# Eagle Mountain - Woodfibre Gas Pipeline Project

# BCER Waste Discharge Permit Weekly Report

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# 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 environments (upstream and downstream) and points 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. 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 | 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 LevelPro PT100 Temperature and Signet 2350 Temp sensor |
| | NTU | Monitoring using Observator NEP9504GPI |
| | Electrical Conductivity | Monitoring using ProCon C450 |
| Weekly (or per batch) Lab Samples | List prescribed in permit | Lab samples |

**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 |

*Note that Woodfibre receiving environment downstream sonde is not in place due to dry conditions

# Summary-BC Rail Site

## Site Activities

- Two batches discharged during this reporting period
- Water produced by the water treatment plant is being recirculated for tunneling and to create grout for tunneling.
- Weekly Upstream and downstream samples taken by Triton

## 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 |
|---|---|---|---|---|---|---|---|
| BCR | 2024-11-13 to 2024-11-15 | 2024-11-12 | N/A-Batch | Yes for batch | 300-400 GPM | 657.1 $m^3$ | Lab results attached |
| BCR | 2024-11-16 to 2024-11-18 | 2024-11-15 | N/A-Batch | Yes for batch | 300-350 GPM | 252.8 m3 | Lab results attached |

*Max discharge is 515 m3/day

## Exceedances

No exceedances 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 | Results |
|---|---|---|---|
| Squamish River Upstream | 2024-11-12 | 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 | Results |
|---|---|---|---|
| Squamish River Downstream | 2024-11-12 | 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 15-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

- Weekly Upstream, downstream and end of pipe samples taken by Triton

## Point of Discharge from Water Treatment System Monitoring

Table 3 below includes information on the discharge water. Appendix C includes real time/field samples from the discharge.

**Table 3: Discharges from Water Treatment System**

| Location | Date of Discharge | Real Time Monitored and Daily Monitoring | Discharge Volume |
|---|---|---|---|
| Woodfibre | 2024-11-11 | Yes-Appendix C | 383$m^3$ |
| Woodfibre | 2024-11-12 | Yes-Appendix C*lab sample day | 397$m^3$ |
| Woodfibre | 2024-11-13 | Yes-Appendix C | 434 $m^3$ |
| Woodfibre | 2024-11-14 | Yes-Appendix C | 375$m^3$ |
| Woodfibre | 2024-11-15 | Yes-Appendix C | 324$m^3$ |
| Woodfibre | 2024-11-16 | Yes-Appendix C | 443$m^3$ |
| Woodfibre | 2024-11-17 | Yes-Appendix C | 494$m^3$ |

*Max discharge is 1500$m^3$/day

## Exceedances

See above.

## Receiving Environment Monitoring

The receiving environment is being monitored as outlined in the permit with additional oversight by the QP.

**Table 4: Upstream Monitoring Information**

| Location | Date of Lab Sample | Real Time Monitored | Results |
|---|---|---|---|
| Woodfibre Upstream | 2024-11-14 | Yes * | Full set of lab sample results, photo and documentation are provided in Appendix D. |

**Table 5: Downstream Monitoring Information**

| | Date of Lab Sample | Real Time Monitored | Results |
|---|---|---|---|
| Woodfibre Downstream | 2024-10-29 | Yes * | Full set of lab sample results, photo and documentation are provided in Appendix D. |

***** Sondes set up to log temperature, specific conductivity, salinity (in PSU), pH, ORP, DO (mg/L), and turbidity (NTU) at 15-minute intervals.

## Receiving Environment Monitoring Details

- Visual sheen checks are conducted during discharges.
- Recorded exceedances in the laboratory and field samples collected from the receiving environment (upstream and downstream) may be indicative of the existing background water quality in the East Creek and are not related to the EGP Project activities.

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

# BCR Site Batch Sample Analysis

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **BC Rail Batch Water Discharge Report** | **Revision:** | **0** |
| **Data** | **November 13th** | **Prepared by:**<br>**Date:** | **SD**<br>**November 18th** |

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1. Executive Summary and Notes
2. Discharge Lab's results
3. Photos


**Executive Summary and Field Notes:**

On November 13th, FKM initiated a new batch discharge at the BC Rail site. The discharge began at 09:30 AM and concluded at 11:30 PM on November 15th. Total volume of discharge water was 656.43 m3, with an average flow rate ranging between 300 to 400 GPM.

**Table 1: Discharge details**

| Date | Start Time | Flow Rate (GPM) | Volume (m3) |
|---|---|---|---|
| 13-Nov-2024 | 9:30 | 300-350 | 113.9 |
| 14-Nov-2024 | 11:29 | 300-400 | 316 |
| 15-Nov-2024 | 13:30 | 300-400 | 227.2 |

**Table 3: In-Situ Sample**

| Date | Time | pH | Temperature (°C) | DO (mg/L) | NTU | Conductivity (µS/cm) | ORP (mV) | Salinity (ppt) | Visible sheen |
|---|---|---|---|---|---|---|---|---|---|
| 11/13/2024 | 08:25:20 AM | 7.72 | 9.2 | 10.19 | 0.74 | 480.4 | 203.3 | 0.23 | No |
| 11/14/2024 | 09:12:25 AM | 7.98 | 8.5 | 10.16 | 4.03 | 432.5 | 199.7 | 0.21 | No |
| 11/15/2024 | 10:22:03 AM | 7.65 | 9.3 | 10.10 | 0.82 | 478.9 | 198.9 | 0.20 | No |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
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## Discharge Sample results:

**Table 3: Lab Sample**

| Client Sample ID | | | WTP |
|---|---|---|---|
| Date Sampled | | | 12-Nov-2024 |
| Time Sampled | | | 07:50 |
| ALS Sample ID | | | VA24D0524-001 |
| Analyte | Lowest Detection Limit | Units | Sub-Matrix: Water |
| | | | |
| **Field Tests (Matrix: Water)** | | | |
| Temperature, field | 0.100000000 | °C | |
| pH, field | 0.100000000 | pH units | |
| | | | |
| **Physical Tests (Matrix: Water)** | | | |
| Conductivity | 2.0 | µS/cm | 757 |
| Alkalinity, bicarbonate (as CaCO3) | 2.0 | mg/L | 236 |
| Alkalinity, carbonate (as CaCO3) | 2.0 | mg/L | <2.0 |
| Alkalinity, hydroxide (as CaCO3) | 2.0 | mg/L | <2.0 |
| Alkalinity, phenolphthalein (as CaCO3) | 2.0 | mg/L | <2.0 |
| Alkalinity, total (as CaCO3) | 2.0 | mg/L | 236 |
| Oxidation-reduction potential [ORP] | 0.10 | mV | 204 |
| Solids, total dissolved [TDS] | 10 | mg/L | 463 |
| Solids, total suspended [TSS] | 3.0 | mg/L | <3.0 |
| Turbidity | 0.10 | NTU | 0.34 |
| pH | 0.10 | pH units | 6.89 |
| | | | |
| **Anions and Nutrients (Matrix: Water)** | | | |
| Ammonia, total (as N) | 0.0050 | mg/L | 0.350 |
| Bromide | 0.050 | mg/L | <0.250 |
| Chloride | 0.50 | mg/L | 53.6 |
| Fluoride | 0.020 | mg/L | 0.133 |
| Nitrate (as N) | 0.0050 | mg/L | 0.120 |
| Nitrite (as N) | 0.0010 | mg/L | 0.0382 |
| Nitrogen, total | 0.030 | mg/L | 1.03 |

| | | | |
|---|---|---|---|
| Phosphorus, total | 0.0020 | mg/L | 0.0129 |
| Sulfate (as SO4) | 0.30 | mg/L | 69.8 |
| Ammonium (as NH4), field | 0.0010 | mg/L | |
| | | | |
| **Organic / Inorganic Carbon (Matrix: Water)** | | | |
| Carbon, dissolved organic [DOC] | 0.50 | mg/L | 4.83 |
| Carbon, total organic [TOC] | 0.50 | mg/L | 4.85 |
| | | | |
| **Total Metals (Matrix: Water)** | | | |
| Aluminum, total | 0.0030 | mg/L | 0.0150 |
| Antimony, total | 0.00010 | mg/L | 0.00170 |
| Arsenic, total | 0.00010 | mg/L | 0.00356 |
| Barium, total | 0.00010 | mg/L | 0.0523 |
| Beryllium, total | 0.000020 | mg/L | <0.000020 |
| Bismuth, total | 0.000050 | mg/L | <0.000050 |
| Boron, total | 0.010 | mg/L | 0.101 |
| Cadmium, total | 0.0000050 | mg/L | <0.0000300 |
| Calcium, total | 0.050 | mg/L | 75.6 |
| Cesium, total | 0.000010 | mg/L | 0.00230 |
| Chromium, total | 0.00050 | mg/L | 0.00631 |
| Cobalt, total | 0.00010 | mg/L | 0.00011 |
| Copper, total | 0.00050 | mg/L | 0.00176 |
| Iron, total | 0.010 | mg/L | <0.010 |
| Lead, total | 0.000050 | mg/L | 0.000070 |
| Lithium, total | 0.0010 | mg/L | 0.0185 |
| Magnesium, total | 0.0050 | mg/L | 1.26 |
| Manganese, total | 0.00010 | mg/L | 0.00150 |
| Molybdenum, total | 0.000050 | mg/L | 0.172 |
| Nickel, total | 0.00050 | mg/L | 0.00103 |
| Phosphorus, total | 0.050 | mg/L | <0.050 |
| Potassium, total | 0.050 | mg/L | 18.6 |
| Rubidium, total | 0.00020 | mg/L | 0.0520 |
| Selenium, total | 0.000050 | mg/L | 0.00100 |
| Silicon, total | 0.10 | mg/L | 11.5 |
| Silver, total | 0.000010 | mg/L | <0.000010 |
| Sodium, total | 0.050 | mg/L | 80.3 |
| Strontium, total | 0.00020 | mg/L | 1.20 |

| | | | |
|---|---|---|---|
| Sulfur, total | 0.50 | mg/L | 25.9 |
| Tellurium, total | 0.00020 | mg/L | 0.00027 |
| Thallium, total | 0.000010 | mg/L | <0.000010 |
| Thorium, total | 0.00010 | mg/L | <0.00010 |
| Tin, total | 0.00010 | mg/L | <0.00010 |
| Titanium, total | 0.00030 | mg/L | 0.00034 |
| Tungsten, total | 0.00010 | mg/L | 0.00117 |
| Uranium, total | 0.000010 | mg/L | 0.000021 |
| Vanadium, total | 0.00050 | mg/L | 0.00150 |
| Zinc, total | 0.0030 | mg/L | <0.0030 |
| Zirconium, total | 0.00020 | mg/L | <0.00020 |
| | | | |
| **Dissolved Metals (Matrix: Water)** | | | |
| Aluminum, dissolved | 0.0010 | mg/L | 0.0116 |
| Antimony, dissolved | 0.00010 | mg/L | 0.00166 |
| Arsenic, dissolved | 0.00010 | mg/L | 0.00361 |
| Barium, dissolved | 0.00010 | mg/L | 0.0512 |
| Beryllium, dissolved | 0.000020 | mg/L | <0.000020 |
| Bismuth, dissolved | 0.000050 | mg/L | <0.000050 |
| Boron, dissolved | 0.010 | mg/L | 0.090 |
| Cadmium, dissolved | 0.0000050 | mg/L | <0.0000250 |
| Calcium, dissolved | 0.050 | mg/L | 72.2 |
| Cesium, dissolved | 0.000010 | mg/L | 0.00222 |
| Chromium, dissolved | 0.00050 | mg/L | 0.00611 |
| Cobalt, dissolved | 0.00010 | mg/L | 0.00011 |
| Copper, dissolved | 0.00020 | mg/L | 0.00170 |
| Iron, dissolved | 0.010 | mg/L | <0.010 |
| Lead, dissolved | 0.000050 | mg/L | 0.000062 |
| Lithium, dissolved | 0.0010 | mg/L | 0.0170 |
| Magnesium, dissolved | 0.0050 | mg/L | 1.23 |
| Manganese, dissolved | 0.00010 | mg/L | 0.00138 |
| Molybdenum, dissolved | 0.000050 | mg/L | 0.165 |
| Nickel, dissolved | 0.00050 | mg/L | 0.00099 |
| Phosphorus, dissolved | 0.050 | mg/L | <0.050 |
| Potassium, dissolved | 0.050 | mg/L | 17.5 |
| Rubidium, dissolved | 0.00020 | mg/L | 0.0500 |
| Selenium, dissolved | 0.000050 | mg/L | 0.00119 |

| | | | |
|---|---|---|---|
| Silicon, dissolved | 0.050 | mg/L | 11.4 |
| Silver, dissolved | 0.000010 | mg/L | <0.000010 |
| Sodium, dissolved | 0.050 | mg/L | 78.2 |
| Strontium, dissolved | 0.00020 | mg/L | 1.17 |
| Sulfur, dissolved | 0.50 | mg/L | 25.4 |
| Tellurium, dissolved | 0.00020 | mg/L | <0.00020 |
| Thallium, dissolved | 0.000010 | mg/L | <0.000010 |
| Thorium, dissolved | 0.00010 | mg/L | <0.00010 |
| Tin, dissolved | 0.00010 | mg/L | <0.00010 |
| Titanium, dissolved | 0.00030 | mg/L | 0.00031 |
| Tungsten, dissolved | 0.00010 | mg/L | 0.00112 |
| Uranium, dissolved | 0.000010 | mg/L | 0.000019 |
| Vanadium, dissolved | 0.00050 | mg/L | 0.00147 |
| Zinc, dissolved | 0.0010 | mg/L | 0.0013 |
| Zirconium, dissolved | 0.00030 | mg/L | <0.00030 |
| Dissolved metals filtration location | | | Field |
| | | | |
| **Aggregate Organics (Matrix: Water)** | | | |
| Phenols, total (4AAP) | 0.001000000 | mg/L | |
| | | | |
| **Volatile Organic Compounds (Matrix: Water)** | | | |
| Chlorobenzene | 0.50 | µg/L | <0.50 |
| Chloromethane | 5.0 | µg/L | <5.0 |
| Dichlorobenzene, 1,2- | 0.50 | µg/L | <0.50 |
| Dichlorobenzene, 1,3- | 0.50 | µg/L | <0.50 |
| Dichlorobenzene, 1,4- | 0.50 | µg/L | <0.50 |
| Dichloropropane, 1,2- | 0.50 | µg/L | <0.50 |
| Dichloropropylene, cis+trans-1,3- | 0.75 | µg/L | <0.75 |
| Dichloropropylene, cis-1,3- | 0.50 | µg/L | <0.50 |
| Tetrachloroethane, 1,1,1,2- | 0.50 | µg/L | <0.50 |
| Tetrachloroethane, 1,1,2,2- | 0.20 | µg/L | <0.20 |
| Trichloroethane, 1,1,2- | 0.50 | µg/L | <0.50 |
| Trichlorofluoromethane | 0.50 | µg/L | <0.50 |
| | | | |
| **Volatile Organic Compounds [Drycleaning] (Matrix: Water)** | | | |
| Carbon tetrachloride | 0.50 | µg/L | <0.50 |

| | | | |
|---|---|---|---|
| Chloroethane | 0.50 | µg/L | <0.50 |
| Dichloroethane, 1,1- | 0.50 | µg/L | <0.50 |
| Dichloroethane, 1,2- | 0.50 | µg/L | <0.50 |
| Dichloroethylene, 1,1- | 0.50 | µg/L | <0.50 |
| Dichloroethylene, cis-1,2- | 0.50 | µg/L | <0.50 |
| Dichloroethylene, trans-1,2- | 0.50 | µg/L | <0.50 |
| Dichloromethane | 1.0 | µg/L | <1.0 |
| Dichloropropylene, trans-1,3- | 0.50 | µg/L | <0.50 |
| Tetrachloroethylene | 0.50 | µg/L | <0.50 |
| Trichloroethane, 1,1,1- | 0.50 | µg/L | <0.50 |
| Trichloroethylene | 0.50 | µg/L | <0.50 |
| Vinyl chloride | 0.40 | µg/L | <0.40 |
| | | | |
| **Volatile Organic Compounds [Fuels] (Matrix: Water)** | | | |
| Benzene | 0.50 | µg/L | <0.50 |
| Ethylbenzene | 0.50 | µg/L | <0.50 |
| Methyl-tert-butyl ether [MTBE] | 0.50 | µg/L | <0.50 |
| Styrene | 0.50 | µg/L | <0.50 |
| Toluene | 0.40 | µg/L | <0.40 |
| Xylene, m+p- | 0.40 | µg/L | <0.40 |
| Xylene, o- | 0.30 | µg/L | <0.30 |
| Xylenes, total | 0.50 | µg/L | <0.50 |
| | | | |
| **Volatile Organic Compounds [THMs] (Matrix: Water)** | | | |
| Bromodichloromethane | 0.50 | µg/L | <0.50 |
| Bromoform | 0.50 | µg/L | <0.50 |
| Chloroform | 0.50 | µg/L | <0.50 |
| Dibromochloromethane | 0.50 | µg/L | <0.50 |
| | | | |
| **Hydrocarbons (Matrix: Water)** | | | |
| EPH (C10-C19) | 250 | µg/L | <250 |
| EPH (C19-C32) | 250 | µg/L | <250 |
| LEPHw | 250 | µg/L | <250 |
| HEPHw | 250 | µg/L | <250 |
| | | | |
| **Hydrocarbons Surrogates (Matrix: Water)** | | | |

| | | | |
|---|---|---|---|
| Bromobenzotrifluoride, 2- (EPH surrogate) | 1.0 | % | 83.9 |
| | | | |
| **Volatile Organic Compounds Surrogates (Matrix: Water)** | | | |
| Bromofluorobenzene, 4- | 1.0 | % | 90.0 |
| Difluorobenzene, 1,4- | 1.0 | % | 102 |
| | | | |
| **Polycyclic Aromatic Hydrocarbons (Matrix: Water)** | | | |
| Acenaphthene | 0.010 | µg/L | <0.010 |
| Acenaphthylene | 0.010 | µg/L | <0.010 |
| Acridine | 0.010 | µg/L | <0.010 |
| Anthracene | 0.010 | µg/L | <0.010 |
| Benz(a)anthracene | 0.010 | µg/L | <0.010 |
| Benzo(a)pyrene | 0.0050 | µg/L | <0.0050 |
| Benzo(b+j)fluoranthene | 0.010 | µg/L | <0.010 |
| Benzo(b+j+k)fluoranthene | 0.015 | µg/L | <0.015 |
| Benzo(g,h,i)perylene | 0.010 | µg/L | <0.010 |
| Benzo(k)fluoranthene | 0.010 | µg/L | <0.010 |
| Chrysene | 0.010 | µg/L | <0.010 |
| Dibenz(a,h)anthracene | 0.0050 | µg/L | <0.0050 |
| Fluoranthene | 0.010 | µg/L | <0.010 |
| Fluorene | 0.010 | µg/L | <0.010 |
| Indeno(1,2,3-c,d)pyrene | 0.010 | µg/L | <0.010 |
| Methylnaphthalene, 1- | 0.010 | µg/L | <0.010 |
| Methylnaphthalene, 2- | 0.010 | µg/L | <0.010 |
| Naphthalene | 0.050 | µg/L | <0.050 |
| Phenanthrene | 0.020 | µg/L | <0.020 |
| Pyrene | 0.010 | µg/L | <0.010 |
| Quinoline | 0.050 | µg/L | 0.264 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **BC Rail Batch Water Discharge Report** | **Revision:** | **0** |
| **Data** | **November 13th** | **Prepared by:**<br>**Date:** | **SD**<br>**November 18th** |

**Photo:**

| **Photo 1: No visible sheen observed in the WTP water, November 13th** |
|---|
| |

| **Photo 1: No visible sheen observed in the WTP water, November 14th** |
|---|
| |

| FRONTIER-KEMPER MICHELS® joint venture | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | | |
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| **Title** | **BC Rail Batch Water Discharge Report** | **Revision:** | **0** |
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**Executive Summary and Field Notes:**

On November 16th, FKM initiated a new batch discharge at the BC Rail site. The discharge began at 05:50 PM and concluded at 03:20 AM on November 18th. Total volume of discharge water was 252.8 m3, with an average flow rate ranging between 300 to 350 GPM.

