EGP) Project includes the results of water quality monitoring and sampling of the receiving environment (upstream and downstream) and point of discharge.

FortisBC has retained Triton Environmental Consultants Ltd. as the Qualified Professional to implement and oversee the monitoring and sampling program in the receiving environments. The data represented below, including laboratory reported exceedances, represent background conditions from the receiving environment sampling as shown on the Waste Discharge Permit.

# Introduction

The results provided in this document are submitted to BC Energy Regulator (BCER) by FortisBC as per the requirements listed in the Waste Discharge Permit PE-110163 Section 4.2:

> The Permittee shall summarize the results of the discharge and receiving environment compliance sampling and monitoring program in a report that shall be submitted weekly over the term of this permit. The sampling and monitoring results shall be suitably tabulated and include comparison to the respective British Columbia Approved and Working Water Quality Guidelines for Freshwater & Marine Aquatic Life, as published by the Ministry of Environment & Climate Change Strategy. Any exceedance of regulatory guidelines shall be clearly highlighted, and any missed sampling events/missing data shall be identified with an explanation provided. Reporting frequency may be reduced upon a history of compliance and by written confirmation from the BCER. These reports shall be submitted to Waste.Management@bc-er.ca. A copy of the reports shall be provided to each First Nation consulted with regarding the subject permit, and also made publicly available on the FortisBC Eagle Mountain-Woodfibre Gas Pipeline Project | Talking Energy webpage.

## Sampling Methodology

The monitoring and sampling has been carried out in accordance with the procedures described in the most recent edition of the “British Columbia Field Sampling Manual” using field equipment and lab samples to meet daily and real time requirements for the Waste Discharge Permit.

At the receiving environments, real time and daily readings are being monitored at the same time with one piece of equipment, allowing all the daily readings real time. Visible sheen will be monitored with visual inspections during times of discharge or sampling.
At the point of discharge from the WTP, the parameters are being monitored using field equipment and sondes/real time meters make and models to be confirmed by the contractor. Table 1 and Table 2 below show how each parameter is being monitored.

**Table 1. Monitor Details for the Point of Discharge from the Water Treatment System-BC Rail and Woodfibre**

| Permit Frequency | Parameters | Details |
|---|---|---|
| Daily | Visible Sheen | Monitoring using In field inspection |
| Daily (or per batch) | DO | Monitoring using YSI ProDSS |
| | ORP | Monitoring using YSI ProDSS |
| | Salinity | Monitoring using YSI ProDSS |
| Real Time (or per batch) | pH | Monitoring using GF Dryloc pH Series NPT |
| | Temperature | Monitoring using YSI ProDSS |
| | NTU | Monitoring using Observator NEP9504GPI |
| | Electrical Conductivity | Monitoring using YSI ProDSS |
| Weekly (or per batch) Lab Samples | List prescribed in permit | Lab samples |

Point of Discharge from the WTP equipment details: YSI ProDSS with pH, conductivity, DO, ORP and turbidity probe that measure pH, temperature, NTU, electrical conductivity, ORP, DO and salinity.

**Table 2. Monitor Details for the Receiving Environment (upstream and downstream)-BC Rail and Woodfibre**

| Permit Frequency | Parameters | Details |
|---|---|---|
| Daily | Visible Sheen | In field inspection |
| Daily | DO | Monitoring using Sonde- AquaTROLL 600 datalogger |
| | ORP | Monitoring using Sonde- AquaTROLL 600 datalogger |
| | Salinity | Monitoring using Sonde- AquaTROLL 600 datalogger |
| Real Time | pH | Monitoring using Sonde- AquaTROLL 600 datalogger |
| | Temperature | Monitoring using Sonde- AquaTROLL 600 datalogger |
| | NTU | Monitoring using Sonde- AquaTROLL 600 datalogger |
| | Electrical Conductivity | Monitoring using Sonde- AquaTROLL 600 datalogger |
| Weekly Lab Samples | List prescribed in permit | Lab samples |

Receiving Environment equipment details: Sondes: Aqua-TROLL 600 made by In-Situ Inc. Sondes set up to log temperature, specific conductivity, salinity (in PSU), pH, ORP, DO (mg/L), and turbidity (NTU) at 10 minute intervals.

# Summary-BC Rail Site

## Site Activities

- No discharges occurred during this time period.

## Point of Discharge from Water Treatment System Monitoring

Table 3 below includes information on water quality and lab sampling during discharges. Appendix A includes a full set of lab results with real time/field samples from discharges.

**Table 3: Discharge from Water Treatment System Information**

| Location | Date of Discharge | Date of Lab Sample (for the discharge) | Real Time Monitored | Field Samples Taken | Discharge Rate (batch) | Discharge Volume (batch) | Results |
|---|---|---|---|---|---|---|---|
| BC Rail | No discharges during this time period | | | | | | |

## Exceedance details

- No discharges during this reporting period.

## Receiving Environment Monitoring

The receiving environment is being monitored as outlined in the permit.

**Table 4: Upstream Monitoring Information**

| Location | Date of Lab Sample | Real Time Monitored | Field Samples Taken | Results |
|---|---|---|---|---|
| Squamish River Upstream | 2024-04-09 | Yes * | Yes | Full set of lab sample results, photo and documentation are provided in Appendix B. |

**Table 5: Downstream Monitoring Information**

| | Date of Lab Sample | Real Time Monitored | Field Samples Taken | Results |
|---|---|---|---|---|
| Squamish River Downstream | 2023-04-09 | Yes * | Yes | Full set of lab sample results, photo and documentation are provided in Appendix B. |

***** Sondes set up to log temperature, specific conductivity, salinity (in PSU), pH, ORP, DO (mg/L), and turbidity (NTU) at 10 minute intervals.

## Receiving Environment Monitoring Details

- Visual sheen checks conducted for days of discharge.
- All receiving environment lab results are in Appendix B.
- Any recorded exceedances in the laboratory and field samples collected from the receiving environment (upstream and downstream) are indicative of the existing background water quality in the Squamish River, and are not related to the EGP Project activities.

# Summary-Woodfibre

## Site Activities

- No discharges during this reporting period. Water Treatment Plant still in the process of being constructed.

## Point of Discharge from Water Treatment System Monitoring

Table 3 below includes information on the batch test water quality and lab sampling. Appendix C includes a full set of lab results with real time/field samples from the batch discharge.

**Table 3: Discharge from Water Treatment System Information**

| Location | Date of Discharge | Date of Lab Sample (for the discharge) | Real Time Monitored | Field Samples Taken | Discharge Rate (batch) | Discharge Volume (batch) | Results |
|---|---|---|---|---|---|---|---|
| Woodfibre | No discharges this reporting period | | | | | | |

## Exceedance details

- No discharges during this reporting period.

## Receiving Environment Monitoring

The receiving environment is being monitored as outlined in the permit.

**Table 4: Upstream Monitoring Information**

| Location | Date of Lab Sample | Real Time Monitored | Field Samples Taken | Results |
|---|---|---|---|---|
| Woodfibre Upstream | 2024-04-08 | Yes * | No | Field documentation in Appendix D |

**Table 5: Downstream Monitoring Information**

| | Date of Lab Sample | Real Time Monitored | Field Samples Taken | Results |
|---|---|---|---|---|
| Woodfibre Downstream | 2024-04-08 | Yes * | No | Field documentation in Appendix D |

***** Sondes set up to log temperature, specific conductivity, salinity (in PSU), pH, ORP, DO (mg/L), and turbidity (NTU) at 10 minute intervals.

## Receiving Environment Monitoring Details

- Visual sheen checks are conducted during discharges.
- Any recorded exceedances in the laboratory and field samples collected from the receiving environment (upstream and downstream) are indicative of the existing background water quality in the Squamish River, and are not related to the EGP Project activities.

# Appendix A: BCR Site Point of Discharge from Water Treatment Plant Documentation

No discharges during this reporting period

# BCR Site Receiving Environment Lab Analysis

| Client Sample ID | | | SQU US1 | SQU DS1 |
|---|---|---|---|---|
| Date Sampled | | | 09-Apr-2024 | 09-Apr-2024 |
| Time Sampled | | | 11:00 | 10:11 |
| ALS Sample ID | | | VA24A7459-001 | VA24A7459-002 |
| Analyte | Lowest Detection Limit | Units | Sub-Matrix: Water | Sub-Matrix: Water |
| **Field Tests (Matrix: Water)** | | | | |
| Conductivity, field | 0.10 | µS/cm | 64 | 66 |
| Temperature, field | 0.10 | °C | 6.3 | 6.1 |
| pH, field | 0.10 | pH units | 7.13 | 7.2 |
| **Physical Tests (Matrix: Water)** | | | | |
| Alkalinity, total (as CaCO3) | 2.0 | mg/L | 18.3 | 16.5 |
| Hardness (as CaCO3), dissolved | 0.60 | mg/L | 19.8 | 19.2 |
| Hardness (as CaCO3), from total Ca/Mg | 0.60 | mg/L | 19.7 | 19.2 |
| Solids, total dissolved [TDS] | 10 | mg/L | 41 | 33 |
| Solids, total suspended [TSS] | 3.0 | mg/L | <3.0 | <3.0 |
| **Anions and Nutrients (Matrix: Water)** | | | | |
| Ammonia, total (as N) | 0.0050 | mg/L | 0.28 | 0.14 |
| Bromide | 0.050 | mg/L | <0.050 | <0.050 |
| Chloride | 0.50 | mg/L | 2.44 | 2.37 |
| Fluoride | 0.020 | mg/L | <0.020 | <0.020 |
| Nitrate (as N) | 0.0050 | mg/L | 0.0298 | 0.0347 |
| Nitrite (as N) | 0.0010 | mg/L | 0.0013 | <0.0010 |
| Nitrogen, total | 0.030 | mg/L | 0.394 | 0.247 |
| Phosphorus, total | 0.0020 | mg/L | 0.0356 | 0.0235 |
| Sulfate (as SO4) | 0.30 | mg/L | 5.37 | 5.18 |
| **Organic / Inorganic Carbon (Matrix: Water)** | | | | |
| Carbon, dissolved organic [DOC] | 0.50 | mg/L | 2.2 | 1.84 |
| **Total Sulfides (Matrix: Water)** | | | | |
| Sulfide, total (as S) | 0.010 | mg/L | <0.010 | <0.010 |
| Sulfide, total (as H2S) | 0.011 | mg/L | <0.011 | <0.011 |
| **Total Metals (Matrix: Water)** | | | | |
| Aluminum, total | 0.0030 | mg/L | 0.0876 | 0.0895 |
| Antimony, total | 0.00010 | mg/L | <0.00010 | <0.00010 |
| Arsenic, total | 0.00010 | mg/L | 0.00019 | 0.00015 |
| Barium, total | 0.00010 | mg/L | 0.00833 | 0.00845 |
| Beryllium, total | 0.000100 | mg/L | <0.000100 | <0.000100 |
| Bismuth, total | 0.000050 | mg/L | <0.000050 | <0.000050 |

| | | | | |
|---|---|---|---|---|
| Boron, total | 0.010 | mg/L | <0.010 | <0.010 |
| Cadmium, total | 0.0000050 | mg/L | 0.000006 | 0.0000072 |
| Calcium, total | 0.050 | mg/L | 6.66 | 6.52 |
| Cesium, total | 0.000010 | mg/L | 0.000021 | 0.00002 |
| Chromium, total | 0.00050 | mg/L | <0.00050 | <0.00050 |
| Cobalt, total | 0.00010 | mg/L | <0.00010 | <0.00010 |
| Copper, total | 0.00050 | mg/L | 0.00081 | 0.0008 |
| Iron, total | 0.010 | mg/L | 0.145 | 0.153 |
| Lead, total | 0.000050 | mg/L | <0.000050 | <0.000050 |
| Lithium, total | 0.0010 | mg/L | 0.001 | 0.0012 |
| Magnesium, total | 0.0050 | mg/L | 0.743 | 0.71 |
| Manganese, total | 0.00010 | mg/L | 0.00757 | 0.00803 |
| Mercury, total | 0.0000050 | mg/L | <0.0000050 | <0.0000050 |
| Molybdenum, total | 0.000050 | mg/L | 0.000671 | 0.0006 |
| Nickel, total | 0.00050 | mg/L | <0.00050 | <0.00050 |
| Phosphorus, total | 0.050 | mg/L | <0.050 | <0.050 |
| Potassium, total | 0.050 | mg/L | 0.645 | 0.614 |
| Rubidium, total | 0.00020 | mg/L | 0.00093 | 0.00092 |
| Selenium, total | 0.000050 | mg/L | <0.000050 | <0.000050 |
| Silicon, total | 0.10 | mg/L | 5.26 | 4.79 |
| Silver, total | 0.000010 | mg/L | <0.000010 | <0.000010 |
| Sodium, total | 0.050 | mg/L | 2.78 | 2.68 |
| Strontium, total | 0.00020 | mg/L | 0.0418 | 0.0406 |
| Sulfur, total | 0.50 | mg/L | 1.64 | 1.44 |
| Tellurium, total | 0.00020 | mg/L | <0.00020 | <0.00020 |
| Thallium, total | 0.000010 | mg/L | <0.000010 | <0.000010 |
| Thorium, total | 0.00010 | mg/L | <0.00010 | <0.00010 |
| Tin, total | 0.00010 | mg/L | <0.00010 | <0.00010 |
| Titanium, total | 0.00030 | mg/L | 0.00161 | <0.00240 |
| Tungsten, total | 0.00010 | mg/L | <0.00010 | <0.00010 |
| Uranium, total | 0.000010 | mg/L | 0.000031 | 0.000034 |
| Vanadium, total | 0.00050 | mg/L | 0.00165 | 0.00154 |
| Zinc, total | 0.0030 | mg/L | <0.0030 | <0.0030 |
| Zirconium, total | 0.00020 | mg/L | <0.00020 | <0.00020 |

**Dissolved Metals (Matrix: Water)**

| | | | | |
|---|---|---|---|---|
| Aluminum, dissolved | 0.0010 | mg/L | 0.0335 | 0.0316 |
| Antimony, dissolved | 0.00010 | mg/L | <0.00010 | <0.00010 |
| Arsenic, dissolved | 0.00010 | mg/L | 0.00016 | 0.00013 |
| Barium, dissolved | 0.00010 | mg/L | 0.00802 | 0.00814 |
| Beryllium, dissolved | 0.000100 | mg/L | <0.000100 | <0.000100 |
| Bismuth, dissolved | 0.000050 | mg/L | <0.000050 | <0.000050 |
| Boron, dissolved | 0.010 | mg/L | <0.010 | <0.010 |
| Cadmium, dissolved | 0.0000050 | mg/L | 0.0000101 | <0.0000050 |

| | | | | |
|---|---|---|---|---|
| Calcium, dissolved | 0.050 | mg/L | 6.65 | 6.47 |
| Cesium, dissolved | 0.000010 | mg/L | 0.000019 | 0.000018 |
| Chromium, dissolved | 0.00050 | mg/L | <0.00050 | <0.00050 |
| Cobalt, dissolved | 0.00010 | mg/L | <0.00010 | <0.00010 |
| Copper, dissolved | 0.00020 | mg/L | 0.00068 | 0.00063 |
| Iron, dissolved | 0.010 | mg/L | 0.105 | 0.106 |
| Lead, dissolved | 0.000050 | mg/L | <0.000050 | <0.000050 |
| Lithium, dissolved | 0.0010 | mg/L | <0.0010 | 0.001 |
| Magnesium, dissolved | 0.0050 | mg/L | 0.786 | 0.753 |
| Manganese, dissolved | 0.00010 | mg/L | 0.00672 | 0.007 |
| Mercury, dissolved | 0.0000050 | mg/L | <0.0000050 | <0.0000050 |
| Molybdenum, dissolved | 0.000050 | mg/L | 0.000636 | 0.000594 |
| Nickel, dissolved | 0.00050 | mg/L | <0.00050 | <0.00050 |
| Phosphorus, dissolved | 0.050 | mg/L | <0.050 | <0.050 |
| Potassium, dissolved | 0.050 | mg/L | 0.733 | 0.692 |
| Rubidium, dissolved | 0.00020 | mg/L | 0.00101 | 0.00102 |
| Selenium, dissolved | 0.000050 | mg/L | <0.000050 | <0.000050 |
| Silicon, dissolved | 0.050 | mg/L | 5.55 | 5.11 |
| Silver, dissolved | 0.000010 | mg/L | <0.000010 | <0.000010 |
| Sodium, dissolved | 0.050 | mg/L | 2.86 | 2.66 |
| Strontium, dissolved | 0.00020 | mg/L | 0.0407 | 0.0405 |
| Sulfur, dissolved | 0.50 | mg/L | 1.79 | 1.64 |
| Tellurium, dissolved | 0.00020 | mg/L | <0.00020 | <0.00020 |
| Thallium, dissolved | 0.000010 | mg/L | <0.000010 | <0.000010 |
| Thorium, dissolved | 0.00010 | mg/L | <0.00010 | <0.00010 |
| Tin, dissolved | 0.00010 | mg/L | <0.00010 | <0.00010 |
| Titanium, dissolved | 0.00030 | mg/L | <0.00030 | 0.00031 |
| Tungsten, dissolved | 0.00010 | mg/L | <0.00010 | <0.00010 |
| Uranium, dissolved | 0.000010 | mg/L | 0.000031 | 0.000033 |
| Vanadium, dissolved | 0.00050 | mg/L | 0.00137 | 0.0012 |
| Zinc, dissolved | 0.0010 | mg/L | 0.0012 | 0.001 |
| Zirconium, dissolved | 0.00020 | mg/L | <0.00020 | <0.00020 |
| Dissolved mercury filtration location | | | Field | Field |
| Dissolved metals filtration location | | | Field | Field |

**Speciated Metals (Matrix: Water)**

| | | | | |
|---|---|---|---|---|
| Chromium, hexavalent [Cr VI], total | 0.00050 | mg/L | <0.00050 | <0.00050 |
| Chromium, trivalent [Cr III], total | 0.00050 | mg/L | <0.00050 | <0.00050 |

**Qualifier Legend**

| | |
|---|---|
| DLM | Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity). |

# Appendix B: BCR Site Receiving Environment Documentation

# BCR Site Receiving Environment Lab Documentation

ALS Canada Ltd.

right solutions. right partner.

# CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24A7459** | Page | : 1 of 6 |
| Client | : **Triton Environmental Consultants Ltd.** | Laboratory | : ALS Environmental - Vancouver |
| Contact | | Account Manager | |
| Address | | Address | |
| Telephone | | Telephone | |
| Project | : 11964 | Date Samples Received | : 09-Apr-2024 13:17 |
| PO | : 11964-Task 20-Phase 3C-4C | Date Analysis Commenced | : 10-Apr-2024 |
| C-O-C number | : ---- | Issue Date | : 16-Apr-2024 20:44 |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : VA23-TRIT100-003 | | |
| No. of samples received | : 2 | | |
| No. of samples analysed | : 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

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

## *Signatories*

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

| *Signatories* | *Position* | *Laboratory Department* |
|---|---|---|
| Brieanna Allen | Production/Validation Manager | Administration, Burnaby, British Columbia |
| Chamoi Beckford | Lab Assistant | Metals, Burnaby, British Columbia |
| Dan Gebert | Laboratory Analyst | Metals, Burnaby, British Columbia |
| Kate Dimitrova | Supervisor - Inorganic | Inorganics, Burnaby, British Columbia |
| Kim Jensen | Department Manager - Metals | Metals, Burnaby, British Columbia |
| Leon Yang | Analyst | Inorganics, Burnaby, British Columbia |
| Monica Ko | Lab Assistant | Inorganics, Burnaby, British Columbia |
| Sam Silveira | Analyst | Metals, Burnaby, British Columbia |

## General Comments

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

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

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

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

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

LOR: Limit of Reporting (detection limit).

| *Unit* | *Description* |
|---|---|
| - | 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.

## Qualifiers

| *Qualifier* | *Description* |
|---|---|
| *DLM* | *Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).* |

## Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | SQU US1 | SQU DS1 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 09-Apr-2024 11:00 | 09-Apr-2024 10:11 | ---- | ---- | ---- |
| | | | | | | VA24A7459-001 | VA24A7459-002 | -------- | -------- | -------- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Field Tests** | | | | | | | | | | |
| **Conductivity, field** | ---- | EF001/VA | 0.10 | µS/cm | | 64.000 | 66.000 | ---- | ---- | ---- |
| **pH, field** | ---- | EF001/VA | 0.10 | pH units | | 7.13 | 7.20 | ---- | ---- | ---- |
| **Temperature, field** | ---- | EF001/VA | 0.10 | °C | | 6.30 | 6.10 | ---- | ---- | ---- |
| **Physical Tests** | | | | | | | | | | |
| **Hardness (as CaCO3), dissolved** | ---- | EC100/VA | 0.60 | mg/L | | 19.8 | 19.2 | ---- | ---- | ---- |
| **Hardness (as CaCO3), from total Ca/Mg** | ---- | EC100A/VA | 0.60 | mg/L | | 19.7 | 19.2 | ---- | ---- | ---- |
| **Solids, total dissolved [TDS]** | ---- | E162/VA | 10 | mg/L | | 41 | 33 | ---- | ---- | ---- |
| **Solids, total suspended [TSS]** | ---- | E160/VA | 3.0 | mg/L | | <3.0 | <3.0 | ---- | ---- | ---- |
| **Alkalinity, total (as CaCO3)** | ---- | E290/VA | 2.0 | mg/L | | 18.3 | 16.5 | ---- | ---- | ---- |
| **Anions and Nutrients** | | | | | | | | | | |
| **Ammonia, total (as N)** | 7664-41-7 | E298/VA | 0.0050 | mg/L | | 0.280 | 0.140 | ---- | ---- | ---- |
| **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 | | 2.44 | 2.37 | ---- | ---- | ---- |
| **Fluoride** | 16984-48-8 | E235.F/VA | 0.020 | mg/L | | <0.020 | <0.020 | ---- | ---- | ---- |
| **Nitrate (as N)** | 14797-55-8 | E235.NO3-L/VA | 0.0050 | mg/L | | 0.0298 | 0.0347 | ---- | ---- | ---- |
| **Nitrite (as N)** | 14797-65-0 | E235.NO2-L/VA | 0.0010 | mg/L | | 0.0013 | <0.0010 | ---- | ---- | ---- |
| **Nitrogen, total** | 7727-37-9 | E366/VA | 0.030 | mg/L | | 0.394 | 0.247 | ---- | ---- | ---- |
| **Phosphorus, total** | 7723-14-0 | E372-U/VA | 0.0020 | mg/L | | 0.0356 | 0.0235 | ---- | ---- | ---- |
| **Sulfate (as SO4)** | 14808-79-8 | E235.SO4/VA | 0.30 | mg/L | | 5.37 | 5.18 | ---- | ---- | ---- |
| **Organic / Inorganic Carbon** | | | | | | | | | | |
| **Carbon, dissolved organic [DOC]** | ---- | E358-L/VA | 0.50 | mg/L | | 2.20 | 1.84 | ---- | ---- | ---- |
| **Total Sulfides** | | | | | | | | | | |
| **Sulfide, total (as H2S)** | 7783-06-4 | E395-H/VA | 0.011 | mg/L | | <0.011 | <0.011 | ---- | ---- | ---- |
| **Sulfide, total (as S)** | 18496-25-8 | E395-H/VA | 0.010 | mg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **Aluminum, total** | 7429-90-5 | E420/VA | 0.0030 | mg/L | | 0.0876 | 0.0895 | ---- | ---- | ---- |
| **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 | 0.00015 | ---- | ---- | ---- |

## Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | SQU US1 | SQU DS1 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 09-Apr-2024 11:00 | 09-Apr-2024 10:11 | ---- | ---- | ---- |
| | | | | | | VA24A7459-001 | VA24A7459-002 | -------- | -------- | -------- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **Barium, total** | 7440-39-3 | E420/VA | 0.00010 | mg/L | | 0.00833 | 0.00845 | ---- | ---- | ---- |
| **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 | | 0.0000060 | 0.0000072 | ---- | ---- | ---- |
| **Calcium, total** | 7440-70-2 | E420/VA | 0.050 | mg/L | | 6.66 | 6.52 | ---- | ---- | ---- |
| **Cesium, total** | 7440-46-2 | E420/VA | 0.000010 | mg/L | | 0.000021 | 0.000020 | ---- | ---- | ---- |
| **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 | | <0.00010 | <0.00010 | ---- | ---- | ---- |
| **Copper, total** | 7440-50-8 | E420/VA | 0.00050 | mg/L | | 0.00081 | 0.00080 | ---- | ---- | ---- |
| **Iron, total** | 7439-89-6 | E420/VA | 0.010 | mg/L | | 0.145 | 0.153 | ---- | ---- | ---- |
| **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 | | 0.0010 | 0.0012 | ---- | ---- | ---- |
| **Magnesium, total** | 7439-95-4 | E420/VA | 0.0050 | mg/L | | 0.743 | 0.710 | ---- | ---- | ---- |
| **Manganese, total** | 7439-96-5 | E420/VA | 0.00010 | mg/L | | 0.00757 | 0.00803 | ---- | ---- | ---- |
| **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 | | 0.000671 | 0.000600 | ---- | ---- | ---- |
| **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 | | 0.645 | 0.614 | ---- | ---- | ---- |
| **Rubidium, total** | 7440-17-7 | E420/VA | 0.00020 | mg/L | | 0.00093 | 0.00092 | ---- | ---- | ---- |
| **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 | | 5.26 | 4.79 | ---- | ---- | ---- |
| **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 | | 2.78 | 2.68 | ---- | ---- | ---- |
| **Strontium, total** | 7440-24-6 | E420/VA | 0.00020 | mg/L | | 0.0418 | 0.0406 | ---- | ---- | ---- |
| **Sulfur, total** | 7704-34-9 | E420/VA | 0.50 | mg/L | | 1.64 | 1.44 | ---- | ---- | ---- |
| **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**
(Matrix: **Water**)

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | SQU US1 | SQU DS1 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 09-Apr-2024 11:00 | 09-Apr-2024 10:11 | ---- | ---- | ---- |
| | | | | | | VA24A7459-001 | VA24A7459-002 | -------- | -------- | -------- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **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 | | 0.00161 | <0.00240 DLM | ---- | ---- | ---- |
| **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 | | 0.000031 | 0.000034 | ---- | ---- | ---- |
| **Vanadium, total** | 7440-62-2 | E420/VA | 0.00050 | mg/L | | 0.00165 | 0.00154 | ---- | ---- | ---- |
| **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 | ---- | ---- | ---- |
| **Dissolved Metals** | | | | | | | | | | |
| **Aluminum, dissolved** | 7429-90-5 | E421/VA | 0.0010 | mg/L | | 0.0335 | 0.0316 | ---- | ---- | ---- |
| **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 | | 0.00016 | 0.00013 | ---- | ---- | ---- |
| **Barium, dissolved** | 7440-39-3 | E421/VA | 0.00010 | mg/L | | 0.00802 | 0.00814 | ---- | ---- | ---- |
| **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 | | 0.0000101 | <0.0000050 | ---- | ---- | ---- |
| **Calcium, dissolved** | 7440-70-2 | E421/VA | 0.050 | mg/L | | 6.65 | 6.47 | ---- | ---- | ---- |
| **Cesium, dissolved** | 7440-46-2 | E421/VA | 0.000010 | mg/L | | 0.000019 | 0.000018 | ---- | ---- | ---- |
| **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 | 0.00063 | ---- | ---- | ---- |
| **Iron, dissolved** | 7439-89-6 | E421/VA | 0.010 | mg/L | | 0.105 | 0.106 | ---- | ---- | ---- |
| **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 | | 0.786 | 0.753 | ---- | ---- | ---- |
| **Manganese, dissolved** | 7439-96-5 | E421/VA | 0.00010 | mg/L | | 0.00672 | 0.00700 | ---- | ---- | ---- |
| **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 | | 0.000636 | 0.000594 | ---- | ---- | ---- |
| **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 (Matrix: Water) | | | | | Client sample ID | SQU US1 | SQU DS1 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 09-Apr-2024 11:00 | 09-Apr-2024 10:11 | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24A7459-001 | VA24A7459-002 | -------- | -------- | -------- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Dissolved Metals** | | | | | | | | | | |
| **Potassium, dissolved** | 7440-09-7 | E421/VA | 0.050 | mg/L | | 0.733 | 0.692 | ---- | ---- | ---- |
| **Rubidium, dissolved** | 7440-17-7 | E421/VA | 0.00020 | mg/L | | 0.00101 | 0.00102 | ---- | ---- | ---- |
| **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 | | 5.55 | 5.11 | ---- | ---- | ---- |
| **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 | | 2.86 | 2.66 | ---- | ---- | ---- |
| **Strontium, dissolved** | 7440-24-6 | E421/VA | 0.00020 | mg/L | | 0.0407 | 0.0405 | ---- | ---- | ---- |
| **Sulfur, dissolved** | 7704-34-9 | E421/VA | 0.50 | mg/L | | 1.79 | 1.64 | ---- | ---- | ---- |
| **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 | | <0.00030 | 0.00031 | ---- | ---- | ---- |
| **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 | | 0.000031 | 0.000033 | ---- | ---- | ---- |
| **Vanadium, dissolved** | 7440-62-2 | E421/VA | 0.00050 | mg/L | | 0.00137 | 0.00120 | ---- | ---- | ---- |
| **Zinc, dissolved** | 7440-66-6 | E421/VA | 0.0010 | mg/L | | 0.0012 | 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 | ---- | ---- | ---- |
| **Speciated Metals** | | | | | | | | | | |
| **Chromium, hexavalent [Cr VI], total** | 18540-29-9 | E532/VA | 0.00050 | mg/L | | <0.00050 | <0.00050 | ---- | ---- | ---- |
| **Chromium, trivalent [Cr III], total** | 16065-83-1 | EC535/VA | 0.00050 | mg/L | | <0.00050 | <0.00050 | ---- | ---- | ---- |

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.

ALS Canada Ltd.

# QUALITY CONTROL INTERPRETIVE REPORT

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24A7459** | Page | : 1 of 13 |
| Client | : **Triton Environmental Consultants Ltd.** | Laboratory | : ALS Environmental - Vancouver |
| Contact | | Account Manager | : |
| Address | | Address | : |
| Telephone | | Telephone | : |
| Project | : 11964 | Date Samples Received | : 09-Apr-2024 13:17 |
| PO | : 11964-Task 20-Phase 3C-4C | Issue Date | : 16-Apr-2024 20:44 |
| C-O-C number | : ---- | | |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : VA23-TRIT100-003 | | |
| No. of samples received | : 2 | | |
| No. of samples analysed | : 2 | | |

**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

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.

# 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 Rec | Holding Times Actual | Eval | Analysis Date | Holding Times Rec | Holding Times Actual | Eval |
| **Anions and Nutrients : Ammonia by Fluorescence** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** SQU DS1 | E298 | 09-Apr-2024 | 14-Apr-2024 | 28 days | 5 days | ✓ | 16-Apr-2024 | 28 days | 7 days | ✓ |
| **Anions and Nutrients : Ammonia by Fluorescence** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** SQU US1 | E298 | 09-Apr-2024 | 14-Apr-2024 | 28 days | 5 days | ✓ | 16-Apr-2024 | 28 days | 7 days | ✓ |
| **Anions and Nutrients : Bromide in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** SQU US1 | E235.Br-L | 09-Apr-2024 | 11-Apr-2024 | 28 days | 2 days | ✓ | 11-Apr-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Bromide in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** SQU DS1 | E235.Br-L | 09-Apr-2024 | 11-Apr-2024 | 28 days | 2 days | ✓ | 11-Apr-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Chloride in Water by IC** | | | | | | | | | | |
| **HDPE** SQU US1 | E235.Cl | 09-Apr-2024 | 11-Apr-2024 | 28 days | 2 days | ✓ | 11-Apr-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Chloride in Water by IC** | | | | | | | | | | |
| **HDPE** SQU DS1 | E235.Cl | 09-Apr-2024 | 11-Apr-2024 | 28 days | 2 days | ✓ | 11-Apr-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Fluoride in Water by IC** | | | | | | | | | | |
| **HDPE** SQU US1 | E235.F | 09-Apr-2024 | 11-Apr-2024 | 28 days | 2 days | ✓ | 11-Apr-2024 | 28 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 Rec | Holding Times Actual | Eval | Analysis Date | Holding Times Rec | Holding Times Actual | Eval |
| **Anions and Nutrients : Fluoride in Water by IC** | | | | | | | | | | |
| **HDPE** SQU DS1 | E235.F | 09-Apr-2024 | 11-Apr-2024 | 28 days | 2 days | ✓ | 11-Apr-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Nitrate in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** SQU US1 | E235.NO3-L | 09-Apr-2024 | 11-Apr-2024 | 3 days | 2 days | ✓ | 11-Apr-2024 | 3 days | 2 days | ✓ |
| **Anions and Nutrients : Nitrate in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** SQU DS1 | E235.NO3-L | 09-Apr-2024 | 11-Apr-2024 | 3 days | 2 days | ✓ | 11-Apr-2024 | 3 days | 3 days | ✓ |
| **Anions and Nutrients : Nitrite in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** SQU US1 | E235.NO2-L | 09-Apr-2024 | 11-Apr-2024 | 3 days | 2 days | ✓ | 11-Apr-2024 | 3 days | 2 days | ✓ |
| **Anions and Nutrients : Nitrite in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** SQU DS1 | E235.NO2-L | 09-Apr-2024 | 11-Apr-2024 | 3 days | 2 days | ✓ | 11-Apr-2024 | 3 days | 3 days | ✓ |
| **Anions and Nutrients : Sulfate in Water by IC** | | | | | | | | | | |
| **HDPE** SQU US1 | E235.SO4 | 09-Apr-2024 | 11-Apr-2024 | 28 days | 2 days | ✓ | 11-Apr-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Sulfate in Water by IC** | | | | | | | | | | |
| **HDPE** SQU DS1 | E235.SO4 | 09-Apr-2024 | 11-Apr-2024 | 28 days | 2 days | ✓ | 11-Apr-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Total Nitrogen by Colourimetry** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** SQU DS1 | E366 | 09-Apr-2024 | 14-Apr-2024 | 28 days | 5 days | ✓ | 16-Apr-2024 | 28 days | 7 days | ✓ |
| **Anions and Nutrients : Total Nitrogen by Colourimetry** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** SQU US1 | E366 | 09-Apr-2024 | 14-Apr-2024 | 28 days | 5 days | ✓ | 16-Apr-2024 | 28 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 Rec | Holding Times Actual | Eval | Analysis Date | Holding Times Rec | Holding Times Actual | Eval |
| **Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** | | | | | | | | | | |
| SQU DS1 | E372-U | 09-Apr-2024 | 14-Apr-2024 | 28 days | 5 days | ✓ | 16-Apr-2024 | 28 days | 7 days | ✓ |
| **Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** | | | | | | | | | | |
| SQU US1 | E372-U | 09-Apr-2024 | 14-Apr-2024 | 28 days | 5 days | ✓ | 16-Apr-2024 | 28 days | 7 days | ✓ |
| **Dissolved Metals : Dissolved Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial - dissolved (lab preserved)** | | | | | | | | | | |
| SQU DS1 | E509 | 09-Apr-2024 | 11-Apr-2024 | 28 days | 2 days | ✓ | 11-Apr-2024 | 28 days | 2 days | ✓ |
| **Dissolved Metals : Dissolved Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial - dissolved (lab preserved)** | | | | | | | | | | |
| SQU US1 | E509 | 09-Apr-2024 | 11-Apr-2024 | 28 days | 2 days | ✓ | 11-Apr-2024 | 28 days | 2 days | ✓ |
| **Dissolved Metals : Dissolved Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE - dissolved (lab preserved)** | | | | | | | | | | |
| SQU DS1 | E421 | 09-Apr-2024 | 11-Apr-2024 | 180 days | 2 days | ✓ | 12-Apr-2024 | 180 days | 3 days | ✓ |
| **Dissolved Metals : Dissolved Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE - dissolved (lab preserved)** | | | | | | | | | | |
| SQU US1 | E421 | 09-Apr-2024 | 11-Apr-2024 | 180 days | 2 days | ✓ | 12-Apr-2024 | 180 days | 3 days | ✓ |
| **Field Tests : Field pH,EC,Salinity,Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine** | | | | | | | | | | |
| **Glass vial - total (lab preserved)** | | | | | | | | | | |
| SQU DS1 | EF001 | 09-Apr-2024 | ---- | ---- | ---- | | 12-Apr-2024 | ---- | 3 days | |
| **Field Tests : Field pH,EC,Salinity,Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine** | | | | | | | | | | |
| **Glass vial - total (lab preserved)** | | | | | | | | | | |
| SQU US1 | EF001 | 09-Apr-2024 | ---- | ---- | ---- | | 12-Apr-2024 | ---- | 3 days | |
| **Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)** | | | | | | | | | | |
| **Amber glass dissolved (sulfuric acid)** | | | | | | | | | | |
| SQU DS1 | E358-L | 09-Apr-2024 | 14-Apr-2024 | 28 days | 5 days | ✓ | 14-Apr-2024 | 28 days | 5 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 Rec | Holding Times Actual | Eval | Analysis Date | Holding Times Rec | Holding Times Actual | Eval |
| **Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)** | | | | | | | | | | |
| **Amber glass dissolved (sulfuric acid)** SQU US1 | E358-L | 09-Apr-2024 | 14-Apr-2024 | 28 days | 5 days | ✓ | 14-Apr-2024 | 28 days | 5 days | ✓ |
| **Physical Tests : Alkalinity Species by Titration** | | | | | | | | | | |
| **HDPE** SQU DS1 | E290 | 09-Apr-2024 | 11-Apr-2024 | 14 days | 2 days | ✓ | 12-Apr-2024 | 14 days | 3 days | ✓ |
| **Physical Tests : Alkalinity Species by Titration** | | | | | | | | | | |
| **HDPE** SQU US1 | E290 | 09-Apr-2024 | 11-Apr-2024 | 14 days | 2 days | ✓ | 12-Apr-2024 | 14 days | 3 days | ✓ |
| **Physical Tests : TDS by Gravimetry** | | | | | | | | | | |
| **HDPE** SQU DS1 | E162 | 09-Apr-2024 | ---- | ---- | ---- | | 15-Apr-2024 | 7 days | 6 days | ✓ |
| **Physical Tests : TDS by Gravimetry** | | | | | | | | | | |
| **HDPE** SQU US1 | E162 | 09-Apr-2024 | ---- | ---- | ---- | | 15-Apr-2024 | 7 days | 6 days | ✓ |
| **Physical Tests : TSS by Gravimetry** | | | | | | | | | | |
| **HDPE** SQU DS1 | E160 | 09-Apr-2024 | ---- | ---- | ---- | | 15-Apr-2024 | 7 days | 6 days | ✓ |
| **Physical Tests : TSS by Gravimetry** | | | | | | | | | | |
| **HDPE** SQU US1 | E160 | 09-Apr-2024 | ---- | ---- | ---- | | 15-Apr-2024 | 7 days | 6 days | ✓ |
| **Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC** | | | | | | | | | | |
| **UV-inhibited HDPE - total (sodium hydroxide)** SQU DS1 | E532 | 09-Apr-2024 | ---- | ---- | ---- | | 11-Apr-2024 | 28 days | 2 days | ✓ |
| **Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC** | | | | | | | | | | |
| **UV-inhibited HDPE - total (sodium hydroxide)** SQU US1 | E532 | 09-Apr-2024 | ---- | ---- | ---- | | 11-Apr-2024 | 28 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 Rec | Holding Times Actual | Eval | Analysis Date | Holding Times Rec | Holding Times Actual | Eval |
| **Total Metals : Total Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial - total (lab preserved)** SQU DS1 | E508 | 09-Apr-2024 | 11-Apr-2024 | 28 days | 2 days | ✓ | 11-Apr-2024 | 28 days | 2 days | ✓ |
| **Total Metals : Total Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial - total (lab preserved)** SQU US1 | E508 | 09-Apr-2024 | 11-Apr-2024 | 28 days | 2 days | ✓ | 11-Apr-2024 | 28 days | 2 days | ✓ |
| **Total Metals : Total Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE - total (lab preserved)** SQU DS1 | E420 | 09-Apr-2024 | 10-Apr-2024 | 180 days | 1 days | ✓ | 11-Apr-2024 | 180 days | 2 days | ✓ |
| **Total Metals : Total Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE - total (lab preserved)** SQU US1 | E420 | 09-Apr-2024 | 10-Apr-2024 | 180 days | 1 days | ✓ | 11-Apr-2024 | 180 days | 2 days | ✓ |
| **Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)** | | | | | | | | | | |
| **HDPE total (zinc acetate+sodium hydroxide)** SQU DS1 | E395-H | 09-Apr-2024 | ---- | ---- | ---- | | 12-Apr-2024 | 7 days | 3 days | ✓ |
| **Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)** | | | | | | | | | | |
| **HDPE total (zinc acetate+sodium hydroxide)** SQU US1 | E395-H | 09-Apr-2024 | ---- | ---- | ---- | | 12-Apr-2024 | 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 | | | Count | | Frequency (%) | | |
|---|---|---|---|---|---|---|---|
| *Analytical Methods* | *Method* | *QC Lot #* | *QC* | *Regular* | *Actual* | *Expected* | *Evaluation* |
| **Laboratory Duplicates (DUP)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1400086 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1402415 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1400090 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1400089 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1399871 | 1 | 18 | 5.5 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1398098 | 1 | 19 | 5.2 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1402418 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1400088 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1400091 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1400092 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1400093 | 1 | 17 | 5.8 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1403475 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1400068 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1399938 | 1 | 19 | 5.2 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1397374 | 1 | 10 | 10.0 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1402414 | 0 | 2 | 0.0 | 5.0 | ✗ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1402427 | 1 | 3 | 33.3 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1403465 | 2 | 40 | 5.0 | 5.0 | ✓ |
| **Laboratory Control Samples (LCS)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1400086 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1402415 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1400090 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1400089 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1399871 | 1 | 18 | 5.5 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1398098 | 1 | 19 | 5.2 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1402418 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1400088 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1400091 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1400092 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1400093 | 1 | 17 | 5.8 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1403475 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1400068 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1399938 | 1 | 19 | 5.2 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1397374 | 1 | 10 | 10.0 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1402414 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1402427 | 1 | 3 | 33.3 | 5.0 | ✓ |

Matrix: **Water**

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

| Quality Control Sample Type | | | Count | | Frequency (%) | | |
|---|---|---|---|---|---|---|---|
| *Analytical Methods* | *Method* | *QC Lot #* | *QC* | *Regular* | *Actual* | *Expected* | *Evaluation* |
| **Laboratory Control Samples (LCS) - Continued** | | | | | | | |
| TSS by Gravimetry | E160 | 1403465 | 2 | 40 | 5.0 | 5.0 | ✓ |
| **Method Blanks (MB)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1400086 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1402415 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1400090 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1400089 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1399871 | 1 | 18 | 5.5 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1398098 | 1 | 19 | 5.2 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1402418 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1400088 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1400091 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1400092 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1400093 | 1 | 17 | 5.8 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1403475 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1400068 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1399938 | 1 | 19 | 5.2 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1397374 | 1 | 10 | 10.0 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1402414 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1402427 | 1 | 3 | 33.3 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1403465 | 2 | 40 | 5.0 | 5.0 | ✓ |
| **Matrix Spikes (MS)** | | | | | | | |
| Ammonia by Fluorescence | E298 | 1402415 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1400090 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1400089 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1399871 | 1 | 18 | 5.5 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1398098 | 1 | 19 | 5.2 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1402418 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1400088 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1400091 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1400092 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1400093 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1400068 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1399938 | 1 | 19 | 5.2 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1397374 | 1 | 10 | 10.0 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1402414 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1402427 | 1 | 3 | 33.3 | 5.0 | ✓ |

## Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

| Analytical Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|---|---|---|---|
| TSS by Gravimetry | E160<br>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 ± 1°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<br>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 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue. |
| Bromide in Water by IC (Low Level) | E235.Br-L<br>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<br>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<br>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<br>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<br>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<br>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<br>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<br><br>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) |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L<br><br>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 CO2. 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<br><br>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<br><br>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-H<br><br>ALS Environmental - Vancouver | Water | APHA 4500 -S E-Auto-Colorimetry | Sulfide is determined using the gas dialysis automated methlyene blue colourimetric method. Results expressed "as H2S" if reported represent the maximum possible H2S concentration based on the total sulfide concentration in the sample. The H2S calculation converts Total Sulphide as (S2-) and reports it as Total Sulphide as (H2S) |
| Total Metals in Water by CRC ICPMS | E420<br><br>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.<br><br>Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method. |
| Dissolved Metals in Water by CRC ICPMS | E421<br><br>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.<br><br>Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method. |
| Total Mercury in Water by CVAAS | E508<br><br>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<br><br>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. |

| Analytical Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|---|---|---|---|
| Total Hexavalent Chromium (Cr VI) by IC | E532<br>ALS Environmental - Vancouver | Water | APHA 3500-Cr C (Ion Chromatography) | Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection.<br>Results are based on an un-filtered, field-preserved sample. |
| Dissolved Hardness (Calculated) | EC100<br>ALS Environmental - Vancouver | Water | APHA 2340B | "Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 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<br>ALS Environmental - Vancouver | Water | APHA 2340B | "Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 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. |
| Total Trivalent Chromium (Cr III) by Calculation | EC535<br>ALS Environmental - Vancouver | Water | APHA 3030B/6020A/EPA 7196A (mod) | Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results. |
| Field pH,EC,Salinity,Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine | EF001<br>ALS Environmental - Vancouver | Water | Field Measurement (Client Supplied) | Field pH,EC,Salinity,Cl2,ClO2,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<br>ALS Environmental - Vancouver | Water | | Sample preparation for Preserved Nutrients Water Quality Analysis. |
| Preparation for Dissolved Organic Carbon for Combustion | EP358<br>ALS Environmental - Vancouver | Water | APHA 5310 B (mod) | Preparation for Dissolved Organic Carbon |
| Digestion for Total Nitrogen in water | EP366<br>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<br>ALS Environmental - Vancouver | Water | APHA 4500-P E (mod). | Samples are heated with a persulfate digestion reagent. |
| Dissolved Metals Water Filtration | EP421<br>ALS Environmental - Vancouver | Water | APHA 3030B | Water samples are filtered (0.45 um), and preserved with HNO3. |

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

# QUALITY CONTROL REPORT

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24A7459** | Page | : 1 of 17 |
| Client | : Triton Environmental Consultants Ltd. | Laboratory | : ALS Environmental - Vancouver |
| Contact | : Miranda Lewis | Account Manager | : Can Dang |
| Address | : Suite 1730, 1111 West Georgia St<br>Vancouver BC Canada V6E 4M3 | Address | : 8081 Lougheed Highway<br>Burnaby, British Columbia Canada V5A 1W9 |
| Telephone | : 604 631 2213 | Telephone | : +1 604 253 4188 |
| Project | : 11964 | Date Samples Received | : 09-Apr-2024 13:17 |
| PO | : 11964-Task 20-Phase 3C-4C | Date Analysis Commenced | : 10-Apr-2024 |
| C-O-C number | : ---- | Issue Date | : 16-Apr-2024 20:44 |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : VA23-TRIT100-003 | | |
| No. of samples received | : 2 | | |
| No. of samples analysed | : 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.

| *Signatories* | *Position* | *Laboratory Department* |
|---|---|---|
| Brieanna Allen | Production/Validation Manager | Vancouver Administration, Burnaby, British Columbia |
| Chamoi Beckford | Lab Assistant | Vancouver Metals, Burnaby, British Columbia |
| Dan Gebert | Laboratory Analyst | Vancouver Metals, Burnaby, British Columbia |
| Kate Dimitrova | Supervisor - Inorganic | Vancouver Inorganics, Burnaby, British Columbia |
| Kim Jensen | Department Manager - Metals | Vancouver Metals, Burnaby, British Columbia |
| Leon Yang | Analyst | Vancouver Inorganics, Burnaby, British Columbia |
| Monica Ko | Lab Assistant | Vancouver Inorganics, Burnaby, British Columbia |
| Sam Silveira | Analyst | Vancouver Metals, Burnaby, British Columbia |

## General Comments

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

Key :