**Table 1: Discharge details**

| Date | Time | Flow Rate (GPM) | Volume (m3) | Duration |
|---|---|---|---|---|
| 16-Nov-2024 | 05:50 PM | 300-350 | 160.8 | 2 Hours and 50 Minutes |
| 18-Nov-2024 | 01:15 AM | 300-350 | 92 | 1 Hours and 26 Minutes |

**Table 3: In-Situ Sample**

| Date | Time | pH | Temperature (°C) | DO (mg/L) | NTU | Conductivity (µS/cm) | ORP (mV) | Salinity (ppt) | Visible sheen |
|---|---|---|---|---|---|---|---|---|---|
| 16/11/2024 | 11:01:48 PM | 7.17 | 8.0 | 9.51 | 0.37 | 642 | 209.1 | 0.31 | No |
| 18/11/2024 | 01:11:26 AM | 7.73 | 9.4 | 10.56 | 0.58 | 412.4 | 179.2 | 0.20 | No |

## Discharge Sample results:

**Table 3: Lab Sample**

| Client Sample ID | | | WTP |
|---|---|---|---|
| Date Sampled | | | 15-Nov-2024 |
| Time Sampled | | | 10:30 |
| ALS Sample ID | | | VA24D1001-001 |
| Analyte | Lowest Detection Limit | Units | Sub-Matrix: Water |
| | | | |
| **Field Tests (Matrix: Water)** | | | |
| Temperature, field | 0.100000000 | °C | |
| pH, field | 0.100000000 | pH units | |
| | | | |
| **Physical Tests (Matrix: Water)** | | | |
| Conductivity | 2.0 | µS/cm | 587 |
| Alkalinity, bicarbonate (as CaCO3) | 2.0 | mg/L | 110 |
| Alkalinity, carbonate (as CaCO3) | 2.0 | mg/L | <2.0 |
| Alkalinity, hydroxide (as CaCO3) | 2.0 | mg/L | <2.0 |
| Alkalinity, phenolphthalein (as CaCO3) | 2.0 | mg/L | <2.0 |
| Alkalinity, total (as CaCO3) | 2.0 | mg/L | 110 |
| Hardness (as CaCO3), dissolved | 0.60 | mg/L | 135 |
| Hardness (as CaCO3), from total Ca/Mg | 0.60 | mg/L | 132 |
| Oxidation-reduction potential [ORP] | 0.10 | mV | 170 |
| Solids, total dissolved [TDS] | 10 | mg/L | 355 |
| Solids, total suspended [TSS] | 3.0 | mg/L | <3.0 |
| Turbidity | 0.10 | NTU | 0.45 |
| pH | 0.10 | pH units | 7.66 |
| | | | |
| **Anions and Nutrients (Matrix: Water)** | | | |
| Ammonia, total (as N) | 0.0050 | mg/L | 0.362 |

| | | | |
|---|---|---|---|
| Bromide | 0.050 | mg/L | <0.050 |
| Chloride | 0.50 | mg/L | 34.8 |
| Fluoride | 0.020 | mg/L | 0.136 |
| Nitrate (as N) | 0.0050 | mg/L | 0.112 |
| Nitrite (as N) | 0.0010 | mg/L | 0.0148 |
| Nitrogen, total | 0.030000000 | mg/L | |
| Phosphorus, total | 0.0020 | mg/L | 0.0559 |
| Sulfate (as SO4) | 0.30 | mg/L | 117 |
| Ammonium (as NH4), field | 0.0010 | mg/L | |
| | | | |
| **Organic / Inorganic Carbon (Matrix: Water)** | | | |
| Carbon, dissolved organic [DOC] | 0.50 | mg/L | 5.05 |
| Carbon, total organic [TOC] | 0.50 | mg/L | 6.56 |
| | | | |
| **Total Metals (Matrix: Water)** | | | |
| Aluminum, total | 0.0030 | mg/L | 0.0093 |
| Antimony, total | 0.00010 | mg/L | 0.00197 |
| Arsenic, total | 0.00010 | mg/L | 0.00095 |
| Barium, total | 0.00010 | mg/L | 0.0336 |
| Beryllium, total | 0.000100 | mg/L | <0.000100 |
| Bismuth, total | 0.000050 | mg/L | <0.000050 |
| Boron, total | 0.010 | mg/L | 0.045 |
| Cadmium, total | 0.0000050 | mg/L | <0.0000450 |
| Calcium, total | 0.050 | mg/L | 52.3 |
| Cesium, total | 0.000010 | mg/L | 0.00576 |
| Chromium, total | 0.00050 | mg/L | 0.0341 |
| Cobalt, total | 0.00010 | mg/L | <0.00010 |
| Copper, total | 0.00050 | mg/L | 0.00128 |
| Iron, total | 0.010 | mg/L | <0.010 |
| Lead, total | 0.000050 | mg/L | <0.000050 |
| Lithium, total | 0.0010 | mg/L | 0.0146 |
| Magnesium, total | 0.0050 | mg/L | 0.349 |
| Manganese, total | 0.00010 | mg/L | 0.00107 |
| Mercury, total | 0.0000050 | mg/L | <0.0000050 |
| Molybdenum, total | 0.000050 | mg/L | 0.303 |
| Nickel, total | 0.00050 | mg/L | 0.00062 |
| Phosphorus, total | 0.050 | mg/L | <0.050 |

| | | | |
|---|---|---|---|
| Potassium, total | 0.050 | mg/L | 31.0 |
| Rubidium, total | 0.00020 | mg/L | 0.114 |
| Selenium, total | 0.000050 | mg/L | 0.00232 |
| Silicon, total | 0.10 | mg/L | 6.58 |
| Silver, total | 0.000010 | mg/L | <0.000010 |
| Sodium, total | 0.050 | mg/L | 49.7 |
| Strontium, total | 0.00020 | mg/L | 0.690 |
| Sulfur, total | 0.50 | mg/L | 40.6 |
| Tellurium, total | 0.00020 | mg/L | <0.00020 |
| Thallium, total | 0.000010 | mg/L | <0.000010 |
| Thorium, total | 0.00010 | mg/L | <0.00010 |
| Tin, total | 0.00010 | mg/L | <0.00010 |
| Titanium, total | 0.00030 | mg/L | <0.00030 |
| Tungsten, total | 0.00010 | mg/L | 0.00094 |
| Uranium, total | 0.000010 | mg/L | <0.000010 |
| Vanadium, total | 0.00050 | mg/L | 0.00178 |
| Zinc, total | 0.0030 | mg/L | <0.0030 |
| Zirconium, total | 0.00020 | mg/L | <0.00020 |
| | | | |
| **Dissolved Metals (Matrix: Water)** | | | |
| Aluminum, dissolved | 0.0010 | mg/L | 0.0042 |
| Antimony, dissolved | 0.00010 | mg/L | 0.00193 |
| Arsenic, dissolved | 0.00010 | mg/L | 0.00100 |
| Barium, dissolved | 0.00010 | mg/L | 0.0328 |
| Beryllium, dissolved | 0.000100 | mg/L | <0.000100 |
| Bismuth, dissolved | 0.000050 | mg/L | <0.000050 |
| Boron, dissolved | 0.010 | mg/L | 0.046 |
| Cadmium, dissolved | 0.0000050 | mg/L | <0.0000500 |
| Calcium, dissolved | 0.050 | mg/L | 53.6 |
| Cesium, dissolved | 0.000010 | mg/L | 0.00572 |
| Chromium, dissolved | 0.00050 | mg/L | 0.0334 |
| Cobalt, dissolved | 0.00010 | mg/L | <0.00010 |
| Copper, dissolved | 0.00020 | mg/L | 0.00114 |
| Iron, dissolved | 0.010 | mg/L | <0.010 |
| Lead, dissolved | 0.000050 | mg/L | <0.000050 |
| Lithium, dissolved | 0.0010 | mg/L | 0.0151 |
| Magnesium, dissolved | 0.0050 | mg/L | 0.343 |

| | | | |
|---|---|---|---|
| Manganese, dissolved | 0.00010 | mg/L | 0.00092 |
| Mercury, dissolved | 0.0000050 | mg/L | <0.0000050 |
| Molybdenum, dissolved | 0.000050 | mg/L | 0.282 |
| Nickel, dissolved | 0.00050 | mg/L | 0.00062 |
| Phosphorus, dissolved | 0.050 | mg/L | <0.050 |
| Potassium, dissolved | 0.050 | mg/L | 29.6 |
| Rubidium, dissolved | 0.00020 | mg/L | 0.111 |
| Selenium, dissolved | 0.000050 | mg/L | 0.00254 |
| Silicon, dissolved | 0.050 | mg/L | 6.79 |
| Silver, dissolved | 0.000010 | mg/L | <0.000010 |
| Sodium, dissolved | 0.050 | mg/L | 47.9 |
| Strontium, dissolved | 0.00020 | mg/L | 0.664 |
| Sulfur, dissolved | 0.50 | mg/L | 41.5 |
| Tellurium, dissolved | 0.00020 | mg/L | <0.00020 |
| Thallium, dissolved | 0.000010 | mg/L | <0.000010 |
| Thorium, dissolved | 0.00010 | mg/L | <0.00010 |
| Tin, dissolved | 0.00010 | mg/L | <0.00010 |
| Titanium, dissolved | 0.00030 | mg/L | <0.00030 |
| Tungsten, dissolved | 0.00010 | mg/L | 0.00091 |
| Uranium, dissolved | 0.000010 | mg/L | <0.000010 |
| Vanadium, dissolved | 0.00050 | mg/L | 0.00171 |
| Zinc, dissolved | 0.0010 | mg/L | 0.0018 |
| Zirconium, dissolved | 0.00020 | mg/L | <0.00020 |
| Dissolved mercury filtration location | | | Field |
| Dissolved metals filtration location | | | Field |
| | | | |
| **Aggregate Organics (Matrix: Water)** | | | |
| Phenols, total (4AAP) | 0.001000000 | mg/L | |
| | | | |
| **Volatile Organic Compounds (Matrix: Water)** | | | |
| Chlorobenzene | 0.50 | µg/L | <0.50 |
| Chloromethane | 5.0 | µg/L | <5.0 |
| Dichlorobenzene, 1,2- | 0.50 | µg/L | <0.50 |
| Dichlorobenzene, 1,3- | 0.50 | µg/L | <0.50 |
| Dichlorobenzene, 1,4- | 0.50 | µg/L | <0.50 |
| Dichloropropane, 1,2- | 0.50 | µg/L | <0.50 |
| Dichloropropylene, cis+trans-1,3- | 0.75 | µg/L | <0.75 |

| | | | |
|---|---|---|---|
| Dichloropropylene, cis-1,3- | 0.50 | µg/L | <0.50 |
| Tetrachloroethane, 1,1,1,2- | 0.50 | µg/L | <0.50 |
| Tetrachloroethane, 1,1,2,2- | 0.20 | µg/L | <0.20 |
| Trichloroethane, 1,1,2- | 0.50 | µg/L | <0.50 |
| Trichlorofluoromethane | 0.50 | µg/L | <0.50 |
| | | | |
| **Volatile Organic Compounds [Drycleaning] (Matrix: Water)** | | | |
| Carbon tetrachloride | 0.50 | µg/L | <0.50 |
| Chloroethane | 0.50 | µg/L | <0.50 |
| Dichloroethane, 1,1- | 0.50 | µg/L | <0.50 |
| Dichloroethane, 1,2- | 0.50 | µg/L | <0.50 |
| Dichloroethylene, 1,1- | 0.50 | µg/L | <0.50 |
| Dichloroethylene, cis-1,2- | 0.50 | µg/L | <0.50 |
| Dichloroethylene, trans-1,2- | 0.50 | µg/L | <0.50 |
| Dichloromethane | 1.0 | µg/L | <1.0 |
| Dichloropropylene, trans-1,3- | 0.50 | µg/L | <0.50 |
| Tetrachloroethylene | 0.50 | µg/L | <0.50 |
| Trichloroethane, 1,1,1- | 0.50 | µg/L | <0.50 |
| Trichloroethylene | 0.50 | µg/L | <0.50 |
| Vinyl chloride | 0.40 | µg/L | <0.40 |
| | | | |
| **Volatile Organic Compounds [Fuels] (Matrix: Water)** | | | |
| Benzene | 0.50 | µg/L | <0.50 |
| Ethylbenzene | 0.50 | µg/L | <0.50 |
| Methyl-tert-butyl ether [MTBE] | 0.50 | µg/L | <0.50 |
| Styrene | 0.50 | µg/L | <0.50 |
| Toluene | 0.40 | µg/L | <0.40 |
| Xylene, m+p- | 0.40 | µg/L | <0.40 |
| Xylene, o- | 0.30 | µg/L | <0.30 |
| Xylenes, total | 0.50 | µg/L | <0.50 |
| | | | |
| **Volatile Organic Compounds [THMs] (Matrix: Water)** | | | |
| Bromodichloromethane | 0.50 | µg/L | <0.50 |
| Bromoform | 0.50 | µg/L | <0.50 |
| Chloroform | 0.50 | µg/L | <0.50 |
| Dibromochloromethane | 0.50 | µg/L | <0.50 |

| | | | |
|---|---|---|---|
| **Hydrocarbons (Matrix: Water)** | | | |
| EPH (C10-C19) | 250 | µg/L | <250 |
| EPH (C19-C32) | 250 | µg/L | <250 |
| VHw (C6-C10) | 100 | µg/L | <100 |
| LEPHw | 250 | µg/L | <250 |
| VPHw | 100 | µg/L | <100 |
| HEPHw | 250 | µg/L | <250 |
| | | | |
| **Hydrocarbons Surrogates (Matrix: Water)** | | | |
| Bromobenzotrifluoride, 2- (EPH surrogate) | 1.0 | % | 94.1 |
| Dichlorotoluene, 3,4- | 1.0 | % | 106 |
| | | | |
| **Volatile Organic Compounds Surrogates (Matrix: Water)** | | | |
| Bromofluorobenzene, 4- | 1.0 | % | 92.9 |
| Difluorobenzene, 1,4- | 1.0 | % | 99.9 |
| | | | |
| **Polycyclic Aromatic Hydrocarbons (Matrix: Water)** | | | |
| Acenaphthene | 0.010 | µg/L | <0.010 |
| Acenaphthylene | 0.010 | µg/L | <0.010 |
| Acridine | 0.010 | µg/L | <0.010 |
| Anthracene | 0.010 | µg/L | <0.010 |
| Benz(a)anthracene | 0.010 | µg/L | <0.010 |
| Benzo(a)pyrene | 0.0050 | µg/L | <0.0050 |
| Benzo(b+j)fluoranthene | 0.010 | µg/L | <0.010 |
| Benzo(b+j+k)fluoranthene | 0.015 | µg/L | <0.015 |
| Benzo(g,h,i)perylene | 0.010 | µg/L | <0.010 |
| Benzo(k)fluoranthene | 0.010 | µg/L | <0.010 |
| Chrysene | 0.010 | µg/L | <0.010 |
| Dibenz(a,h)anthracene | 0.0050 | µg/L | <0.0050 |
| Fluoranthene | 0.010 | µg/L | <0.010 |
| Fluorene | 0.010 | µg/L | <0.010 |
| Indeno(1,2,3-c,d)pyrene | 0.010 | µg/L | <0.010 |
| Methylnaphthalene, 1- | 0.010 | µg/L | <0.010 |
| Methylnaphthalene, 2- | 0.010 | µg/L | <0.010 |
| Naphthalene | 0.050 | µg/L | <0.050 |

| | | | |
|---|---|---|---|
| Phenanthrene | 0.020 | µg/L | <0.020 |
| Pyrene | 0.010 | µg/L | <0.010 |
| Quinoline | 0.050 | µg/L | 0.168 |
| | | | |
| **Polycyclic Aromatic Hydrocarbons Surrogates (Matrix: Water)** | | | |
| Chrysene-d12 | 0.1 | % | 92.9 |
| Naphthalene-d8 | 0.1 | % | 98.1 |
| Phenanthrene-d10 | 0.1 | % | 98.7 |
| | | | |
| **Glycols (Matrix: Water)** | | | |
| Diethylene glycol | 5.0 | mg/L | <5.0 |
| Ethylene glycol | 5.0 | mg/L | <5.0 |
| Propylene glycol, 1,2- | 5.0 | mg/L | <5.0 |
| Triethylene glycol | 5.0 | mg/L | <5.0 |
| Glycols, total (EG+DEG+PG) | 10 | mg/L | <10 |

**Photo:**

**Photo 1: No visible sheen observed in the WTP water, November 16th**

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **BC Rail Batch Water Discharge Report** | **Revision:** | **0** |
| **Data** | **November 16th, 2024** | **Prepared by:**<br>**Date:** | **SD**<br>**November 20th, 2024** |

# BCR Site Batch Sample Lab Documentation

# CERTIFICATE OF ANALYSIS

| | | | | |
|---|---|---|---|---|
| **Work Order** | : | **VA24D0524** | | |
| Client | : | **Frontier-Kemper Michels Joint Venture** | Laboratory | : ALS Environmental - Vancouver |
| Contact | : | Sara Derakhshi | Account Manager | : Thomas Chang |
| Address | : | 404-850 Harbourside Drive<br>North Vancouver British Columbia Canada V7P 0A3 | Address | : 8081 Lougheed Highway<br>Burnaby BC Canada V5A 1W9 |
| Telephone | : | ---- | Telephone | : +1 604 253 4188 |
| Project | : | ---- | Date Samples Received | : 12-Nov-2024 10:40 |
| PO | : | ---- | Date Analysis Commenced | : 12-Nov-2024 |
| C-O-C number | : | 23-1083429 | Issue Date | : 14-Nov-2024 15:08 |
| Sampler | : | ---- | | |
| Site | : | ---- | | |
| Quote number | : | WTP Discharge | | |
| No. of samples received | : | 1 | | |
| No. of samples analysed | : | 1 | | |

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

## *Signatories*

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

| *Signatories* | *Position* | *Laboratory Department* |
|---|---|---|
| Cecilia Zhang | Account Manager Assistant | Administration, Burnaby, British Columbia |
| Cindy Tang | Team Leader - Inorganics | Inorganics, Burnaby, British Columbia |
| Leon Yang | Analyst | Inorganics, Burnaby, British Columbia |
| Lindsay Gung | Supervisor - Water Chemistry | Organics, Burnaby, British Columbia |
| Manpreet Cheema | Lab Assistant | Metals, Burnaby, British Columbia |
| Miles Gropen | Department Manager - Inorganics | Inorganics, Burnaby, British Columbia |
| Monica Ko | Lab Assistant | Inorganics, Burnaby, British Columbia |
| Paul Cushing | Team Leader - Organics | Organics, Burnaby, British Columbia |
| Ping Yeung | Team Leader - Inorganics | Inorganics, Edmonton, Alberta |
| Robin Weeks | Team Leader - Metals | Organics, Burnaby, British Columbia |
| Russell Zhang | 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* |
|---|---|
| mg/L | milligrams per litre |
| µg/L | micrograms per litre |
| °C | degrees celsius |
| pH units | pH units |
| µS/cm | microsiemens per centimetre |
| NTU | nephelometric turbidity units |
| mV | millivolts |
| - | no units |

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

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

## Sample Comments

| *Sample* | *Client Id* | *Comment* |
|---|---|---|
| VA24D0524-001 | WTP | ***Sample(s) VA24D0524 - 1: Water sample for VOC analysis contained > 5% headspace. Results may be biased low.*** |
| VA24D0524-001 | WTP | ***Sample(s) VA24D0524-1: Water sample for VOC analysis contained > 5% headspace. Results may be biased low.*** |
| VA24D0524-001 | WTP | ***Sample(s) VA24D0524 - 1: Water sample for VOC analysis contained > 5% headspace. Results may be biased low.*** |

## Qualifiers

| Qualifier | Description |
|---|---|
| DLDS | Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity. |
| DLM | Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity). |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | | | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 12-Nov-2024 07:50 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24D0524-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Field Tests** | | | | | | | | | | |
| pH, field | ---- | EF001/VA | 0.10 | pH units | | 6.80 | ---- | ---- | ---- | ---- |
| Temperature, field | ---- | EF001/VA | 0.10 | °C | | 9.80 | ---- | ---- | ---- | ---- |
| **Physical Tests** | | | | | | | | | | |
| Alkalinity, bicarbonate (as CaCO3) | ---- | E290/VA | 2.0 | mg/L | | 236 | ---- | ---- | ---- | ---- |
| Alkalinity, carbonate (as CaCO3) | ---- | E290/VA | 2.0 | mg/L | | <2.0 | ---- | ---- | ---- | ---- |
| Alkalinity, hydroxide (as CaCO3) | ---- | E290/VA | 2.0 | mg/L | | <2.0 | ---- | ---- | ---- | ---- |
| Alkalinity, phenolphthalein (as CaCO3) | ---- | E290/VA | 2.0 | mg/L | | <2.0 | ---- | ---- | ---- | ---- |
| Alkalinity, total (as CaCO3) | ---- | E290/VA | 2.0 | mg/L | | 236 | ---- | ---- | ---- | ---- |
| Conductivity | ---- | E100/VA | 2.0 | µS/cm | | 757 | ---- | ---- | ---- | ---- |
| Oxidation-reduction potential [ORP] | ---- | E125/VA | 0.10 | mV | | 204 | ---- | ---- | ---- | ---- |
| pH | ---- | E108/VA | 0.10 | pH units | | 6.89 | ---- | ---- | ---- | ---- |
| Solids, total dissolved [TDS] | ---- | E162/VA | 10 | mg/L | | 463 | ---- | ---- | ---- | ---- |
| Solids, total suspended [TSS] | ---- | E160/VA | 3.0 | mg/L | | <3.0 | ---- | ---- | ---- | ---- |
| Turbidity | ---- | E121/VA | 0.10 | NTU | | 0.34 | ---- | ---- | ---- | ---- |
| **Anions and Nutrients** | | | | | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298/VA | 0.0050 | mg/L | | 0.350 | ---- | ---- | ---- | ---- |
| Ammonium (as NH4), field | 14798-03-9 | EC298A/VA | 0.0010 | mg/L | | 0.450 | ---- | ---- | ---- | ---- |
| Bromide | 24959-67-9 | E235.Br-L/VA | 0.050 | mg/L | | <0.250 DLDS | ---- | ---- | ---- | ---- |
| Chloride | 16887-00-6 | E235.Cl/VA | 0.50 | mg/L | | 53.6 | ---- | ---- | ---- | ---- |
| Fluoride | 16984-48-8 | E235.F/VA | 0.020 | mg/L | | 0.133 | ---- | ---- | ---- | ---- |
| Nitrate (as N) | 14797-55-8 | E235.NO3-L/VA | 0.0050 | mg/L | | 0.120 | ---- | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | | | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 12-Nov-2024 07:50 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24D0524-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Anions and Nutrients** | | | | | | | | | | |
| **Nitrite (as N)** | 14797-65-0 | E235.NO2-L/VA | 0.0010 | mg/L | | 0.0382 | ---- | ---- | ---- | ---- |
| **Nitrogen, total** | 7727-37-9 | E366/VA | 0.030 | mg/L | | 1.03 | ---- | ---- | ---- | ---- |
| **Phosphorus, total** | 7723-14-0 | E372-U/VA | 0.0020 | mg/L | | 0.0129 | ---- | ---- | ---- | ---- |
| **Sulfate (as SO4)** | 14808-79-8 | E235.SO4/VA | 0.30 | mg/L | | 69.8 | ---- | ---- | ---- | ---- |
| **Organic / Inorganic Carbon** | | | | | | | | | | |
| **Carbon, dissolved organic [DOC]** | ---- | E358-L/VA | 0.50 | mg/L | | 4.83 | ---- | ---- | ---- | ---- |
| **Carbon, total organic [TOC]** | ---- | E355-L/VA | 0.50 | mg/L | | 4.85 | ---- | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **Aluminum, total** | 7429-90-5 | E420/VA | 0.0030 | mg/L | | 0.0150 | ---- | ---- | ---- | ---- |
| **Antimony, total** | 7440-36-0 | E420/VA | 0.00010 | mg/L | | 0.00170 | ---- | ---- | ---- | ---- |
| **Arsenic, total** | 7440-38-2 | E420/VA | 0.00010 | mg/L | | 0.00356 | ---- | ---- | ---- | ---- |
| **Barium, total** | 7440-39-3 | E420/VA | 0.00010 | mg/L | | 0.0523 | ---- | ---- | ---- | ---- |
| **Beryllium, total** | 7440-41-7 | E420/VA | 0.000020 | mg/L | | <0.000020 | ---- | ---- | ---- | ---- |
| **Bismuth, total** | 7440-69-9 | E420/VA | 0.000050 | mg/L | | <0.000050 | ---- | ---- | ---- | ---- |
| **Boron, total** | 7440-42-8 | E420/VA | 0.010 | mg/L | | 0.101 | ---- | ---- | ---- | ---- |
| **Cadmium, total** | 7440-43-9 | E420/VA | 0.0000050 | mg/L | | <0.0000300 DLM | ---- | ---- | ---- | ---- |
| **Calcium, total** | 7440-70-2 | E420/VA | 0.050 | mg/L | | 75.6 | ---- | ---- | ---- | ---- |
| **Cesium, total** | 7440-46-2 | E420/VA | 0.000010 | mg/L | | 0.00230 | ---- | ---- | ---- | ---- |
| **Chromium, total** | 7440-47-3 | E420/VA | 0.00050 | mg/L | | 0.00631 | ---- | ---- | ---- | ---- |
| **Cobalt, total** | 7440-48-4 | E420/VA | 0.00010 | mg/L | | 0.00011 | ---- | ---- | ---- | ---- |
| **Copper, total** | 7440-50-8 | E420/VA | 0.00050 | mg/L | | 0.00176 | ---- | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | | | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 12-Nov-2024 07:50 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24D0524-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **Iron, total** | 7439-89-6 | E420/VA | 0.010 | mg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Lead, total** | 7439-92-1 | E420/VA | 0.000050 | mg/L | | 0.000070 | ---- | ---- | ---- | ---- |
| **Lithium, total** | 7439-93-2 | E420/VA | 0.0010 | mg/L | | 0.0185 | ---- | ---- | ---- | ---- |
| **Magnesium, total** | 7439-95-4 | E420/VA | 0.0050 | mg/L | | 1.26 | ---- | ---- | ---- | ---- |
| **Manganese, total** | 7439-96-5 | E420/VA | 0.00010 | mg/L | | 0.00150 | ---- | ---- | ---- | ---- |
| **Molybdenum, total** | 7439-98-7 | E420/VA | 0.000050 | mg/L | | 0.172 | ---- | ---- | ---- | ---- |
| **Nickel, total** | 7440-02-0 | E420/VA | 0.00050 | mg/L | | 0.00103 | ---- | ---- | ---- | ---- |
| **Phosphorus, total** | 7723-14-0 | E420/VA | 0.050 | mg/L | | <0.050 | ---- | ---- | ---- | ---- |
| **Potassium, total** | 7440-09-7 | E420/VA | 0.050 | mg/L | | 18.6 | ---- | ---- | ---- | ---- |
| **Rubidium, total** | 7440-17-7 | E420/VA | 0.00020 | mg/L | | 0.0520 | ---- | ---- | ---- | ---- |
| **Selenium, total** | 7782-49-2 | E420/VA | 0.000050 | mg/L | | 0.00100 | ---- | ---- | ---- | ---- |
| **Silicon, total** | 7440-21-3 | E420/VA | 0.10 | mg/L | | 11.5 | ---- | ---- | ---- | ---- |
| **Silver, total** | 7440-22-4 | E420/VA | 0.000010 | mg/L | | <0.000010 | ---- | ---- | ---- | ---- |
| **Sodium, total** | 7440-23-5 | E420/VA | 0.050 | mg/L | | 80.3 | ---- | ---- | ---- | ---- |
| **Strontium, total** | 7440-24-6 | E420/VA | 0.00020 | mg/L | | 1.20 | ---- | ---- | ---- | ---- |
| **Sulfur, total** | 7704-34-9 | E420/VA | 0.50 | mg/L | | 25.9 | ---- | ---- | ---- | ---- |
| **Tellurium, total** | 13494-80-9 | E420/VA | 0.00020 | mg/L | | 0.00027 | ---- | ---- | ---- | ---- |
| **Thallium, total** | 7440-28-0 | E420/VA | 0.000010 | mg/L | | <0.000010 | ---- | ---- | ---- | ---- |
| **Thorium, total** | 7440-29-1 | E420/VA | 0.00010 | mg/L | | <0.00010 | ---- | ---- | ---- | ---- |
| **Tin, total** | 7440-31-5 | E420/VA | 0.00010 | mg/L | | <0.00010 | ---- | ---- | ---- | ---- |
| **Titanium, total** | 7440-32-6 | E420/VA | 0.00030 | mg/L | | 0.00034 | ---- | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | | | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 12-Nov-2024 07:50 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24D0524-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| Tungsten, total | 7440-33-7 | E420/VA | 0.00010 | mg/L | | 0.00117 | ---- | ---- | ---- | ---- |
| Uranium, total | 7440-61-1 | E420/VA | 0.000010 | mg/L | | 0.000021 | ---- | ---- | ---- | ---- |
| Vanadium, total | 7440-62-2 | E420/VA | 0.00050 | mg/L | | 0.00150 | ---- | ---- | ---- | ---- |
| Zinc, total | 7440-66-6 | E420/VA | 0.0030 | mg/L | | <0.0030 | ---- | ---- | ---- | ---- |
| Zirconium, total | 7440-67-7 | E420/VA | 0.00020 | mg/L | | <0.00020 | ---- | ---- | ---- | ---- |
| **Dissolved Metals** | | | | | | | | | | |
| Aluminum, dissolved | 7429-90-5 | E421/VA | 0.0010 | mg/L | | 0.0116 | ---- | ---- | ---- | ---- |
| Antimony, dissolved | 7440-36-0 | E421/VA | 0.00010 | mg/L | | 0.00166 | ---- | ---- | ---- | ---- |
| Arsenic, dissolved | 7440-38-2 | E421/VA | 0.00010 | mg/L | | 0.00361 | ---- | ---- | ---- | ---- |
| Barium, dissolved | 7440-39-3 | E421/VA | 0.00010 | mg/L | | 0.0512 | ---- | ---- | ---- | ---- |
| Beryllium, dissolved | 7440-41-7 | E421/VA | 0.000020 | mg/L | | <0.000020 | ---- | ---- | ---- | ---- |
| Bismuth, dissolved | 7440-69-9 | E421/VA | 0.000050 | mg/L | | <0.000050 | ---- | ---- | ---- | ---- |
| Boron, dissolved | 7440-42-8 | E421/VA | 0.010 | mg/L | | 0.090 | ---- | ---- | ---- | ---- |
| Cadmium, dissolved | 7440-43-9 | E421/VA | 0.0000050 | mg/L | | <0.0000250 DLM | ---- | ---- | ---- | ---- |
| Calcium, dissolved | 7440-70-2 | E421/VA | 0.050 | mg/L | | 72.2 | ---- | ---- | ---- | ---- |
| Cesium, dissolved | 7440-46-2 | E421/VA | 0.000010 | mg/L | | 0.00222 | ---- | ---- | ---- | ---- |
| Chromium, dissolved | 7440-47-3 | E421/VA | 0.00050 | mg/L | | 0.00611 | ---- | ---- | ---- | ---- |
| Cobalt, dissolved | 7440-48-4 | E421/VA | 0.00010 | mg/L | | 0.00011 | ---- | ---- | ---- | ---- |
| Copper, dissolved | 7440-50-8 | E421/VA | 0.00020 | mg/L | | 0.00170 | ---- | ---- | ---- | ---- |
| Iron, dissolved | 7439-89-6 | E421/VA | 0.010 | mg/L | | <0.010 | ---- | ---- | ---- | ---- |
| Lead, dissolved | 7439-92-1 | E421/VA | 0.000050 | mg/L | | 0.000062 | ---- | ---- | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 12-Nov-2024 07:50 | ---- | ---- | ---- | ---- |
| | | | | | | VA24D0524-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Dissolved Metals** | | | | | | | | | | |
| **Lithium, dissolved** | 7439-93-2 | E421/VA | 0.0010 | mg/L | | 0.0170 | ---- | ---- | ---- | ---- |
| **Magnesium, dissolved** | 7439-95-4 | E421/VA | 0.0050 | mg/L | | 1.23 | ---- | ---- | ---- | ---- |
| **Manganese, dissolved** | 7439-96-5 | E421/VA | 0.00010 | mg/L | | 0.00138 | ---- | ---- | ---- | ---- |
| **Molybdenum, dissolved** | 7439-98-7 | E421/VA | 0.000050 | mg/L | | 0.165 | ---- | ---- | ---- | ---- |
| **Nickel, dissolved** | 7440-02-0 | E421/VA | 0.00050 | mg/L | | 0.00099 | ---- | ---- | ---- | ---- |
| **Phosphorus, dissolved** | 7723-14-0 | E421/VA | 0.050 | mg/L | | <0.050 | ---- | ---- | ---- | ---- |
| **Potassium, dissolved** | 7440-09-7 | E421/VA | 0.050 | mg/L | | 17.5 | ---- | ---- | ---- | ---- |
| **Rubidium, dissolved** | 7440-17-7 | E421/VA | 0.00020 | mg/L | | 0.0500 | ---- | ---- | ---- | ---- |
| **Selenium, dissolved** | 7782-49-2 | E421/VA | 0.000050 | mg/L | | 0.00119 | ---- | ---- | ---- | ---- |
| **Silicon, dissolved** | 7440-21-3 | E421/VA | 0.050 | mg/L | | 11.4 | ---- | ---- | ---- | ---- |
| **Silver, dissolved** | 7440-22-4 | E421/VA | 0.000010 | mg/L | | <0.000010 | ---- | ---- | ---- | ---- |
| **Sodium, dissolved** | 7440-23-5 | E421/VA | 0.050 | mg/L | | 78.2 | ---- | ---- | ---- | ---- |
| **Strontium, dissolved** | 7440-24-6 | E421/VA | 0.00020 | mg/L | | 1.17 | ---- | ---- | ---- | ---- |
| **Sulfur, dissolved** | 7704-34-9 | E421/VA | 0.50 | mg/L | | 25.4 | ---- | ---- | ---- | ---- |
| **Tellurium, dissolved** | 13494-80-9 | E421/VA | 0.00020 | mg/L | | <0.00020 | ---- | ---- | ---- | ---- |
| **Thallium, dissolved** | 7440-28-0 | E421/VA | 0.000010 | mg/L | | <0.000010 | ---- | ---- | ---- | ---- |
| **Thorium, dissolved** | 7440-29-1 | E421/VA | 0.00010 | mg/L | | <0.00010 | ---- | ---- | ---- | ---- |
| **Tin, dissolved** | 7440-31-5 | E421/VA | 0.00010 | mg/L | | <0.00010 | ---- | ---- | ---- | ---- |
| **Titanium, dissolved** | 7440-32-6 | E421/VA | 0.00030 | mg/L | | 0.00031 | ---- | ---- | ---- | ---- |
| **Tungsten, dissolved** | 7440-33-7 | E421/VA | 0.00010 | mg/L | | 0.00112 | ---- | ---- | ---- | ---- |
| **Uranium, dissolved** | 7440-61-1 | E421/VA | 0.000010 | mg/L | | 0.000019 | ---- | ---- | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 12-Nov-2024 07:50 | ---- | ---- | ---- | ---- |
| | | | | | | VA24D0524-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Dissolved Metals** | | | | | | | | | | |
| **Vanadium, dissolved** | 7440-62-2 | E421/VA | 0.00050 | mg/L | | 0.00147 | ---- | ---- | ---- | ---- |
| **Zinc, dissolved** | 7440-66-6 | E421/VA | 0.0010 | mg/L | | 0.0013 | ---- | ---- | ---- | ---- |
| **Zirconium, dissolved** | 7440-67-7 | E421/VA | 0.00030 | mg/L | | <0.00030 | ---- | ---- | ---- | ---- |
| **Dissolved metals filtration location** | ---- | EP421/VA | - | - | | Field | ---- | ---- | ---- | ---- |
| **Aggregate Organics** | | | | | | | | | | |
| **Phenols, total (4AAP)** | ---- | E562/EO | 0.0010 | mg/L | | <0.0010 | ---- | ---- | ---- | ---- |
| **Volatile Organic Compounds** | | | | | | | | | | |
| **Chlorobenzene** | 108-90-7 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Chloromethane** | 74-87-3 | E611C/VA | 5.0 | µg/L | | <5.0 | ---- | ---- | ---- | ---- |
| **Dichlorobenzene, 1,2-** | 95-50-1 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichlorobenzene, 1,3-** | 541-73-1 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichlorobenzene, 1,4-** | 106-46-7 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloropropane, 1,2-** | 78-87-5 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloropropylene, cis-1,3-** | 10061-01-5 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloropropylene, cis+trans-1,3-** | 542-75-6 | E611C/VA | 0.75 | µg/L | | <0.75 | ---- | ---- | ---- | ---- |
| **Tetrachloroethane, 1,1,1,2-** | 630-20-6 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Tetrachloroethane, 1,1,2,2-** | 79-34-5 | E611C/VA | 0.20 | µg/L | | <0.20 | ---- | ---- | ---- | ---- |
| **Trichloroethane, 1,1,2-** | 79-00-5 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Trichlorofluoromethane** | 75-69-4 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Volatile Organic Compounds [Drycleaning]** | | | | | | | | | | |
| **Carbon tetrachloride** | 56-23-5 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | | | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 12-Nov-2024 07:50 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24D0524-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Volatile Organic Compounds [Drycleaning]** | | | | | | | | | | |
| **Chloroethane** | 75-00-3 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloroethane, 1,1-** | 75-34-3 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloroethane, 1,2-** | 107-06-2 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloroethylene, 1,1-** | 75-35-4 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloroethylene, cis-1,2-** | 156-59-2 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloroethylene, trans-1,2-** | 156-60-5 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloromethane** | 75-09-2 | E611C/VA | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| **Dichloropropylene, trans-1,3-** | 10061-02-6 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Tetrachloroethylene** | 127-18-4 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Trichloroethane, 1,1,1-** | 71-55-6 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Trichloroethylene** | 79-01-6 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Vinyl chloride** | 75-01-4 | E611C/VA | 0.40 | µg/L | | <0.40 | ---- | ---- | ---- | ---- |
| **Volatile Organic Compounds [Fuels]** | | | | | | | | | | |
| **Benzene** | 71-43-2 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Ethylbenzene** | 100-41-4 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Methyl-tert-butyl ether [MTBE]** | 1634-04-4 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Styrene** | 100-42-5 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Toluene** | 108-88-3 | E611C/VA | 0.40 | µg/L | | <0.40 | ---- | ---- | ---- | ---- |
| **Xylene, m+p-** | 179601-23-1 | E611C/VA | 0.40 | µg/L | | <0.40 | ---- | ---- | ---- | ---- |
| **Xylene, o-** | 95-47-6 | E611C/VA | 0.30 | µg/L | | <0.30 | ---- | ---- | ---- | ---- |
| **Xylenes, total** | 1330-20-7 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | | | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 12-Nov-2024 07:50 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24D0524-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Volatile Organic Compounds [THMs]** | | | | | | | | | | |
| **Bromodichloromethane** | 75-27-4 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Bromoform** | 75-25-2 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Chloroform** | 67-66-3 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dibromochloromethane** | 124-48-1 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Hydrocarbons** | | | | | | | | | | |
| **EPH (C10-C19)** | ---- | E601A/VA | 250 | µg/L | | <250 | ---- | ---- | ---- | ---- |
| **EPH (C19-C32)** | ---- | E601A/VA | 250 | µg/L | | <250 | ---- | ---- | ---- | ---- |
| **F1 (C6-C10)** | ---- | E581.VH+F1/VA | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| **VHw (C6-C10)** | ---- | E581.VH+F1/VA | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| **VPHw** | ---- | EC580A/VA | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| **HEPHw** | ---- | EC600A/VA | 250 | µg/L | | <250 | ---- | ---- | ---- | ---- |
| **LEPHw** | ---- | EC600A/VA | 250 | µg/L | | <250 | ---- | ---- | ---- | ---- |
| **Hydrocarbons Surrogates** | | | | | | | | | | |
| **Bromobenzotrifluoride, 2- (EPH surrogate)** | 392-83-6 | E601A/VA | 1.0 | % | | 83.9 | ---- | ---- | ---- | ---- |
| **Dichlorotoluene, 3,4-** | 95-75-0 | E581.VH+F1/VA | 1.0 | % | | 106 | ---- | ---- | ---- | ---- |
| **Volatile Organic Compounds Surrogates** | | | | | | | | | | |
| **Bromofluorobenzene, 4-** | 460-00-4 | E611C/VA | 1.0 | % | | 90.0 | ---- | ---- | ---- | ---- |
| **Difluorobenzene, 1,4-** | 540-36-3 | E611C/VA | 1.0 | % | | 102 | ---- | ---- | ---- | ---- |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | | | | |
| **Acenaphthene** | 83-32-9 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Acenaphthylene** | 208-96-8 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 12-Nov-2024 07:50 | ---- | ---- | ---- | ---- |
| | | | | | | VA24D0524-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | | | | |
| **Acridine** | 260-94-6 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Anthracene** | 120-12-7 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Benz(a)anthracene** | 56-55-3 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Benzo(a)pyrene** | 50-32-8 | E641A/VA | 0.0050 | µg/L | | <0.0050 | ---- | ---- | ---- | ---- |
| **Benzo(b+j)fluoranthene** | n/a | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Benzo(b+j+k)fluoranthene** | n/a | E641A/VA | 0.015 | µg/L | | <0.015 | ---- | ---- | ---- | ---- |
| **Benzo(g,h,i)perylene** | 191-24-2 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Benzo(k)fluoranthene** | 207-08-9 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Chrysene** | 218-01-9 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Dibenz(a,h)anthracene** | 53-70-3 | E641A/VA | 0.0050 | µg/L | | <0.0050 | ---- | ---- | ---- | ---- |
| **Fluoranthene** | 206-44-0 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Fluorene** | 86-73-7 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Indeno(1,2,3-c,d)pyrene** | 193-39-5 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Methylnaphthalene, 1-** | 90-12-0 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Methylnaphthalene, 2-** | 91-57-6 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Naphthalene** | 91-20-3 | E641A/VA | 0.050 | µg/L | | <0.050 | ---- | ---- | ---- | ---- |
| **Phenanthrene** | 85-01-8 | E641A/VA | 0.020 | µg/L | | <0.020 | ---- | ---- | ---- | ---- |
| **Pyrene** | 129-00-0 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Quinoline** | 91-22-5 | E641A/VA | 0.050 | µg/L | | 0.264 | ---- | ---- | ---- | ---- |
| **Polycyclic Aromatic Hydrocarbons Surrogates** | | | | | | | | | | |
| **Chrysene-d12** | 1719-03-5 | E641A/VA | 0.1 | % | | 108 | ---- | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | | | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 12-Nov-2024 07:50 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24D0524-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Polycyclic Aromatic Hydrocarbons Surrogates** | | | | | | | | | | |
| **Naphthalene-d8** | 1146-65-2 | E641A/VA | 0.1 | % | | 102 | ---- | ---- | ---- | ---- |
| **Phenanthrene-d10** | 1517-22-2 | E641A/VA | 0.1 | % | | 104 | ---- | ---- | ---- | ---- |

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

ALS Canada Ltd.