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

## Workorder Comments

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

## Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **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* |
| **Physical Tests (QC Lot: 1400086)** | | | | | | | | | | | |
| VA24A7449-003 | Anonymous | Alkalinity, total (as CaCO3) | ---- | E290 | 1.0 | mg/L | 62.3 | 63.4 | 1.77% | 20% | ---- |
| **Physical Tests (QC Lot: 1403465)** | | | | | | | | | | | |
| KS2401259-001 | Anonymous | Solids, total suspended [TSS] | ---- | E160 | 3.0 | mg/L | 5.4 | 6.0 | 0.6 | Diff <2x LOR | ---- |
| **Physical Tests (QC Lot: 1403466)** | | | | | | | | | | | |
| VA24A7459-002 | SQU DS1 | Solids, total suspended [TSS] | ---- | E160 | 3.0 | mg/L | <3.0 | <3.0 | 0 | Diff <2x LOR | ---- |
| **Physical Tests (QC Lot: 1403475)** | | | | | | | | | | | |
| VA24A7459-002 | SQU DS1 | Solids, total dissolved [TDS] | ---- | E162 | 10 | mg/L | 33 | 37 | 4 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1400088)** | | | | | | | | | | | |
| VA24A7449-001 | Anonymous | Fluoride | 16984-48-8 | E235.F | 0.400 | mg/L | <0.400 | <0.400 | 0 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1400089)** | | | | | | | | | | | |
| VA24A7449-001 | Anonymous | Chloride | 16887-00-6 | E235.Cl | 10.0 | mg/L | <10.0 | <10.0 | 0 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1400090)** | | | | | | | | | | | |
| VA24A7449-001 | Anonymous | Bromide | 24959-67-9 | E235.Br-L | 1.00 | mg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1400091)** | | | | | | | | | | | |
| VA24A7449-001 | Anonymous | Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.100 | mg/L | 0.158 | 0.135 | 0.0230 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1400092)** | | | | | | | | | | | |
| VA24A7449-001 | Anonymous | Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.0200 | mg/L | <0.0200 | <0.0200 | 0 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1400093)** | | | | | | | | | | | |
| VA24A7449-001 | Anonymous | Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 6.00 | mg/L | 1250 | 1260 | 0.869% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1402415)** | | | | | | | | | | | |
| VA24A7408-001 | Anonymous | Ammonia, total (as N) | 7664-41-7 | E298 | 0.0050 | mg/L | 0.211 | 0.211 | 0.138% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1402427)** | | | | | | | | | | | |
| VA24A7459-001 | SQU US1 | Phosphorus, total | 7723-14-0 | E372-U | 0.0020 | mg/L | 0.0356 | 0.0348 | 2.24% | 20% | ---- |
| **Organic / Inorganic Carbon (QC Lot: 1402418)** | | | | | | | | | | | |
| VA24A7444-001 | Anonymous | Carbon, dissolved organic [DOC] | ---- | E358-L | 0.50 | mg/L | 5.49 | 5.71 | 4.04% | 20% | ---- |
| **Total Metals (QC Lot: 1397374)** | | | | | | | | | | | |
| VA24A7423-039 | 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 | ---- |
| | | 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 | ---- |

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* |
| **Total Metals (QC Lot: 1397374) - continued** | | | | | | | | | | | |
| VA24A7423-039 | Anonymous | 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 | 0.00050 | mg/L | <0.00050 | <0.00050 | 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 | 0.00050 | mg/L | <0.00050 | <0.00050 | 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 | 0.00050 | 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 | <0.050 | <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 | ---- |
| | | 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* |
| **Total Metals (QC Lot: 1397374) - continued** | | | | | | | | | | | |
| VA24A7423-039 | Anonymous | Zirconium, total | 7440-67-7 | E420 | 0.00020 | mg/L | <0.00020 | <0.00020 | 0 | Diff <2x LOR | ---- |
| **Total Metals (QC Lot: 1399938)** | | | | | | | | | | | |
| VA24A7429-001 | Anonymous | Mercury, total | 7439-97-6 | E508 | 0.0000050 | mg/L | <0.0000050 | <0.0000050 | 0 | Diff <2x LOR | ---- |
| **Dissolved Metals (QC Lot: 1398098)** | | | | | | | | | | | |
| VA24A7489-001 | Anonymous | Aluminum, dissolved | 7429-90-5 | E421 | 0.0010 | mg/L | 0.0015 | 0.0011 | 0.0004 | Diff <2x LOR | ---- |
| | | Antimony, dissolved | 7440-36-0 | E421 | 0.00010 | mg/L | 0.0127 | 0.0126 | 0.683% | 20% | ---- |
| | | Arsenic, dissolved | 7440-38-2 | E421 | 0.00010 | mg/L | 0.00120 | 0.00116 | 3.42% | 20% | ---- |
| | | Barium, dissolved | 7440-39-3 | E421 | 0.00010 | mg/L | 0.0322 | 0.0319 | 0.764% | 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 | 0.464 | 0.461 | 0.692% | 20% | ---- |
| | | Cadmium, dissolved | 7440-43-9 | E421 | 0.0000100 | mg/L | <0.0000100 | <0.0000100 | 0 | Diff <2x LOR | ---- |
| | | Calcium, dissolved | 7440-70-2 | E421 | 0.050 | mg/L | 79.4 | 79.4 | 0.0242% | 20% | ---- |
| | | Cesium, dissolved | 7440-46-2 | E421 | 0.000010 | mg/L | 0.0113 | 0.0111 | 2.00% | 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 | 0.00060 | 0.00060 | 0.0000007 | Diff <2x LOR | ---- |
| | | Copper, dissolved | 7440-50-8 | E421 | 0.00020 | mg/L | 0.00021 | 0.00021 | 0.000001 | Diff <2x LOR | ---- |
| | | Iron, dissolved | 7439-89-6 | E421 | 0.010 | mg/L | 0.020 | 0.019 | 0.0006 | Diff <2x LOR | ---- |
| | | Lead, dissolved | 7439-92-1 | E421 | 0.000050 | mg/L | 0.000152 | 0.000150 | 0.000002 | Diff <2x LOR | ---- |
| | | Lithium, dissolved | 7439-93-2 | E421 | 0.0010 | mg/L | 0.505 | 0.490 | 3.00% | 20% | ---- |
| | | Magnesium, dissolved | 7439-95-4 | E421 | 0.0050 | mg/L | 7.64 | 7.60 | 0.495% | 20% | ---- |
| | | Manganese, dissolved | 7439-96-5 | E421 | 0.00010 | mg/L | 0.0656 | 0.0647 | 1.41% | 20% | ---- |
| | | Molybdenum, dissolved | 7439-98-7 | E421 | 0.000050 | mg/L | 0.0278 | 0.0279 | 0.490% | 20% | ---- |
| | | Nickel, dissolved | 7440-02-0 | E421 | 0.00050 | mg/L | 0.00144 | 0.00142 | 0.00002 | 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 | 81.3 | 80.4 | 1.04% | 20% | ---- |
| | | Rubidium, dissolved | 7440-17-7 | E421 | 0.00020 | mg/L | 0.106 | 0.104 | 1.69% | 20% | ---- |
| | | Selenium, dissolved | 7782-49-2 | E421 | 0.000050 | mg/L | 0.00410 | 0.00395 | 3.63% | 20% | ---- |
| | | Silicon, dissolved | 7440-21-3 | E421 | 0.050 | mg/L | 0.548 | 0.514 | 6.32% | 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 | 236 | 231 | 1.82% | 20% | ---- |
| | | Strontium, dissolved | 7440-24-6 | E421 | 0.00020 | mg/L | 0.989 | 0.986 | 0.267% | 20% | ---- |
| | | Sulfur, dissolved | 7704-34-9 | E421 | 0.50 | mg/L | 216 | 215 | 0.615% | 20% | ---- |
| | | Tellurium, dissolved | 13494-80-9 | E421 | 0.00020 | mg/L | <0.00020 | <0.00020 | 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* |
| **Dissolved Metals (QC Lot: 1398098) - continued** | | | | | | | | | | | |
| VA24A7489-001 | Anonymous | Thallium, dissolved | 7440-28-0 | E421 | 0.000010 | mg/L | 0.000144 | 0.000143 | 0.152% | 20% | ---- |
| | | 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 | 0.00112 | 0.00111 | 1.49% | 20% | ---- |
| | | Uranium, dissolved | 7440-61-1 | E421 | 0.000010 | mg/L | 0.000250 | 0.000248 | 0.795% | 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 | 0.0015 | 0.0016 | 0.00005 | Diff <2x LOR | ---- |
| | | Zirconium, dissolved | 7440-67-7 | E421 | 0.00030 | mg/L | <0.00030 | <0.00030 | 0 | Diff <2x LOR | ---- |
| **Dissolved Metals (QC Lot: 1399871)** | | | | | | | | | | | |
| VA24A7409-001 | Anonymous | Mercury, dissolved | 7439-97-6 | E509 | 0.0000050 | mg/L | <0.0000050 | <0.0000050 | 0 | Diff <2x LOR | ---- |
| **Speciated Metals (QC Lot: 1400068)** | | | | | | | | | | | |
| VA24A7459-001 | SQU US1 | Chromium, hexavalent [Cr VI], total | 18540-29-9 | E532 | 0.00050 | mg/L | <0.00050 | <0.00050 | 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 |
|---|---|---|---|---|---|---|
| **Physical Tests (QCLot: 1400086)** | | | | | | |
| Alkalinity, total (as CaCO3) | ---- | E290 | 1 | mg/L | <1.0 | ---- |
| **Physical Tests (QCLot: 1403465)** | | | | | | |
| Solids, total suspended [TSS] | ---- | E160 | 3 | mg/L | <3.0 | ---- |
| **Physical Tests (QCLot: 1403466)** | | | | | | |
| Solids, total suspended [TSS] | ---- | E160 | 3 | mg/L | <3.0 | ---- |
| **Physical Tests (QCLot: 1403475)** | | | | | | |
| Solids, total dissolved [TDS] | ---- | E162 | 10 | mg/L | <10 | ---- |
| **Anions and Nutrients (QCLot: 1400088)** | | | | | | |
| Fluoride | 16984-48-8 | E235.F | 0.02 | mg/L | <0.020 | ---- |
| **Anions and Nutrients (QCLot: 1400089)** | | | | | | |
| Chloride | 16887-00-6 | E235.Cl | 0.5 | mg/L | <0.50 | ---- |
| **Anions and Nutrients (QCLot: 1400090)** | | | | | | |
| Bromide | 24959-67-9 | E235.Br-L | 0.05 | mg/L | <0.050 | ---- |
| **Anions and Nutrients (QCLot: 1400091)** | | | | | | |
| Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.005 | mg/L | <0.0050 | ---- |
| **Anions and Nutrients (QCLot: 1400092)** | | | | | | |
| Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.001 | mg/L | <0.0010 | ---- |
| **Anions and Nutrients (QCLot: 1400093)** | | | | | | |
| Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.3 | mg/L | <0.30 | ---- |
| **Anions and Nutrients (QCLot: 1402414)** | | | | | | |
| Nitrogen, total | 7727-37-9 | E366 | 0.03 | mg/L | <0.030 | ---- |
| **Anions and Nutrients (QCLot: 1402415)** | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298 | 0.005 | mg/L | <0.0050 | ---- |
| **Anions and Nutrients (QCLot: 1402427)** | | | | | | |
| Phosphorus, total | 7723-14-0 | E372-U | 0.002 | mg/L | <0.0020 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1402418)** | | | | | | |
| Carbon, dissolved organic [DOC] | ---- | E358-L | 0.5 | mg/L | <0.50 | ---- |
| **Total Metals (QCLot: 1397374)** | | | | | | |
| 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 |
|---|---|---|---|---|---|---|
| **Total Metals (QCLot: 1397374) - continued** | | | | | | |
| 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 |
|---|---|---|---|---|---|---|
| **Total Metals (QCLot: 1399938)** | | | | | | |
| Mercury, total | 7439-97-6 | E508 | 0.000005 | mg/L | <0.0000050 | ---- |
| **Dissolved Metals (QCLot: 1398098)** | | | | | | |
| 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 |
|---|---|---|---|---|---|---|
| **Dissolved Metals (QCLot: 1398098) - continued** | | | | | | |
| 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 | ---- |
| **Dissolved Metals (QCLot: 1399871)** | | | | | | |
| Mercury, dissolved | 7439-97-6 | E509 | 0.000005 | mg/L | <0.0000050 | ---- |
| **Speciated Metals (QCLot: 1400068)** | | | | | | |
| Chromium, hexavalent [Cr VI], total | 18540-29-9 | E532 | 0.0005 | mg/L | <0.00050 | ---- |

## 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Target Concentration | LCS | Low | High | Qualifier |
| **Physical Tests (QCLot: 1400086)** | | | | | | | | | |
| Alkalinity, total (as CaCO3) | ---- | E290 | 1 | mg/L | 500 mg/L | 108 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1403465)** | | | | | | | | | |
| Solids, total suspended [TSS] | ---- | E160 | 3 | mg/L | 150 mg/L | 96.7 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1403466)** | | | | | | | | | |
| Solids, total suspended [TSS] | ---- | E160 | 3 | mg/L | 150 mg/L | 88.3 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1403475)** | | | | | | | | | |
| Solids, total dissolved [TDS] | ---- | E162 | 10 | mg/L | 1000 mg/L | 98.6 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1400088)** | | | | | | | | | |
| Fluoride | 16984-48-8 | E235.F | 0.02 | mg/L | 1 mg/L | 99.1 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1400089)** | | | | | | | | | |
| Chloride | 16887-00-6 | E235.Cl | 0.5 | mg/L | 100 mg/L | 98.3 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1400090)** | | | | | | | | | |
| Bromide | 24959-67-9 | E235.Br-L | 0.05 | mg/L | 0.5 mg/L | 98.6 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1400091)** | | | | | | | | | |
| Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.005 | mg/L | 2.5 mg/L | 98.1 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1400092)** | | | | | | | | | |
| Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.001 | mg/L | 0.5 mg/L | 96.2 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1400093)** | | | | | | | | | |
| Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.3 | mg/L | 100 mg/L | 100 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1402414)** | | | | | | | | | |
| Nitrogen, total | 7727-37-9 | E366 | 0.03 | mg/L | 0.5 mg/L | 96.9 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1402415)** | | | | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298 | 0.005 | mg/L | 0.2 mg/L | 90.1 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1402427)** | | | | | | | | | |
| Phosphorus, total | 7723-14-0 | E372-U | 0.002 | mg/L | 0.05 mg/L | 96.2 | 80.0 | 120 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1402418)** | | | | | | | | | |
| Carbon, dissolved organic [DOC] | ---- | E358-L | 0.5 | mg/L | 8.57 mg/L | 104 | 80.0 | 120 | ---- |
| **Total Metals (QCLot: 1397374)** | | | | | | | | | |
| Aluminum, total | 7429-90-5 | E420 | 0.003 | mg/L | 2 mg/L | 102 | 80.0 | 120 | ---- |

Sub-Matrix: **Water**

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Target Concentration | LCS | Low | High | Qualifier |
| **Total Metals (QCLot: 1397374) - continued** | | | | | | | | | |
| Antimony, total | 7440-36-0 | E420 | 0.0001 | mg/L | 1 mg/L | 110 | 80.0 | 120 | ---- |
| Arsenic, total | 7440-38-2 | E420 | 0.0001 | mg/L | 1 mg/L | 106 | 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 | 97.8 | 80.0 | 120 | ---- |
| Boron, total | 7440-42-8 | E420 | 0.01 | mg/L | 1 mg/L | 100 | 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 | 100 | 80.0 | 120 | ---- |
| Cesium, total | 7440-46-2 | E420 | 0.00001 | mg/L | 0.05 mg/L | 101 | 80.0 | 120 | ---- |
| Chromium, total | 7440-47-3 | E420 | 0.0005 | mg/L | 0.25 mg/L | 99.5 | 80.0 | 120 | ---- |
| Cobalt, total | 7440-48-4 | E420 | 0.0001 | mg/L | 0.25 mg/L | 98.3 | 80.0 | 120 | ---- |
| Copper, total | 7440-50-8 | E420 | 0.0005 | mg/L | 0.25 mg/L | 98.6 | 80.0 | 120 | ---- |
| Iron, total | 7439-89-6 | E420 | 0.01 | mg/L | 1 mg/L | 98.2 | 80.0 | 120 | ---- |
| Lead, total | 7439-92-1 | E420 | 0.00005 | mg/L | 0.5 mg/L | 98.7 | 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 | 108 | 80.0 | 120 | ---- |
| Manganese, total | 7439-96-5 | E420 | 0.0001 | mg/L | 0.25 mg/L | 98.6 | 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 | 99.1 | 80.0 | 120 | ---- |
| Phosphorus, total | 7723-14-0 | E420 | 0.05 | mg/L | 10 mg/L | 106 | 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 | 96.2 | 80.0 | 120 | ---- |
| Selenium, total | 7782-49-2 | E420 | 0.00005 | mg/L | 1 mg/L | 98.3 | 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 | 97.4 | 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 | 99.9 | 80.0 | 120 | ---- |
| Sulfur, total | 7704-34-9 | E420 | 0.5 | mg/L | 50 mg/L | 99.8 | 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 | 102 | 80.0 | 120 | ---- |
| Thorium, total | 7440-29-1 | E420 | 0.0001 | mg/L | 0.1 mg/L | 96.0 | 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 | 100 | 80.0 | 120 | ---- |
| Tungsten, total | 7440-33-7 | E420 | 0.0001 | mg/L | 0.1 mg/L | 98.4 | 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 | 100 | 80.0 | 120 | ---- |

Sub-Matrix: **Water**

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Target Concentration | LCS | Low | High | Qualifier |
| **Total Metals (QCLot: 1397374) - continued** | | | | | | | | | |
| Zinc, total | 7440-66-6 | E420 | 0.003 | mg/L | 0.5 mg/L | 105 | 80.0 | 120 | ---- |
| Zirconium, total | 7440-67-7 | E420 | 0.0002 | mg/L | 0.1 mg/L | 97.8 | 80.0 | 120 | ---- |
| **Total Metals (QCLot: 1399938)** | | | | | | | | | |
| Mercury, total | 7439-97-6 | E508 | 0.000005 | mg/L | 0 mg/L | 103 | 80.0 | 120 | ---- |
| **Dissolved Metals (QCLot: 1398098)** | | | | | | | | | |
| Aluminum, dissolved | 7429-90-5 | E421 | 0.001 | mg/L | 2 mg/L | 101 | 80.0 | 120 | ---- |
| Antimony, dissolved | 7440-36-0 | E421 | 0.0001 | mg/L | 1 mg/L | 104 | 80.0 | 120 | ---- |
| Arsenic, dissolved | 7440-38-2 | E421 | 0.0001 | mg/L | 1 mg/L | 105 | 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 | 103 | 80.0 | 120 | ---- |
| Bismuth, dissolved | 7440-69-9 | E421 | 0.00005 | mg/L | 1 mg/L | 99.2 | 80.0 | 120 | ---- |
| Boron, dissolved | 7440-42-8 | E421 | 0.01 | mg/L | 1 mg/L | 99.3 | 80.0 | 120 | ---- |
| Cadmium, dissolved | 7440-43-9 | E421 | 0.000005 | mg/L | 0.1 mg/L | 99.1 | 80.0 | 120 | ---- |
| Calcium, dissolved | 7440-70-2 | E421 | 0.05 | mg/L | 50 mg/L | 98.6 | 80.0 | 120 | ---- |
| Cesium, dissolved | 7440-46-2 | E421 | 0.00001 | mg/L | 0.05 mg/L | 103 | 80.0 | 120 | ---- |
| Chromium, dissolved | 7440-47-3 | E421 | 0.0005 | mg/L | 0.25 mg/L | 100 | 80.0 | 120 | ---- |
| Cobalt, dissolved | 7440-48-4 | E421 | 0.0001 | mg/L | 0.25 mg/L | 98.8 | 80.0 | 120 | ---- |
| Copper, dissolved | 7440-50-8 | E421 | 0.0002 | mg/L | 0.25 mg/L | 96.9 | 80.0 | 120 | ---- |
| Iron, dissolved | 7439-89-6 | E421 | 0.01 | mg/L | 1 mg/L | 116 | 80.0 | 120 | ---- |
| Lead, dissolved | 7439-92-1 | E421 | 0.00005 | mg/L | 0.5 mg/L | 102 | 80.0 | 120 | ---- |
| Lithium, dissolved | 7439-93-2 | E421 | 0.001 | mg/L | 0.25 mg/L | 108 | 80.0 | 120 | ---- |
| Magnesium, dissolved | 7439-95-4 | E421 | 0.005 | mg/L | 50 mg/L | 99.8 | 80.0 | 120 | ---- |
| Manganese, dissolved | 7439-96-5 | E421 | 0.0001 | mg/L | 0.25 mg/L | 98.6 | 80.0 | 120 | ---- |
| Molybdenum, dissolved | 7439-98-7 | E421 | 0.00005 | mg/L | 0.25 mg/L | 103 | 80.0 | 120 | ---- |
| Nickel, dissolved | 7440-02-0 | E421 | 0.0005 | mg/L | 0.5 mg/L | 97.5 | 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 | 104 | 80.0 | 120 | ---- |
| Rubidium, dissolved | 7440-17-7 | E421 | 0.0002 | mg/L | 0.1 mg/L | 100 | 80.0 | 120 | ---- |
| Selenium, dissolved | 7782-49-2 | E421 | 0.00005 | mg/L | 1 mg/L | 98.2 | 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 | 98.7 | 80.0 | 120 | ---- |
| Sodium, dissolved | 7440-23-5 | E421 | 0.05 | mg/L | 50 mg/L | 99.9 | 80.0 | 120 | ---- |
| Strontium, dissolved | 7440-24-6 | E421 | 0.0002 | mg/L | 0.25 mg/L | 101 | 80.0 | 120 | ---- |
| Sulfur, dissolved | 7704-34-9 | E421 | 0.5 | mg/L | 50 mg/L | 90.8 | 80.0 | 120 | ---- |
| Tellurium, dissolved | 13494-80-9 | E421 | 0.0002 | mg/L | 0.1 mg/L | 102 | 80.0 | 120 | ---- |

Sub-Matrix: **Water**

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Target Concentration | LCS | Low | High | Qualifier |
| **Dissolved Metals (QCLot: 1398098) - continued** | | | | | | | | | |
| 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 | 100.0 | 80.0 | 120 | ---- |
| Tin, dissolved | 7440-31-5 | E421 | 0.0001 | mg/L | 0.5 mg/L | 99.9 | 80.0 | 120 | ---- |
| Titanium, dissolved | 7440-32-6 | E421 | 0.0003 | mg/L | 0.25 mg/L | 95.6 | 80.0 | 120 | ---- |
| Tungsten, dissolved | 7440-33-7 | E421 | 0.0001 | mg/L | 0.1 mg/L | 102 | 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 | 100 | 80.0 | 120 | ---- |
| Zinc, dissolved | 7440-66-6 | E421 | 0.001 | mg/L | 0.5 mg/L | 98.4 | 80.0 | 120 | ---- |
| Zirconium, dissolved | 7440-67-7 | E421 | 0.0002 | mg/L | 0.1 mg/L | 102 | 80.0 | 120 | ---- |
| Mercury, dissolved | 7439-97-6 | E509 | 0.000005 | mg/L | 0 mg/L | 100 | 80.0 | 120 | ---- |
| **Speciated Metals (QCLot: 1400068)** | | | | | | | | | |
| Chromium, hexavalent [Cr VI], total | 18540-29-9 | E532 | 0.0005 | mg/L | 0.25 mg/L | 102 | 80.0 | 120 | ---- |