# QUALITY CONTROL REPORT

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24D0524** | Page | : 1 of 21 |
| Client | : Frontier-Kemper Michels Joint Venture | Laboratory | : ALS Environmental - Vancouver |
| Contact | : Sara Derakhshi | Account Manager | : Thomas Chang |
| Address | : 404-850 Harbourside Drive<br>North Vancouver BC Canada V7P 0A3 | Address | : 8081 Lougheed Highway<br>Burnaby, British Columbia Canada V5A 1W9 |
| Telephone | : ---- | Telephone | : +1 604 253 4188 |
| Project | : ---- | Date Samples Received | : 12-Nov-2024 10:40 |
| PO | : ---- | Date Analysis Commenced | : 12-Nov-2024 |
| C-O-C number | : 23-1083429 | Issue Date | : 14-Nov-2024 15:07 |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : WTP Discharge | | |
| No. of samples received | : 1 | | |
| No. of samples analysed | : 1 | | |

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

This Quality Control Report contains the following information:

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

## *Signatories*

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

| *Signatories* | *Position* | *Laboratory Department* |
|---|---|---|
| Cecilia Zhang | Account Manager Assistant | Vancouver Administration, Burnaby, British Columbia |
| Cindy Tang | Team Leader - Inorganics | Vancouver Inorganics, Burnaby, British Columbia |
| Leon Yang | Analyst | Vancouver Inorganics, Burnaby, British Columbia |
| Lindsay Gung | Supervisor - Water Chemistry | Vancouver Organics, Burnaby, British Columbia |
| Manpreet Cheema | Lab Assistant | Vancouver Metals, Burnaby, British Columbia |
| Miles Gropen | Department Manager - Inorganics | Vancouver Inorganics, Burnaby, British Columbia |
| Monica Ko | Lab Assistant | Vancouver Inorganics, Burnaby, British Columbia |
| Paul Cushing | Team Leader - Organics | Vancouver Organics, Burnaby, British Columbia |
| Ping Yeung | Team Leader - Inorganics | Edmonton Inorganics, Edmonton, Alberta |
| Robin Weeks | Team Leader - Metals | Vancouver Organics, Burnaby, British Columbia |
| Russell Zhang | 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: 1762011)** | | | | | | | | | | | |
| VA24D0512-001 | Anonymous | Solids, total dissolved [TDS] | ---- | E162 | 10 | mg/L | 228 | 233 | 1.95% | 20% | ---- |
| **Physical Tests (QC Lot: 1762013)** | | | | | | | | | | | |
| VA24D0512-001 | Anonymous | Solids, total suspended [TSS] | ---- | E160 | 3.0 | mg/L | 17.8 | 17.0 | 0.8 | Diff <2x LOR | ---- |
| **Physical Tests (QC Lot: 1762129)** | | | | | | | | | | | |
| VA24D0524-001 | WTP | pH | ---- | E108 | 0.10 | pH units | 6.89 | 7.02 | 1.87% | 4% | ---- |
| **Physical Tests (QC Lot: 1762131)** | | | | | | | | | | | |
| VA24D0524-001 | WTP | Conductivity | ---- | E100 | 2.0 | µS/cm | 757 | 759 | 0.264% | 10% | ---- |
| **Physical Tests (QC Lot: 1762227)** | | | | | | | | | | | |
| VA24D0512-001 | Anonymous | Turbidity | ---- | E121 | 0.10 | NTU | 38.0 | 35.5 | 6.81% | 15% | ---- |
| **Physical Tests (QC Lot: 1762388)** | | | | | | | | | | | |
| VA24D0524-001 | WTP | Oxidation-reduction potential [ORP] | ---- | E125 | 0.10 | mV | 204 | 204 | 0.00% | 10% | ---- |
| **Anions and Nutrients (QC Lot: 1762099)** | | | | | | | | | | | |
| VA24D0380-010 | Anonymous | Nitrogen, total | 7727-37-9 | E366 | 0.030 | mg/L | 0.805 | 0.794 | 1.36% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1762100)** | | | | | | | | | | | |
| VA24D0380-010 | Anonymous | Phosphorus, total | 7723-14-0 | E372-U | 0.0020 | mg/L | 0.0063 | 0.0066 | 0.0003 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1762132)** | | | | | | | | | | | |
| VA24D0524-001 | WTP | Fluoride | 16984-48-8 | E235.F | 0.100 | mg/L | 0.133 | 0.124 | 0.009 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1762133)** | | | | | | | | | | | |
| VA24D0524-001 | WTP | Chloride | 16887-00-6 | E235.Cl | 2.50 | mg/L | 53.6 | 53.7 | 0.181% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1762134)** | | | | | | | | | | | |
| VA24D0524-001 | WTP | Bromide | 24959-67-9 | E235.Br-L | 0.250 | mg/L | <0.250 | <0.250 | 0 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1762135)** | | | | | | | | | | | |
| VA24D0524-001 | WTP | Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.0250 | mg/L | 0.120 | 0.119 | 0.0003 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1762136)** | | | | | | | | | | | |
| VA24D0524-001 | WTP | Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.0050 | mg/L | 0.0382 | 0.0368 | 0.0014 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1762137)** | | | | | | | | | | | |
| VA24D0524-001 | WTP | Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 1.50 | mg/L | 69.8 | 69.9 | 0.176% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1762139)** | | | | | | | | | | | |
| VA24D0529-001 | Anonymous | Ammonia, total (as N) | 7664-41-7 | E298 | 0.100 | mg/L | 1.34 | 1.37 | 2.43% | 20% | ---- |
| **Organic / Inorganic Carbon (QC Lot: 1762097)** | | | | | | | | | | | |

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* |
| **Organic / Inorganic Carbon (QC Lot: 1762097) - continued** | | | | | | | | | | | |
| VA24D0380-010 | Anonymous | Carbon, dissolved organic [DOC] | ---- | E358-L | 0.50 | mg/L | 7.30 | 7.69 | 5.12% | 20% | ---- |
| **Organic / Inorganic Carbon (QC Lot: 1762098)** | | | | | | | | | | | |
| VA24D0380-011 | Anonymous | Carbon, total organic [TOC] | ---- | E355-L | 0.50 | mg/L | 6.82 | 6.68 | 2.06% | 20% | ---- |
| **Total Metals (QC Lot: 1762122)** | | | | | | | | | | | |
| VA24D0524-001 | WTP | Aluminum, total | 7429-90-5 | E420 | 0.0030 | mg/L | 0.0150 | 0.0134 | 0.0016 | Diff <2x LOR | ---- |
| | | Antimony, total | 7440-36-0 | E420 | 0.00010 | mg/L | 0.00170 | 0.00172 | 0.733% | 20% | ---- |
| | | Arsenic, total | 7440-38-2 | E420 | 0.00010 | mg/L | 0.00356 | 0.00353 | 0.777% | 20% | ---- |
| | | Barium, total | 7440-39-3 | E420 | 0.00010 | mg/L | 0.0523 | 0.0526 | 0.548% | 20% | ---- |
| | | Beryllium, total | 7440-41-7 | E420 | 0.000020 | mg/L | <0.000020 | <0.000020 | 0 | Diff <2x LOR | ---- |
| | | Bismuth, total | 7440-69-9 | E420 | 0.000050 | mg/L | <0.000050 | <0.000050 | 0 | Diff <2x LOR | ---- |
| | | Boron, total | 7440-42-8 | E420 | 0.010 | mg/L | 0.101 | 0.104 | 3.62% | 20% | ---- |
| | | Cadmium, total | 7440-43-9 | E420 | 0.0000300 | mg/L | <0.0000300 | <0.0000300 | 0 | Diff <2x LOR | ---- |
| | | Calcium, total | 7440-70-2 | E420 | 0.050 | mg/L | 75.6 | 75.5 | 0.130% | 20% | ---- |
| | | Cesium, total | 7440-46-2 | E420 | 0.000010 | mg/L | 0.00230 | 0.00230 | 0.0504% | 20% | ---- |
| | | Chromium, total | 7440-47-3 | E420 | 0.00050 | mg/L | 0.00631 | 0.00651 | 3.04% | 20% | ---- |
| | | Cobalt, total | 7440-48-4 | E420 | 0.00010 | mg/L | 0.00011 | 0.00011 | 0.000002 | Diff <2x LOR | ---- |
| | | Copper, total | 7440-50-8 | E420 | 0.00050 | mg/L | 0.00176 | 0.00179 | 0.00003 | 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 | 0.000070 | 0.000068 | 0.000002 | Diff <2x LOR | ---- |
| | | Lithium, total | 7439-93-2 | E420 | 0.0010 | mg/L | 0.0185 | 0.0176 | 4.99% | 20% | ---- |
| | | Magnesium, total | 7439-95-4 | E420 | 0.0050 | mg/L | 1.26 | 1.26 | 0.00453% | 20% | ---- |
| | | Manganese, total | 7439-96-5 | E420 | 0.00010 | mg/L | 0.00150 | 0.00148 | 1.01% | 20% | ---- |
| | | Molybdenum, total | 7439-98-7 | E420 | 0.000050 | mg/L | 0.172 | 0.167 | 3.41% | 20% | ---- |
| | | Nickel, total | 7440-02-0 | E420 | 0.00050 | mg/L | 0.00103 | 0.00101 | 0.00002 | 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 | 18.6 | 18.2 | 2.04% | 20% | ---- |
| | | Rubidium, total | 7440-17-7 | E420 | 0.00020 | mg/L | 0.0520 | 0.0518 | 0.335% | 20% | ---- |
| | | Selenium, total | 7782-49-2 | E420 | 0.000050 | mg/L | 0.00100 | 0.00102 | 1.83% | 20% | ---- |
| | | Silicon, total | 7440-21-3 | E420 | 0.10 | mg/L | 11.5 | 11.6 | 0.855% | 20% | ---- |
| | | Silver, total | 7440-22-4 | E420 | 0.000010 | mg/L | <0.000010 | <0.000010 | 0 | Diff <2x LOR | ---- |
| | | Sodium, total | 7440-23-5 | E420 | 0.050 | mg/L | 80.3 | 79.7 | 0.729% | 20% | ---- |
| | | Strontium, total | 7440-24-6 | E420 | 0.00020 | mg/L | 1.20 | 1.20 | 0.359% | 20% | ---- |
| | | Sulfur, total | 7704-34-9 | E420 | 0.50 | mg/L | 25.9 | 25.5 | 1.33% | 20% | ---- |
| | | Tellurium, total | 13494-80-9 | E420 | 0.00020 | mg/L | 0.00027 | 0.00038 | 0.00010 | 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: 1762122) - continued** | | | | | | | | | | | |
| VA24D0524-001 | WTP | 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 | 0.00034 | 0.00032 | 0.00002 | Diff <2x LOR | ---- |
| | | Tungsten, total | 7440-33-7 | E420 | 0.00010 | mg/L | 0.00117 | 0.00116 | 0.193% | 20% | ---- |
| | | Uranium, total | 7440-61-1 | E420 | 0.000010 | mg/L | 0.000021 | 0.000020 | 0.0000010 | Diff <2x LOR | ---- |
| | | Vanadium, total | 7440-62-2 | E420 | 0.00050 | mg/L | 0.00150 | 0.00155 | 0.00005 | Diff <2x LOR | ---- |
| | | Zinc, total | 7440-66-6 | E420 | 0.0030 | mg/L | <0.0030 | <0.0030 | 0 | Diff <2x LOR | ---- |
| | | Zirconium, total | 7440-67-7 | E420 | 0.00020 | mg/L | <0.00020 | <0.00020 | 0 | Diff <2x LOR | ---- |
| **Dissolved Metals (QC Lot: 1762123)** | | | | | | | | | | | |
| VA24D0524-001 | WTP | Aluminum, dissolved | 7429-90-5 | E421 | 0.0010 | mg/L | 0.0116 | 0.0117 | 0.796% | 20% | ---- |
| | | Antimony, dissolved | 7440-36-0 | E421 | 0.00010 | mg/L | 0.00166 | 0.00168 | 1.18% | 20% | ---- |
| | | Arsenic, dissolved | 7440-38-2 | E421 | 0.00010 | mg/L | 0.00361 | 0.00369 | 2.15% | 20% | ---- |
| | | Barium, dissolved | 7440-39-3 | E421 | 0.00010 | mg/L | 0.0512 | 0.0512 | 0.0196% | 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 | 0.090 | 0.094 | 0.004 | Diff <2x LOR | ---- |
| | | Cadmium, dissolved | 7440-43-9 | E421 | 0.0000250 | mg/L | <0.0000250 | <0.0000250 | 0 | Diff <2x LOR | ---- |
| | | Calcium, dissolved | 7440-70-2 | E421 | 0.050 | mg/L | 72.2 | 73.2 | 1.36% | 20% | ---- |
| | | Cesium, dissolved | 7440-46-2 | E421 | 0.000010 | mg/L | 0.00222 | 0.00226 | 1.93% | 20% | ---- |
| | | Chromium, dissolved | 7440-47-3 | E421 | 0.00050 | mg/L | 0.00611 | 0.00636 | 4.11% | 20% | ---- |
| | | Cobalt, dissolved | 7440-48-4 | E421 | 0.00010 | mg/L | 0.00011 | 0.00011 | 0.000004 | Diff <2x LOR | ---- |
| | | Copper, dissolved | 7440-50-8 | E421 | 0.00020 | mg/L | 0.00170 | 0.00174 | 0.00004 | Diff <2x LOR | ---- |
| | | Iron, dissolved | 7439-89-6 | E421 | 0.010 | mg/L | <0.010 | <0.010 | 0 | Diff <2x LOR | ---- |
| | | Lead, dissolved | 7439-92-1 | E421 | 0.000050 | mg/L | 0.000062 | 0.000064 | 0.000002 | Diff <2x LOR | ---- |
| | | Lithium, dissolved | 7439-93-2 | E421 | 0.0010 | mg/L | 0.0170 | 0.0178 | 4.41% | 20% | ---- |
| | | Magnesium, dissolved | 7439-95-4 | E421 | 0.0050 | mg/L | 1.23 | 1.26 | 2.39% | 20% | ---- |
| | | Manganese, dissolved | 7439-96-5 | E421 | 0.00010 | mg/L | 0.00138 | 0.00143 | 3.60% | 20% | ---- |
| | | Molybdenum, dissolved | 7439-98-7 | E421 | 0.000050 | mg/L | 0.165 | 0.170 | 2.82% | 20% | ---- |
| | | Nickel, dissolved | 7440-02-0 | E421 | 0.00050 | mg/L | 0.00099 | 0.00103 | 0.00004 | Diff <2x LOR | ---- |
| | | Phosphorus, dissolved | 7723-14-0 | E421 | 0.050 | mg/L | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Potassium, dissolved | 7440-09-7 | E421 | 0.050 | mg/L | 17.5 | 19.0 | 8.22% | 20% | ---- |
| | | Rubidium, dissolved | 7440-17-7 | E421 | 0.00020 | mg/L | 0.0500 | 0.0509 | 1.87% | 20% | ---- |
| | | Selenium, dissolved | 7782-49-2 | E421 | 0.000050 | mg/L | 0.00119 | 0.00109 | 8.77% | 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: 1762123) - continued** | | | | | | | | | | | |
| VA24D0524-001 | WTP | Silicon, dissolved | 7440-21-3 | E421 | 0.050 | mg/L | 11.4 | 11.3 | 0.575% | 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 | 78.2 | 80.3 | 2.66% | 20% | ---- |
| | | Strontium, dissolved | 7440-24-6 | E421 | 0.00020 | mg/L | 1.17 | 1.20 | 1.97% | 20% | ---- |
| | | Sulfur, dissolved | 7704-34-9 | E421 | 0.50 | mg/L | 25.4 | 25.3 | 0.519% | 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 | 0.00031 | <0.00030 | 0.000007 | Diff <2x LOR | ---- |
| | | Tungsten, dissolved | 7440-33-7 | E421 | 0.00010 | mg/L | 0.00112 | 0.00112 | 0.339% | 20% | ---- |
| | | Uranium, dissolved | 7440-61-1 | E421 | 0.000010 | mg/L | 0.000019 | 0.000020 | 0.0000008 | Diff <2x LOR | ---- |
| | | Vanadium, dissolved | 7440-62-2 | E421 | 0.00050 | mg/L | 0.00147 | 0.00156 | 0.00009 | Diff <2x LOR | ---- |
| | | Zinc, dissolved | 7440-66-6 | E421 | 0.0010 | mg/L | 0.0013 | 0.0012 | 0.00004 | Diff <2x LOR | ---- |
| | | Zirconium, dissolved | 7440-67-7 | E421 | 0.00030 | mg/L | <0.00030 | <0.00030 | 0 | Diff <2x LOR | ---- |
| **Aggregate Organics (QC Lot: 1764213)** | | | | | | | | | | | |
| VA24D0408-001 | Anonymous | Phenols, total (4AAP) | ---- | E562 | 0.0010 | mg/L | <0.0010 | <0.0010 | 0 | Diff <2x LOR | ---- |
| **Volatile Organic Compounds (QC Lot: 1762127)** | | | | | | | | | | | |
| VA24D0524-001 | WTP | Benzene | 71-43-2 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Bromodichloromethane | 75-27-4 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Bromoform | 75-25-2 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Carbon tetrachloride | 56-23-5 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Chlorobenzene | 108-90-7 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Chloroethane | 75-00-3 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Chloroform | 67-66-3 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Chloromethane | 74-87-3 | E611C | 5.0 | µg/L | <5.0 | <5.0 | 0 | Diff <2x LOR | ---- |
| | | Dibromochloromethane | 124-48-1 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichlorobenzene, 1,2- | 95-50-1 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichlorobenzene, 1,3- | 541-73-1 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichlorobenzene, 1,4- | 106-46-7 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethane, 1,1- | 75-34-3 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethane, 1,2- | 107-06-2 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethylene, 1,1- | 75-35-4 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethylene, cis-1,2- | 156-59-2 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 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* |
| **Volatile Organic Compounds (QC Lot: 1762127) - continued** | | | | | | | | | | | |
| VA24D0524-001 | WTP | Dichloroethylene, trans-1,2- | 156-60-5 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloromethane | 75-09-2 | E611C | 1.0 | µg/L | <1.0 | <1.0 | 0 | Diff <2x LOR | ---- |
| | | Dichloropropane, 1,2- | 78-87-5 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloropropylene, cis-1,3- | 10061-01-5 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloropropylene, trans-1,3- | 10061-02-6 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Ethylbenzene | 100-41-4 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Styrene | 100-42-5 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611C | 0.20 | µg/L | <0.20 | <0.20 | 0 | Diff <2x LOR | ---- |
| | | Tetrachloroethylene | 127-18-4 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Toluene | 108-88-3 | E611C | 0.40 | µg/L | <0.40 | <0.40 | 0 | Diff <2x LOR | ---- |
| | | Trichloroethane, 1,1,1- | 71-55-6 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Trichloroethane, 1,1,2- | 79-00-5 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Trichloroethylene | 79-01-6 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Trichlorofluoromethane | 75-69-4 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Vinyl chloride | 75-01-4 | E611C | 0.40 | µg/L | <0.40 | <0.40 | 0 | Diff <2x LOR | ---- |
| | | Xylene, m+p- | 179601-23-1 | E611C | 0.40 | µg/L | <0.40 | <0.40 | 0 | Diff <2x LOR | ---- |
| | | Xylene, o- | 95-47-6 | E611C | 0.30 | µg/L | <0.30 | <0.30 | 0 | Diff <2x LOR | ---- |
| **Hydrocarbons (QC Lot: 1765231)** | | | | | | | | | | | |
| VA24D0524-001 | WTP | F1 (C6-C10) | ---- | E581.VH+F1 | 100 | µg/L | <100 | <100 | 0.0% | 30% | ---- |
| | | VHw (C6-C10) | ---- | E581.VH+F1 | 100 | µg/L | <100 | <100 | 0.0% | 30% | ---- |

## 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: 1762011)** | | | | | | |
| Solids, total dissolved [TDS] | ---- | E162 | 10 | mg/L | <10 | ---- |
| **Physical Tests (QCLot: 1762013)** | | | | | | |
| Solids, total suspended [TSS] | ---- | E160 | 3 | mg/L | <3.0 | ---- |
| **Physical Tests (QCLot: 1762130)** | | | | | | |
| Alkalinity, bicarbonate (as CaCO3) | ---- | E290 | 1 | mg/L | <1.0 | ---- |
| Alkalinity, carbonate (as CaCO3) | ---- | E290 | 1 | mg/L | <1.0 | ---- |
| Alkalinity, hydroxide (as CaCO3) | ---- | E290 | 1 | mg/L | <1.0 | ---- |
| Alkalinity, phenolphthalein (as CaCO3) | ---- | E290 | 1 | mg/L | <1.0 | ---- |
| Alkalinity, total (as CaCO3) | ---- | E290 | 1 | mg/L | <1.0 | ---- |
| **Physical Tests (QCLot: 1762131)** | | | | | | |
| Conductivity | ---- | E100 | 1 | µS/cm | <1.0 | ---- |
| **Physical Tests (QCLot: 1762227)** | | | | | | |
| Turbidity | ---- | E121 | 0.1 | NTU | <0.10 | ---- |
| **Anions and Nutrients (QCLot: 1762099)** | | | | | | |
| Nitrogen, total | 7727-37-9 | E366 | 0.03 | mg/L | <0.030 | ---- |
| **Anions and Nutrients (QCLot: 1762100)** | | | | | | |
| Phosphorus, total | 7723-14-0 | E372-U | 0.002 | mg/L | <0.0020 | ---- |
| **Anions and Nutrients (QCLot: 1762132)** | | | | | | |
| Fluoride | 16984-48-8 | E235.F | 0.02 | mg/L | <0.020 | ---- |
| **Anions and Nutrients (QCLot: 1762133)** | | | | | | |
| Chloride | 16887-00-6 | E235.Cl | 0.5 | mg/L | <0.50 | ---- |
| **Anions and Nutrients (QCLot: 1762134)** | | | | | | |
| Bromide | 24959-67-9 | E235.Br-L | 0.05 | mg/L | <0.050 | ---- |
| **Anions and Nutrients (QCLot: 1762135)** | | | | | | |
| Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.005 | mg/L | <0.0050 | ---- |
| **Anions and Nutrients (QCLot: 1762136)** | | | | | | |
| Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.001 | mg/L | <0.0010 | ---- |
| **Anions and Nutrients (QCLot: 1762137)** | | | | | | |
| Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.3 | mg/L | <0.30 | ---- |
| **Anions and Nutrients (QCLot: 1762139)** | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298 | 0.005 | mg/L | <0.0050 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1762097)** | | | | | | |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|---|---|---|---|---|---|
| **Organic / Inorganic Carbon (QCLot: 1762097) - continued** | | | | | | |
| Carbon, dissolved organic [DOC] | ---- | E358-L | 0.5 | mg/L | <0.50 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1762098)** | | | | | | |
| Carbon, total organic [TOC] | ---- | E355-L | 0.5 | mg/L | <0.50 | ---- |
| **Total Metals (QCLot: 1762122)** | | | | | | |
| Aluminum, total | 7429-90-5 | E420 | 0.003 | mg/L | <0.0030 | ---- |
| Antimony, total | 7440-36-0 | E420 | 0.0001 | mg/L | <0.00010 | ---- |
| Arsenic, total | 7440-38-2 | E420 | 0.0001 | mg/L | <0.00010 | ---- |
| Barium, total | 7440-39-3 | E420 | 0.0001 | mg/L | <0.00010 | ---- |
| Beryllium, total | 7440-41-7 | E420 | 0.00002 | mg/L | <0.000020 | ---- |
| Bismuth, total | 7440-69-9 | E420 | 0.00005 | mg/L | <0.000050 | ---- |
| Boron, total | 7440-42-8 | E420 | 0.01 | mg/L | <0.010 | ---- |
| Cadmium, total | 7440-43-9 | E420 | 0.000005 | mg/L | <0.0000050 | ---- |
| Calcium, total | 7440-70-2 | E420 | 0.05 | mg/L | <0.050 | ---- |
| Cesium, total | 7440-46-2 | E420 | 0.00001 | mg/L | <0.000010 | ---- |
| Chromium, total | 7440-47-3 | E420 | 0.0005 | mg/L | <0.00050 | ---- |
| Cobalt, total | 7440-48-4 | E420 | 0.0001 | mg/L | <0.00010 | ---- |
| Copper, total | 7440-50-8 | E420 | 0.0005 | mg/L | <0.00050 | ---- |
| Iron, total | 7439-89-6 | E420 | 0.01 | mg/L | <0.010 | ---- |
| Lead, total | 7439-92-1 | E420 | 0.00005 | mg/L | <0.000050 | ---- |
| Lithium, total | 7439-93-2 | E420 | 0.001 | mg/L | <0.0010 | ---- |
| 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 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|---|---|---|---|---|---|
| **Total Metals (QCLot: 1762122) - continued** | | | | | | |
| 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 | ---- |
| **Dissolved Metals (QCLot: 1762123)** | | | | | | |
| 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 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|---|---|---|---|---|---|
| **Dissolved Metals (QCLot: 1762123) - continued** | | | | | | |
| Sodium, dissolved | 7440-23-5 | E421 | 0.05 | mg/L | <0.050 | ---- |
| Strontium, dissolved | 7440-24-6 | E421 | 0.0002 | mg/L | <0.00020 | ---- |
| Sulfur, dissolved | 7704-34-9 | E421 | 0.5 | mg/L | <0.50 | ---- |
| Tellurium, dissolved | 13494-80-9 | E421 | 0.0002 | mg/L | <0.00020 | ---- |
| Thallium, dissolved | 7440-28-0 | E421 | 0.00001 | mg/L | <0.000010 | ---- |
| Thorium, dissolved | 7440-29-1 | E421 | 0.0001 | mg/L | <0.00010 | ---- |
| Tin, dissolved | 7440-31-5 | E421 | 0.0001 | mg/L | <0.00010 | ---- |
| Titanium, dissolved | 7440-32-6 | E421 | 0.0003 | mg/L | <0.00030 | ---- |
| Tungsten, dissolved | 7440-33-7 | E421 | 0.0001 | mg/L | <0.00010 | ---- |
| Uranium, dissolved | 7440-61-1 | E421 | 0.00001 | mg/L | <0.000010 | ---- |
| Vanadium, dissolved | 7440-62-2 | E421 | 0.0005 | mg/L | <0.00050 | ---- |
| Zinc, dissolved | 7440-66-6 | E421 | 0.001 | mg/L | <0.0010 | ---- |
| Zirconium, dissolved | 7440-67-7 | E421 | 0.0002 | mg/L | <0.00020 | ---- |
| **Aggregate Organics (QCLot: 1764213)** | | | | | | |
| Phenols, total (4AAP) | ---- | E562 | 0.001 | mg/L | <0.0010 | ---- |
| **Volatile Organic Compounds (QCLot: 1762127)** | | | | | | |
| Benzene | 71-43-2 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Bromodichloromethane | 75-27-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Bromoform | 75-25-2 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Carbon tetrachloride | 56-23-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Chlorobenzene | 108-90-7 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Chloroethane | 75-00-3 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Chloroform | 67-66-3 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Chloromethane | 74-87-3 | E611C | 5 | µg/L | <5.0 | ---- |
| Dibromochloromethane | 124-48-1 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichlorobenzene, 1,2- | 95-50-1 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichlorobenzene, 1,3- | 541-73-1 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichlorobenzene, 1,4- | 106-46-7 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethane, 1,1- | 75-34-3 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethane, 1,2- | 107-06-2 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethylene, 1,1- | 75-35-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethylene, cis-1,2- | 156-59-2 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethylene, trans-1,2- | 156-60-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloromethane | 75-09-2 | E611C | 1 | µg/L | <1.0 | ---- |
| Dichloropropane, 1,2- | 78-87-5 | E611C | 0.5 | µg/L | <0.50 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|---|---|---|---|---|---|
| **Volatile Organic Compounds (QCLot: 1762127) - continued** | | | | | | |
| Dichloropropylene, cis-1,3- | 10061-01-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloropropylene, trans-1,3- | 10061-02-6 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Ethylbenzene | 100-41-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Styrene | 100-42-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611C | 0.2 | µg/L | <0.20 | ---- |
| Tetrachloroethylene | 127-18-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Toluene | 108-88-3 | E611C | 0.4 | µg/L | <0.40 | ---- |
| Trichloroethane, 1,1,1- | 71-55-6 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Trichloroethane, 1,1,2- | 79-00-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Trichloroethylene | 79-01-6 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Trichlorofluoromethane | 75-69-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Vinyl chloride | 75-01-4 | E611C | 0.4 | µg/L | <0.40 | ---- |
| Xylene, m+p- | 179601-23-1 | E611C | 0.4 | µg/L | <0.40 | ---- |
| Xylene, o- | 95-47-6 | E611C | 0.3 | µg/L | <0.30 | ---- |
| **Hydrocarbons (QCLot: 1762045)** | | | | | | |
| EPH (C10-C19) | ---- | E601A | 250 | µg/L | <250 | ---- |
| EPH (C19-C32) | ---- | E601A | 250 | µg/L | <250 | ---- |
| **Hydrocarbons (QCLot: 1765231)** | | | | | | |
| F1 (C6-C10) | ---- | E581.VH+F1 | 100 | µg/L | <100 | ---- |
| VHw (C6-C10) | ---- | E581.VH+F1 | 100 | µg/L | <100 | ---- |
| **Polycyclic Aromatic Hydrocarbons (QCLot: 1762046)** | | | | | | |
| Acenaphthene | 83-32-9 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Acenaphthylene | 208-96-8 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Acridine | 260-94-6 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Anthracene | 120-12-7 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Benz(a)anthracene | 56-55-3 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Benzo(a)pyrene | 50-32-8 | E641A | 0.005 | µg/L | <0.0050 | ---- |
| Benzo(b+j)fluoranthene | n/a | E641A | 0.01 | µg/L | <0.010 | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Benzo(k)fluoranthene | 207-08-9 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Chrysene | 218-01-9 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | E641A | 0.005 | µg/L | <0.0050 | ---- |
| Fluoranthene | 206-44-0 | E641A | 0.01 | µg/L | <0.010 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|---|---|---|---|---|---|
| **Polycyclic Aromatic Hydrocarbons (QCLot: 1762046) - continued** | | | | | | |
| Fluorene | 86-73-7 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Indeno(1,2,3-c,d)pyrene | 193-39-5 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Methylnaphthalene, 1- | 90-12-0 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Methylnaphthalene, 2- | 91-57-6 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Naphthalene | 91-20-3 | E641A | 0.05 | µg/L | <0.050 | ---- |
| Phenanthrene | 85-01-8 | E641A | 0.02 | µg/L | <0.020 | ---- |
| Pyrene | 129-00-0 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Quinoline | 91-22-5 | E641A | 0.05 | µg/L | <0.050 | ---- |