## Matrix Spike (MS) Report

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

Sub-Matrix: **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 |
| **Anions and Nutrients (QCLot: 1400088)** | | | | | | | | | | |
| VA24A7449-002 | Anonymous | Fluoride | 16984-48-8 | E235.F | 9.88 mg/L | 10 mg/L | 98.8 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1400089)** | | | | | | | | | | |
| VA24A7449-002 | Anonymous | Chloride | 16887-00-6 | E235.Cl | 973 mg/L | 1000 mg/L | 97.3 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1400090)** | | | | | | | | | | |
| VA24A7449-002 | Anonymous | Bromide | 24959-67-9 | E235.Br-L | 4.71 mg/L | 5 mg/L | 94.2 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1400091)** | | | | | | | | | | |
| VA24A7449-002 | Anonymous | Nitrate (as N) | 14797-55-8 | E235.NO3-L | 24.3 mg/L | 25 mg/L | 97.3 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1400092)** | | | | | | | | | | |
| VA24A7449-002 | Anonymous | Nitrite (as N) | 14797-65-0 | E235.NO2-L | 4.77 mg/L | 5 mg/L | 95.5 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1400093)** | | | | | | | | | | |
| VA24A7449-002 | Anonymous | Sulfate (as SO4) | 14808-79-8 | E235.SO4 | ND mg/L | ---- | ND | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1402414)** | | | | | | | | | | |
| VA24A7459-001 | SQU US1 | Nitrogen, total | 7727-37-9 | E366 | 0.450 mg/L | 0.4 mg/L | 112 | 70.0 | 130 | ---- |
| **Anions and Nutrients (QCLot: 1402415)** | | | | | | | | | | |
| VA24A7408-002 | Anonymous | Ammonia, total (as N) | 7664-41-7 | E298 | ND mg/L | ---- | ND | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1402427)** | | | | | | | | | | |
| VA24A7459-002 | SQU DS1 | Phosphorus, total | 7723-14-0 | E372-U | 0.0489 mg/L | 0.05 mg/L | 97.7 | 70.0 | 130 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1402418)** | | | | | | | | | | |
| VA24A7444-002 | Anonymous | Carbon, dissolved organic [DOC] | ---- | E358-L | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| **Total Metals (QCLot: 1397374)** | | | | | | | | | | |
| VA24A7446-001 | Anonymous | Aluminum, total | 7429-90-5 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Antimony, total | 7440-36-0 | E420 | 0.0198 mg/L | 0.02 mg/L | 98.9 | 70.0 | 130 | ---- |
| | | Arsenic, total | 7440-38-2 | E420 | 0.0199 mg/L | 0.02 mg/L | 99.6 | 70.0 | 130 | ---- |
| | | Barium, total | 7440-39-3 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Beryllium, total | 7440-41-7 | E420 | 0.0381 mg/L | 0.04 mg/L | 95.3 | 70.0 | 130 | ---- |
| | | Bismuth, total | 7440-69-9 | E420 | 0.00883 mg/L | 0.01 mg/L | 88.3 | 70.0 | 130 | ---- |
| | | Boron, total | 7440-42-8 | E420 | 0.097 mg/L | 0.1 mg/L | 96.6 | 70.0 | 130 | ---- |
| | | Cadmium, total | 7440-43-9 | E420 | 0.00387 mg/L | 0.004 mg/L | 96.7 | 70.0 | 130 | ---- |
| | | Calcium, total | 7440-70-2 | E420 | ND 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 | 0.0374 mg/L | 0.04 mg/L | 93.5 | 70.0 | 130 | ---- |
| | | Cobalt, total | 7440-48-4 | E420 | 0.0186 mg/L | 0.02 mg/L | 93.0 | 70.0 | 130 | ---- |
| | | Copper, total | 7440-50-8 | E420 | ND 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 |
| **Total Metals (QCLot: 1397374) - continued** | | | | | | | | | | |
| VA24A7446-001 | Anonymous | Iron, total | 7439-89-6 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Lead, total | 7439-92-1 | E420 | 0.0178 mg/L | 0.02 mg/L | 88.9 | 70.0 | 130 | ---- |
| | | Lithium, total | 7439-93-2 | E420 | 0.0954 mg/L | 0.1 mg/L | 95.4 | 70.0 | 130 | ---- |
| | | Magnesium, total | 7439-95-4 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Manganese, total | 7439-96-5 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Molybdenum, total | 7439-98-7 | E420 | 0.0202 mg/L | 0.02 mg/L | 101 | 70.0 | 130 | ---- |
| | | Nickel, total | 7440-02-0 | E420 | 0.0376 mg/L | 0.04 mg/L | 94.0 | 70.0 | 130 | ---- |
| | | Phosphorus, total | 7723-14-0 | E420 | 9.72 mg/L | 10 mg/L | 97.2 | 70.0 | 130 | ---- |
| | | Potassium, total | 7440-09-7 | E420 | 3.74 mg/L | 4 mg/L | 93.5 | 70.0 | 130 | ---- |
| | | Rubidium, total | 7440-17-7 | E420 | 0.0185 mg/L | 0.02 mg/L | 92.5 | 70.0 | 130 | ---- |
| | | Selenium, total | 7782-49-2 | E420 | 0.0383 mg/L | 0.04 mg/L | 95.7 | 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 | 0.00383 mg/L | 0.004 mg/L | 95.7 | 70.0 | 130 | ---- |
| | | Sodium, total | 7440-23-5 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Strontium, total | 7440-24-6 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Sulfur, total | 7704-34-9 | E420 | 20.5 mg/L | 20 mg/L | 102 | 70.0 | 130 | ---- |
| | | Tellurium, total | 13494-80-9 | E420 | 0.0412 mg/L | 0.04 mg/L | 103 | 70.0 | 130 | ---- |
| | | Thallium, total | 7440-28-0 | E420 | 0.00357 mg/L | 0.004 mg/L | 89.4 | 70.0 | 130 | ---- |
| | | Thorium, total | 7440-29-1 | E420 | 0.0177 mg/L | 0.02 mg/L | 88.5 | 70.0 | 130 | ---- |
| | | Tin, total | 7440-31-5 | E420 | 0.0197 mg/L | 0.02 mg/L | 98.6 | 70.0 | 130 | ---- |
| | | Titanium, total | 7440-32-6 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Tungsten, total | 7440-33-7 | E420 | 0.0186 mg/L | 0.02 mg/L | 93.2 | 70.0 | 130 | ---- |
| | | Uranium, total | 7440-61-1 | E420 | 0.00375 mg/L | 0.004 mg/L | 93.7 | 70.0 | 130 | ---- |
| | | Vanadium, total | 7440-62-2 | E420 | 0.0955 mg/L | 0.1 mg/L | 95.5 | 70.0 | 130 | ---- |
| | | Zinc, total | 7440-66-6 | E420 | 0.385 mg/L | 0.4 mg/L | 96.4 | 70.0 | 130 | ---- |
| | | Zirconium, total | 7440-67-7 | E420 | 0.0407 mg/L | 0.04 mg/L | 102 | 70.0 | 130 | ---- |
| **Total Metals (QCLot: 1399938)** | | | | | | | | | | |
| VA24A7429-002 | Anonymous | Mercury, total | 7439-97-6 | E508 | 0.000102 mg/L | 0 mg/L | 102 | 70.0 | 130 | ---- |
| **Dissolved Metals (QCLot: 1398098)** | | | | | | | | | | |
| VA24A7489-002 | Anonymous | Aluminum, dissolved | 7429-90-5 | E421 | 0.196 mg/L | 0.2 mg/L | 97.9 | 70.0 | 130 | ---- |
| | | Antimony, dissolved | 7440-36-0 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Arsenic, dissolved | 7440-38-2 | E421 | 0.0211 mg/L | 0.02 mg/L | 106 | 70.0 | 130 | ---- |
| | | Barium, dissolved | 7440-39-3 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Beryllium, dissolved | 7440-41-7 | E421 | 0.0408 mg/L | 0.04 mg/L | 102 | 70.0 | 130 | ---- |
| | | Bismuth, dissolved | 7440-69-9 | E421 | 0.00896 mg/L | 0.01 mg/L | 89.6 | 70.0 | 130 | ---- |
| | | Boron, dissolved | 7440-42-8 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Cadmium, dissolved | 7440-43-9 | E421 | 0.00379 mg/L | 0.004 mg/L | 94.7 | 70.0 | 130 | ---- |
| | | Calcium, dissolved | 7440-70-2 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Cesium, dissolved | 7440-46-2 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Chromium, dissolved | 7440-47-3 | E421 | 0.0385 mg/L | 0.04 mg/L | 96.3 | 70.0 | 130 | ---- |
| | | 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 | 0.0178 mg/L | 0.02 mg/L | 88.9 | 70.0 | 130 | ---- |
| | | Iron, dissolved | 7439-89-6 | E421 | 1.91 mg/L | 2 mg/L | 95.4 | 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 |
| **Dissolved Metals (QCLot: 1398098) - continued** | | | | | | | | | | |
| VA24A7489-002 | Anonymous | Lead, dissolved | 7439-92-1 | E421 | 0.0186 mg/L | 0.02 mg/L | 93.0 | 70.0 | 130 | ---- |
| | | Lithium, dissolved | 7439-93-2 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Magnesium, dissolved | 7439-95-4 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Manganese, dissolved | 7439-96-5 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Molybdenum, dissolved | 7439-98-7 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Nickel, dissolved | 7440-02-0 | E421 | 0.0363 mg/L | 0.04 mg/L | 90.7 | 70.0 | 130 | ---- |
| | | Phosphorus, dissolved | 7723-14-0 | E421 | 10.6 mg/L | 10 mg/L | 106 | 70.0 | 130 | ---- |
| | | Potassium, dissolved | 7440-09-7 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Rubidium, dissolved | 7440-17-7 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Selenium, dissolved | 7782-49-2 | E421 | 0.0393 mg/L | 0.04 mg/L | 98.3 | 70.0 | 130 | ---- |
| | | Silicon, dissolved | 7440-21-3 | E421 | 10.8 mg/L | 10 mg/L | 108 | 70.0 | 130 | ---- |
| | | Silver, dissolved | 7440-22-4 | E421 | 0.00314 mg/L | 0.004 mg/L | 78.5 | 70.0 | 130 | ---- |
| | | Sodium, dissolved | 7440-23-5 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Strontium, dissolved | 7440-24-6 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Sulfur, dissolved | 7704-34-9 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Tellurium, dissolved | 13494-80-9 | E421 | 0.0408 mg/L | 0.04 mg/L | 102 | 70.0 | 130 | ---- |
| | | Thallium, dissolved | 7440-28-0 | E421 | 0.00368 mg/L | 0.004 mg/L | 92.0 | 70.0 | 130 | ---- |
| | | Thorium, dissolved | 7440-29-1 | E421 | 0.0188 mg/L | 0.02 mg/L | 94.2 | 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 | 0.0412 mg/L | 0.04 mg/L | 103 | 70.0 | 130 | ---- |
| | | Tungsten, dissolved | 7440-33-7 | E421 | 0.0195 mg/L | 0.02 mg/L | 97.5 | 70.0 | 130 | ---- |
| | | Uranium, dissolved | 7440-61-1 | E421 | 0.00387 mg/L | 0.004 mg/L | 96.8 | 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 | 0.379 mg/L | 0.4 mg/L | 94.8 | 70.0 | 130 | ---- |
| | | Zirconium, dissolved | 7440-67-7 | E421 | 0.0418 mg/L | 0.04 mg/L | 104 | 70.0 | 130 | ---- |
| **Dissolved Metals (QCLot: 1399871)** | | | | | | | | | | |
| VA24A7409-002 | Anonymous | Mercury, dissolved | 7439-97-6 | E509 | 0.000101 mg/L | 0 mg/L | 101 | 70.0 | 130 | ---- |
| **Speciated Metals (QCLot: 1400068)** | | | | | | | | | | |
| VA24A7459-002 | SQU DS1 | Chromium, hexavalent [Cr VI], total | 18540-29-9 | E532 | 0.255 mg/L | 0.25 mg/L | 102 | 70.0 | 130 | ---- |

# Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17 -

Page 1 of

| Report To | Contact and company name below will appear on the final report | Report Format / Distribution | Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply) |
|---|---|---|---|
| Company: | Triton Environmental | Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL) | Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply |
| Contact: | | Quality Control (QC) Report with Report ☑ ☐ NO | PRIORITY (Business Days): 4 day [P4-20%] ☐ / 3 day [P3-25%] ☐ / 2 day [P2-50%] ☐ |
| Phone: | | ☑ Compare Results to Criteria on Report - provide details below if box checked | EMERGENCY: 1 Business day [E1 - 100%] ☐ / Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐ |
| | | Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX | |
| Street: | | Email 1 or Fax | Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm |
| City/Province: | Vancouver/BC | Email 2 | For tests that can not be performed according to the service level selected, you will be contacted. |
| Postal Code: | V6E 4M3 | Email 3 | |

| Invoice To | Same as Report To ☐ YES ☑ NO | Invoice Distribution |
|---|---|---|
| | Copy of Invoice with Report ☐ YES ☑ NO | Select Invoice Distribution: ☑ EMAIL ☑ MAIL ☑ FAX |
| Company: | | Email 1 or Fax |
| Contact: | | Email 2 |

| Project Information | | Oil and Gas Required Fields (client use) | |
|---|---|---|---|
| ALS Account # / Quote #: | VA23-TRIT100-003 | AFE/Cost Center: | PO# |
| Job #: | 11964 | Major/Minor Code: | Routing Code: |
| PO / AFE: | 11964 - Task 20 - Phase 3C-4C | Requisitioner: | |
| LSD: | | Location: | |
| ALS Lab Work Order # (lab use only): | | ALS Contact: Can Dang | Sampler: |

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

| 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 | Total metals + mercury | Dissolved metals + mercury | Total hexavalent chromium | Total trivalent chromium | TSS | TDS | Nutrients (ammonia, ammonium, total nitrogen, total phosphorus) | Total sulfide (as H2S), Unionized Sulfide | Anions scan (Br, Cl, F, NO2, NO3, SO4) | General parameters (alkalinity) | DOC | SAMPLES ON HOLD | Sample is hazardous (please provide further details | NUMBER OF CONTAINERS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | F | | | | | P | P | | | F/P | | | |
| | SQU US 1 | 09 Apr 24 | 10:08 | Water | R | R | R | R | R | R | R | R | R | R | R | | N | 9 |
| | pH: 7.13 cond: 64uS temp: 6.3°C | | | | | | | | | | | | | | | | | |
| | SQU DS 1 | 09 Apr 24 | 10:11 | Water | R | R | R | R | R | R | R | R | R | R | R | | N | 9 |
| | pH: 7.20 cond: 66uS temp: 6.1°C | | | | | | | | | | | | | | | | | |
| | Duplicate n/a | | | Water | R | R | R | R | R | R | R | R | R | R | R | | N | 9 |
| | Field Blank n/a | | | Water | R | R | R | R | R | R | R | R | R | R | R | | N | 9 |
| | Trip Blank n/a | | | Water | R | | R | R | R | R | R | R | R | R | | | N | 6 |

Environmental Division
Vancouver
Work Order Reference
VA24A7459

Telephone : +1 604 253 4188

| Drinking Water (DW) Samples[1] (client use) | Special Instructions / Specify Criteria below |
|---|---|
| Are samples taken from a Regulated DW System? ☐ ☑ NO | |
| Are samples for human consumption/ use? ☐ ☑ NO | Triton Project # 11964 |

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☑ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

| INITIAL COOLER TEMPERATURES °C | FINAL COOLER TEMPERATURES °C |
|---|---|
| | 6 |

| SHIPMENT RELEASE (client use) | | | INITIAL SHIPMENT RECEPTION (lab use only) | | | FINAL SHIPMENT RECEPTION (lab use only) | | |
|---|---|---|---|---|---|---|---|---|
| | 09 Apr 24 | Time: 13:00 | Received by: | Date: | Time: | Received by: JC | Date: APR - 9 2024 | Time: 1317 |

LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

SEPT 2017 FRONT

may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

# BCR Site Receiving Environment Field Notes and Logs

# FortisBC Eagle Mountain-Woodfibre Gas Pipeline

## Water Discharge Authorization Water Quality Monitoring

2024-4-9-Blanchard-1FD60

| | | | |
|---|---|---|---|
| **Project Component:** | Tunnel | **Site Name:** | Receiving Environment - Downstream of Discharge |
| **Inspection Date:** | 04/09/2024 | **Location:** | BC Rail Site |
| **Triton QP:** | Sam Blanchard | **Latitude/Longitude:** | 49.725282 -123.165175 |
| **Temperature(c):** | Low 4 High 14 | **Permit:** | AE 111824 |
| **Weather Conditions:** | Clear | **Ground Conditions:** | Damp |

### Observations

**Time:** 10:11:00 **Flow Volume (visual):** moderate

**Notes:**

| | | | |
|---|---|---|---|
| **Odour Detected?:** | No | **Notes:** | |
| **Unusual Colour?** | No | **Notes:** | |
| **Unusual Observations?** | No | **Notes:** | |
| **Sheen on Water?** | No | **Notes:** | |

### Samples Collected - Parameters

| | | | | | |
|---|---|---|---|---|---|
| **Total Metals + Mercury** | Yes | **General Parameters (Alkalinity)** | Yes | **Other Sample:** | Total chromium. |
| **Dissolved Metals + Mercury** | Yes | **Total Sulfide, Unionized Sulfide** | Yes | | |
| **TSS** | Yes | **Anions** | Yes | | |
| **TDS** | Yes | **VOC/VPH** | N/A | **QA Samples:** | No |
| **Nutrients** | Yes | **EPH, PAH, LEPH/HEPH** | N/A | Total chromium. | |
| **DOC** | Yes | **Trout LC50** | N/A | | |

### Logger Maintenance

| | | | |
|---|---|---|---|
| **Logger Maintenance Performed?** | Yes | **Photo of COC with Lab Signature?** | Yes |

**Describe Logger Maintenance**

Wiped sensors, changed marine battery for telemetry setup.

## Photos

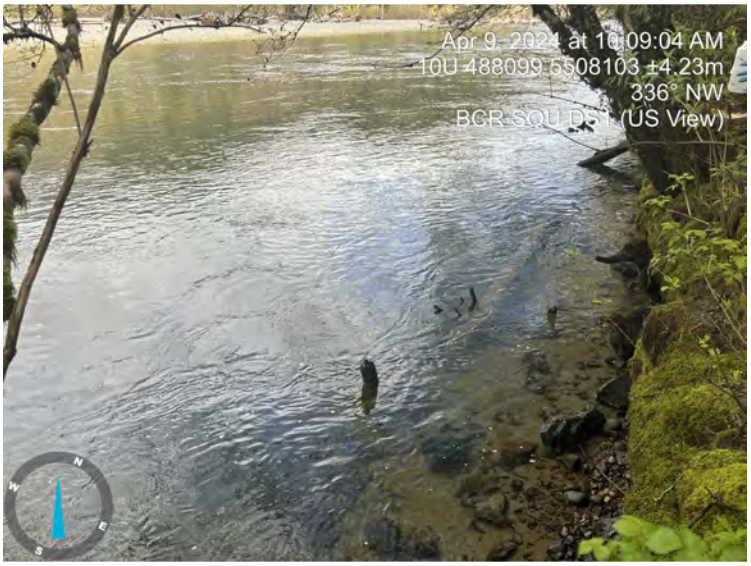


**Photo:** 1

**Location:** SQU DS1

**Description:** US View


**Photo:** 2

**Location:** SQU DS1

**Description:** DS View

## Photos


**Photo:** 3

**Location:** SQU DS1

**Description:** Across View

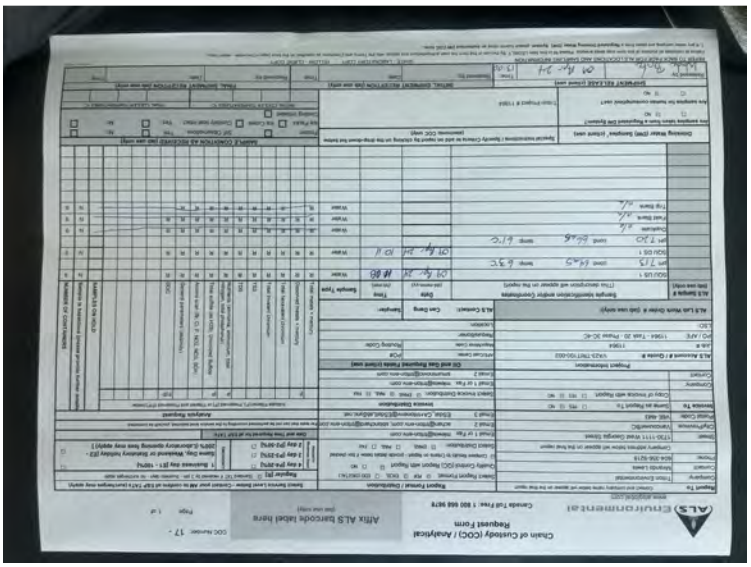

**Photo:** 4

**Location:** SQU DS1

**Description:** Lab COC

## Sign Off

**Report Prepared By:** Sam Blanchard

**Report Reviewer:** Miranda Lewis

**Name:**

**Designation:**

**Designation Number:**

**Report Reviewed:** Yes

**Professional(s) of Record:** N/A

# FortisBC Eagle Mountain-Woodfibre Gas Pipeline

## Water Discharge Authorization Water Quality Monitoring

2024-4-9-Blanchard-C050D

| | | | |
|---|---|---|---|
| **Project Component:** | Tunnel | **Site Name:** | Receiving Environment - Upstream of Discharge |
| **Inspection Date:** | 04/09/2024 | **Location:** | BC Rail Site |
| **Triton QP:** | Sam Blanchard | **Latitude/Longitude:** | 49.726866 -123.163912 |
| **Temperature(c):** | Low 4 High 12 | **Permit:** | AE 111824 |
| **Weather Conditions:** | Clear | **Ground Conditions:** | Damp |

### Observations

**Time:** 11:08:00 **Flow Volume (visual):** moderate

**Notes:**

| | | | |
|---|---|---|---|
| **Odour Detected?:** | No | **Notes:** | |
| **Unusual Colour?** | No | **Notes:** | |
| **Unusual Observations?** | No | **Notes:** | |
| **Sheen on Water?** | No | **Notes:** | |

### Samples Collected - Parameters

| | | | | | |
|---|---|---|---|---|---|
| **Total Metals + Mercury** | Yes | **General Parameters (Alkalinity)** | Yes | **Other Sample:** | Total chromium. |
| **Dissolved Metals + Mercury** | Yes | **Total Sulfide, Unionized Sulfide** | Yes | | |
| **TSS** | Yes | **Anions** | Yes | | |
| **TDS** | Yes | **VOC/VPH** | N/A | **QA Samples:** | No |
| **Nutrients** | Yes | **EPH, PAH, LEPH/HEPH** | N/A | Total chromium. | |
| **DOC** | Yes | **Trout LC50** | N/A | | |

### Logger Maintenance

| | | | |
|---|---|---|---|
| **Logger Maintenance Performed?** | Yes | **Photo of COC with Lab Signature?** | Yes |

**Describe Logger Maintenance**

Wiped sensors, calibrated ORP.

## Photos


**Photo:** 1

**Location:** SQU US1

**Description:** View US


**Photo:** 2

**Location:** SQU US1

**Description:** View DS

## Photos


**Photo:** 3

**Location:** SQU US1

**Description:** View Across

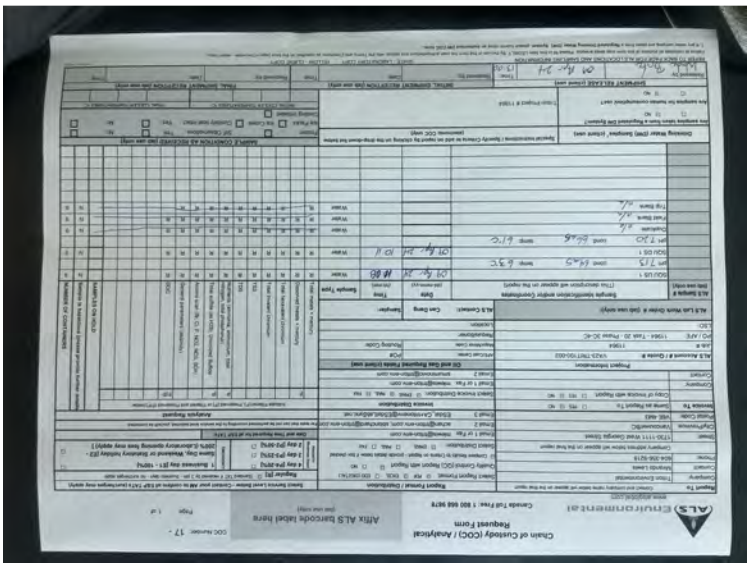

**Photo:** 4

**Location:** SQU US1

**Description:** Lab COC

## Sign Off

| | | | |
|---|---|---|---|
| **Report Prepared By:** | Sam Blanchard | **Report Reviewed:** | Yes |
| **Report Reviewer:** | Miranda Lewis | **Professional(s) of Record:** | N/A |
| **Name:** | | | |
| **Designation:** | | | |
| **Designation Number:** | | | |

# Appendix C: Woodfibre Site Point of Discharge from Water Treatment Plant Documentation

No discharges during this reporting period

# Appendix D: Woodfibre Site Receiving Environment Documentation

# Woodfibre Site Receiving Environment Sample Analysis

# Results Summary VA24A7363

| | |
|---|---|
| **Project** | 11964 |
| **Report To** | Miranda Lewis, Triton Environmental Consultants Ltd. |
| **Date Received** | 08-Apr-2024 17:15 |
| **Issue Date** | 16-Apr-2024 20:46 |
| **Amendment** | 0 |

| Client Sample ID | | | WLNG DS 1 | WLNG US 1 |
|---|---|---|---|---|
| Date Sampled | | | 08-Apr-2024 | 08-Apr-2024 |
| Time Sampled | | | 09:08 | 10:08 |
| ALS Sample ID | | | VA24A7363-001 | VA24A7363-002 |
| Analyte | Lowest Detection Limit | Units | Sub-Matrix: Water | Sub-Matrix: Water |
| **Field Tests (Matrix: Water)** | | | | |
| Conductivity, field | 0.10 | µS/cm | 77.000 | 69.000 |
| Temperature, field | 0.10 | °C | 6.60 | 6.50 |
| pH, field | 0.10 | pH units | 7.38 | 7.21 |
| **Physical Tests (Matrix: Water)** | | | | |
| Alkalinity, total (as CaCO3) | 2.0 | mg/L | 26.7 | 19.6 |
| Hardness (as CaCO3), dissolved | 0.60 | mg/L | 27.9 | 22.8 |
| Hardness (as CaCO3), from total Ca/Mg | 0.60 | mg/L | 28.2 | 24.3 |
| Solids, total dissolved [TDS] | 10 | mg/L | 52 | 52 |
| Solids, total suspended [TSS] | 3.0 | mg/L | <3.0 | <3.0 |
| **Anions and Nutrients (Matrix: Water)** | | | | |
| Ammonia, total (as N) | 0.0050 | mg/L | <0.0050 | 0.0073 |
| Bromide | 0.050 | mg/L | <0.050 | <0.050 |
| Chloride | 0.50 | mg/L | 1.08 | 1.07 |
| Fluoride | 0.020 | mg/L | <0.020 | 0.021 |
| Nitrate (as N) | 0.0050 | mg/L | 0.203 | 0.132 |
| Nitrite (as N) | 0.0010 | mg/L | <0.0010 | 0.0014 |
| Nitrogen, total | 0.030 | mg/L | 0.406 | 0.584 |
| Phosphorus, total | 0.0020 | mg/L | 0.0620 | 0.400 |
| Sulfate (as SO4) | 0.30 | mg/L | 5.23 | 5.60 |
| **Organic / Inorganic Carbon (Matrix: Water)** | | | | |
| Carbon, dissolved organic [DOC] | 0.50 | mg/L | 2.74 | 4.55 |
| **Total Sulfides (Matrix: Water)** | | | | |
| Sulfide, total (as S) | 0.010 | mg/L | <0.010 | <0.010 |
| Sulfide, un-ionized (as H2S), from total | 0.0015 | mg/L | <0.0049 | <0.0049 |
| Sulfide, total (as H2S) | 0.011 | mg/L | <0.011 | <0.011 |

**Total Metals (Matrix: Water)**

| | | | | |
|---|---|---|---|---|
| Aluminum, total | 0.0030 | mg/L | 0.182 | 0.285 |
| Antimony, total | 0.00010 | mg/L | 0.00014 | 0.00019 |
| Arsenic, total | 0.00010 | mg/L | 0.00032 | 0.00092 |
| Barium, total | 0.00010 | mg/L | 0.00814 | 0.00560 |
| Beryllium, total | 0.000100 | mg/L | <0.000100 | <0.000100 |
| Bismuth, total | 0.000050 | mg/L | <0.000050 | <0.000050 |
| Boron, total | 0.010 | mg/L | <0.010 | <0.010 |
| Cadmium, total | 0.0000050 | mg/L | 0.0000177 | 0.0000158 |
| Calcium, total | 0.050 | mg/L | 9.93 | 7.43 |
| Cesium, total | 0.000010 | mg/L | 0.000010 | <0.000010 |
| Chromium, total | 0.00050 | mg/L | 0.00059 | <0.00050 |
| Cobalt, total | 0.00010 | mg/L | 0.00017 | 0.00020 |
| Copper, total | 0.00050 | mg/L | 0.00230 | 0.00554 |
| Iron, total | 0.010 | mg/L | 0.402 | 0.201 |
| Lead, total | 0.000050 | mg/L | 0.000288 | 0.000131 |
| Lithium, total | 0.0010 | mg/L | <0.0010 | <0.0010 |
| Magnesium, total | 0.0050 | mg/L | 0.818 | 1.39 |
| Manganese, total | 0.00010 | mg/L | 0.0153 | 0.00952 |
| Mercury, total | 0.0000050 | mg/L | <0.0000050 | <0.0000050 |
| Molybdenum, total | 0.000050 | mg/L | 0.00183 | 0.00181 |
| Nickel, total | 0.00050 | mg/L | 0.00116 | 0.00168 |
| Phosphorus, total | 0.050 | mg/L | 0.063 | 0.372 |
| Potassium, total | 0.050 | mg/L | 0.486 | 0.624 |
| Rubidium, total | 0.00020 | mg/L | 0.00071 | 0.00050 |
| Selenium, total | 0.000050 | mg/L | 0.000052 | 0.000075 |
| Silicon, total | 0.10 | mg/L | 3.78 | 3.54 |
| Silver, total | 0.000010 | mg/L | <0.000010 | <0.000010 |
| Sodium, total | 0.050 | mg/L | 1.89 | 1.85 |
| Strontium, total | 0.00020 | mg/L | 0.0359 | 0.0269 |
| Sulfur, total | 0.50 | mg/L | 1.53 | 1.68 |
| Tellurium, total | 0.00020 | mg/L | <0.00020 | <0.00020 |
| Thallium, total | 0.000010 | mg/L | <0.000010 | <0.000010 |
| Thorium, total | 0.00010 | mg/L | <0.00010 | <0.00010 |
| Tin, total | 0.00010 | mg/L | <0.00010 | <0.00010 |
| Titanium, total | 0.00030 | mg/L | 0.00511 | 0.00557 |
| Tungsten, total | 0.00010 | mg/L | <0.00010 | 0.00010 |
| Uranium, total | 0.000010 | mg/L | 0.000144 | 0.000141 |
| Vanadium, total | 0.00050 | mg/L | 0.00055 | 0.00117 |
| Zinc, total | 0.0030 | mg/L | 0.0041 | 0.0074 |
| Zirconium, total | 0.00020 | mg/L | <0.00020 | <0.00020 |

**Dissolved Metals (Matrix: Water)**

| | | | | |
|---|---|---|---|---|
| Aluminum, dissolved | 0.0010 | mg/L | 0.0455 | 0.0575 |
| Antimony, dissolved | 0.00010 | mg/L | 0.00012 | 0.00017 |
| Arsenic, dissolved | 0.00010 | mg/L | 0.00027 | 0.00078 |
| Barium, dissolved | 0.00010 | mg/L | 0.00650 | 0.00366 |
| Beryllium, dissolved | 0.000100 | mg/L | <0.000100 | <0.000100 |
| Bismuth, dissolved | 0.000050 | mg/L | <0.000050 | <0.000050 |
| Boron, dissolved | 0.010 | mg/L | <0.010 | <0.010 |
| Cadmium, dissolved | 0.0000050 | mg/L | 0.0000133 | 0.0000067 |
| Calcium, dissolved | 0.050 | mg/L | 9.76 | 6.96 |
| Cesium, dissolved | 0.000010 | mg/L | <0.000010 | <0.000010 |
| Chromium, dissolved | 0.00050 | mg/L | <0.00050 | <0.00050 |
| Cobalt, dissolved | 0.00010 | mg/L | 0.00010 | 0.00013 |
| Copper, dissolved | 0.00020 | mg/L | 0.00200 | 0.00477 |
| Iron, dissolved | 0.010 | mg/L | 0.023 | 0.032 |
| Lead, dissolved | 0.000050 | mg/L | <0.000050 | <0.000050 |
| Lithium, dissolved | 0.0010 | mg/L | <0.0010 | <0.0010 |
| Magnesium, dissolved | 0.0050 | mg/L | 0.869 | 1.31 |
| Manganese, dissolved | 0.00010 | mg/L | 0.00278 | 0.00184 |
| Mercury, dissolved | 0.0000050 | mg/L | <0.0000050 | <0.0000050 |
| Molybdenum, dissolved | 0.000050 | mg/L | 0.00164 | 0.00162 |
| Nickel, dissolved | 0.00050 | mg/L | 0.00097 | 0.00140 |
| Phosphorus, dissolved | 0.050 | mg/L | 0.064 | 0.332 |
| Potassium, dissolved | 0.050 | mg/L | 0.528 | 0.590 |
| Rubidium, dissolved | 0.00020 | mg/L | 0.00062 | 0.00041 |
| Selenium, dissolved | 0.000050 | mg/L | <0.000050 | 0.000083 |
| Silicon, dissolved | 0.050 | mg/L | 3.56 | 3.13 |
| Silver, dissolved | 0.000010 | mg/L | <0.000010 | <0.000010 |
| Sodium, dissolved | 0.050 | mg/L | 2.08 | 1.76 |
| Strontium, dissolved | 0.00020 | mg/L | 0.0345 | 0.0246 |
| Sulfur, dissolved | 0.50 | mg/L | 1.17 | 1.35 |
| Tellurium, dissolved | 0.00020 | mg/L | <0.00020 | <0.00020 |
| Thallium, dissolved | 0.000010 | mg/L | <0.000010 | <0.000010 |
| Thorium, dissolved | 0.00010 | mg/L | <0.00010 | <0.00010 |
| Tin, dissolved | 0.00010 | mg/L | <0.00010 | <0.00010 |
| Titanium, dissolved | 0.00030 | mg/L | 0.00032 | 0.00050 |
| Tungsten, dissolved | 0.00010 | mg/L | <0.00010 | <0.00010 |
| Uranium, dissolved | 0.000010 | mg/L | 0.000122 | 0.000113 |
| Vanadium, dissolved | 0.00050 | mg/L | <0.00050 | 0.00088 |
| Zinc, dissolved | 0.0010 | mg/L | 0.0023 | 0.0022 |
| Zirconium, dissolved | 0.00020 | mg/L | <0.00020 | <0.00020 |
| Dissolved mercury filtration location | | | Field | Field |
| Dissolved metals filtration location | | | Field | Field |

**Speciated Metals (Matrix: Water)**

| | | | | |
|---|---|---|---|---|
| Chromium, hexavalent [Cr VI], total | 0.00050 | mg/L | 0.00074 | <0.00050 |
| Chromium, trivalent [Cr III], total | 0.00050 | mg/L | <0.00050 | <0.00050 |

# Woodfibre Site Receiving Environment Lab Documentation

ALS Canada Ltd.

right solutions. right partner.

# CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24A7363** | Page | : 1 of 6 |
| Client | : **Triton Environmental Consultants Ltd.** | Laboratory | : ALS Environmental - Vancouver |
| Contact | | Account Manager | |
| Address | | Address | |
| Telephone | | Telephone | |
| Project | : 11964 | Date Samples Received | : 08-Apr-2024 17:15 |
| PO | : 11964 - Task 20 - Phase 3C-4C | Date Analysis Commenced | : 09-Apr-2024 |
| C-O-C number | : ---- | Issue Date | : 16-Apr-2024 20:45 |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : VA23-TRIT100-003 | | |
| No. of samples received | : 2 | | |
| No. of samples analysed | : 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

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

## *Signatories*

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

| *Signatories* | *Position* | *Laboratory Department* |
|---|---|---|
| Brieanna Allen | Production/Validation Manager | Administration, Burnaby, British Columbia |
| Erin Sanchez | | Metals, Burnaby, British Columbia |
| Kevin Duarte | Supervisor - Metals ICP Instrumentation | Metals, Burnaby, British Columbia |
| Leon Yang | Analyst | Inorganics, Burnaby, British Columbia |
| Sam Silveira | Analyst | Metals, Burnaby, British Columbia |

## General Comments

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

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

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

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

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

LOR: Limit of Reporting (detection limit).

| *Unit* | *Description* |
|---|---|
| - | 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**
(Matrix: **Water**)

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | WLNG DS 1 | WLNG US 1 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 08-Apr-2024 09:08 | 08-Apr-2024 10:08 | ---- | ---- | ---- |
| | | | | | | VA24A7363-001 | VA24A7363-002 | -------- | -------- | -------- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Field Tests** | | | | | | | | | | |
| **Conductivity, field** | ---- | EF001/VA | 0.10 | µS/cm | | 77.000 | 69.000 | ---- | ---- | ---- |
| **pH, field** | ---- | EF001/VA | 0.10 | pH units | | 7.38 | 7.21 | ---- | ---- | ---- |
| **Temperature, field** | ---- | EF001/VA | 0.10 | °C | | 6.60 | 6.50 | ---- | ---- | ---- |
| **Physical Tests** | | | | | | | | | | |
| **Hardness (as CaCO3), dissolved** | ---- | EC100/VA | 0.60 | mg/L | | 27.9 | 22.8 | ---- | ---- | ---- |
| **Hardness (as CaCO3), from total Ca/Mg** | ---- | EC100A/VA | 0.60 | mg/L | | 28.2 | 24.3 | ---- | ---- | ---- |
| **Solids, total dissolved [TDS]** | ---- | E162/VA | 10 | mg/L | | 52 | 52 | ---- | ---- | ---- |
| **Solids, total suspended [TSS]** | ---- | E160/VA | 3.0 | mg/L | | <3.0 | <3.0 | ---- | ---- | ---- |
| **Alkalinity, total (as CaCO3)** | ---- | E290/VA | 2.0 | mg/L | | 26.7 | 19.6 | ---- | ---- | ---- |
| **Anions and Nutrients** | | | | | | | | | | |
| **Ammonia, total (as N)** | 7664-41-7 | E298/VA | 0.0050 | mg/L | | <0.0050 | 0.0073 | ---- | ---- | ---- |
| **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 | | 1.08 | 1.07 | ---- | ---- | ---- |
| **Fluoride** | 16984-48-8 | E235.F/VA | 0.020 | mg/L | | <0.020 | 0.021 | ---- | ---- | ---- |
| **Nitrate (as N)** | 14797-55-8 | E235.NO3-L/VA | 0.0050 | mg/L | | 0.203 | 0.132 | ---- | ---- | ---- |
| **Nitrite (as N)** | 14797-65-0 | E235.NO2-L/VA | 0.0010 | mg/L | | <0.0010 | 0.0014 | ---- | ---- | ---- |
| **Nitrogen, total** | 7727-37-9 | E366/VA | 0.030 | mg/L | | 0.406 | 0.584 | ---- | ---- | ---- |
| **Phosphorus, total** | 7723-14-0 | E372-U/VA | 0.0020 | mg/L | | 0.0620 | 0.400 | ---- | ---- | ---- |
| **Sulfate (as SO4)** | 14808-79-8 | E235.SO4/VA | 0.30 | mg/L | | 5.23 | 5.60 | ---- | ---- | ---- |
| **Organic / Inorganic Carbon** | | | | | | | | | | |
| **Carbon, dissolved organic [DOC]** | ---- | E358-L/VA | 0.50 | mg/L | | 2.74 | 4.55 | ---- | ---- | ---- |
| **Total Sulfides** | | | | | | | | | | |
| **Sulfide, total (as H2S)** | 7783-06-4 | E395-H/VA | 0.011 | mg/L | | <0.011 | <0.011 | ---- | ---- | ---- |
| **Sulfide, un-ionized (as H2S), from total** | 7783-06-4 | EC395/VA | 0.0015 | mg/L | | <0.0049 | <0.0049 | ---- | ---- | ---- |
| **Sulfide, total (as S)** | 18496-25-8 | E395-H/VA | 0.010 | mg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **Aluminum, total** | 7429-90-5 | E420/VA | 0.0030 | mg/L | | 0.182 | 0.285 | ---- | ---- | ---- |
| **Antimony, total** | 7440-36-0 | E420/VA | 0.00010 | mg/L | | 0.00014 | 0.00019 | ---- | ---- | ---- |

## Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | WLNG DS 1 | WLNG US 1 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 08-Apr-2024 09:08 | 08-Apr-2024 10:08 | ---- | ---- | ---- |
| | | | | | | VA24A7363-001 | VA24A7363-002 | -------- | -------- | -------- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **Arsenic, total** | 7440-38-2 | E420/VA | 0.00010 | mg/L | | 0.00032 | 0.00092 | ---- | ---- | ---- |
| **Barium, total** | 7440-39-3 | E420/VA | 0.00010 | mg/L | | 0.00814 | 0.00560 | ---- | ---- | ---- |
| **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 | | 0.0000177 | 0.0000158 | ---- | ---- | ---- |
| **Calcium, total** | 7440-70-2 | E420/VA | 0.050 | mg/L | | 9.93 | 7.43 | ---- | ---- | ---- |
| **Cesium, total** | 7440-46-2 | E420/VA | 0.000010 | mg/L | | 0.000010 | <0.000010 | ---- | ---- | ---- |
| **Chromium, total** | 7440-47-3 | E420/VA | 0.00050 | mg/L | | 0.00059 | <0.00050 | ---- | ---- | ---- |
| **Cobalt, total** | 7440-48-4 | E420/VA | 0.00010 | mg/L | | 0.00017 | 0.00020 | ---- | ---- | ---- |
| **Copper, total** | 7440-50-8 | E420/VA | 0.00050 | mg/L | | 0.00230 | 0.00554 | ---- | ---- | ---- |
| **Iron, total** | 7439-89-6 | E420/VA | 0.010 | mg/L | | 0.402 | 0.201 | ---- | ---- | ---- |
| **Lead, total** | 7439-92-1 | E420/VA | 0.000050 | mg/L | | 0.000288 | 0.000131 | ---- | ---- | ---- |
| **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 | | 0.818 | 1.39 | ---- | ---- | ---- |
| **Manganese, total** | 7439-96-5 | E420/VA | 0.00010 | mg/L | | 0.0153 | 0.00952 | ---- | ---- | ---- |
| **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 | | 0.00183 | 0.00181 | ---- | ---- | ---- |
| **Nickel, total** | 7440-02-0 | E420/VA | 0.00050 | mg/L | | 0.00116 | 0.00168 | ---- | ---- | ---- |
| **Phosphorus, total** | 7723-14-0 | E420/VA | 0.050 | mg/L | | 0.063 | 0.372 | ---- | ---- | ---- |
| **Potassium, total** | 7440-09-7 | E420/VA | 0.050 | mg/L | | 0.486 | 0.624 | ---- | ---- | ---- |
| **Rubidium, total** | 7440-17-7 | E420/VA | 0.00020 | mg/L | | 0.00071 | 0.00050 | ---- | ---- | ---- |
| **Selenium, total** | 7782-49-2 | E420/VA | 0.000050 | mg/L | | 0.000052 | 0.000075 | ---- | ---- | ---- |
| **Silicon, total** | 7440-21-3 | E420/VA | 0.10 | mg/L | | 3.78 | 3.54 | ---- | ---- | ---- |
| **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 | | 1.89 | 1.85 | ---- | ---- | ---- |
| **Strontium, total** | 7440-24-6 | E420/VA | 0.00020 | mg/L | | 0.0359 | 0.0269 | ---- | ---- | ---- |
| **Sulfur, total** | 7704-34-9 | E420/VA | 0.50 | mg/L | | 1.53 | 1.68 | ---- | ---- | ---- |
| **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 | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | | | Client sample ID | WLNG DS 1 | WLNG US 1 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 08-Apr-2024 09:08 | 08-Apr-2024 10:08 | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24A7363-001 | VA24A7363-002 | -------- | -------- | -------- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| 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 | | 0.00511 | 0.00557 | ---- | ---- | ---- |
| 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 | | 0.000144 | 0.000141 | ---- | ---- | ---- |
| Vanadium, total | 7440-62-2 | E420/VA | 0.00050 | mg/L | | 0.00055 | 0.00117 | ---- | ---- | ---- |
| Zinc, total | 7440-66-6 | E420/VA | 0.0030 | mg/L | | 0.0041 | 0.0074 | ---- | ---- | ---- |
| Zirconium, total | 7440-67-7 | E420/VA | 0.00020 | mg/L | | <0.00020 | <0.00020 | ---- | ---- | ---- |
| **Dissolved Metals** | | | | | | | | | | |
| Aluminum, dissolved | 7429-90-5 | E421/VA | 0.0010 | mg/L | | 0.0455 | 0.0575 | ---- | ---- | ---- |
| Antimony, dissolved | 7440-36-0 | E421/VA | 0.00010 | mg/L | | 0.00012 | 0.00017 | ---- | ---- | ---- |
| Arsenic, dissolved | 7440-38-2 | E421/VA | 0.00010 | mg/L | | 0.00027 | 0.00078 | ---- | ---- | ---- |
| Barium, dissolved | 7440-39-3 | E421/VA | 0.00010 | mg/L | | 0.00650 | 0.00366 | ---- | ---- | ---- |
| 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 | | 0.0000133 | 0.0000067 | ---- | ---- | ---- |
| Calcium, dissolved | 7440-70-2 | E421/VA | 0.050 | mg/L | | 9.76 | 6.96 | ---- | ---- | ---- |
| 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 | 0.00013 | ---- | ---- | ---- |
| Copper, dissolved | 7440-50-8 | E421/VA | 0.00020 | mg/L | | 0.00200 | 0.00477 | ---- | ---- | ---- |
| Iron, dissolved | 7439-89-6 | E421/VA | 0.010 | mg/L | | 0.023 | 0.032 | ---- | ---- | ---- |
| 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 | | 0.869 | 1.31 | ---- | ---- | ---- |
| Manganese, dissolved | 7439-96-5 | E421/VA | 0.00010 | mg/L | | 0.00278 | 0.00184 | ---- | ---- | ---- |
| 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 | | 0.00164 | 0.00162 | ---- | ---- | ---- |
| Nickel, dissolved | 7440-02-0 | E421/VA | 0.00050 | mg/L | | 0.00097 | 0.00140 | ---- | ---- | ---- |

## Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | WLNG DS 1 | WLNG US 1 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 08-Apr-2024 09:08 | 08-Apr-2024 10:08 | ---- | ---- | ---- |
| | | | | | | VA24A7363-001 | VA24A7363-002 | -------- | -------- | -------- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Dissolved Metals** | | | | | | | | | | |
| **Phosphorus, dissolved** | 7723-14-0 | E421/VA | 0.050 | mg/L | | 0.064 | 0.332 | ---- | ---- | ---- |
| **Potassium, dissolved** | 7440-09-7 | E421/VA | 0.050 | mg/L | | 0.528 | 0.590 | ---- | ---- | ---- |
| **Rubidium, dissolved** | 7440-17-7 | E421/VA | 0.00020 | mg/L | | 0.00062 | 0.00041 | ---- | ---- | ---- |
| **Selenium, dissolved** | 7782-49-2 | E421/VA | 0.000050 | mg/L | | <0.000050 | 0.000083 | ---- | ---- | ---- |
| **Silicon, dissolved** | 7440-21-3 | E421/VA | 0.050 | mg/L | | 3.56 | 3.13 | ---- | ---- | ---- |
| **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 | | 2.08 | 1.76 | ---- | ---- | ---- |
| **Strontium, dissolved** | 7440-24-6 | E421/VA | 0.00020 | mg/L | | 0.0345 | 0.0246 | ---- | ---- | ---- |
| **Sulfur, dissolved** | 7704-34-9 | E421/VA | 0.50 | mg/L | | 1.17 | 1.35 | ---- | ---- | ---- |
| **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 | | 0.00032 | 0.00050 | ---- | ---- | ---- |
| **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 | | 0.000122 | 0.000113 | ---- | ---- | ---- |
| **Vanadium, dissolved** | 7440-62-2 | E421/VA | 0.00050 | mg/L | | <0.00050 | 0.00088 | ---- | ---- | ---- |
| **Zinc, dissolved** | 7440-66-6 | E421/VA | 0.0010 | mg/L | | 0.0023 | 0.0022 | ---- | ---- | ---- |
| **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 | ---- | ---- | ---- |
| **Speciated Metals** | | | | | | | | | | |
| **Chromium, hexavalent [Cr VI], total** | 18540-29-9 | E532/VA | 0.00050 | mg/L | | 0.00074 | <0.00050 | ---- | ---- | ---- |
| **Chromium, trivalent [Cr III], total** | 16065-83-1 | EC535/VA | 0.00050 | mg/L | | <0.00050 | <0.00050 | ---- | ---- | ---- |

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.

ALS Canada Ltd.