## 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: 1762011)** | | | | | | | | | |
| Solids, total dissolved [TDS] | ---- | E162 | 10 | mg/L | 1000 mg/L | 96.6 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1762013)** | | | | | | | | | |
| Solids, total suspended [TSS] | ---- | E160 | 3 | mg/L | 150 mg/L | 85.0 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1762129)** | | | | | | | | | |
| pH | ---- | E108 | ---- | pH units | 7 pH units | 101 | 98.0 | 102 | ---- |
| **Physical Tests (QCLot: 1762130)** | | | | | | | | | |
| Alkalinity, phenolphthalein (as CaCO3) | ---- | E290 | 1 | mg/L | 229 mg/L | 113 | 75.0 | 125 | ---- |
| Alkalinity, total (as CaCO3) | ---- | E290 | 1 | mg/L | 500 mg/L | 102 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1762131)** | | | | | | | | | |
| Conductivity | ---- | E100 | 1 | µS/cm | 147 µS/cm | 101 | 90.0 | 110 | ---- |
| **Physical Tests (QCLot: 1762227)** | | | | | | | | | |
| Turbidity | ---- | E121 | 0.1 | NTU | 200 NTU | 99.5 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1762099)** | | | | | | | | | |
| Nitrogen, total | 7727-37-9 | E366 | 0.03 | mg/L | 0.5 mg/L | 101 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1762100)** | | | | | | | | | |
| Phosphorus, total | 7723-14-0 | E372-U | 0.002 | mg/L | 0.05 mg/L | 91.4 | 80.0 | 120 | ---- |
| **Anions and Nutrients (QCLot: 1762132)** | | | | | | | | | |
| Fluoride | 16984-48-8 | E235.F | 0.02 | mg/L | 1 mg/L | 100 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1762133)** | | | | | | | | | |
| Chloride | 16887-00-6 | E235.Cl | 0.5 | mg/L | 100 mg/L | 101 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1762134)** | | | | | | | | | |
| Bromide | 24959-67-9 | E235.Br-L | 0.05 | mg/L | 0.5 mg/L | 107 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1762135)** | | | | | | | | | |
| Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.005 | mg/L | 2.5 mg/L | 99.8 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1762136)** | | | | | | | | | |
| 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: 1762137)** | | | | | | | | | |
| Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.3 | mg/L | 100 mg/L | 101 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1762139)** | | | | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298 | 0.005 | mg/L | 0.2 mg/L | 98.3 | 85.0 | 115 | ---- |

Sub-Matrix: **Water**

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Target Concentration | LCS | Low | High | Qualifier |
| **Organic / Inorganic Carbon (QCLot: 1762097)** | | | | | | | | | |
| Carbon, dissolved organic [DOC] | ---- | E358-L | 0.5 | mg/L | 8.57 mg/L | 97.3 | 80.0 | 120 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1762098)** | | | | | | | | | |
| Carbon, total organic [TOC] | ---- | E355-L | 0.5 | mg/L | 8.57 mg/L | 104 | 80.0 | 120 | ---- |
| **Total Metals (QCLot: 1762122)** | | | | | | | | | |
| Aluminum, total | 7429-90-5 | E420 | 0.003 | mg/L | 2 mg/L | 95.8 | 80.0 | 120 | ---- |
| Antimony, total | 7440-36-0 | E420 | 0.0001 | mg/L | 1 mg/L | 105 | 80.0 | 120 | ---- |
| Arsenic, total | 7440-38-2 | E420 | 0.0001 | mg/L | 1 mg/L | 99.8 | 80.0 | 120 | ---- |
| Barium, total | 7440-39-3 | E420 | 0.0001 | mg/L | 0.25 mg/L | 98.7 | 80.0 | 120 | ---- |
| Beryllium, total | 7440-41-7 | E420 | 0.00002 | mg/L | 0.1 mg/L | 96.0 | 80.0 | 120 | ---- |
| Bismuth, total | 7440-69-9 | E420 | 0.00005 | mg/L | 1 mg/L | 99.7 | 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 | 97.8 | 80.0 | 120 | ---- |
| Calcium, total | 7440-70-2 | E420 | 0.05 | mg/L | 50 mg/L | 96.8 | 80.0 | 120 | ---- |
| Cesium, total | 7440-46-2 | E420 | 0.00001 | mg/L | 0.05 mg/L | 99.8 | 80.0 | 120 | ---- |
| Chromium, total | 7440-47-3 | E420 | 0.0005 | mg/L | 0.25 mg/L | 97.3 | 80.0 | 120 | ---- |
| Cobalt, total | 7440-48-4 | E420 | 0.0001 | mg/L | 0.25 mg/L | 94.8 | 80.0 | 120 | ---- |
| Copper, total | 7440-50-8 | E420 | 0.0005 | mg/L | 0.25 mg/L | 93.5 | 80.0 | 120 | ---- |
| Iron, total | 7439-89-6 | E420 | 0.01 | mg/L | 1 mg/L | 91.6 | 80.0 | 120 | ---- |
| Lead, total | 7439-92-1 | E420 | 0.00005 | mg/L | 0.5 mg/L | 100 | 80.0 | 120 | ---- |
| Lithium, total | 7439-93-2 | E420 | 0.001 | mg/L | 0.25 mg/L | 99.8 | 80.0 | 120 | ---- |
| Magnesium, total | 7439-95-4 | E420 | 0.005 | mg/L | 50 mg/L | 95.8 | 80.0 | 120 | ---- |
| Manganese, total | 7439-96-5 | E420 | 0.0001 | mg/L | 0.25 mg/L | 96.7 | 80.0 | 120 | ---- |
| Molybdenum, total | 7439-98-7 | E420 | 0.00005 | mg/L | 0.25 mg/L | 97.8 | 80.0 | 120 | ---- |
| Nickel, total | 7440-02-0 | E420 | 0.0005 | mg/L | 0.5 mg/L | 93.2 | 80.0 | 120 | ---- |
| Phosphorus, total | 7723-14-0 | E420 | 0.05 | mg/L | 10 mg/L | 102 | 80.0 | 120 | ---- |
| Potassium, total | 7440-09-7 | E420 | 0.05 | mg/L | 50 mg/L | 97.6 | 80.0 | 120 | ---- |
| Rubidium, total | 7440-17-7 | E420 | 0.0002 | mg/L | 0.1 mg/L | 98.7 | 80.0 | 120 | ---- |
| Selenium, total | 7782-49-2 | E420 | 0.00005 | mg/L | 1 mg/L | 95.6 | 80.0 | 120 | ---- |
| Silicon, total | 7440-21-3 | E420 | 0.1 | mg/L | 10 mg/L | 104 | 80.0 | 120 | ---- |
| Silver, total | 7440-22-4 | E420 | 0.00001 | mg/L | 0.1 mg/L | 95.8 | 80.0 | 120 | ---- |
| Sodium, total | 7440-23-5 | E420 | 0.05 | mg/L | 50 mg/L | 103 | 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 | 89.2 | 80.0 | 120 | ---- |
| Tellurium, total | 13494-80-9 | E420 | 0.0002 | mg/L | 0.1 mg/L | 100 | 80.0 | 120 | ---- |
| Thallium, total | 7440-28-0 | E420 | 0.00001 | mg/L | 1 mg/L | 98.4 | 80.0 | 120 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| | | | | | Target Concentration | LCS | Low | High | Qualifier |
| **Total Metals (QCLot: 1762122) - continued** | | | | | | | | | |
| Thorium, total | 7440-29-1 | E420 | 0.0001 | mg/L | 0.1 mg/L | 91.0 | 80.0 | 120 | ---- |
| Tin, total | 7440-31-5 | E420 | 0.0001 | mg/L | 0.5 mg/L | 101 | 80.0 | 120 | ---- |
| Titanium, total | 7440-32-6 | E420 | 0.0003 | mg/L | 0.25 mg/L | 98.3 | 80.0 | 120 | ---- |
| Tungsten, total | 7440-33-7 | E420 | 0.0001 | mg/L | 0.1 mg/L | 99.9 | 80.0 | 120 | ---- |
| Uranium, total | 7440-61-1 | E420 | 0.00001 | mg/L | 0.005 mg/L | 98.6 | 80.0 | 120 | ---- |
| Vanadium, total | 7440-62-2 | E420 | 0.0005 | mg/L | 0.5 mg/L | 97.5 | 80.0 | 120 | ---- |
| Zinc, total | 7440-66-6 | E420 | 0.003 | mg/L | 0.5 mg/L | 92.4 | 80.0 | 120 | ---- |
| Zirconium, total | 7440-67-7 | E420 | 0.0002 | mg/L | 0.1 mg/L | 101 | 80.0 | 120 | ---- |
| **Dissolved Metals (QCLot: 1762123)** | | | | | | | | | |
| Aluminum, dissolved | 7429-90-5 | E421 | 0.001 | mg/L | 2 mg/L | 103 | 80.0 | 120 | ---- |
| Antimony, dissolved | 7440-36-0 | E421 | 0.0001 | mg/L | 1 mg/L | 110 | 80.0 | 120 | ---- |
| Arsenic, dissolved | 7440-38-2 | E421 | 0.0001 | mg/L | 1 mg/L | 103 | 80.0 | 120 | ---- |
| Barium, dissolved | 7440-39-3 | E421 | 0.0001 | mg/L | 0.25 mg/L | 102 | 80.0 | 120 | ---- |
| Beryllium, dissolved | 7440-41-7 | E421 | 0.00002 | mg/L | 0.1 mg/L | 97.8 | 80.0 | 120 | ---- |
| Bismuth, dissolved | 7440-69-9 | E421 | 0.00005 | mg/L | 1 mg/L | 105 | 80.0 | 120 | ---- |
| Boron, dissolved | 7440-42-8 | E421 | 0.01 | mg/L | 1 mg/L | 100 | 80.0 | 120 | ---- |
| Cadmium, dissolved | 7440-43-9 | E421 | 0.000005 | mg/L | 0.1 mg/L | 101 | 80.0 | 120 | ---- |
| Calcium, dissolved | 7440-70-2 | E421 | 0.05 | mg/L | 50 mg/L | 99.9 | 80.0 | 120 | ---- |
| Cesium, dissolved | 7440-46-2 | E421 | 0.00001 | mg/L | 0.05 mg/L | 109 | 80.0 | 120 | ---- |
| Chromium, dissolved | 7440-47-3 | E421 | 0.0005 | mg/L | 0.25 mg/L | 102 | 80.0 | 120 | ---- |
| Cobalt, dissolved | 7440-48-4 | E421 | 0.0001 | mg/L | 0.25 mg/L | 98.9 | 80.0 | 120 | ---- |
| Copper, dissolved | 7440-50-8 | E421 | 0.0002 | mg/L | 0.25 mg/L | 98.0 | 80.0 | 120 | ---- |
| Iron, dissolved | 7439-89-6 | E421 | 0.01 | mg/L | 1 mg/L | 91.4 | 80.0 | 120 | ---- |
| Lead, dissolved | 7439-92-1 | E421 | 0.00005 | mg/L | 0.5 mg/L | 103 | 80.0 | 120 | ---- |
| Lithium, dissolved | 7439-93-2 | E421 | 0.001 | mg/L | 0.25 mg/L | 107 | 80.0 | 120 | ---- |
| Magnesium, dissolved | 7439-95-4 | E421 | 0.005 | mg/L | 50 mg/L | 99.5 | 80.0 | 120 | ---- |
| Manganese, dissolved | 7439-96-5 | E421 | 0.0001 | mg/L | 0.25 mg/L | 99.4 | 80.0 | 120 | ---- |
| Molybdenum, dissolved | 7439-98-7 | E421 | 0.00005 | mg/L | 0.25 mg/L | 108 | 80.0 | 120 | ---- |
| Nickel, dissolved | 7440-02-0 | E421 | 0.0005 | mg/L | 0.5 mg/L | 98.4 | 80.0 | 120 | ---- |
| Phosphorus, dissolved | 7723-14-0 | E421 | 0.05 | mg/L | 10 mg/L | 110 | 80.0 | 120 | ---- |
| Potassium, dissolved | 7440-09-7 | E421 | 0.05 | mg/L | 50 mg/L | 103 | 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 | 97.2 | 80.0 | 120 | ---- |
| Silicon, dissolved | 7440-21-3 | E421 | 0.05 | mg/L | 10 mg/L | 107 | 80.0 | 120 | ---- |
| Silver, dissolved | 7440-22-4 | E421 | 0.00001 | mg/L | 0.1 mg/L | 104 | 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: 1762123) - continued** | | | | | | | | | |
| 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 | 114 | 80.0 | 120 | ---- |
| Sulfur, dissolved | 7704-34-9 | E421 | 0.5 | mg/L | 50 mg/L | 95.0 | 80.0 | 120 | ---- |
| Tellurium, dissolved | 13494-80-9 | E421 | 0.0002 | mg/L | 0.1 mg/L | 106 | 80.0 | 120 | ---- |
| Thallium, dissolved | 7440-28-0 | E421 | 0.00001 | mg/L | 1 mg/L | 104 | 80.0 | 120 | ---- |
| Thorium, dissolved | 7440-29-1 | E421 | 0.0001 | mg/L | 0.1 mg/L | 100 | 80.0 | 120 | ---- |
| Tin, dissolved | 7440-31-5 | E421 | 0.0001 | mg/L | 0.5 mg/L | 105 | 80.0 | 120 | ---- |
| Titanium, dissolved | 7440-32-6 | E421 | 0.0003 | mg/L | 0.25 mg/L | 100 | 80.0 | 120 | ---- |
| Tungsten, dissolved | 7440-33-7 | E421 | 0.0001 | mg/L | 0.1 mg/L | 103 | 80.0 | 120 | ---- |
| Uranium, dissolved | 7440-61-1 | E421 | 0.00001 | mg/L | 0.005 mg/L | 102 | 80.0 | 120 | ---- |
| Vanadium, dissolved | 7440-62-2 | E421 | 0.0005 | mg/L | 0.5 mg/L | 101 | 80.0 | 120 | ---- |
| Zinc, dissolved | 7440-66-6 | E421 | 0.001 | mg/L | 0.5 mg/L | 93.8 | 80.0 | 120 | ---- |
| Zirconium, dissolved | 7440-67-7 | E421 | 0.0002 | mg/L | 0.1 mg/L | 111 | 80.0 | 120 | ---- |
| **Aggregate Organics (QCLot: 1764213)** | | | | | | | | | |
| Phenols, total (4AAP) | ---- | E562 | 0.001 | mg/L | 0.02 mg/L | 95.8 | 85.0 | 115 | ---- |
| **Volatile Organic Compounds (QCLot: 1762127)** | | | | | | | | | |
| Benzene | 71-43-2 | E611C | 0.5 | µg/L | 100 µg/L | 93.6 | 70.0 | 130 | ---- |
| Bromodichloromethane | 75-27-4 | E611C | 0.5 | µg/L | 100 µg/L | 89.8 | 70.0 | 130 | ---- |
| Bromoform | 75-25-2 | E611C | 0.5 | µg/L | 100 µg/L | 100 | 70.0 | 130 | ---- |
| Carbon tetrachloride | 56-23-5 | E611C | 0.5 | µg/L | 100 µg/L | 89.1 | 70.0 | 130 | ---- |
| Chlorobenzene | 108-90-7 | E611C | 0.5 | µg/L | 100 µg/L | 96.5 | 70.0 | 130 | ---- |
| Chloroethane | 75-00-3 | E611C | 0.5 | µg/L | 100 µg/L | 99.4 | 60.0 | 140 | ---- |
| Chloroform | 67-66-3 | E611C | 0.5 | µg/L | 100 µg/L | 90.9 | 70.0 | 130 | ---- |
| Chloromethane | 74-87-3 | E611C | 5 | µg/L | 100 µg/L | 93.0 | 60.0 | 140 | ---- |
| Dibromochloromethane | 124-48-1 | E611C | 0.5 | µg/L | 100 µg/L | 94.0 | 70.0 | 130 | ---- |
| Dichlorobenzene, 1,2- | 95-50-1 | E611C | 0.5 | µg/L | 100 µg/L | 96.4 | 70.0 | 130 | ---- |
| Dichlorobenzene, 1,3- | 541-73-1 | E611C | 0.5 | µg/L | 100 µg/L | 101 | 70.0 | 130 | ---- |
| Dichlorobenzene, 1,4- | 106-46-7 | E611C | 0.5 | µg/L | 100 µg/L | 101 | 70.0 | 130 | ---- |
| Dichloroethane, 1,1- | 75-34-3 | E611C | 0.5 | µg/L | 100 µg/L | 92.7 | 70.0 | 130 | ---- |
| Dichloroethane, 1,2- | 107-06-2 | E611C | 0.5 | µg/L | 100 µg/L | 90.4 | 70.0 | 130 | ---- |
| Dichloroethylene, 1,1- | 75-35-4 | E611C | 0.5 | µg/L | 100 µg/L | 87.2 | 70.0 | 130 | ---- |
| Dichloroethylene, cis-1,2- | 156-59-2 | E611C | 0.5 | µg/L | 100 µg/L | 90.7 | 70.0 | 130 | ---- |
| Dichloroethylene, trans-1,2- | 156-60-5 | E611C | 0.5 | µg/L | 100 µg/L | 96.1 | 70.0 | 130 | ---- |
| Dichloromethane | 75-09-2 | E611C | 1 | µg/L | 100 µg/L | 92.1 | 70.0 | 130 | ---- |

Sub-Matrix: **Water**

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Target Concentration | LCS | Low | High | Qualifier |
| **Volatile Organic Compounds (QCLot: 1762127) - continued** | | | | | | | | | |
| Dichloropropane, 1,2- | 78-87-5 | E611C | 0.5 | µg/L | 100 µg/L | 97.0 | 70.0 | 130 | ---- |
| Dichloropropylene, cis-1,3- | 10061-01-5 | E611C | 0.5 | µg/L | 100 µg/L | 104 | 70.0 | 130 | ---- |
| Dichloropropylene, trans-1,3- | 10061-02-6 | E611C | 0.5 | µg/L | 100 µg/L | 105 | 70.0 | 130 | ---- |
| Ethylbenzene | 100-41-4 | E611C | 0.5 | µg/L | 100 µg/L | 95.2 | 70.0 | 130 | ---- |
| Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611C | 0.5 | µg/L | 100 µg/L | 102 | 70.0 | 130 | ---- |
| Styrene | 100-42-5 | E611C | 0.5 | µg/L | 100 µg/L | 95.0 | 70.0 | 130 | ---- |
| Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611C | 0.5 | µg/L | 100 µg/L | 93.6 | 70.0 | 130 | ---- |
| Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611C | 0.2 | µg/L | 100 µg/L | 88.4 | 70.0 | 130 | ---- |
| Tetrachloroethylene | 127-18-4 | E611C | 0.5 | µg/L | 100 µg/L | 102 | 70.0 | 130 | ---- |
| Toluene | 108-88-3 | E611C | 0.4 | µg/L | 100 µg/L | 95.7 | 70.0 | 130 | ---- |
| Trichloroethane, 1,1,1- | 71-55-6 | E611C | 0.5 | µg/L | 100 µg/L | 92.3 | 70.0 | 130 | ---- |
| Trichloroethane, 1,1,2- | 79-00-5 | E611C | 0.5 | µg/L | 100 µg/L | 92.9 | 70.0 | 130 | ---- |
| Trichloroethylene | 79-01-6 | E611C | 0.5 | µg/L | 100 µg/L | 100 | 70.0 | 130 | ---- |
| Trichlorofluoromethane | 75-69-4 | E611C | 0.5 | µg/L | 100 µg/L | 89.1 | 60.0 | 140 | ---- |
| Vinyl chloride | 75-01-4 | E611C | 0.4 | µg/L | 100 µg/L | 93.9 | 60.0 | 140 | ---- |
| Xylene, m+p- | 179601-23-1 | E611C | 0.4 | µg/L | 200 µg/L | 95.9 | 70.0 | 130 | ---- |
| Xylene, o- | 95-47-6 | E611C | 0.3 | µg/L | 100 µg/L | 93.3 | 70.0 | 130 | ---- |
| **Hydrocarbons (QCLot: 1762045)** | | | | | | | | | |
| EPH (C10-C19) | ---- | E601A | 250 | µg/L | 6490 µg/L | 108 | 70.0 | 130 | ---- |
| EPH (C19-C32) | ---- | E601A | 250 | µg/L | 3360 µg/L | 94.0 | 70.0 | 130 | ---- |
| **Hydrocarbons (QCLot: 1765231)** | | | | | | | | | |
| F1 (C6-C10) | ---- | E581.VH+F1 | 100 | µg/L | 6310 µg/L | 87.0 | 70.0 | 130 | ---- |
| VHw (C6-C10) | ---- | E581.VH+F1 | 100 | µg/L | 6310 µg/L | 83.1 | 70.0 | 130 | ---- |
| **Polycyclic Aromatic Hydrocarbons (QCLot: 1762046)** | | | | | | | | | |
| Acenaphthene | 83-32-9 | E641A | 0.01 | µg/L | 0.5 µg/L | 113 | 60.0 | 130 | ---- |
| Acenaphthylene | 208-96-8 | E641A | 0.01 | µg/L | 0.5 µg/L | 121 | 60.0 | 130 | ---- |
| Acridine | 260-94-6 | E641A | 0.01 | µg/L | 0.5 µg/L | 112 | 60.0 | 130 | ---- |
| Anthracene | 120-12-7 | E641A | 0.01 | µg/L | 0.5 µg/L | 120 | 60.0 | 130 | ---- |
| Benz(a)anthracene | 56-55-3 | E641A | 0.01 | µg/L | 0.5 µg/L | 102 | 60.0 | 130 | ---- |
| Benzo(a)pyrene | 50-32-8 | E641A | 0.005 | µg/L | 0.5 µg/L | 110 | 60.0 | 130 | ---- |
| Benzo(b+j)fluoranthene | n/a | E641A | 0.01 | µg/L | 0.5 µg/L | 116 | 60.0 | 130 | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | E641A | 0.01 | µg/L | 0.5 µg/L | 118 | 60.0 | 130 | ---- |
| Benzo(k)fluoranthene | 207-08-9 | E641A | 0.01 | µg/L | 0.5 µg/L | 112 | 60.0 | 130 | ---- |
| Chrysene | 218-01-9 | E641A | 0.01 | µg/L | 0.5 µg/L | 111 | 60.0 | 130 | ---- |

Sub-Matrix: **Water**

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Target Concentration | LCS | Low | High | Qualifier |
| **Polycyclic Aromatic Hydrocarbons (QCLot: 1762046) - continued** | | | | | | | | | |
| Dibenz(a,h)anthracene | 53-70-3 | E641A | 0.005 | µg/L | 0.5 µg/L | 115 | 60.0 | 130 | ---- |
| Fluoranthene | 206-44-0 | E641A | 0.01 | µg/L | 0.5 µg/L | 115 | 60.0 | 130 | ---- |
| Fluorene | 86-73-7 | E641A | 0.01 | µg/L | 0.5 µg/L | 113 | 60.0 | 130 | ---- |
| Indeno(1,2,3-c,d)pyrene | 193-39-5 | E641A | 0.01 | µg/L | 0.5 µg/L | 110 | 60.0 | 130 | ---- |
| Methylnaphthalene, 1- | 90-12-0 | E641A | 0.01 | µg/L | 0.5 µg/L | 108 | 60.0 | 130 | ---- |
| Methylnaphthalene, 2- | 91-57-6 | E641A | 0.01 | µg/L | 0.5 µg/L | 119 | 60.0 | 130 | ---- |
| Naphthalene | 91-20-3 | E641A | 0.05 | µg/L | 0.5 µg/L | 114 | 50.0 | 130 | ---- |
| Phenanthrene | 85-01-8 | E641A | 0.02 | µg/L | 0.5 µg/L | 118 | 60.0 | 130 | ---- |
| Pyrene | 129-00-0 | E641A | 0.01 | µg/L | 0.5 µg/L | 113 | 60.0 | 130 | ---- |
| Quinoline | 91-22-5 | E641A | 0.05 | µg/L | 0.5 µg/L | 113 | 60.0 | 130 | ---- |

## 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: 1762099)** | | | | | | | | | | |
| VA24D0524-001 | WTP | Nitrogen, total | 7727-37-9 | E366 | 2.00 mg/L | 2 mg/L | 100 | 70.0 | 130 | ---- |
| **Anions and Nutrients (QCLot: 1762100)** | | | | | | | | | | |
| VA24D0380-011 | Anonymous | Phosphorus, total | 7723-14-0 | E372-U | 0.0458 mg/L | 0.05 mg/L | 91.5 | 70.0 | 130 | ---- |
| **Anions and Nutrients (QCLot: 1762133)** | | | | | | | | | | |
| VA24D0529-001 | Anonymous | Chloride | 16887-00-6 | E235.Cl | 110 mg/L | 100 mg/L | 110 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1762135)** | | | | | | | | | | |
| VA24D0529-001 | Anonymous | Nitrate (as N) | 14797-55-8 | E235.NO3-L | ND mg/L | ---- | ND | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1762136)** | | | | | | | | | | |
| VA24D0529-001 | Anonymous | Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.514 mg/L | 0.5 mg/L | 103 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1762139)** | | | | | | | | | | |
| VA24D0529-001 | Anonymous | Ammonia, total (as N) | 7664-41-7 | E298 | ND mg/L | ---- | ND | 75.0 | 125 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1762097)** | | | | | | | | | | |
| VA24D0380-011 | Anonymous | Carbon, dissolved organic [DOC] | ---- | E358-L | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1762098)** | | | | | | | | | | |
| VA24D0524-001 | WTP | Carbon, total organic [TOC] | ---- | E355-L | 4.86 mg/L | 5 mg/L | 97.2 | 70.0 | 130 | ---- |
| **Aggregate Organics (QCLot: 1764213)** | | | | | | | | | | |
| VA24D0408-002 | Anonymous | Phenols, total (4AAP) | ---- | E562 | 0.0191 mg/L | 0.02 mg/L | 95.5 | 75.0 | 125 | ---- |
| **Volatile Organic Compounds (QCLot: 1762127)** | | | | | | | | | | |
| VA24D0524-001 | WTP | Benzene | 71-43-2 | E611C | 93.6 µg/L | 100 µg/L | 93.6 | 60.0 | 140 | ---- |
| | | Bromodichloromethane | 75-27-4 | E611C | 90.7 µg/L | 100 µg/L | 90.7 | 60.0 | 140 | ---- |
| | | Bromoform | 75-25-2 | E611C | 99.5 µg/L | 100 µg/L | 99.5 | 60.0 | 140 | ---- |
| | | Carbon tetrachloride | 56-23-5 | E611C | 90.3 µg/L | 100 µg/L | 90.3 | 60.0 | 140 | ---- |
| | | Chlorobenzene | 108-90-7 | E611C | 96.6 µg/L | 100 µg/L | 96.6 | 60.0 | 140 | ---- |
| | | Chloroethane | 75-00-3 | E611C | 96.0 µg/L | 100 µg/L | 96.0 | 50.0 | 150 | ---- |
| | | Chloroform | 67-66-3 | E611C | 91.4 µg/L | 100 µg/L | 91.4 | 60.0 | 140 | ---- |
| | | Chloromethane | 74-87-3 | E611C | 85.3 µg/L | 100 µg/L | 85.3 | 50.0 | 150 | ---- |
| | | Dibromochloromethane | 124-48-1 | E611C | 94.8 µg/L | 100 µg/L | 94.8 | 60.0 | 140 | ---- |
| | | Dichlorobenzene, 1,2- | 95-50-1 | E611C | 96.7 µg/L | 100 µg/L | 96.7 | 60.0 | 140 | ---- |
| | | Dichlorobenzene, 1,3- | 541-73-1 | E611C | 100 µg/L | 100 µg/L | 100 | 60.0 | 140 | ---- |
| | | Dichlorobenzene, 1,4- | 106-46-7 | E611C | 100 µg/L | 100 µg/L | 100 | 60.0 | 140 | ---- |
| | | Dichloroethane, 1,1- | 75-34-3 | E611C | 92.8 µg/L | 100 µg/L | 92.8 | 60.0 | 140 | ---- |
| | | Dichloroethane, 1,2- | 107-06-2 | E611C | 90.5 µg/L | 100 µg/L | 90.5 | 60.0 | 140 | ---- |
| | | Dichloroethylene, 1,1- | 75-35-4 | E611C | 85.5 µg/L | 100 µg/L | 85.5 | 60.0 | 140 | ---- |
| | | Dichloroethylene, cis-1,2- | 156-59-2 | E611C | 90.5 µg/L | 100 µg/L | 90.5 | 60.0 | 140 | ---- |

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 |
| **Volatile Organic Compounds (QCLot: 1762127) - continued** | | | | | | | | | | |
| VA24D0524-001 | WTP | Dichloroethylene, trans-1,2- | 156-60-5 | E611C | 94.6 µg/L | 100 µg/L | 94.6 | 60.0 | 140 | ---- |
| | | Dichloromethane | 75-09-2 | E611C | 91.7 µg/L | 100 µg/L | 91.7 | 60.0 | 140 | ---- |
| | | Dichloropropane, 1,2- | 78-87-5 | E611C | 97.0 µg/L | 100 µg/L | 97.0 | 60.0 | 140 | ---- |
| | | Dichloropropylene, cis-1,3- | 10061-01-5 | E611C | 103 µg/L | 100 µg/L | 103 | 60.0 | 140 | ---- |
| | | Dichloropropylene, trans-1,3- | 10061-02-6 | E611C | 103 µg/L | 100 µg/L | 103 | 60.0 | 140 | ---- |
| | | Ethylbenzene | 100-41-4 | E611C | 94.8 µg/L | 100 µg/L | 94.8 | 60.0 | 140 | ---- |
| | | Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611C | 102 µg/L | 100 µg/L | 102 | 60.0 | 140 | ---- |
| | | Styrene | 100-42-5 | E611C | 95.3 µg/L | 100 µg/L | 95.3 | 60.0 | 140 | ---- |
| | | Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611C | 94.5 µg/L | 100 µg/L | 94.5 | 60.0 | 140 | ---- |
| | | Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611C | 87.7 µg/L | 100 µg/L | 87.7 | 60.0 | 140 | ---- |
| | | Tetrachloroethylene | 127-18-4 | E611C | 101 µg/L | 100 µg/L | 101 | 60.0 | 140 | ---- |
| | | Toluene | 108-88-3 | E611C | 94.8 µg/L | 100 µg/L | 94.8 | 60.0 | 140 | ---- |
| | | Trichloroethane, 1,1,1- | 71-55-6 | E611C | 92.9 µg/L | 100 µg/L | 92.9 | 60.0 | 140 | ---- |
| | | Trichloroethane, 1,1,2- | 79-00-5 | E611C | 93.0 µg/L | 100 µg/L | 93.0 | 60.0 | 140 | ---- |
| | | Trichloroethylene | 79-01-6 | E611C | 101 µg/L | 100 µg/L | 101 | 60.0 | 140 | ---- |
| | | Trichlorofluoromethane | 75-69-4 | E611C | 87.4 µg/L | 100 µg/L | 87.4 | 50.0 | 150 | ---- |
| | | Vinyl chloride | 75-01-4 | E611C | 87.7 µg/L | 100 µg/L | 87.7 | 50.0 | 150 | ---- |
| | | Xylene, m+p- | 179601-23-1 | E611C | 191 µg/L | 200 µg/L | 95.7 | 60.0 | 140 | ---- |
| | | Xylene, o- | 95-47-6 | E611C | 93.2 µg/L | 100 µg/L | 93.2 | 60.0 | 140 | ---- |

## Reference Material (RM) Report

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

Sub-Matrix:

| | | | | | Reference Material (RM) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | RM Target | Recovery (%) | Recovery Limits (%) | | |
| Laboratory sample ID | Reference Material ID | Analyte | CAS Number | Method | Concentration | RM | Low | High | Qualifier |
| **Physical Tests (QCLot: 1762388)** | | | | | | | | | |
| QC-1762388-001 | RM | Oxidation-reduction potential [ORP] | ---- | E125 | 220 mV | 100.0 | 95.0 | 105 | ---- |

ALS Canada Ltd.

# QUALITY CONTROL INTERPRETIVE REPORT

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24D0524** | Page | : 1 of 14 |
| Client | : **Frontier-Kemper Michels Joint Venture** | Laboratory | : ALS Environmental - Vancouver |
| Contact | : Sara Derakhshi | Account Manager | : Thomas Chang |
| Address | : 404-850 Harbourside Drive<br>North Vancouver BC Canada V7P 0A3 | Address | : 8081 Lougheed Highway<br>Burnaby, British Columbia Canada V5A 1W9 |
| Telephone | : ---- | Telephone | : +1 604 253 4188 |
| Project | : ---- | Date Samples Received | : 12-Nov-2024 10:40 |
| PO | : ---- | Issue Date | : 14-Nov-2024 15:07 |
| C-O-C number | : 23-1083429 | | |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : WTP Discharge | | |
| No. of samples received | : 1 | | |
| No. of samples analysed | : 1 | | |

**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)*

- Analysis Holding Time Outliers exist - please see following pages for full details.

## *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 |
| **Aggregate Organics : Phenols (4AAP) in Water by Colorimetry** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** WTP | E562 | 12-Nov-2024 | 13-Nov-2024 | 28 days | 1 days | ✓ | 13-Nov-2024 | 28 days | 1 days | ✓ |
| **Anions and Nutrients : Ammonia by Fluorescence** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** WTP | E298 | 12-Nov-2024 | 12-Nov-2024 | 28 days | 0 days | ✓ | 12-Nov-2024 | 28 days | 0 days | ✓ |
| **Anions and Nutrients : Bromide in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** WTP | E235.Br-L | 12-Nov-2024 | 12-Nov-2024 | 28 days | 0 days | ✓ | 12-Nov-2024 | 28 days | 0 days | ✓ |
| **Anions and Nutrients : Chloride in Water by IC** | | | | | | | | | | |
| **HDPE** WTP | E235.Cl | 12-Nov-2024 | 12-Nov-2024 | 28 days | 0 days | ✓ | 12-Nov-2024 | 28 days | 0 days | ✓ |
| **Anions and Nutrients : Fluoride in Water by IC** | | | | | | | | | | |
| **HDPE** WTP | E235.F | 12-Nov-2024 | 12-Nov-2024 | 28 days | 0 days | ✓ | 12-Nov-2024 | 28 days | 0 days | ✓ |
| **Anions and Nutrients : Nitrate in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** WTP | E235.NO3-L | 12-Nov-2024 | 12-Nov-2024 | 3 days | 0 days | ✓ | 12-Nov-2024 | 3 days | 0 days | ✓ |
| **Anions and Nutrients : Nitrite in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** WTP | E235.NO2-L | 12-Nov-2024 | 12-Nov-2024 | 3 days | 0 days | ✓ | 12-Nov-2024 | 3 days | 0 days | ✓ |

Matrix: **Water**

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

| Analyte Group : Analytical Method / Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preparation Date | Holding Times Rec | Holding Times Actual | Eval | Analysis Date | Holding Times Rec | Holding Times Actual | Eval |
| **Anions and Nutrients : Sulfate in Water by IC** | | | | | | | | | | |
| **HDPE** WTP | E235.SO4 | 12-Nov-2024 | 12-Nov-2024 | 28 days | 0 days | ✓ | 12-Nov-2024 | 28 days | 0 days | ✓ |
| **Anions and Nutrients : Total Nitrogen by Colourimetry** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** WTP | E366 | 12-Nov-2024 | 12-Nov-2024 | 28 days | 0 days | ✓ | 12-Nov-2024 | 28 days | 0 days | ✓ |
| **Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** WTP | E372-U | 12-Nov-2024 | 12-Nov-2024 | 28 days | 0 days | ✓ | 12-Nov-2024 | 28 days | 1 days | ✓ |
| **Dissolved Metals : Dissolved Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE dissolved (nitric acid)** WTP | E421 | 12-Nov-2024 | 12-Nov-2024 | 180 days | 0 days | ✓ | 12-Nov-2024 | 180 days | 0 days | ✓ |
| **Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine** | | | | | | | | | | |
| **Amber glass dissolved (lab preserved)** WTP | EF001 | 12-Nov-2024 | ---- | ---- | ---- | | 13-Nov-2024 | ---- | 1 days | |
| **Hydrocarbons : BC PHCs - EPH by GC-FID** | | | | | | | | | | |
| **Amber glass/Teflon lined cap (sodium bisulfate)** WTP | E601A | 12-Nov-2024 | 12-Nov-2024 | 14 days | 0 days | ✓ | 12-Nov-2024 | 40 days | 0 days | ✓ |
| **Hydrocarbons : VH and F1 by Headspace GC-FID** | | | | | | | | | | |
| **Glass vial (sodium bisulfate)** WTP | E581.VH+F1 | 12-Nov-2024 | 12-Nov-2024 | 14 days | 0 days | ✓ | 14-Nov-2024 | 14 days | 2 days | ✓ |
| **Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)** | | | | | | | | | | |
| **Amber glass dissolved (lab preserved)** WTP | E358-L | 12-Nov-2024 | 12-Nov-2024 | 3 days | 0 days | ✓ | 12-Nov-2024 | 28 days | 0 days | ✓ |
| **Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** WTP | E355-L | 12-Nov-2024 | 12-Nov-2024 | 28 days | 0 days | ✓ | 12-Nov-2024 | 28 days | 0 days | ✓ |

Matrix: **Water**

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

| Analyte Group : Analytical Method / Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preparation Date | Holding Times Rec | Holding Times Actual | Eval | Analysis Date | Holding Times Rec | Holding Times Actual | Eval |
| **Physical Tests : Alkalinity Species by Titration** | | | | | | | | | | |
| **HDPE** WTP | E290 | 12-Nov-2024 | 12-Nov-2024 | 14 days | 0 days | ✓ | 12-Nov-2024 | 14 days | 0 days | ✓ |
| **Physical Tests : Conductivity in Water** | | | | | | | | | | |
| **HDPE** WTP | E100 | 12-Nov-2024 | 12-Nov-2024 | 28 days | 0 days | ✓ | 12-Nov-2024 | 28 days | 0 days | ✓ |
| **Physical Tests : ORP by Electrode** | | | | | | | | | | |
| **HDPE** WTP | E125 | 12-Nov-2024 | ---- | ---- | ---- | | 12-Nov-2024 | 0.25 hrs | 6 hrs | × EHTR-FM |
| **Physical Tests : pH by Meter** | | | | | | | | | | |
| **HDPE** WTP | E108 | 12-Nov-2024 | 12-Nov-2024 | 0.25 hrs | 5 hrs | × EHTR-FM | 12-Nov-2024 | 0.25 hrs | 5 hrs | × EHTR-FM |
| **Physical Tests : TDS by Gravimetry** | | | | | | | | | | |
| **HDPE** WTP | E162 | 12-Nov-2024 | ---- | ---- | ---- | | 12-Nov-2024 | 7 days | 0 days | ✓ |
| **Physical Tests : TSS by Gravimetry** | | | | | | | | | | |
| **HDPE** WTP | E160 | 12-Nov-2024 | ---- | ---- | ---- | | 12-Nov-2024 | 7 days | 0 days | ✓ |
| **Physical Tests : Turbidity by Nephelometry** | | | | | | | | | | |
| **HDPE** WTP | E121 | 12-Nov-2024 | ---- | ---- | ---- | | 12-Nov-2024 | 3 days | 0 days | ✓ |
| **Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS** | | | | | | | | | | |
| **Amber glass/Teflon lined cap (sodium bisulfate)** WTP | E641A | 12-Nov-2024 | 12-Nov-2024 | 14 days | 0 days | ✓ | 12-Nov-2024 | 40 days | 0 days | ✓ |
| **Total Metals : Total Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE total (nitric acid)** WTP | E420 | 12-Nov-2024 | 12-Nov-2024 | 180 days | 0 days | ✓ | 12-Nov-2024 | 180 days | 0 days | ✓ |