# QUALITY CONTROL INTERPRETIVE REPORT

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24A7363** | Page | : 1 of 15 |
| Client | : **Triton Environmental Consultants Ltd.** | Laboratory | : ALS Environmental - Vancouver |
| Contact | | Account Manager | : |
| Address | | Address | : |
| Telephone | | Telephone | : |
| Project | : 11964 | Date Samples Received | : 08-Apr-2024 17:15 |
| PO | : 11964 - Task 20 - Phase 3C-4C | Issue Date | : 16-Apr-2024 20:45 |
| C-O-C number | : ---- | | |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : VA23-TRIT100-003 | | |
| No. of samples received | : 2 | | |
| No. of samples analysed | : 2 | | |

**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
- 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 |
|---|---|---|---|---|---|---|---|---|
| **Matrix Spike (MS) Recoveries** | | | | | | | | |
| Dissolved Metals | Anonymous | Anonymous | Silver, dissolved | 7440-22-4 | E421 | 61.8 % MES | 70.0-130% | Recovery less than lower data quality objective |

## Result Qualifiers

| Qualifier | Description |
|---|---|
| *MES* | *Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).* |

# 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 Rec | Holding Times Actual | Eval | Analysis Date | Holding Times Rec | Holding Times Actual | Eval |
| **Anions and Nutrients : Ammonia by Fluorescence** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** WLNG DS 1 | E298 | 08-Apr-2024 | 14-Apr-2024 | 28 days | 6 days | ✓ | 16-Apr-2024 | 28 days | 8 days | ✓ |
| **Anions and Nutrients : Ammonia by Fluorescence** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** WLNG US 1 | E298 | 08-Apr-2024 | 14-Apr-2024 | 28 days | 6 days | ✓ | 16-Apr-2024 | 28 days | 8 days | ✓ |
| **Anions and Nutrients : Bromide in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** WLNG DS 1 | E235.Br-L | 08-Apr-2024 | 09-Apr-2024 | 28 days | 1 days | ✓ | 09-Apr-2024 | 28 days | 1 days | ✓ |
| **Anions and Nutrients : Bromide in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** WLNG US 1 | E235.Br-L | 08-Apr-2024 | 09-Apr-2024 | 28 days | 1 days | ✓ | 09-Apr-2024 | 28 days | 1 days | ✓ |
| **Anions and Nutrients : Chloride in Water by IC** | | | | | | | | | | |
| **HDPE** WLNG DS 1 | E235.Cl | 08-Apr-2024 | 09-Apr-2024 | 28 days | 1 days | ✓ | 09-Apr-2024 | 28 days | 1 days | ✓ |
| **Anions and Nutrients : Chloride in Water by IC** | | | | | | | | | | |
| **HDPE** WLNG US 1 | E235.Cl | 08-Apr-2024 | 09-Apr-2024 | 28 days | 1 days | ✓ | 09-Apr-2024 | 28 days | 1 days | ✓ |
| **Anions and Nutrients : Fluoride in Water by IC** | | | | | | | | | | |
| **HDPE** WLNG DS 1 | E235.F | 08-Apr-2024 | 09-Apr-2024 | 28 days | 1 days | ✓ | 09-Apr-2024 | 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 Rec | Holding Times Actual | Eval | Analysis Date | Holding Times Rec | Holding Times Actual | Eval |
| **Anions and Nutrients : Fluoride in Water by IC** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG US 1 | E235.F | 08-Apr-2024 | 09-Apr-2024 | 28 days | 1 days | ✓ | 09-Apr-2024 | 28 days | 1 days | ✓ |
| **Anions and Nutrients : Nitrate in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG DS 1 | E235.NO3-L | 08-Apr-2024 | 09-Apr-2024 | 3 days | 1 days | ✓ | 09-Apr-2024 | 3 days | 1 days | ✓ |
| **Anions and Nutrients : Nitrate in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG US 1 | E235.NO3-L | 08-Apr-2024 | 09-Apr-2024 | 3 days | 1 days | ✓ | 09-Apr-2024 | 3 days | 1 days | ✓ |
| **Anions and Nutrients : Nitrite in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG DS 1 | E235.NO2-L | 08-Apr-2024 | 09-Apr-2024 | 3 days | 1 days | ✓ | 09-Apr-2024 | 3 days | 1 days | ✓ |
| **Anions and Nutrients : Nitrite in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG US 1 | E235.NO2-L | 08-Apr-2024 | 09-Apr-2024 | 3 days | 1 days | ✓ | 09-Apr-2024 | 3 days | 1 days | ✓ |
| **Anions and Nutrients : Sulfate in Water by IC** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG DS 1 | E235.SO4 | 08-Apr-2024 | 09-Apr-2024 | 28 days | 1 days | ✓ | 09-Apr-2024 | 28 days | 1 days | ✓ |
| **Anions and Nutrients : Sulfate in Water by IC** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG US 1 | E235.SO4 | 08-Apr-2024 | 09-Apr-2024 | 28 days | 1 days | ✓ | 09-Apr-2024 | 28 days | 1 days | ✓ |
| **Anions and Nutrients : Total Nitrogen by Colourimetry** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** | | | | | | | | | | |
| WLNG DS 1 | E366 | 08-Apr-2024 | 14-Apr-2024 | 28 days | 6 days | ✓ | 16-Apr-2024 | 28 days | 8 days | ✓ |
| **Anions and Nutrients : Total Nitrogen by Colourimetry** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** | | | | | | | | | | |
| WLNG US 1 | E366 | 08-Apr-2024 | 14-Apr-2024 | 28 days | 6 days | ✓ | 16-Apr-2024 | 28 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 Rec | Holding Times Actual | Eval | Analysis Date | Holding Times Rec | Holding Times Actual | Eval |
| **Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** | | | | | | | | | | |
| WLNG DS 1 | E372-U | 08-Apr-2024 | 14-Apr-2024 | 28 days | 6 days | ✓ | 16-Apr-2024 | 28 days | 8 days | ✓ |
| **Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** | | | | | | | | | | |
| WLNG US 1 | E372-U | 08-Apr-2024 | 14-Apr-2024 | 28 days | 6 days | ✓ | 16-Apr-2024 | 28 days | 8 days | ✓ |
| **Dissolved Metals : Dissolved Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial - dissolved (lab preserved)** | | | | | | | | | | |
| WLNG DS 1 | E509 | 08-Apr-2024 | 10-Apr-2024 | 28 days | 2 days | ✓ | 10-Apr-2024 | 28 days | 2 days | ✓ |
| **Dissolved Metals : Dissolved Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial - dissolved (lab preserved)** | | | | | | | | | | |
| WLNG US 1 | E509 | 08-Apr-2024 | 10-Apr-2024 | 28 days | 2 days | ✓ | 10-Apr-2024 | 28 days | 2 days | ✓ |
| **Dissolved Metals : Dissolved Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE - dissolved (lab preserved)** | | | | | | | | | | |
| WLNG DS 1 | E421 | 08-Apr-2024 | 09-Apr-2024 | 180 days | 1 days | ✓ | 10-Apr-2024 | 180 days | 2 days | ✓ |
| **Dissolved Metals : Dissolved Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE - dissolved (lab preserved)** | | | | | | | | | | |
| WLNG US 1 | E421 | 08-Apr-2024 | 09-Apr-2024 | 180 days | 1 days | ✓ | 10-Apr-2024 | 180 days | 2 days | ✓ |
| **Field Tests : Field pH,EC,Salinity,Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine** | | | | | | | | | | |
| **Glass vial - total (lab preserved)** | | | | | | | | | | |
| WLNG DS 1 | EF001 | 08-Apr-2024 | ---- | ---- | ---- | | 12-Apr-2024 | ---- | 4 days | |
| **Field Tests : Field pH,EC,Salinity,Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine** | | | | | | | | | | |
| **Glass vial - total (lab preserved)** | | | | | | | | | | |
| WLNG US 1 | EF001 | 08-Apr-2024 | ---- | ---- | ---- | | 12-Apr-2024 | ---- | 4 days | |
| **Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)** | | | | | | | | | | |
| **Amber glass dissolved (sulfuric acid)** | | | | | | | | | | |
| WLNG DS 1 | E358-L | 08-Apr-2024 | 14-Apr-2024 | 28 days | 6 days | ✓ | 14-Apr-2024 | 28 days | 6 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 Rec | Holding Times Actual | Eval | Analysis Date | Holding Times Rec | Holding Times Actual | Eval |
| **Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)** | | | | | | | | | | |
| **Amber glass dissolved (sulfuric acid)** | | | | | | | | | | |
| WLNG US 1 | E358-L | 08-Apr-2024 | 14-Apr-2024 | 28 days | 6 days | ✓ | 14-Apr-2024 | 28 days | 6 days | ✓ |
| **Physical Tests : Alkalinity Species by Titration** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG DS 1 | E290 | 08-Apr-2024 | 09-Apr-2024 | 14 days | 1 days | ✓ | 10-Apr-2024 | 14 days | 2 days | ✓ |
| **Physical Tests : Alkalinity Species by Titration** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG US 1 | E290 | 08-Apr-2024 | 09-Apr-2024 | 14 days | 1 days | ✓ | 10-Apr-2024 | 14 days | 2 days | ✓ |
| **Physical Tests : TDS by Gravimetry** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG DS 1 | E162 | 08-Apr-2024 | ---- | ---- | ---- | | 14-Apr-2024 | 7 days | 6 days | ✓ |
| **Physical Tests : TDS by Gravimetry** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG US 1 | E162 | 08-Apr-2024 | ---- | ---- | ---- | | 14-Apr-2024 | 7 days | 6 days | ✓ |
| **Physical Tests : TSS by Gravimetry** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG DS 1 | E160 | 08-Apr-2024 | ---- | ---- | ---- | | 14-Apr-2024 | 7 days | 6 days | ✓ |
| **Physical Tests : TSS by Gravimetry** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG US 1 | E160 | 08-Apr-2024 | ---- | ---- | ---- | | 14-Apr-2024 | 7 days | 6 days | ✓ |
| **Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC** | | | | | | | | | | |
| **UV-inhibited HDPE - total (sodium hydroxide)** | | | | | | | | | | |
| WLNG DS 1 | E532 | 08-Apr-2024 | ---- | ---- | ---- | | 11-Apr-2024 | 28 days | 3 days | ✓ |
| **Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC** | | | | | | | | | | |
| **UV-inhibited HDPE - total (sodium hydroxide)** | | | | | | | | | | |
| WLNG US 1 | E532 | 08-Apr-2024 | ---- | ---- | ---- | | 11-Apr-2024 | 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 Rec | Holding Times Actual | Eval | Analysis Date | Holding Times Rec | Holding Times Actual | Eval |
| **Total Metals : Total Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial - total (lab preserved)** | | | | | | | | | | |
| WLNG DS 1 | E508 | 08-Apr-2024 | 10-Apr-2024 | 28 days | 2 days | ✓ | 10-Apr-2024 | 28 days | 2 days | ✓ |
| **Total Metals : Total Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial - total (lab preserved)** | | | | | | | | | | |
| WLNG US 1 | E508 | 08-Apr-2024 | 10-Apr-2024 | 28 days | 2 days | ✓ | 10-Apr-2024 | 28 days | 2 days | ✓ |
| **Total Metals : Total Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE - total (lab preserved)** | | | | | | | | | | |
| WLNG DS 1 | E420 | 08-Apr-2024 | 09-Apr-2024 | 180 days | 1 days | ✓ | 10-Apr-2024 | 180 days | 2 days | ✓ |
| **Total Metals : Total Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE - total (lab preserved)** | | | | | | | | | | |
| WLNG US 1 | E420 | 08-Apr-2024 | 09-Apr-2024 | 180 days | 1 days | ✓ | 10-Apr-2024 | 180 days | 2 days | ✓ |
| **Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)** | | | | | | | | | | |
| **HDPE total (zinc acetate+sodium hydroxide)** | | | | | | | | | | |
| WLNG DS 1 | E395-H | 08-Apr-2024 | ---- | ---- | ---- | | 09-Apr-2024 | 7 days | 1 days | ✓ |
| **Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)** | | | | | | | | | | |
| **HDPE total (zinc acetate+sodium hydroxide)** | | | | | | | | | | |
| WLNG US 1 | E395-H | 08-Apr-2024 | ---- | ---- | ---- | | 09-Apr-2024 | 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 | | | Count | | Frequency (%) | | |
|---|---|---|---|---|---|---|---|
| *Analytical Methods* | *Method* | *QC Lot #* | *QC* | *Regular* | *Actual* | *Expected* | *Evaluation* |
| **Laboratory Duplicates (DUP)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1395606 | 1 | 14 | 7.1 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1402483 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1395610 | 1 | 14 | 7.1 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1395609 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1398261 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1395519 | 1 | 18 | 5.5 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1402482 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1395608 | 1 | 14 | 7.1 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1395611 | 1 | 18 | 5.5 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1395612 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1395613 | 1 | 16 | 6.2 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1402389 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1398579 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1398237 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1395689 | 1 | 16 | 6.2 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1402484 | 1 | 5 | 20.0 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1402485 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Total Sulfide by Colourimetry (Automated Flow) | E395-H | 1395706 | 1 | 10 | 10.0 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1402384 | 1 | 20 | 5.0 | 5.0 | ✓ |
| **Laboratory Control Samples (LCS)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1395606 | 1 | 14 | 7.1 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1402483 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1395610 | 1 | 14 | 7.1 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1395609 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1398261 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1395519 | 1 | 18 | 5.5 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1402482 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1395608 | 1 | 14 | 7.1 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1395611 | 1 | 18 | 5.5 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1395612 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1395613 | 1 | 16 | 6.2 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1402389 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1398579 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1398237 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1395689 | 1 | 16 | 6.2 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1402484 | 1 | 5 | 20.0 | 5.0 | ✓ |

Matrix: **Water**

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

| Quality Control Sample Type | | | Count | | Frequency (%) | | |
|---|---|---|---|---|---|---|---|
| *Analytical Methods* | *Method* | *QC Lot #* | *QC* | *Regular* | *Actual* | *Expected* | *Evaluation* |
| **Laboratory Control Samples (LCS) - Continued** | | | | | | | |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1402485 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Total Sulfide by Colourimetry (Automated Flow) | E395-H | 1395706 | 1 | 10 | 10.0 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1402384 | 1 | 20 | 5.0 | 5.0 | ✓ |
| **Method Blanks (MB)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1395606 | 1 | 14 | 7.1 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1402483 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1395610 | 1 | 14 | 7.1 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1395609 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1398261 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1395519 | 1 | 18 | 5.5 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1402482 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1395608 | 1 | 14 | 7.1 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1395611 | 1 | 18 | 5.5 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1395612 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1395613 | 1 | 16 | 6.2 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1402389 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1398579 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1398237 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1395689 | 1 | 16 | 6.2 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1402484 | 1 | 5 | 20.0 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1402485 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Total Sulfide by Colourimetry (Automated Flow) | E395-H | 1395706 | 1 | 10 | 10.0 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1402384 | 1 | 20 | 5.0 | 5.0 | ✓ |
| **Matrix Spikes (MS)** | | | | | | | |
| Ammonia by Fluorescence | E298 | 1402483 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1395610 | 1 | 14 | 7.1 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1395609 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1398261 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1395519 | 1 | 18 | 5.5 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1402482 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1395608 | 1 | 14 | 7.1 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1395611 | 1 | 18 | 5.5 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1395612 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1395613 | 1 | 16 | 6.2 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1398579 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1398237 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1395689 | 1 | 16 | 6.2 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1402484 | 1 | 5 | 20.0 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1402485 | 1 | 2 | 50.0 | 5.0 | ✓ |

Matrix: **Water**

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

| Quality Control Sample Type | | | Count | | Frequency (%) | | |
|---|---|---|---|---|---|---|---|
| *Analytical Methods* | *Method* | *QC Lot #* | *QC* | *Regular* | *Actual* | *Expected* | *Evaluation* |
| Matrix Spikes (MS) - Continued | | | | | | | |
| Total Sulfide by Colourimetry (Automated Flow) | E395-H | 1395706 | 1 | 10 | 10.0 | 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<br>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 ± 1°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<br>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 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue. |
| Bromide in Water by IC (Low Level) | E235.Br-L<br>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<br>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<br>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<br>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<br>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<br>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<br>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<br>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) |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L<br>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 CO2. 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<br>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<br>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-H<br>ALS Environmental - Vancouver | Water | APHA 4500 -S E-Auto-Colorimetry | Sulfide is determined using the gas dialysis automated methlyene blue colourimetric method. Results expressed "as H2S" if reported represent the maximum possible H2S concentration based on the total sulfide concentration in the sample. The H2S calculation converts Total Sulphide as (S2-) and reports it as Total Sulphide as (H2S) |
| Total Metals in Water by CRC ICPMS | E420<br>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.<br><br>Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method. |
| Dissolved Metals in Water by CRC ICPMS | E421<br>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.<br><br>Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method. |
| Total Mercury in Water by CVAAS | E508<br>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<br>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. |

| Analytical Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|---|---|---|---|
| Total Hexavalent Chromium (Cr VI) by IC | E532<br>ALS Environmental - Vancouver | Water | APHA 3500-Cr C (Ion Chromatography) | Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection.<br>Results are based on an un-filtered, field-preserved sample. |
| Dissolved Hardness (Calculated) | EC100<br>ALS Environmental - Vancouver | Water | APHA 2340B | "Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 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<br>ALS Environmental - Vancouver | Water | APHA 2340B | "Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 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<br>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. |
| Total Trivalent Chromium (Cr III) by Calculation | EC535<br>ALS Environmental - Vancouver | Water | APHA 3030B/6020A/EPA 7196A (mod) | Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results. |
| Field pH,EC,Salinity,Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine | EF001<br>ALS Environmental - Vancouver | Water | Field Measurement (Client Supplied) | Field pH,EC,Salinity,Cl2,ClO2,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<br>ALS Environmental - Vancouver | Water | | Sample preparation for Preserved Nutrients Water Quality Analysis. |
| Preparation for Dissolved Organic Carbon for Combustion | EP358<br>ALS Environmental - Vancouver | Water | APHA 5310 B (mod) | Preparation for Dissolved Organic Carbon |
| Digestion for Total Nitrogen in water | EP366<br>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<br>ALS Environmental - Vancouver | Water | APHA 4500-P E (mod). | Samples are heated with a persulfate digestion reagent. |

| Preparation Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|---|---|---|---|
| Dissolved Metals Water Filtration | EP421<br><br>ALS Environmental - Vancouver | Water | APHA 3030B | Water samples are filtered (0.45 um), and preserved with HNO3. |
| Dissolved Mercury Water Filtration | EP509<br><br>ALS Environmental - Vancouver | Water | APHA 3030B | Water samples are filtered (0.45 um), and preserved with HCl. |

# QUALITY CONTROL REPORT

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24A7363** | Page | : 1 of 17 |
| Client | : Triton Environmental Consultants Ltd. | Laboratory | : ALS Environmental - Vancouver |
| Contact | : Miranda Lewis | Account Manager | : Can Dang |
| Address | : Suite 1730, 1111 West Georgia St<br>Vancouver BC Canada V6E 4M3 | Address | : 8081 Lougheed Highway<br>Burnaby, British Columbia Canada V5A 1W9 |
| Telephone | : 604 631 2213 | Telephone | : +1 604 253 4188 |
| Project | : 11964 | Date Samples Received | : 08-Apr-2024 17:15 |
| PO | : 11964 - Task 20 - Phase 3C-4C | Date Analysis Commenced | : 09-Apr-2024 |
| C-O-C number | : ---- | Issue Date | : 16-Apr-2024 20:45 |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : VA23-TRIT100-003 | | |
| No. of samples received | : 2 | | |
| No. of samples analysed | : 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.

| *Signatories* | *Position* | *Laboratory Department* |
|---|---|---|
| Brieanna Allen | Production/Validation Manager | Vancouver Administration, Burnaby, British Columbia |
| Erin Sanchez | | Vancouver Metals, Burnaby, British Columbia |
| Kevin Duarte | Supervisor - Metals ICP Instrumentation | Vancouver Metals, Burnaby, British Columbia |
| Leon Yang | Analyst | Vancouver Inorganics, Burnaby, British Columbia |
| Sam Silveira | Analyst | Vancouver Metals, Burnaby, British Columbia |

## General Comments

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

Key :