Matrix: **Water**

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

| *Analyte Group : Analytical Method* / **Container / Client Sample ID(s)** | *Method* | *Sampling Date* | *Extraction / Preparation* | | | | *Analysis* | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | *Preparation Date* | *Holding Times* | | *Eval* | *Analysis Date* | *Holding Times* | | *Eval* |
| | | | | *Rec* | *Actual* | | | *Rec* | *Actual* | |
| **Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS** | | | | | | | | | | |
| **Glass vial (sodium bisulfate)** | | | | | | | | | | |
| WTP | E611C | 12-Nov-2024 | 12-Nov-2024 | 14 days | 0 days | ✓ | 12-Nov-2024 | 14 days | 0 days | ✓ |

**Legend & Qualifier Definitions**

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

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 | 1762130 | 0 | 1 | 0.0 | 5.0 | ✗ |
| Ammonia by Fluorescence | E298 | 1762139 | 1 | 4 | 25.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1762134 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1762133 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Conductivity in Water | E100 | 1762131 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1762123 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1762097 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1762132 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1762135 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1762136 | 1 | 2 | 50.0 | 5.0 | ✓ |
| ORP by Electrode | E125 | 1762388 | 1 | 1 | 100.0 | 5.0 | ✓ |
| pH by Meter | E108 | 1762129 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Phenols (4AAP) in Water by Colorimetry | E562 | 1764213 | 1 | 13 | 7.6 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1762137 | 1 | 1 | 100.0 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1762011 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1762122 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1762099 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Total Organic Carbon (Non-Purgeable) by Combustion (Low Level) | E355-L | 1762098 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1762100 | 1 | 3 | 33.3 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1762013 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Turbidity by Nephelometry | E121 | 1762227 | 1 | 9 | 11.1 | 5.0 | ✓ |
| VH and F1 by Headspace GC-FID | E581.VH+F1 | 1765231 | 1 | 1 | 100.0 | 5.0 | ✓ |
| VOCs (BC List) by Headspace GC-MS | E611C | 1762127 | 1 | 1 | 100.0 | 5.0 | ✓ |
| **Laboratory Control Samples (LCS)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1762130 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1762139 | 1 | 4 | 25.0 | 5.0 | ✓ |
| BC PHCs - EPH by GC-FID | E601A | 1762045 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1762134 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1762133 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Conductivity in Water | E100 | 1762131 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1762123 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1762097 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1762132 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1762135 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1762136 | 1 | 2 | 50.0 | 5.0 | ✓ |
| ORP by Electrode | E125 | 1762388 | 1 | 1 | 100.0 | 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** | | | | | | | |
| PAHs in Water by Hexane LVI GC-MS | E641A | 1762046 | 1 | 1 | 100.0 | 5.0 | ✓ |
| pH by Meter | E108 | 1762129 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Phenols (4AAP) in Water by Colorimetry | E562 | 1764213 | 1 | 13 | 7.6 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1762137 | 1 | 1 | 100.0 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1762011 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1762122 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1762099 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Total Organic Carbon (Non-Purgeable) by Combustion (Low Level) | E355-L | 1762098 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1762100 | 1 | 3 | 33.3 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1762013 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Turbidity by Nephelometry | E121 | 1762227 | 1 | 9 | 11.1 | 5.0 | ✓ |
| VH and F1 by Headspace GC-FID | E581.VH+F1 | 1765231 | 1 | 1 | 100.0 | 5.0 | ✓ |
| VOCs (BC List) by Headspace GC-MS | E611C | 1762127 | 1 | 1 | 100.0 | 5.0 | ✓ |
| **Method Blanks (MB)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1762130 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1762139 | 1 | 4 | 25.0 | 5.0 | ✓ |
| BC PHCs - EPH by GC-FID | E601A | 1762045 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1762134 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1762133 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Conductivity in Water | E100 | 1762131 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1762123 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1762097 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1762132 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1762135 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1762136 | 1 | 2 | 50.0 | 5.0 | ✓ |
| PAHs in Water by Hexane LVI GC-MS | E641A | 1762046 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Phenols (4AAP) in Water by Colorimetry | E562 | 1764213 | 1 | 13 | 7.6 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1762137 | 1 | 1 | 100.0 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1762011 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1762122 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1762099 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Total Organic Carbon (Non-Purgeable) by Combustion (Low Level) | E355-L | 1762098 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1762100 | 1 | 3 | 33.3 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1762013 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Turbidity by Nephelometry | E121 | 1762227 | 1 | 9 | 11.1 | 5.0 | ✓ |
| VH and F1 by Headspace GC-FID | E581.VH+F1 | 1765231 | 1 | 1 | 100.0 | 5.0 | ✓ |
| VOCs (BC List) by Headspace GC-MS | E611C | 1762127 | 1 | 1 | 100.0 | 5.0 | ✓ |
| **Matrix Spikes (MS)** | | | | | | | |
| Ammonia by Fluorescence | E298 | 1762139 | 1 | 4 | 25.0 | 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 | | | | | | | |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1762134 | 0 | 1 | 0.0 | 5.0 | ✗ |
| Chloride in Water by IC | E235.Cl | 1762133 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1762123 | 0 | 1 | 0.0 | 5.0 | ✗ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1762097 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1762132 | 0 | 1 | 0.0 | 5.0 | ✗ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1762135 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1762136 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Phenols (4AAP) in Water by Colorimetry | E562 | 1764213 | 1 | 13 | 7.6 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1762137 | 0 | 1 | 0.0 | 5.0 | ✗ |
| Total Metals in Water by CRC ICPMS | E420 | 1762122 | 0 | 1 | 0.0 | 5.0 | ✗ |
| Total Nitrogen by Colourimetry | E366 | 1762099 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Total Organic Carbon (Non-Purgeable) by Combustion (Low Level) | E355-L | 1762098 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1762100 | 1 | 3 | 33.3 | 5.0 | ✓ |
| VH and F1 by Headspace GC-FID | E581.VH+F1 | 1765231 | 0 | 1 | 0.0 | 5.0 | ✗ |
| VOCs (BC List) by Headspace GC-MS | E611C | 1762127 | 1 | 1 | 100.0 | 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 |
|---|---|---|---|---|
| Conductivity in Water | E100<br>ALS Environmental - Vancouver | Water | APHA 2510 (mod) | Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C. |
| pH by Meter | E108<br>ALS Environmental - Vancouver | Water | APHA 4500-H (mod) | pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time. |
| Turbidity by Nephelometry | E121<br>ALS Environmental - Vancouver | Water | APHA 2130 B (mod) | Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions. |
| ORP by Electrode | E125<br>ALS Environmental - Vancouver | Water | ASTM D1498 (mod) | Oxidation redution potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field. |
| 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. |

| Analytical Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|---|---|---|---|
| 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. |
| 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) |
| Total Organic Carbon (Non-Purgeable) by Combustion (Low Level) | E355-L<br>ALS Environmental - Vancouver | Water | APHA 5310 B (mod) | Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of $CO_2$. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC). |
| 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 $CO_2$. 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. |

| Analytical Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|---|---|---|---|
| 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. |
| Phenols (4AAP) in Water by Colorimetry | E562<br><br>ALS Environmental - Edmonton | Water | EPA 9066 | This automated method is based on the distillation of phenol and subsequent reaction of the distillate with alkaline ferricyanide (K3Fe(CN)6) and 4-amino-antipyrine (4-AAP) to form a red complex which is measured colorimetrically. |
| VH and F1 by Headspace GC-FID | E581.VH+F1<br><br>ALS Environmental - Vancouver | Water | BC MOE Lab Manual / CCME PHC in Soil - Tier 1 (mod) | Volatile Hydrocarbons (VH and F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.<br><br>Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements. |
| BC PHCs - EPH by GC-FID | E601A<br><br>ALS Environmental - Vancouver | Water | BC MOE Lab Manual | Sample extracts are analyzed by GC-FID for BC hydrocarbon fractions. |
| VOCs (BC List) by Headspace GC-MS | E611C<br><br>ALS Environmental - Vancouver | Water | EPA 8260D (mod) | Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.<br><br>Total Xylenes is the sum of m,p-Xylene & o-Xylene. Total BTEX is the sum of Benzene, Toluene, Ethylbenzene, & Total Xylenes. Total BTEX+Styrene is the sum of Total BTEX & Styrene. Total Trihalomethanes [THMs] is the sum of Bromodichloromethane, Bromoform, Chloroform, & Dibromochloromethane. |
| PAHs in Water by Hexane LVI GC-MS | E641A<br><br>ALS Environmental - Vancouver | Water | EPA 8270E (mod) | Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by large volume injection (LVI) GC-MS. |
| Un-ionized and Ionized Ammonia (Calculation) (Field Temperature and pH) | EC298A<br><br>ALS Environmental - Vancouver | Water | CCME CWQG Ammonia | Un-ionized ammonia is calculated from test results for total ammonia, field temperature and pH, and is expressed in units of mg/L "as N". |

| Analytical Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|---|---|---|---|
| VPH: VH-BTEX-Styrene | EC580A<br>ALS Environmental - Vancouver | Water | BC MOE Lab Manual (VPH in Water and Solids) (mod) | Volatile Petroleum Hydrocarbons (VPH) is calculated as follows: VPHw = Volatile Hydrocarbons (VH C6-C10) minus benzene, toluene, ethylbenzene, xylenes (BTEX) and styrene. |
| LEPH and HEPH: EPH-PAH | EC600A<br>ALS Environmental - Vancouver | Water | BC MOE Lab Manual (LEPH and HEPH) | Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are calculated as follows: LEPH = Extractable Petroleum Hydrocarbons (EPH10-19) minus Acenaphthene, Acridine, Anthracene, Fluorene, Naphthalene and Phenanthrene; HEPH = Extractable Petroleum Hydrocarbons (EPH19-32) minus Benz(a)anthracene, Benzo(a)pyrene, Fluoranthene, and Pyrene. |
| Field pH,EC,Salinity, TDS, 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, TDS, 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 Total Organic Carbon by Combustion | EP355<br>ALS Environmental - Vancouver | Water | | Preparation for Total Organic Carbon by Combustion |
| 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. |
| VOCs Preparation for Headspace Analysis | EP581<br>ALS Environmental - Vancouver | Water | EPA 5021A (mod) | Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID. |

| Preparation Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|---|---|---|---|
| PHCs and PAHs Hexane Extraction | EP601<br><br>ALS Environmental - Vancouver | Water | EPA 3511 (mod) | Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction. |

# Chain of Custody (COC) / Analytical Request Form

COC Number: 23 - 1083429

Page of

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

| Report To | Contact and company name below will appear on the final report |
|---|---|
| Company: | FKM |
| Contact: | Sara Derakhshi |
| Phone: | 5148912993 |
| | Company address below will appear on the final report |
| Street: | |
| City/Province: | |
| Postal Code: | |
| **Invoice To** | Same as Report To ☐ YES ☐ NO |
| | Copy of Invoice with Report ☐ YES ☐ NO |
| Company: | |
| Contact: | |

**Reports / Recipients**

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

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

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

Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: SaraDerakhshi@Michelscanada.com

Email 2: BradClarke@MichelsCanada.com

Email 3:

**Invoice Recipients**

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

**Turnaround Time (TAT) Requested**

- ☐ Routine [R] if received by 3pm M-F - no surcharges apply
- ☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
- ☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
- ☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
- ☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
- ☑ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: 12 dd-mmm-yy 2pm/pm

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

AFFIX ALS BARCODE LABEL HERE (ALS use only)

**Project Information**

| | |
|---|---|
| ALS Client Code / QUOTE #: | EGP150 |
| Job / Project #: | |
| PO / AFE: | |
| LSD: | BC Rail |
| ALS Lab Work Order # (ALS use only): | |

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

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

**Analysis Request**

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

| ALS Sample # (ALS use only) | Sample Identification and/or Coordinates (This description will appear on the report) | Date (dd-mmm-yy) | Time (hh:mm) | Sample Type | NUMBER OF CONTAINERS | Physical test (P) | Total metals (FP) | dissolved metals (F) | phenols (P) | Anions & nutrients (P) | SVOCs (P) | VOC (P) | PAH, VPH, EPH (P) | organics (P) | Hydrocarbons (P) | SAMPLES ON HOLD | EXTENDED STORAGE REQUIRED | SUSPECTED HAZARD (see notes) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WTP | 12-Nov-24 | 7:50Am | water | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |

Environmental Division
Vancouver
Work Order Reference
VA24D0524
Telephone : +1 604 253 4188

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

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

Are samples for human consumption/ use? ☐ YES ☐ NO

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

pH: 6.8 Temp: 9.8

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

Cooling Method: ☐ NONE ☐ ICE ☑ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

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

| INITIAL COOLER TEMPERATURES °C | | | | FINAL COOLER TEMPERATURES °C | | | |
|---|---|---|---|---|---|---|---|
| | | | | | 2 | | |

| SHIPMENT RELEASE (client use) | | | INITIAL SHIPMENT RECEPTION (ALS use only) | | | FINAL SHIPMENT RECEPTION (ALS use only) | | |
|---|---|---|---|---|---|---|---|---|
| Released by: Sara Derakhshi | Date: 12 Nov 2024 | Time: | Received by: | Date: | Time: | Received by: M.C. | Date: 12 NOV | Time: 10:40 |

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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**.

# CERTIFICATE OF ANALYSIS

| | | | | | |
|---|---|---|---|---|---|
| **Work Order** | : | **VA24D1001** | | | |
| Client | : | **Frontier-Kemper Michels Joint Venture** | Laboratory | : | ALS Environmental - Vancouver |
| Contact | : | Sara Derakhshi | Account Manager | : | Thomas Chang |
| Address | : | 404-850 Harbourside Drive<br>North Vancouver British Columbia Canada V7P 0A3 | Address | : | 8081 Lougheed Highway<br>Burnaby BC Canada V5A 1W9 |
| Telephone | : | ---- | Telephone | : | +1 604 253 4188 |
| Project | : | ---- | Date Samples Received | : | 15-Nov-2024 13:25 |
| PO | : | ---- | Date Analysis Commenced | : | 15-Nov-2024 |
| C-O-C number | : | 23-1083430 | Issue Date | : | 19-Nov-2024 13:02 |
| Sampler | : | ---- | | | |
| Site | : | ---- | | | |
| Quote number | : | WTP Discharge | | | |
| No. of samples received | : | 1 | | | |
| No. of samples analysed | : | 1 | | | |

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

## *Signatories*

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

| *Signatories* | *Position* | *Laboratory Department* |
|---|---|---|
| Brooke Miller | Laboratory Analyst | Inorganics, Edmonton, Alberta |
| Courtney Cox | Analyst- General | Inorganics, Burnaby, British Columbia |
| Erin Sanchez | | Metals, Burnaby, British Columbia |
| Harsha Attanayake | Laboratory Analyst | Organics, Burnaby, British Columbia |
| Hyunduck Suk | Analyst- General | Inorganics, Burnaby, British Columbia |
| Maya Urquhart | Lab Analyst | Metals, Burnaby, British Columbia |
| Monica Ko | Lab Assistant | Inorganics, Burnaby, British Columbia |
| Robin Weeks | Team Leader - Metals | Metals, Burnaby, British Columbia |
| Thomas Chang | Account Manager | Administration, Burnaby, British Columbia |

## General Comments

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

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

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

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

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

| *Unit* | *Description* |
|---|---|
| mg/L | milligrams per litre |
| µg/L | micrograms per litre |
| °C | degrees celsius |
| pH units | pH units |
| µS/cm | microsiemens per centimetre |
| NTU | nephelometric turbidity units |
| mV | millivolts |
| - | no units |

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

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

## Sample Comments

| *Sample* | *Client Id* | *Comment* |
|---|---|---|
| VA24D1001-001 | WTP | ***Sample(s) VA24D1001 - 1: Water sample for VOC analysis contained > 5% headspace. Results may be biased low.*** |