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

## Workorder Comments

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

## Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **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 |
| **Physical Tests (QC Lot: 1395606)** | | | | | | | | | | | |
| KS2401183-003 | Anonymous | Alkalinity, total (as CaCO3) | ---- | E290 | 1.0 | mg/L | 549 | 545 | 0.713% | 20% | ---- |
| **Physical Tests (QC Lot: 1402384)** | | | | | | | | | | | |
| KS2401202-001 | Anonymous | Solids, total suspended [TSS] | ---- | E160 | 3.0 | mg/L | <3.0 | <3.0 | 0 | Diff <2x LOR | ---- |
| **Physical Tests (QC Lot: 1402389)** | | | | | | | | | | | |
| KS2401202-001 | Anonymous | Solids, total dissolved [TDS] | ---- | E162 | 20 | mg/L | 2510 | 2580 | 2.85% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1395608)** | | | | | | | | | | | |
| KS2401183-001 | Anonymous | Fluoride | 16984-48-8 | E235.F | 0.400 | mg/L | <0.400 | <0.400 | 0 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1395609)** | | | | | | | | | | | |
| KS2401183-001 | Anonymous | Chloride | 16887-00-6 | E235.Cl | 10.0 | mg/L | 17.0 | 16.6 | 0.44 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1395610)** | | | | | | | | | | | |
| KS2401183-001 | Anonymous | Bromide | 24959-67-9 | E235.Br-L | 1.00 | mg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1395611)** | | | | | | | | | | | |
| KS2401183-001 | Anonymous | Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.100 | mg/L | 4.45 | 4.34 | 2.61% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1395612)** | | | | | | | | | | | |
| KS2401183-001 | Anonymous | Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.0200 | mg/L | 0.213 | 0.207 | 2.46% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1395613)** | | | | | | | | | | | |
| KS2401183-001 | Anonymous | Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 6.00 | mg/L | 1690 | 1640 | 2.66% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1402483)** | | | | | | | | | | | |
| VA24A7363-001 | WLNG DS 1 | Ammonia, total (as N) | 7664-41-7 | E298 | 0.0050 | mg/L | <0.0050 | <0.0050 | 0 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1402484)** | | | | | | | | | | | |
| EO2402596-001 | Anonymous | Nitrogen, total | 7727-37-9 | E366 | 3.00 | mg/L | 84.7 | 75.9 | 11.0% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1402485)** | | | | | | | | | | | |
| VA24A7363-001 | WLNG DS 1 | Phosphorus, total | 7723-14-0 | E372-U | 0.0020 | mg/L | 0.0620 | 0.0638 | 2.86% | 20% | ---- |
| **Organic / Inorganic Carbon (QC Lot: 1402482)** | | | | | | | | | | | |
| VA24A7363-001 | WLNG DS 1 | Carbon, dissolved organic [DOC] | ---- | E358-L | 0.50 | mg/L | 2.74 | 2.97 | 0.24 | Diff <2x LOR | ---- |
| **Total Sulfides (QC Lot: 1395706)** | | | | | | | | | | | |
| VA24A7080-001 | Anonymous | Sulfide, total (as S) | 18496-25-8 | E395-H | 0.010 | mg/L | <0.010 | <0.010 | 0 | Diff <2x LOR | ---- |
| **Total Metals (QC Lot: 1395689)** | | | | | | | | | | | |
| VA24A7348-001 | Anonymous | Aluminum, total | 7429-90-5 | E420 | 0.0150 | mg/L | 1090 µg/L | 1.12 | 3.07% | 20% | ---- |
| | | Antimony, total | 7440-36-0 | E420 | 0.00050 | mg/L | <0.50 µg/L | <0.00050 | 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* |
| **Total Metals (QC Lot: 1395689) - continued** | | | | | | | | | | | |
| VA24A7348-001 | Anonymous | Arsenic, total | 7440-38-2 | E420 | 0.00050 | mg/L | 23.6 µg/L | 0.0243 | 2.91% | 20% | ---- |
| | | Barium, total | 7440-39-3 | E420 | 0.00050 | mg/L | 842 µg/L | 0.864 | 2.60% | 20% | ---- |
| | | Beryllium, total | 7440-41-7 | E420 | 0.000100 | mg/L | <0.100 µg/L | <0.000100 | 0 | Diff <2x LOR | ---- |
| | | Bismuth, total | 7440-69-9 | E420 | 0.000250 | mg/L | <0.250 µg/L | <0.000250 | 0 | Diff <2x LOR | ---- |
| | | Boron, total | 7440-42-8 | E420 | 0.050 | mg/L | 390 µg/L | 0.393 | 0.004 | Diff <2x LOR | ---- |
| | | Cadmium, total | 7440-43-9 | E420 | 0.0000250 | mg/L | 0.0329 µg/L | 0.0000439 | 0.0000109 | Diff <2x LOR | ---- |
| | | Calcium, total | 7440-70-2 | E420 | 0.250 | mg/L | 104000 µg/L | 98.2 | 5.42% | 20% | ---- |
| | | Cesium, total | 7440-46-2 | E420 | 0.000050 | mg/L | 0.088 µg/L | 0.000079 | 0.000009 | Diff <2x LOR | ---- |
| | | Chromium, total | 7440-47-3 | E420 | 0.00250 | mg/L | 4.27 µg/L | 0.00376 | 0.00051 | Diff <2x LOR | ---- |
| | | Cobalt, total | 7440-48-4 | E420 | 0.00050 | mg/L | 1.87 µg/L | 0.00192 | 0.00005 | Diff <2x LOR | ---- |
| | | Copper, total | 7440-50-8 | E420 | 0.00250 | mg/L | 7.60 µg/L | 0.00762 | 0.00002 | Diff <2x LOR | ---- |
| | | Iron, total | 7439-89-6 | E420 | 0.050 | mg/L | 14700 µg/L | 14.8 | 0.444% | 20% | ---- |
| | | Lead, total | 7439-92-1 | E420 | 0.000250 | mg/L | 0.824 µg/L | 0.000841 | 0.000017 | Diff <2x LOR | ---- |
| | | Lithium, total | 7439-93-2 | E420 | 0.0050 | mg/L | 5.8 µg/L | 0.0055 | 0.0003 | Diff <2x LOR | ---- |
| | | Magnesium, total | 7439-95-4 | E420 | 0.0250 | mg/L | 180000 µg/L | 183 | 1.93% | 20% | ---- |
| | | Manganese, total | 7439-96-5 | E420 | 0.00050 | mg/L | 577 µg/L | 0.583 | 1.07% | 20% | ---- |
| | | Molybdenum, total | 7439-98-7 | E420 | 0.000250 | mg/L | 3.93 µg/L | 0.00413 | 4.93% | 20% | ---- |
| | | Nickel, total | 7440-02-0 | E420 | 0.00250 | mg/L | 7.76 µg/L | 0.00793 | 0.00017 | Diff <2x LOR | ---- |
| | | Phosphorus, total | 7723-14-0 | E420 | 0.250 | mg/L | 1380 µg/L | 1.51 | 0.127 | Diff <2x LOR | ---- |
| | | Potassium, total | 7440-09-7 | E420 | 0.250 | mg/L | 32700 µg/L | 33.4 | 2.24% | 20% | ---- |
| | | Rubidium, total | 7440-17-7 | E420 | 0.00100 | mg/L | 6.15 µg/L | 0.00664 | 0.00049 | Diff <2x LOR | ---- |
| | | Selenium, total | 7782-49-2 | E420 | 0.000250 | mg/L | <0.250 µg/L | <0.000250 | 0 | Diff <2x LOR | ---- |
| | | Silicon, total | 7440-21-3 | E420 | 0.50 | mg/L | 19900 µg/L | 20.2 | 1.86% | 20% | ---- |
| | | Silver, total | 7440-22-4 | E420 | 0.000050 | mg/L | <0.050 µg/L | <0.000050 | 0 | Diff <2x LOR | ---- |
| | | Sodium, total | 7440-23-5 | E420 | 0.250 | mg/L | 1380000 µg/L | 1360 | 1.11% | 20% | ---- |
| | | Strontium, total | 7440-24-6 | E420 | 0.00100 | mg/L | 1820 µg/L | 1.86 | 2.02% | 20% | ---- |
| | | Sulfur, total | 7704-34-9 | E420 | 2.50 | mg/L | 25500 µg/L | 26.8 | 5.10% | 20% | ---- |
| | | Tellurium, total | 13494-80-9 | E420 | 0.00100 | mg/L | <1.00 µg/L | <0.00100 | 0 | Diff <2x LOR | ---- |
| | | Thallium, total | 7440-28-0 | E420 | 0.000050 | mg/L | <0.050 µg/L | <0.000050 | 0 | Diff <2x LOR | ---- |
| | | Thorium, total | 7440-29-1 | E420 | 0.00050 | mg/L | <0.50 µg/L | <0.00050 | 0 | Diff <2x LOR | ---- |
| | | Tin, total | 7440-31-5 | E420 | 0.00050 | mg/L | <0.50 µg/L | <0.00050 | 0 | Diff <2x LOR | ---- |
| | | Titanium, total | 7440-32-6 | E420 | 0.00150 | mg/L | 73.6 µg/L | 0.0787 | 6.72% | 20% | ---- |
| | | Tungsten, total | 7440-33-7 | E420 | 0.00050 | mg/L | <0.50 µg/L | <0.00050 | 0 | Diff <2x LOR | ---- |
| | | Uranium, total | 7440-61-1 | E420 | 0.000050 | mg/L | 0.371 µg/L | 0.000365 | 0.000006 | 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* |
| **Total Metals (QC Lot: 1395689) - continued** | | | | | | | | | | | |
| VA24A7348-001 | Anonymous | Vanadium, total | 7440-62-2 | E420 | 0.00250 | mg/L | 11.6 µg/L | 0.0118 | 0.00027 | Diff <2x LOR | ---- |
| | | Zinc, total | 7440-66-6 | E420 | 0.0150 | mg/L | 16.0 µg/L | 0.0164 | 0.0005 | Diff <2x LOR | ---- |
| | | Zirconium, total | 7440-67-7 | E420 | 0.00100 | mg/L | 2.43 µg/L | 0.00241 | 0.00002 | Diff <2x LOR | ---- |
| **Total Metals (QC Lot: 1398237)** | | | | | | | | | | | |
| KS2401190-001 | Anonymous | Mercury, total | 7439-97-6 | E508 | 0.0000050 | mg/L | <0.0000050 | <0.0000050 | 0 | Diff <2x LOR | ---- |
| **Dissolved Metals (QC Lot: 1395519)** | | | | | | | | | | | |
| VA24A7178-001 | Anonymous | Aluminum, dissolved | 7429-90-5 | E421 | 0.0010 | mg/L | 0.0018 | 0.0018 | 0.000006 | 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 | 0.00028 | 0.00029 | 0.00001 | Diff <2x LOR | ---- |
| | | Barium, dissolved | 7440-39-3 | E421 | 0.00010 | mg/L | 0.0199 | 0.0201 | 1.35% | 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 | <0.010 | <0.010 | 0 | Diff <2x LOR | ---- |
| | | Cadmium, dissolved | 7440-43-9 | E421 | 0.0000050 | mg/L | 0.0000052 | 0.0000057 | 0.0000004 | Diff <2x LOR | ---- |
| | | Calcium, dissolved | 7440-70-2 | E421 | 0.050 | mg/L | 42.0 | 42.0 | 0.0274% | 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 | 0.00107 | 0.00127 | 0.00021 | 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 | 0.00038 | 0.00044 | 0.00005 | 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 | <0.0010 | <0.0010 | 0 | Diff <2x LOR | ---- |
| | | Magnesium, dissolved | 7439-95-4 | E421 | 0.0050 | mg/L | 20.1 | 20.5 | 1.89% | 20% | ---- |
| | | Manganese, dissolved | 7439-96-5 | E421 | 0.00010 | mg/L | 0.00177 | 0.00185 | 4.28% | 20% | ---- |
| | | Molybdenum, dissolved | 7439-98-7 | E421 | 0.000050 | mg/L | 0.000642 | 0.000729 | 12.6% | 20% | ---- |
| | | Nickel, dissolved | 7440-02-0 | E421 | 0.00050 | mg/L | 0.00334 | 0.00344 | 0.00010 | 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 | 0.494 | 0.502 | 0.008 | Diff <2x LOR | ---- |
| | | Rubidium, dissolved | 7440-17-7 | E421 | 0.00020 | mg/L | 0.00045 | 0.00042 | 0.00002 | Diff <2x LOR | ---- |
| | | Selenium, dissolved | 7782-49-2 | E421 | 0.000050 | mg/L | 0.000491 | 0.000592 | 18.7% | 20% | ---- |
| | | Silicon, dissolved | 7440-21-3 | E421 | 0.050 | mg/L | 4.43 | 4.36 | 1.47% | 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 | 1.15 | 1.17 | 1.92% | 20% | ---- |
| | | Strontium, dissolved | 7440-24-6 | E421 | 0.00020 | mg/L | 0.102 | 0.107 | 4.78% | 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* |
| **Dissolved Metals (QC Lot: 1395519) - continued** | | | | | | | | | | | |
| VA24A7178-001 | Anonymous | Sulfur, dissolved | 7704-34-9 | E421 | 0.50 | mg/L | 22.0 | 21.6 | 2.01% | 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 | 0.000750 | 0.000759 | 1.21% | 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 | 0.00020 | mg/L | <0.00020 | <0.00020 | 0 | Diff <2x LOR | ---- |
| **Dissolved Metals (QC Lot: 1398261)** | | | | | | | | | | | |
| KS2401202-001 | Anonymous | Mercury, dissolved | 7439-97-6 | E509 | 0.0000050 | mg/L | <0.0000050 | <0.0000050 | 0 | Diff <2x LOR | ---- |
| **Speciated Metals (QC Lot: 1398579)** | | | | | | | | | | | |
| KS2401183-005 | Anonymous | Chromium, hexavalent [Cr VI], total | 18540-29-9 | E532 | 0.00050 | mg/L | <0.00050 | <0.00050 | 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 |
|---|---|---|---|---|---|---|
| **Physical Tests (QCLot: 1395606)** | | | | | | |
| Alkalinity, total (as CaCO3) | ---- | E290 | 1 | mg/L | 1.3 | ---- |
| **Physical Tests (QCLot: 1402384)** | | | | | | |
| Solids, total suspended [TSS] | ---- | E160 | 3 | mg/L | <3.0 | ---- |
| **Physical Tests (QCLot: 1402389)** | | | | | | |
| Solids, total dissolved [TDS] | ---- | E162 | 10 | mg/L | <10 | ---- |
| **Anions and Nutrients (QCLot: 1395608)** | | | | | | |
| Fluoride | 16984-48-8 | E235.F | 0.02 | mg/L | <0.020 | ---- |
| **Anions and Nutrients (QCLot: 1395609)** | | | | | | |
| Chloride | 16887-00-6 | E235.Cl | 0.5 | mg/L | <0.50 | ---- |
| **Anions and Nutrients (QCLot: 1395610)** | | | | | | |
| Bromide | 24959-67-9 | E235.Br-L | 0.05 | mg/L | <0.050 | ---- |
| **Anions and Nutrients (QCLot: 1395611)** | | | | | | |
| Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.005 | mg/L | <0.0050 | ---- |
| **Anions and Nutrients (QCLot: 1395612)** | | | | | | |
| Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.001 | mg/L | <0.0010 | ---- |
| **Anions and Nutrients (QCLot: 1395613)** | | | | | | |
| Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.3 | mg/L | <0.30 | ---- |
| **Anions and Nutrients (QCLot: 1402483)** | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298 | 0.005 | mg/L | <0.0050 | ---- |
| **Anions and Nutrients (QCLot: 1402484)** | | | | | | |
| Nitrogen, total | 7727-37-9 | E366 | 0.03 | mg/L | <0.030 | ---- |
| **Anions and Nutrients (QCLot: 1402485)** | | | | | | |
| Phosphorus, total | 7723-14-0 | E372-U | 0.002 | mg/L | <0.0020 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1402482)** | | | | | | |
| Carbon, dissolved organic [DOC] | ---- | E358-L | 0.5 | mg/L | <0.50 | ---- |
| **Total Sulfides (QCLot: 1395706)** | | | | | | |
| Sulfide, total (as S) | 18496-25-8 | E395-H | 0.01 | mg/L | <0.010 | ---- |
| **Total Metals (QCLot: 1395689)** | | | | | | |
| 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 |
|---|---|---|---|---|---|---|
| **Total Metals (QCLot: 1395689) - continued** | | | | | | |
| 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 |
|---|---|---|---|---|---|---|
| **Total Metals (QCLot: 1398237)** | | | | | | |
| Mercury, total | 7439-97-6 | E508 | 0.000005 | mg/L | <0.0000050 | ---- |
| **Dissolved Metals (QCLot: 1395519)** | | | | | | |
| 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 |
|---|---|---|---|---|---|---|
| **Dissolved Metals (QCLot: 1395519) - continued** | | | | | | |
| 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 | ---- |
| **Dissolved Metals (QCLot: 1398261)** | | | | | | |
| Mercury, dissolved | 7439-97-6 | E509 | 0.000005 | mg/L | <0.0000050 | ---- |
| **Speciated Metals (QCLot: 1398579)** | | | | | | |
| Chromium, hexavalent [Cr VI], total | 18540-29-9 | E532 | 0.0005 | mg/L | <0.00050 | ---- |

## 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Target Concentration | LCS | Low | High | Qualifier |
| **Physical Tests (QCLot: 1395606)** | | | | | | | | | |
| Alkalinity, total (as CaCO3) | ---- | E290 | 1 | mg/L | 500 mg/L | 108 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1402384)** | | | | | | | | | |
| Solids, total suspended [TSS] | ---- | E160 | 3 | mg/L | 150 mg/L | 103 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1402389)** | | | | | | | | | |
| Solids, total dissolved [TDS] | ---- | E162 | 10 | mg/L | 1000 mg/L | 99.8 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1395608)** | | | | | | | | | |
| Fluoride | 16984-48-8 | E235.F | 0.02 | mg/L | 1 mg/L | 101 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1395609)** | | | | | | | | | |
| Chloride | 16887-00-6 | E235.Cl | 0.5 | mg/L | 100 mg/L | 100 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1395610)** | | | | | | | | | |
| Bromide | 24959-67-9 | E235.Br-L | 0.05 | mg/L | 0.5 mg/L | 101 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1395611)** | | | | | | | | | |
| Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.005 | mg/L | 2.5 mg/L | 98.9 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1395612)** | | | | | | | | | |
| Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.001 | mg/L | 0.5 mg/L | 99.4 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1395613)** | | | | | | | | | |
| Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.3 | mg/L | 100 mg/L | 101 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1402483)** | | | | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298 | 0.005 | mg/L | 0.2 mg/L | 90.3 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1402484)** | | | | | | | | | |
| Nitrogen, total | 7727-37-9 | E366 | 0.03 | mg/L | 0.5 mg/L | 97.9 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1402485)** | | | | | | | | | |
| Phosphorus, total | 7723-14-0 | E372-U | 0.002 | mg/L | 0.05 mg/L | 93.3 | 80.0 | 120 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1402482)** | | | | | | | | | |
| Carbon, dissolved organic [DOC] | ---- | E358-L | 0.5 | mg/L | 8.57 mg/L | 98.1 | 80.0 | 120 | ---- |
| **Total Sulfides (QCLot: 1395706)** | | | | | | | | | |
| Sulfide, total (as H2S) | 7783-06-4 | E395-H | ---- | mg/L | 0.085 mg/L | 105 | 80.0 | 120 | ---- |
| Sulfide, total (as S) | 18496-25-8 | E395-H | 0.01 | mg/L | 0.08 mg/L | 106 | 80.0 | 120 | ---- |

Sub-Matrix: **Water**

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Target Concentration | LCS | Low | High | Qualifier |
| **Total Metals (QCLot: 1395689)** | | | | | | | | | |
| Aluminum, total | 7429-90-5 | E420 | 0.003 | mg/L | 2 mg/L | 107 | 80.0 | 120 | ---- |
| Antimony, total | 7440-36-0 | E420 | 0.0001 | mg/L | 1 mg/L | 110 | 80.0 | 120 | ---- |
| Arsenic, total | 7440-38-2 | E420 | 0.0001 | mg/L | 1 mg/L | 105 | 80.0 | 120 | ---- |
| Barium, total | 7440-39-3 | E420 | 0.0001 | mg/L | 0.25 mg/L | 103 | 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 | 103 | 80.0 | 120 | ---- |
| Boron, total | 7440-42-8 | E420 | 0.01 | mg/L | 1 mg/L | 99.4 | 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 | 102 | 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 | 98.9 | 80.0 | 120 | ---- |
| Copper, total | 7440-50-8 | E420 | 0.0005 | mg/L | 0.25 mg/L | 98.2 | 80.0 | 120 | ---- |
| Iron, total | 7439-89-6 | E420 | 0.01 | mg/L | 1 mg/L | 101 | 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 | 99.8 | 80.0 | 120 | ---- |
| Magnesium, total | 7439-95-4 | E420 | 0.005 | mg/L | 50 mg/L | 104 | 80.0 | 120 | ---- |
| Manganese, total | 7439-96-5 | E420 | 0.0001 | mg/L | 0.25 mg/L | 101 | 80.0 | 120 | ---- |
| Molybdenum, total | 7439-98-7 | E420 | 0.00005 | mg/L | 0.25 mg/L | 108 | 80.0 | 120 | ---- |
| Nickel, total | 7440-02-0 | E420 | 0.0005 | mg/L | 0.5 mg/L | 99.9 | 80.0 | 120 | ---- |
| Phosphorus, total | 7723-14-0 | E420 | 0.05 | mg/L | 10 mg/L | 101 | 80.0 | 120 | ---- |
| Potassium, total | 7440-09-7 | E420 | 0.05 | mg/L | 50 mg/L | 102 | 80.0 | 120 | ---- |
| Rubidium, total | 7440-17-7 | E420 | 0.0002 | mg/L | 0.1 mg/L | 99.7 | 80.0 | 120 | ---- |
| Selenium, total | 7782-49-2 | E420 | 0.00005 | mg/L | 1 mg/L | 101 | 80.0 | 120 | ---- |
| Silicon, total | 7440-21-3 | E420 | 0.1 | mg/L | 10 mg/L | 113 | 80.0 | 120 | ---- |
| Silver, total | 7440-22-4 | E420 | 0.00001 | mg/L | 0.1 mg/L | 97.2 | 80.0 | 120 | ---- |
| Sodium, total | 7440-23-5 | E420 | 0.05 | mg/L | 50 mg/L | 102 | 80.0 | 120 | ---- |
| Strontium, total | 7440-24-6 | E420 | 0.0002 | mg/L | 0.25 mg/L | 101 | 80.0 | 120 | ---- |
| Sulfur, total | 7704-34-9 | E420 | 0.5 | mg/L | 50 mg/L | 94.8 | 80.0 | 120 | ---- |
| Tellurium, total | 13494-80-9 | E420 | 0.0002 | mg/L | 0.1 mg/L | 102 | 80.0 | 120 | ---- |
| Thallium, total | 7440-28-0 | E420 | 0.00001 | mg/L | 1 mg/L | 104 | 80.0 | 120 | ---- |
| Thorium, total | 7440-29-1 | E420 | 0.0001 | mg/L | 0.1 mg/L | 99.8 | 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 | 98.4 | 80.0 | 120 | ---- |
| Tungsten, total | 7440-33-7 | E420 | 0.0001 | mg/L | 0.1 mg/L | 102 | 80.0 | 120 | ---- |
| Uranium, total | 7440-61-1 | E420 | 0.00001 | mg/L | 0.005 mg/L | 102 | 80.0 | 120 | ---- |

Sub-Matrix: **Water**

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Target Concentration | LCS | Low | High | Qualifier |
| **Total Metals (QCLot: 1395689) - continued** | | | | | | | | | |
| Vanadium, total | 7440-62-2 | E420 | 0.0005 | mg/L | 0.5 mg/L | 101 | 80.0 | 120 | ---- |
| Zinc, total | 7440-66-6 | E420 | 0.003 | mg/L | 0.5 mg/L | 102 | 80.0 | 120 | ---- |
| Zirconium, total | 7440-67-7 | E420 | 0.0002 | mg/L | 0.1 mg/L | 100 | 80.0 | 120 | ---- |
| **Total Metals (QCLot: 1398237)** | | | | | | | | | |
| Mercury, total | 7439-97-6 | E508 | 0.000005 | mg/L | 0 mg/L | 102 | 80.0 | 120 | ---- |
| **Dissolved Metals (QCLot: 1395519)** | | | | | | | | | |
| Aluminum, dissolved | 7429-90-5 | E421 | 0.001 | mg/L | 2 mg/L | 98.7 | 80.0 | 120 | ---- |
| Antimony, dissolved | 7440-36-0 | E421 | 0.0001 | mg/L | 1 mg/L | 99.0 | 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 | 103 | 80.0 | 120 | ---- |
| Beryllium, dissolved | 7440-41-7 | E421 | 0.00002 | mg/L | 0.1 mg/L | 94.6 | 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 | 89.2 | 80.0 | 120 | ---- |
| Cadmium, dissolved | 7440-43-9 | E421 | 0.000005 | mg/L | 0.1 mg/L | 98.3 | 80.0 | 120 | ---- |
| Calcium, dissolved | 7440-70-2 | E421 | 0.05 | mg/L | 50 mg/L | 96.2 | 80.0 | 120 | ---- |
| Cesium, dissolved | 7440-46-2 | E421 | 0.00001 | mg/L | 0.05 mg/L | 95.7 | 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 | 98.2 | 80.0 | 120 | ---- |
| Lead, dissolved | 7439-92-1 | E421 | 0.00005 | mg/L | 0.5 mg/L | 97.1 | 80.0 | 120 | ---- |
| Lithium, dissolved | 7439-93-2 | E421 | 0.001 | mg/L | 0.25 mg/L | 92.6 | 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 | 105 | 80.0 | 120 | ---- |
| Molybdenum, dissolved | 7439-98-7 | E421 | 0.00005 | mg/L | 0.25 mg/L | 98.4 | 80.0 | 120 | ---- |
| Nickel, dissolved | 7440-02-0 | E421 | 0.0005 | mg/L | 0.5 mg/L | 101 | 80.0 | 120 | ---- |
| Phosphorus, dissolved | 7723-14-0 | E421 | 0.05 | mg/L | 10 mg/L | 101 | 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 | 102 | 80.0 | 120 | ---- |
| Selenium, dissolved | 7782-49-2 | E421 | 0.00005 | mg/L | 1 mg/L | 102 | 80.0 | 120 | ---- |
| Silicon, dissolved | 7440-21-3 | E421 | 0.05 | mg/L | 10 mg/L | 108 | 80.0 | 120 | ---- |
| Silver, dissolved | 7440-22-4 | E421 | 0.00001 | mg/L | 0.1 mg/L | 89.7 | 80.0 | 120 | ---- |
| Sodium, dissolved | 7440-23-5 | E421 | 0.05 | mg/L | 50 mg/L | 105 | 80.0 | 120 | ---- |
| Strontium, dissolved | 7440-24-6 | E421 | 0.0002 | mg/L | 0.25 mg/L | 96.0 | 80.0 | 120 | ---- |
| Sulfur, dissolved | 7704-34-9 | E421 | 0.5 | mg/L | 50 mg/L | 99.4 | 80.0 | 120 | ---- |

Sub-Matrix: **Water**

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Target Concentration | LCS | Low | High | Qualifier |
| **Dissolved Metals (QCLot: 1395519) - continued** | | | | | | | | | |
| Tellurium, dissolved | 13494-80-9 | E421 | 0.0002 | mg/L | 0.1 mg/L | 103 | 80.0 | 120 | ---- |
| Thallium, dissolved | 7440-28-0 | E421 | 0.00001 | mg/L | 1 mg/L | 100 | 80.0 | 120 | ---- |
| Thorium, dissolved | 7440-29-1 | E421 | 0.0001 | mg/L | 0.1 mg/L | 96.3 | 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 | 99.3 | 80.0 | 120 | ---- |
| Tungsten, dissolved | 7440-33-7 | E421 | 0.0001 | mg/L | 0.1 mg/L | 99.2 | 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 | 104 | 80.0 | 120 | ---- |
| Zinc, dissolved | 7440-66-6 | E421 | 0.001 | mg/L | 0.5 mg/L | 104 | 80.0 | 120 | ---- |
| Zirconium, dissolved | 7440-67-7 | E421 | 0.0002 | mg/L | 0.1 mg/L | 94.8 | 80.0 | 120 | ---- |
| Mercury, dissolved | 7439-97-6 | E509 | 0.000005 | mg/L | 0 mg/L | 99.8 | 80.0 | 120 | ---- |
| **Speciated Metals (QCLot: 1398579)** | | | | | | | | | |
| Chromium, hexavalent [Cr VI], total | 18540-29-9 | E532 | 0.0005 | mg/L | 0.25 mg/L | 99.7 | 80.0 | 120 | ---- |

## Matrix Spike (MS) Report

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

Sub-Matrix: **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 |
| **Anions and Nutrients (QCLot: 1395608)** | | | | | | | | | | |
| KS2401183-002 | Anonymous | Fluoride | 16984-48-8 | E235.F | 1.04 mg/L | 1 mg/L | 104 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1395609)** | | | | | | | | | | |
| KS2401183-002 | Anonymous | Chloride | 16887-00-6 | E235.Cl | 102 mg/L | 100 mg/L | 102 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1395610)** | | | | | | | | | | |
| KS2401183-002 | Anonymous | Bromide | 24959-67-9 | E235.Br-L | 0.520 mg/L | 0.5 mg/L | 104 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1395611)** | | | | | | | | | | |
| KS2401183-002 | Anonymous | Nitrate (as N) | 14797-55-8 | E235.NO3-L | 2.52 mg/L | 2.5 mg/L | 101 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1395612)** | | | | | | | | | | |
| KS2401183-002 | Anonymous | Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.517 mg/L | 0.5 mg/L | 103 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1395613)** | | | | | | | | | | |
| KS2401183-002 | Anonymous | Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 104 mg/L | 100 mg/L | 104 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1402483)** | | | | | | | | | | |
| VA24A7363-002 | WLNG US 1 | Ammonia, total (as N) | 7664-41-7 | E298 | 0.0912 mg/L | 0.1 mg/L | 91.2 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1402484)** | | | | | | | | | | |
| EO2402596-002 | Anonymous | Nitrogen, total | 7727-37-9 | E366 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| **Anions and Nutrients (QCLot: 1402485)** | | | | | | | | | | |
| VA24A7363-002 | WLNG US 1 | Phosphorus, total | 7723-14-0 | E372-U | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1402482)** | | | | | | | | | | |
| VA24A7363-002 | WLNG US 1 | Carbon, dissolved organic [DOC] | ---- | E358-L | 10.1 mg/L | 10 mg/L | 101 | 70.0 | 130 | ---- |
| **Total Sulfides (QCLot: 1395706)** | | | | | | | | | | |
| VA24A7222-001 | Anonymous | Sulfide, total (as S) | 18496-25-8 | E395-H | 0.877 mg/L | 1 mg/L | 87.7 | 75.0 | 125 | ---- |
| **Total Metals (QCLot: 1395689)** | | | | | | | | | | |
| VA24A7348-002 | Anonymous | Aluminum, total | 7429-90-5 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Antimony, total | 7440-36-0 | E420 | 0.0205 mg/L | 0.02 mg/L | 103 | 70.0 | 130 | ---- |
| | | Arsenic, total | 7440-38-2 | E420 | 0.0205 mg/L | 0.02 mg/L | 102 | 70.0 | 130 | ---- |
| | | Barium, total | 7440-39-3 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Beryllium, total | 7440-41-7 | E420 | 0.0412 mg/L | 0.04 mg/L | 103 | 70.0 | 130 | ---- |
| | | Bismuth, total | 7440-69-9 | E420 | 0.00902 mg/L | 0.01 mg/L | 90.2 | 70.0 | 130 | ---- |
| | | Boron, total | 7440-42-8 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Cadmium, total | 7440-43-9 | E420 | 0.00394 mg/L | 0.004 mg/L | 98.5 | 70.0 | 130 | ---- |
| | | Calcium, total | 7440-70-2 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Cesium, total | 7440-46-2 | E420 | 0.00990 mg/L | 0.01 mg/L | 99.0 | 70.0 | 130 | ---- |
| | | Chromium, total | 7440-47-3 | E420 | 0.0397 mg/L | 0.04 mg/L | 99.3 | 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 |
| **Total Metals (QCLot: 1395689) - continued** | | | | | | | | | | |
| VA24A7348-002 | Anonymous | Cobalt, total | 7440-48-4 | E420 | 0.0189 mg/L | 0.02 mg/L | 94.5 | 70.0 | 130 | ---- |
| | | Copper, total | 7440-50-8 | E420 | 0.0182 mg/L | 0.02 mg/L | 90.8 | 70.0 | 130 | ---- |
| | | Iron, total | 7439-89-6 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Lead, total | 7439-92-1 | E420 | 0.0186 mg/L | 0.02 mg/L | 92.8 | 70.0 | 130 | ---- |
| | | Lithium, total | 7439-93-2 | E420 | 0.0985 mg/L | 0.1 mg/L | 98.5 | 70.0 | 130 | ---- |
| | | Magnesium, total | 7439-95-4 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Manganese, total | 7439-96-5 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Molybdenum, total | 7439-98-7 | E420 | 0.0215 mg/L | 0.02 mg/L | 108 | 70.0 | 130 | ---- |
| | | Nickel, total | 7440-02-0 | E420 | 0.0380 mg/L | 0.04 mg/L | 95.0 | 70.0 | 130 | ---- |
| | | Phosphorus, total | 7723-14-0 | E420 | 10.6 mg/L | 10 mg/L | 106 | 70.0 | 130 | ---- |
| | | Potassium, total | 7440-09-7 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Rubidium, total | 7440-17-7 | E420 | 0.0198 mg/L | 0.02 mg/L | 99.2 | 70.0 | 130 | ---- |
| | | Selenium, total | 7782-49-2 | E420 | 0.0404 mg/L | 0.04 mg/L | 101 | 70.0 | 130 | ---- |
| | | Silicon, total | 7440-21-3 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Silver, total | 7440-22-4 | E420 | 0.00384 mg/L | 0.004 mg/L | 95.9 | 70.0 | 130 | ---- |
| | | Sodium, total | 7440-23-5 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Strontium, total | 7440-24-6 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Sulfur, total | 7704-34-9 | E420 | ND mg/L | ---- | ND | 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 | 0.00365 mg/L | 0.004 mg/L | 91.2 | 70.0 | 130 | ---- |
| | | Thorium, total | 7440-29-1 | E420 | 0.0174 mg/L | 0.02 mg/L | 87.3 | 70.0 | 130 | ---- |
| | | Tin, total | 7440-31-5 | E420 | 0.0207 mg/L | 0.02 mg/L | 103 | 70.0 | 130 | ---- |
| | | Titanium, total | 7440-32-6 | E420 | 0.0399 mg/L | 0.04 mg/L | 99.8 | 70.0 | 130 | ---- |
| | | Tungsten, total | 7440-33-7 | E420 | 0.0198 mg/L | 0.02 mg/L | 99.2 | 70.0 | 130 | ---- |
| | | Uranium, total | 7440-61-1 | E420 | 0.00390 mg/L | 0.004 mg/L | 97.6 | 70.0 | 130 | ---- |
| | | Vanadium, total | 7440-62-2 | E420 | 0.101 mg/L | 0.1 mg/L | 101 | 70.0 | 130 | ---- |
| | | Zinc, total | 7440-66-6 | E420 | 0.386 mg/L | 0.4 mg/L | 96.5 | 70.0 | 130 | ---- |
| | | Zirconium, total | 7440-67-7 | E420 | 0.0426 mg/L | 0.04 mg/L | 106 | 70.0 | 130 | ---- |
| **Total Metals (QCLot: 1398237)** | | | | | | | | | | |
| KS2401191-001 | Anonymous | Mercury, total | 7439-97-6 | E508 | 0.000104 mg/L | 0 mg/L | 104 | 70.0 | 130 | ---- |
| **Dissolved Metals (QCLot: 1395519)** | | | | | | | | | | |
| VA24A7334-001 | Anonymous | Aluminum, dissolved | 7429-90-5 | E421 | 0.188 mg/L | 0.2 mg/L | 93.8 | 70.0 | 130 | ---- |
| | | Antimony, dissolved | 7440-36-0 | E421 | 0.0194 mg/L | 0.02 mg/L | 96.8 | 70.0 | 130 | ---- |
| | | Arsenic, dissolved | 7440-38-2 | E421 | 0.0206 mg/L | 0.02 mg/L | 103 | 70.0 | 130 | ---- |
| | | Barium, dissolved | 7440-39-3 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Beryllium, dissolved | 7440-41-7 | E421 | 0.0399 mg/L | 0.04 mg/L | 99.8 | 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 | 0.094 mg/L | 0.1 mg/L | 94.5 | 70.0 | 130 | ---- |
| | | Cadmium, dissolved | 7440-43-9 | E421 | 0.00384 mg/L | 0.004 mg/L | 95.9 | 70.0 | 130 | ---- |
| | | Calcium, dissolved | 7440-70-2 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Cesium, dissolved | 7440-46-2 | E421 | 0.00969 mg/L | 0.01 mg/L | 96.9 | 70.0 | 130 | ---- |
| | | Chromium, dissolved | 7440-47-3 | E421 | 0.0395 mg/L | 0.04 mg/L | 98.8 | 70.0 | 130 | ---- |
| | | Cobalt, dissolved | 7440-48-4 | E421 | 0.0183 mg/L | 0.02 mg/L | 91.7 | 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 |
| **Dissolved Metals (QCLot: 1395519) - continued** | | | | | | | | | | |
| VA24A7334-001 | Anonymous | Copper, dissolved | 7440-50-8 | E421 | 0.0181 mg/L | 0.02 mg/L | 90.7 | 70.0 | 130 | ---- |
| | | Iron, dissolved | 7439-89-6 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Lead, dissolved | 7439-92-1 | E421 | 0.0186 mg/L | 0.02 mg/L | 93.2 | 70.0 | 130 | ---- |
| | | Lithium, dissolved | 7439-93-2 | E421 | 0.101 mg/L | 0.1 mg/L | 101 | 70.0 | 130 | ---- |
| | | Magnesium, dissolved | 7439-95-4 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Manganese, dissolved | 7439-96-5 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Molybdenum, dissolved | 7439-98-7 | E421 | 0.0202 mg/L | 0.02 mg/L | 101 | 70.0 | 130 | ---- |
| | | Nickel, dissolved | 7440-02-0 | E421 | 0.0370 mg/L | 0.04 mg/L | 92.6 | 70.0 | 130 | ---- |
| | | Phosphorus, dissolved | 7723-14-0 | E421 | 10.5 mg/L | 10 mg/L | 105 | 70.0 | 130 | ---- |
| | | Potassium, dissolved | 7440-09-7 | E421 | 3.78 mg/L | 4 mg/L | 94.6 | 70.0 | 130 | ---- |
| | | Rubidium, dissolved | 7440-17-7 | E421 | 0.0193 mg/L | 0.02 mg/L | 96.6 | 70.0 | 130 | ---- |
| | | Selenium, dissolved | 7782-49-2 | E421 | 0.0411 mg/L | 0.04 mg/L | 103 | 70.0 | 130 | ---- |
| | | Silicon, dissolved | 7440-21-3 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Silver, dissolved | 7440-22-4 | E421 | 0.00247 mg/L | 0.004 mg/L | 61.8 | 70.0 | 130 | MES |
| | | Sodium, dissolved | 7440-23-5 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Strontium, dissolved | 7440-24-6 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Sulfur, dissolved | 7704-34-9 | E421 | 20.1 mg/L | 20 mg/L | 101 | 70.0 | 130 | ---- |
| | | Tellurium, dissolved | 13494-80-9 | E421 | 0.0412 mg/L | 0.04 mg/L | 103 | 70.0 | 130 | ---- |
| | | Thallium, dissolved | 7440-28-0 | E421 | 0.00375 mg/L | 0.004 mg/L | 93.7 | 70.0 | 130 | ---- |
| | | Thorium, dissolved | 7440-29-1 | E421 | 0.0184 mg/L | 0.02 mg/L | 92.2 | 70.0 | 130 | ---- |
| | | Tin, dissolved | 7440-31-5 | E421 | 0.0199 mg/L | 0.02 mg/L | 99.4 | 70.0 | 130 | ---- |
| | | Titanium, dissolved | 7440-32-6 | E421 | 0.0382 mg/L | 0.04 mg/L | 95.5 | 70.0 | 130 | ---- |
| | | Tungsten, dissolved | 7440-33-7 | E421 | 0.0203 mg/L | 0.02 mg/L | 101 | 70.0 | 130 | ---- |
| | | Uranium, dissolved | 7440-61-1 | E421 | 0.00383 mg/L | 0.004 mg/L | 95.6 | 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 | 0.391 mg/L | 0.4 mg/L | 97.7 | 70.0 | 130 | ---- |
| | | Zirconium, dissolved | 7440-67-7 | E421 | 0.0410 mg/L | 0.04 mg/L | 102 | 70.0 | 130 | ---- |
| **Dissolved Metals (QCLot: 1398261)** | | | | | | | | | | |
| KS2401202-002 | Anonymous | Mercury, dissolved | 7439-97-6 | E509 | 0.0000993 mg/L | 0 mg/L | 99.3 | 70.0 | 130 | ---- |
| **Speciated Metals (QCLot: 1398579)** | | | | | | | | | | |
| KS2401183-006 | Anonymous | Chromium, hexavalent [Cr VI], total | 18540-29-9 | E532 | 0.257 mg/L | 0.25 mg/L | 103 | 70.0 | 130 | ---- |

## Qualifiers

| Qualifier | Description |
|---|---|
| *MES* | *Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).* |

# Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 17 -

Page

Environmental Division Vancouver
Work Order Reference
VA24A7363

Telephone : +1 604 253 4188

| Report To | Contact and company name below will appear on the final report |
|---|---|
| Company: | Triton Environmental |
| Contact: | |
| Phone: | |
| Street: | |
| City/Province: | Vancouver/BC |
| Postal Code: | V6E 4M3 |

| Report Format / Distribution | |
|---|---|
| Select Report Format: | ☑ EXCEL ☐ EDD (DIGITAL) |
| Quality Control (QC) Report with Report | ☑ YES ☐ NO |
| ☑ 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 | |

Select Service Level Below - Contact your AM to confi

Regular [R] ☑ Standard TAT if received by 3 pm - bu

| PRIORITY (Business Days) | | EMERGENCY | |
|---|---|---|---|
| | 4 day [P4-20%] ☐ | | 1 Business day |
| | 3 day [P3-25%] ☐ | | Same Day, Wee |
| | 2 day [P2-50%] ☐ | | 200% (Laborat |

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected,

| Invoice To | Same as Report To ☐ YES ☑ NO |
|---|---|
| | Copy of Invoice with Report ☐ YES ☑ NO |
| Company: | |
| Contact: | |

| Invoice Distribution | |
|---|---|
| Select Invoice Di | FAX |
| Email 1 or Fax | |
| Email 2 | |
| Oil & | |

| Project Information | |
|---|---|
| ALS Account # / Quote #: | VA23-TRIT100-003 |
| Job #: | 11964 |
| PO / AFE: | 11964 - Task 20 - Phase 3C-4C |
| LSD: | |

| | | | |
|---|---|---|---|
| AFE/Cost Center: | | PO# | |
| Major/Minor Code: | | Routing Code: | |
| Requisitioner: | | | |
| Location: | | | |

ALS Lab Work Order # (lab use only):

ALS Contact: Can Dang

Sampler:

## Analysis Request

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

| 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 | Total metals + mercury | Dissolved metals + mercury | Total hexavalent chromium | Total trivalent chromium | TSS | TDS | Nutrients (ammonia, ammonium, total nitrogen, total phosphorus) | Total sulfide (as H2S), Unionized Sulfide | Anions scan (Br, Cl, F, NO2, NO3, SO4) | General parameters (alkalinity) | DCC | | | | | SAMPLES ON HOLD | Sample is hazardous (please provide further details | NUMBER OF CONTAINERS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | F | | | | | P | P | | | F/P | | | | | | | |
| | WLNG DS 1 | 08-Apr-24 | 09:08 | Water | R | R | R | R | R | R | R | R | R | R | R | | | | | | N | 9 |
| | pH: 7.38 cond: 77uS temp: 6.6°C | | | | | | | | | | | | | | | | | | | | | |
| | WLNG US 1 | 08-Apr-24 | 10:08 | Water | R | R | R | R | R | R | R | R | R | R | R | | | | | | N | 9 |
| | pH: 7.21 cond: 69uS temp: 6.5°C | | | | | | | | | | | | | | | | | | | | | |
| | Duplicate N/A | | | Water | R | R | R | R | R | R | R | R | R | R | R | | | | | | N | 9 |
| | Field Blank N/A | | | Water | R | R | R | R | R | R | R | R | R | R | R | | | | | | N | 0 |
| | Trip Blank N/A | | | Water | R | | R | R | R | R | R | R | R | R | | | | | | | N | 6 |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?
☐ ☑ NO

Are samples for human consumption/ use?
☐ ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Triton project # 11964

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☑ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

| INITIAL COOLER TEMPERATURES °C | | | | FINAL COOLER TEMPERATURES °C | | | |
|---|---|---|---|---|---|---|---|
| | | | | 9 | | | |

EASE (client use)

Apr 1 08, 2024 Time: 16:30

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Apr 9 Time: 3:15 pm

ONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

SEPT 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

# Woodfibre Site Receiving Environment Field Notes and Logs

# FortisBC Eagle Mountain-Woodfibre Gas Pipeline

## Water Discharge Authorization Water Quality Monitoring

2024-4-8-Blanchard-0E504

| | | | |
|---|---|---|---|
| **Project Component:** | Tunnel | **Site Name:** | Receiving Environment - Downstream of Discharge |
| **Inspection Date:** | 04/08/2024 | **Location:** | WLNG |
| **Triton QP:** | Sam Blanchard | **Latitude/Longitude:** | 49.6683 -123.247958 |
| **Temperature(c):** | Low 6 High 7 | **Permit:** | PE 110136 |
| **Weather Conditions:** | Light Rain | **Ground Conditions:** | Wet |

### Observations

**Time:** 09:08:00 **Flow Volume (visual):** moderate

**Notes:**

| | | | |
|---|---|---|---|
| **Odour Detected?:** | No | **Notes:** | |
| **Unusual Colour?** | No | **Notes:** | |
| **Unusual Observations?** | No | **Notes:** | |
| **Sheen on Water?** | No | **Notes:** | |

### Samples Collected - Parameters

| | | | | | |
|---|---|---|---|---|---|
| **Total Metals + Mercury** | Yes | **General Parameters (Alkalinity)** | Yes | **Other Sample:** | Total chromium. |
| **Dissolved Metals + Mercury** | Yes | **Total Sulfide, Unionized Sulfide** | Yes | | |
| **TSS** | Yes | **Anions** | Yes | | |
| **TDS** | Yes | **VOC/VPH** | N/A | **QA Samples:** | No |
| | | | | | Total chromium. |
| **Nutrients** | Yes | **EPH, PAH, LEPH/HEPH** | N/A | | |
| **DOC** | Yes | **Trout LC50** | N/A | | |

### Logger Maintenance

| | | | |
|---|---|---|---|
| **Logger Maintenance Performed?** | Yes | **Photo of COC with Lab Signature?** | Yes |

**Describe Logger Maintenance**

Calibrated pH

## Photos

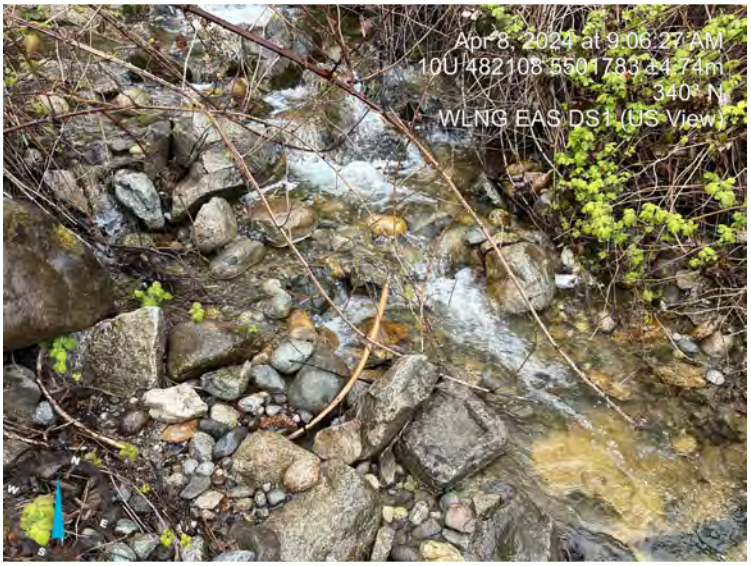


**Photo:** 1

**Location:** EAS DS1

**Description:** US View


**Photo:** 2

**Location:** EAS DS1

**Description:** DS View

## Photos


**Photo:** 3

**Location:** EAS DS1

**Description:** Across View

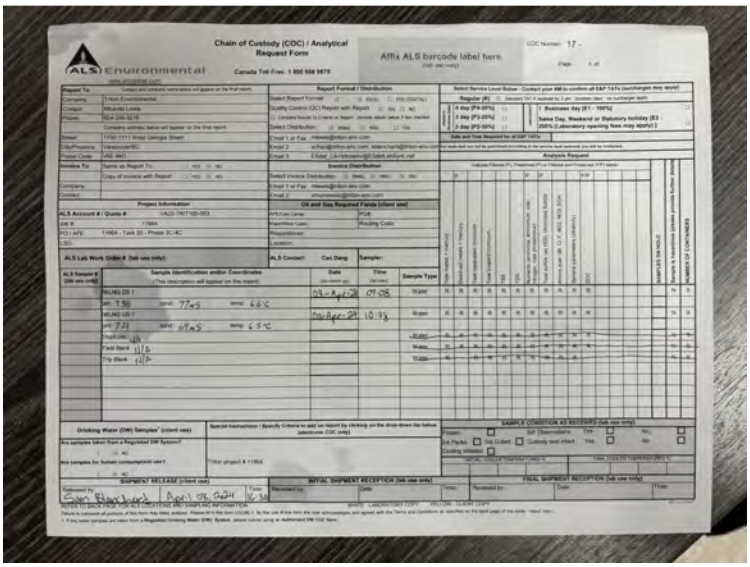


**Photo:** 4

**Location:** EAS DS1

**Description:** Lab COC

## Sign Off

**Report Prepared By:** Sam Blanchard

**Report Reviewer:** Miranda Lewis

**Name:**

**Designation:**

**Designation Number:**

**Report Reviewed:** Yes

**Professional(s) of Record:** N/A

# FortisBC Eagle Mountain-Woodfibre Gas Pipeline

## Water Discharge Authorization Water Quality Monitoring

2024-4-8-Blanchard-9949E

| | | | |
|---|---|---|---|
| **Project Component:** | Tunnel | **Site Name:** | Receiving Environment - Upstream of Discharge |
| **Inspection Date:** | 04/08/2024 | **Location:** | WLNG |
| **Triton QP:** | Sam Blanchard | **Latitude/Longitude:** | 49.669455 -123.25087 |
| **Temperature(c):** | Low 6 High 7 | **Permit:** | PE 110136 |
| **Weather Conditions:** | Light Rain | **Ground Conditions:** | Wet |

### Observations

**Time:** 10:08:00 **Flow Volume (visual):** moderate

**Notes:**

**Odour Detected?:** No **Notes:**

**Unusual Colour?** Yes **Notes:** Water appears light brown/tea coloured - potentially due to tannins from decomposing organic matter.

**Unusual Observations?** No **Notes:**

**Sheen on Water?** No **Notes:**

### Samples Collected - Parameters

| | | | | | |
|---|---|---|---|---|---|
| **Total Metals + Mercury** | Yes | **General Parameters (Alkalinity)** | Yes | **Other Sample:** | |
| **Dissolved Metals + Mercury** | Yes | **Total Sulfide, Unionized Sulfide** | Yes | Total chromium. | |
| **TSS** | Yes | **Anions** | Yes | | |
| **TDS** | Yes | **VOC/VPH** | N/A | **QA Samples:** | No |
| **Nutrients** | Yes | **EPH, PAH, LEPH/HEPH** | N/A | Total chromium. | |
| **DOC** | Yes | **Trout LC50** | N/A | | |

### Logger Maintenance

| | | | |
|---|---|---|---|
| **Logger Maintenance Performed?** | Yes | **Photo of COC with Lab Signature?** | Yes |

**Describe Logger Maintenance**

Calibrated for pH.

## Photos


**Photo:** 1

**Location:** EAS US1

**Description:** US View


**Photo:** 2

**Location:** EAS US1

**Description:** DS View

## Photos


**Photo:** 3

**Location:** EAS US1

**Description:** Across View

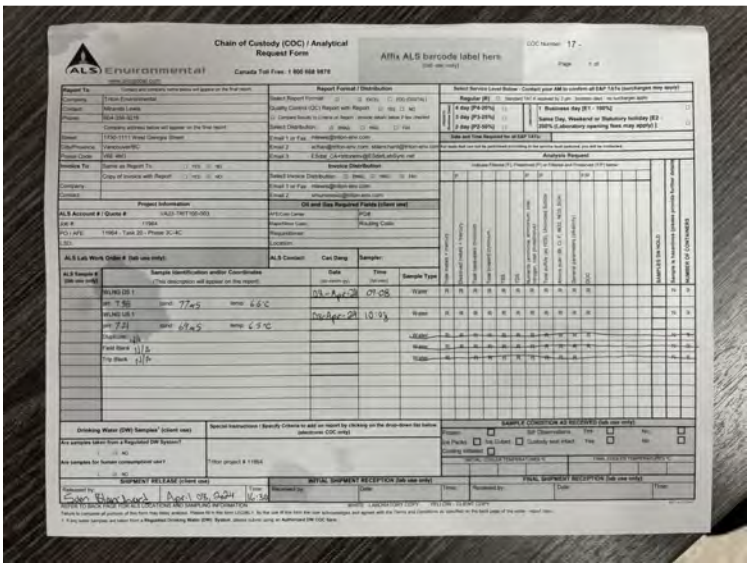


**Photo:** 4

**Location:** EAS US1

**Description:** Lab COC

## Sign Off

**Report Prepared By:** Sam Blanchard

**Report Reviewer:** Miranda Lewis

**Name:**

**Designation:**

**Designation Number:**

**Report Reviewed:** Yes

**Professional(s) of Record:** N/A