## 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) | | | | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Client sampling date / time | 15-Nov-2024 10:30 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | VA24D1001-001 | ---- | ---- | ---- | ---- |
| | | | | | Result | ---- | ---- | ---- | ---- |
| **Field Tests** | | | | | | | | | |
| pH, field | ---- | EF001/VA | 0.10 | pH units | 7.30 | ---- | ---- | ---- | ---- |
| Temperature, field | ---- | EF001/VA | 0.10 | °C | 11.0 | ---- | ---- | ---- | ---- |
| **Physical Tests** | | | | | | | | | |
| Alkalinity, bicarbonate (as CaCO3) | ---- | E290/VA | 2.0 | mg/L | 110 | ---- | ---- | ---- | ---- |
| Alkalinity, carbonate (as CaCO3) | ---- | E290/VA | 2.0 | mg/L | <2.0 | ---- | ---- | ---- | ---- |
| Alkalinity, hydroxide (as CaCO3) | ---- | E290/VA | 2.0 | mg/L | <2.0 | ---- | ---- | ---- | ---- |
| Alkalinity, phenolphthalein (as CaCO3) | ---- | E290/VA | 2.0 | mg/L | <2.0 | ---- | ---- | ---- | ---- |
| Alkalinity, total (as CaCO3) | ---- | E290/VA | 2.0 | mg/L | 110 | ---- | ---- | ---- | ---- |
| Conductivity | ---- | E100/VA | 2.0 | µS/cm | 587 | ---- | ---- | ---- | ---- |
| Hardness (as CaCO3), dissolved | ---- | EC100/VA | 0.60 | mg/L | 135 | ---- | ---- | ---- | ---- |
| Hardness (as CaCO3), from total Ca/Mg | ---- | EC100A/VA | 0.60 | mg/L | 132 | ---- | ---- | ---- | ---- |
| Oxidation-reduction potential [ORP] | ---- | E125/VA | 0.10 | mV | 170 | ---- | ---- | ---- | ---- |
| pH | ---- | E108/VA | 0.10 | pH units | 7.66 | ---- | ---- | ---- | ---- |
| Solids, total dissolved [TDS] | ---- | E162/VA | 10 | mg/L | 355 | ---- | ---- | ---- | ---- |
| Solids, total suspended [TSS] | ---- | E160/VA | 3.0 | mg/L | <3.0 | ---- | ---- | ---- | ---- |
| Turbidity | ---- | E121/VA | 0.10 | NTU | 0.45 | ---- | ---- | ---- | ---- |
| **Anions and Nutrients** | | | | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298/VA | 0.0050 | mg/L | 0.362 | ---- | ---- | ---- | ---- |
| Ammonium (as NH4), field | 14798-03-9 | EC298A/VA | 0.0010 | mg/L | 0.464 | ---- | ---- | ---- | ---- |
| Bromide | 24959-67-9 | E235.Br-L/VA | 0.050 | mg/L | <0.050 | ---- | ---- | ---- | ---- |
| Chloride | 16887-00-6 | E235.Cl/VA | 0.50 | mg/L | 34.8 | ---- | ---- | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 15-Nov-2024 10:30 | ---- | ---- | ---- | ---- |
| | | | | | | VA24D1001-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Anions and Nutrients** | | | | | | | | | | |
| **Fluoride** | 16984-48-8 | E235.F/VA | 0.020 | mg/L | | 0.136 | ---- | ---- | ---- | ---- |
| **Nitrate (as N)** | 14797-55-8 | E235.NO3-L/VA | 0.0050 | mg/L | | 0.112 | ---- | ---- | ---- | ---- |
| **Nitrite (as N)** | 14797-65-0 | E235.NO2-L/VA | 0.0010 | mg/L | | 0.0148 | ---- | ---- | ---- | ---- |
| **Nitrogen, total** | 7727-37-9 | E366/VA | 0.030 | mg/L | | 1.41 | ---- | ---- | ---- | ---- |
| **Phosphorus, total** | 7723-14-0 | E372-U/VA | 0.0020 | mg/L | | 0.0559 | ---- | ---- | ---- | ---- |
| **Sulfate (as SO4)** | 14808-79-8 | E235.SO4/VA | 0.30 | mg/L | | 117 | ---- | ---- | ---- | ---- |
| **Organic / Inorganic Carbon** | | | | | | | | | | |
| **Carbon, dissolved organic [DOC]** | ---- | E358-L/VA | 0.50 | mg/L | | 5.05 | ---- | ---- | ---- | ---- |
| **Carbon, total organic [TOC]** | ---- | E355-L/VA | 0.50 | mg/L | | 6.56 | ---- | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **Aluminum, total** | 7429-90-5 | E420/VA | 0.0030 | mg/L | | 0.0093 | ---- | ---- | ---- | ---- |
| **Antimony, total** | 7440-36-0 | E420/VA | 0.00010 | mg/L | | 0.00197 | ---- | ---- | ---- | ---- |
| **Arsenic, total** | 7440-38-2 | E420/VA | 0.00010 | mg/L | | 0.00095 | ---- | ---- | ---- | ---- |
| **Barium, total** | 7440-39-3 | E420/VA | 0.00010 | mg/L | | 0.0336 | ---- | ---- | ---- | ---- |
| **Beryllium, total** | 7440-41-7 | E420/VA | 0.000100 | mg/L | | <0.000100 | ---- | ---- | ---- | ---- |
| **Bismuth, total** | 7440-69-9 | E420/VA | 0.000050 | mg/L | | <0.000050 | ---- | ---- | ---- | ---- |
| **Boron, total** | 7440-42-8 | E420/VA | 0.010 | mg/L | | 0.045 | ---- | ---- | ---- | ---- |
| **Cadmium, total** | 7440-43-9 | E420/VA | 0.0000050 | mg/L | | <0.0000450 DLM | ---- | ---- | ---- | ---- |
| **Calcium, total** | 7440-70-2 | E420/VA | 0.050 | mg/L | | 52.3 | ---- | ---- | ---- | ---- |
| **Cesium, total** | 7440-46-2 | E420/VA | 0.000010 | mg/L | | 0.00576 | ---- | ---- | ---- | ---- |
| **Chromium, total** | 7440-47-3 | E420/VA | 0.00050 | mg/L | | 0.0341 | ---- | ---- | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 15-Nov-2024 10:30 | ---- | ---- | ---- | ---- |
| | | | | | VA24D1001-001 | ---- | ---- | ---- | ---- | ---- |
| | | | | | Result | ---- | ---- | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **Cobalt, total** | 7440-48-4 | E420/VA | 0.00010 | mg/L | | <0.00010 | ---- | ---- | ---- | ---- |
| **Copper, total** | 7440-50-8 | E420/VA | 0.00050 | mg/L | | 0.00128 | ---- | ---- | ---- | ---- |
| **Iron, total** | 7439-89-6 | E420/VA | 0.010 | mg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Lead, total** | 7439-92-1 | E420/VA | 0.000050 | mg/L | | <0.000050 | ---- | ---- | ---- | ---- |
| **Lithium, total** | 7439-93-2 | E420/VA | 0.0010 | mg/L | | 0.0146 | ---- | ---- | ---- | ---- |
| **Magnesium, total** | 7439-95-4 | E420/VA | 0.0050 | mg/L | | 0.349 | ---- | ---- | ---- | ---- |
| **Manganese, total** | 7439-96-5 | E420/VA | 0.00010 | mg/L | | 0.00107 | ---- | ---- | ---- | ---- |
| **Mercury, total** | 7439-97-6 | E508/VA | 0.0000050 | mg/L | | <0.0000050 | ---- | ---- | ---- | ---- |
| **Molybdenum, total** | 7439-98-7 | E420/VA | 0.000050 | mg/L | | 0.303 | ---- | ---- | ---- | ---- |
| **Nickel, total** | 7440-02-0 | E420/VA | 0.00050 | mg/L | | 0.00062 | ---- | ---- | ---- | ---- |
| **Phosphorus, total** | 7723-14-0 | E420/VA | 0.050 | mg/L | | <0.050 | ---- | ---- | ---- | ---- |
| **Potassium, total** | 7440-09-7 | E420/VA | 0.050 | mg/L | | 31.0 | ---- | ---- | ---- | ---- |
| **Rubidium, total** | 7440-17-7 | E420/VA | 0.00020 | mg/L | | 0.114 | ---- | ---- | ---- | ---- |
| **Selenium, total** | 7782-49-2 | E420/VA | 0.000050 | mg/L | | 0.00232 | ---- | ---- | ---- | ---- |
| **Silicon, total** | 7440-21-3 | E420/VA | 0.10 | mg/L | | 6.58 | ---- | ---- | ---- | ---- |
| **Silver, total** | 7440-22-4 | E420/VA | 0.000010 | mg/L | | <0.000010 | ---- | ---- | ---- | ---- |
| **Sodium, total** | 7440-23-5 | E420/VA | 0.050 | mg/L | | 49.7 | ---- | ---- | ---- | ---- |
| **Strontium, total** | 7440-24-6 | E420/VA | 0.00020 | mg/L | | 0.690 | ---- | ---- | ---- | ---- |
| **Sulfur, total** | 7704-34-9 | E420/VA | 0.50 | mg/L | | 40.6 | ---- | ---- | ---- | ---- |
| **Tellurium, total** | 13494-80-9 | E420/VA | 0.00020 | mg/L | | <0.00020 | ---- | ---- | ---- | ---- |
| **Thallium, total** | 7440-28-0 | E420/VA | 0.000010 | mg/L | | <0.000010 | ---- | ---- | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 15-Nov-2024 10:30 | ---- | ---- | ---- | ---- |
| | | | | | VA24D1001-001 | ---- | ---- | ---- | ---- | ---- |
| | | | | | Result | ---- | ---- | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **Thorium, total** | 7440-29-1 | E420/VA | 0.00010 | mg/L | <0.00010 | ---- | ---- | ---- | ---- | |
| **Tin, total** | 7440-31-5 | E420/VA | 0.00010 | mg/L | <0.00010 | ---- | ---- | ---- | ---- | |
| **Titanium, total** | 7440-32-6 | E420/VA | 0.00030 | mg/L | <0.00030 | ---- | ---- | ---- | ---- | |
| **Tungsten, total** | 7440-33-7 | E420/VA | 0.00010 | mg/L | 0.00094 | ---- | ---- | ---- | ---- | |
| **Uranium, total** | 7440-61-1 | E420/VA | 0.000010 | mg/L | <0.000010 | ---- | ---- | ---- | ---- | |
| **Vanadium, total** | 7440-62-2 | E420/VA | 0.00050 | mg/L | 0.00178 | ---- | ---- | ---- | ---- | |
| **Zinc, total** | 7440-66-6 | E420/VA | 0.0030 | mg/L | <0.0030 | ---- | ---- | ---- | ---- | |
| **Zirconium, total** | 7440-67-7 | E420/VA | 0.00020 | mg/L | <0.00020 | ---- | ---- | ---- | ---- | |
| **Dissolved Metals** | | | | | | | | | | |
| **Aluminum, dissolved** | 7429-90-5 | E421/VA | 0.0010 | mg/L | 0.0042 | ---- | ---- | ---- | ---- | |
| **Antimony, dissolved** | 7440-36-0 | E421/VA | 0.00010 | mg/L | 0.00193 | ---- | ---- | ---- | ---- | |
| **Arsenic, dissolved** | 7440-38-2 | E421/VA | 0.00010 | mg/L | 0.00100 | ---- | ---- | ---- | ---- | |
| **Barium, dissolved** | 7440-39-3 | E421/VA | 0.00010 | mg/L | 0.0328 | ---- | ---- | ---- | ---- | |
| **Beryllium, dissolved** | 7440-41-7 | E421/VA | 0.000100 | mg/L | <0.000100 | ---- | ---- | ---- | ---- | |
| **Bismuth, dissolved** | 7440-69-9 | E421/VA | 0.000050 | mg/L | <0.000050 | ---- | ---- | ---- | ---- | |
| **Boron, dissolved** | 7440-42-8 | E421/VA | 0.010 | mg/L | 0.046 | ---- | ---- | ---- | ---- | |
| **Cadmium, dissolved** | 7440-43-9 | E421/VA | 0.0000050 | mg/L | <0.0000500 DLM | ---- | ---- | ---- | ---- | |
| **Calcium, dissolved** | 7440-70-2 | E421/VA | 0.050 | mg/L | 53.6 | ---- | ---- | ---- | ---- | |
| **Cesium, dissolved** | 7440-46-2 | E421/VA | 0.000010 | mg/L | 0.00572 | ---- | ---- | ---- | ---- | |
| **Chromium, dissolved** | 7440-47-3 | E421/VA | 0.00050 | mg/L | 0.0334 | ---- | ---- | ---- | ---- | |
| **Cobalt, dissolved** | 7440-48-4 | E421/VA | 0.00010 | mg/L | <0.00010 | ---- | ---- | ---- | ---- | |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | | | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 15-Nov-2024 10:30 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24D1001-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Dissolved Metals** | | | | | | | | | | |
| **Copper, dissolved** | 7440-50-8 | E421/VA | 0.00020 | mg/L | | 0.00114 | ---- | ---- | ---- | ---- |
| **Iron, dissolved** | 7439-89-6 | E421/VA | 0.010 | mg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Lead, dissolved** | 7439-92-1 | E421/VA | 0.000050 | mg/L | | <0.000050 | ---- | ---- | ---- | ---- |
| **Lithium, dissolved** | 7439-93-2 | E421/VA | 0.0010 | mg/L | | 0.0151 | ---- | ---- | ---- | ---- |
| **Magnesium, dissolved** | 7439-95-4 | E421/VA | 0.0050 | mg/L | | 0.343 | ---- | ---- | ---- | ---- |
| **Manganese, dissolved** | 7439-96-5 | E421/VA | 0.00010 | mg/L | | 0.00092 | ---- | ---- | ---- | ---- |
| **Mercury, dissolved** | 7439-97-6 | E509/VA | 0.0000050 | mg/L | | <0.0000050 | ---- | ---- | ---- | ---- |
| **Molybdenum, dissolved** | 7439-98-7 | E421/VA | 0.000050 | mg/L | | 0.282 | ---- | ---- | ---- | ---- |
| **Nickel, dissolved** | 7440-02-0 | E421/VA | 0.00050 | mg/L | | 0.00062 | ---- | ---- | ---- | ---- |
| **Phosphorus, dissolved** | 7723-14-0 | E421/VA | 0.050 | mg/L | | <0.050 | ---- | ---- | ---- | ---- |
| **Potassium, dissolved** | 7440-09-7 | E421/VA | 0.050 | mg/L | | 29.6 | ---- | ---- | ---- | ---- |
| **Rubidium, dissolved** | 7440-17-7 | E421/VA | 0.00020 | mg/L | | 0.111 | ---- | ---- | ---- | ---- |
| **Selenium, dissolved** | 7782-49-2 | E421/VA | 0.000050 | mg/L | | 0.00254 | ---- | ---- | ---- | ---- |
| **Silicon, dissolved** | 7440-21-3 | E421/VA | 0.050 | mg/L | | 6.79 | ---- | ---- | ---- | ---- |
| **Silver, dissolved** | 7440-22-4 | E421/VA | 0.000010 | mg/L | | <0.000010 | ---- | ---- | ---- | ---- |
| **Sodium, dissolved** | 7440-23-5 | E421/VA | 0.050 | mg/L | | 47.9 | ---- | ---- | ---- | ---- |
| **Strontium, dissolved** | 7440-24-6 | E421/VA | 0.00020 | mg/L | | 0.664 | ---- | ---- | ---- | ---- |
| **Sulfur, dissolved** | 7704-34-9 | E421/VA | 0.50 | mg/L | | 41.5 | ---- | ---- | ---- | ---- |
| **Tellurium, dissolved** | 13494-80-9 | E421/VA | 0.00020 | mg/L | | <0.00020 | ---- | ---- | ---- | ---- |
| **Thallium, dissolved** | 7440-28-0 | E421/VA | 0.000010 | mg/L | | <0.000010 | ---- | ---- | ---- | ---- |
| **Thorium, dissolved** | 7440-29-1 | E421/VA | 0.00010 | mg/L | | <0.00010 | ---- | ---- | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 15-Nov-2024 10:30 | ---- | ---- | ---- | ---- |
| | | | | | | VA24D1001-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Dissolved Metals** | | | | | | | | | | |
| **Tin, dissolved** | 7440-31-5 | E421/VA | 0.00010 | mg/L | | <0.00010 | ---- | ---- | ---- | ---- |
| **Titanium, dissolved** | 7440-32-6 | E421/VA | 0.00030 | mg/L | | <0.00030 | ---- | ---- | ---- | ---- |
| **Tungsten, dissolved** | 7440-33-7 | E421/VA | 0.00010 | mg/L | | 0.00091 | ---- | ---- | ---- | ---- |
| **Uranium, dissolved** | 7440-61-1 | E421/VA | 0.000010 | mg/L | | <0.000010 | ---- | ---- | ---- | ---- |
| **Vanadium, dissolved** | 7440-62-2 | E421/VA | 0.00050 | mg/L | | 0.00171 | ---- | ---- | ---- | ---- |
| **Zinc, dissolved** | 7440-66-6 | E421/VA | 0.0010 | mg/L | | 0.0018 | ---- | ---- | ---- | ---- |
| **Zirconium, dissolved** | 7440-67-7 | E421/VA | 0.00020 | mg/L | | <0.00020 | ---- | ---- | ---- | ---- |
| **Dissolved mercury filtration location** | ---- | EP509/VA | - | - | | Field | ---- | ---- | ---- | ---- |
| **Dissolved metals filtration location** | ---- | EP421/VA | - | - | | Field | ---- | ---- | ---- | ---- |
| **Aggregate Organics** | | | | | | | | | | |
| **Phenols, total (4AAP)** | ---- | E562/EO | 0.0010 | mg/L | | <0.0010 | ---- | ---- | ---- | ---- |
| **Volatile Organic Compounds** | | | | | | | | | | |
| **Chlorobenzene** | 108-90-7 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Chloromethane** | 74-87-3 | E611C/VA | 5.0 | µg/L | | <5.0 | ---- | ---- | ---- | ---- |
| **Dichlorobenzene, 1,2-** | 95-50-1 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichlorobenzene, 1,3-** | 541-73-1 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichlorobenzene, 1,4-** | 106-46-7 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloropropane, 1,2-** | 78-87-5 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloropropylene, cis-1,3-** | 10061-01-5 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloropropylene, cis+trans-1,3-** | 542-75-6 | E611C/VA | 0.75 | µg/L | | <0.75 | ---- | ---- | ---- | ---- |
| **Tetrachloroethane, 1,1,1,2-** | 630-20-6 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | | | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 15-Nov-2024 10:30 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24D1001-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Volatile Organic Compounds** | | | | | | | | | | |
| **Tetrachloroethane, 1,1,2,2-** | 79-34-5 | E611C/VA | 0.20 | µg/L | | <0.20 | ---- | ---- | ---- | ---- |
| **Trichloroethane, 1,1,2-** | 79-00-5 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Trichlorofluoromethane** | 75-69-4 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Volatile Organic Compounds [Drycleaning]** | | | | | | | | | | |
| **Carbon tetrachloride** | 56-23-5 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Chloroethane** | 75-00-3 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloroethane, 1,1-** | 75-34-3 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloroethane, 1,2-** | 107-06-2 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloroethylene, 1,1-** | 75-35-4 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloroethylene, cis-1,2-** | 156-59-2 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloroethylene, trans-1,2-** | 156-60-5 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dichloromethane** | 75-09-2 | E611C/VA | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| **Dichloropropylene, trans-1,3-** | 10061-02-6 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Tetrachloroethylene** | 127-18-4 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Trichloroethane, 1,1,1-** | 71-55-6 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Trichloroethylene** | 79-01-6 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Vinyl chloride** | 75-01-4 | E611C/VA | 0.40 | µg/L | | <0.40 | ---- | ---- | ---- | ---- |
| **Volatile Organic Compounds [Fuels]** | | | | | | | | | | |
| **Benzene** | 71-43-2 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Ethylbenzene** | 100-41-4 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Methyl-tert-butyl ether [MTBE]** | 1634-04-4 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | | | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 15-Nov-2024 10:30 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24D1001-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Volatile Organic Compounds [Fuels]** | | | | | | | | | | |
| **Styrene** | 100-42-5 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Toluene** | 108-88-3 | E611C/VA | 0.40 | µg/L | | <0.40 | ---- | ---- | ---- | ---- |
| **Xylene, m+p-** | 179601-23-1 | E611C/VA | 0.40 | µg/L | | <0.40 | ---- | ---- | ---- | ---- |
| **Xylene, o-** | 95-47-6 | E611C/VA | 0.30 | µg/L | | <0.30 | ---- | ---- | ---- | ---- |
| **Xylenes, total** | 1330-20-7 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Volatile Organic Compounds [THMs]** | | | | | | | | | | |
| **Bromodichloromethane** | 75-27-4 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Bromoform** | 75-25-2 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Chloroform** | 67-66-3 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Dibromochloromethane** | 124-48-1 | E611C/VA | 0.50 | µg/L | | <0.50 | ---- | ---- | ---- | ---- |
| **Hydrocarbons** | | | | | | | | | | |
| **EPH (C10-C19)** | ---- | E601A/VA | 250 | µg/L | | <250 | ---- | ---- | ---- | ---- |
| **EPH (C19-C32)** | ---- | E601A/VA | 250 | µg/L | | <250 | ---- | ---- | ---- | ---- |
| **VHw (C6-C10)** | ---- | E581.VH+F1/VA | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| **HEPHw** | ---- | EC600A/VA | 250 | µg/L | | <250 | ---- | ---- | ---- | ---- |
| **LEPHw** | ---- | EC600A/VA | 250 | µg/L | | <250 | ---- | ---- | ---- | ---- |
| **VPHw** | ---- | EC580A/VA | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| **Hydrocarbons Surrogates** | | | | | | | | | | |
| **Bromobenzotrifluoride, 2- (EPH surrogate)** | 392-83-6 | E601A/VA | 1.0 | % | | 94.1 | ---- | ---- | ---- | ---- |
| **Dichlorotoluene, 3,4-** | 95-75-0 | E581.VH+F1/VA | 1.0 | % | | 106 | ---- | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | | | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 15-Nov-2024 10:30 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24D1001-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Volatile Organic Compounds Surrogates** | | | | | | | | | | |
| **Bromofluorobenzene, 4-** | 460-00-4 | E611C/VA | 1.0 | % | | 92.9 | ---- | ---- | ---- | ---- |
| **Difluorobenzene, 1,4-** | 540-36-3 | E611C/VA | 1.0 | % | | 99.9 | ---- | ---- | ---- | ---- |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | | | | |
| **Acenaphthene** | 83-32-9 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Acenaphthylene** | 208-96-8 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Acridine** | 260-94-6 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Anthracene** | 120-12-7 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Benz(a)anthracene** | 56-55-3 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Benzo(a)pyrene** | 50-32-8 | E641A/VA | 0.0050 | µg/L | | <0.0050 | ---- | ---- | ---- | ---- |
| **Benzo(b+j)fluoranthene** | n/a | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Benzo(b+j+k)fluoranthene** | n/a | E641A/VA | 0.015 | µg/L | | <0.015 | ---- | ---- | ---- | ---- |
| **Benzo(g,h,i)perylene** | 191-24-2 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Benzo(k)fluoranthene** | 207-08-9 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Chrysene** | 218-01-9 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Dibenz(a,h)anthracene** | 53-70-3 | E641A/VA | 0.0050 | µg/L | | <0.0050 | ---- | ---- | ---- | ---- |
| **Fluoranthene** | 206-44-0 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Fluorene** | 86-73-7 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Indeno(1,2,3-c,d)pyrene** | 193-39-5 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Methylnaphthalene, 1-** | 90-12-0 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Methylnaphthalene, 2-** | 91-57-6 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Naphthalene** | 91-20-3 | E641A/VA | 0.050 | µg/L | | <0.050 | ---- | ---- | ---- | ---- |

## Analytical Results

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

| | | | | | Client sample ID | WTP | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 15-Nov-2024 10:30 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24D1001-001 | ---- | ---- | ---- | ---- |
| | | | | | | Result | ---- | ---- | ---- | ---- |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | | | | |
| **Phenanthrene** | 85-01-8 | E641A/VA | 0.020 | µg/L | | <0.020 | ---- | ---- | ---- | ---- |
| **Pyrene** | 129-00-0 | E641A/VA | 0.010 | µg/L | | <0.010 | ---- | ---- | ---- | ---- |
| **Quinoline** | 91-22-5 | E641A/VA | 0.050 | µg/L | | 0.168 | ---- | ---- | ---- | ---- |
| **Polycyclic Aromatic Hydrocarbons Surrogates** | | | | | | | | | | |
| **Chrysene-d12** | 1719-03-5 | E641A/VA | 0.1 | % | | 92.9 | ---- | ---- | ---- | ---- |
| **Naphthalene-d8** | 1146-65-2 | E641A/VA | 0.1 | % | | 98.1 | ---- | ---- | ---- | ---- |
| **Phenanthrene-d10** | 1517-22-2 | E641A/VA | 0.1 | % | | 98.7 | ---- | ---- | ---- | ---- |
| **Glycols** | | | | | | | | | | |
| **Diethylene glycol** | 111-46-6 | E680E/VA | 5.0 | mg/L | | <5.0 | ---- | ---- | ---- | ---- |
| **Ethylene glycol** | 107-21-1 | E680E/VA | 5.0 | mg/L | | <5.0 | ---- | ---- | ---- | ---- |
| **Propylene glycol, 1,2-** | 57-55-6 | E680E/VA | 5.0 | mg/L | | <5.0 | ---- | ---- | ---- | ---- |
| **Triethylene glycol** | 112-27-6 | E680E/VA | 5.0 | mg/L | | <5.0 | ---- | ---- | ---- | ---- |
| **Glycols, total (EG+DEG+PG)** | ---- | E680E/VA | 10 | mg/L | | <10 | ---- | ---- | ---- | ---- |
| **Glycols Surrogates** | | | | | | | | | | |
| **Propanediol, 1,3-** | 504-63-2 | E680E/VA | 1.0 | % | | 99.5 | ---- | ---- | ---- | ---- |

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

ALS Canada Ltd.

# QUALITY CONTROL REPORT

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24D1001** | Page | : 1 of 21 |
| Client | : Frontier-Kemper Michels Joint Venture | Laboratory | : ALS Environmental - Vancouver |
| Contact | : Sara Derakhshi | Account Manager | : Thomas Chang |
| Address | : 404-850 Harbourside Drive<br>North Vancouver BC Canada V7P 0A3 | Address | : 8081 Lougheed Highway<br>Burnaby, British Columbia Canada V5A 1W9 |
| Telephone | : ---- | Telephone | : +1 604 253 4188 |
| Project | : ---- | Date Samples Received | : 15-Nov-2024 13:25 |
| PO | : ---- | Date Analysis Commenced | : 15-Nov-2024 |
| C-O-C number | : 23-1083430 | Issue Date | : 19-Nov-2024 13:01 |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : WTP Discharge | | |
| No. of samples received | : 1 | | |
| No. of samples analysed | : 1 | | |

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

This Quality Control Report contains the following information:

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

## *Signatories*

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

| *Signatories* | *Position* | *Laboratory Department* |
|---|---|---|
| Brooke Miller | Laboratory Analyst | Edmonton Inorganics, Edmonton, Alberta |
| Courtney Cox | Analyst- General | Vancouver Inorganics, Burnaby, British Columbia |
| Erin Sanchez | | Vancouver Metals, Burnaby, British Columbia |
| Harsha Attanayake | Laboratory Analyst | Vancouver Organics, Burnaby, British Columbia |
| Hyunduck Suk | Analyst- General | Vancouver Inorganics, Burnaby, British Columbia |
| Maya Urquhart | Lab Analyst | Vancouver Metals, Burnaby, British Columbia |
| Monica Ko | Lab Assistant | Vancouver Inorganics, Burnaby, British Columbia |
| Robin Weeks | Team Leader - Metals | Vancouver Metals, Burnaby, British Columbia |
| Thomas Chang | Account Manager | Vancouver Administration, 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: 1769049)** | | | | | | | | | | | |
| FJ2403435-001 | Anonymous | Solids, total suspended [TSS] | ---- | E160 | 3.0 | mg/L | 38.6 | 38.6 | 0.00% | 20% | ---- |
| **Physical Tests (QC Lot: 1769064)** | | | | | | | | | | | |
| FJ2403435-001 | Anonymous | Solids, total dissolved [TDS] | ---- | E162 | 20 | mg/L | 1740 | 1680 | 3.56% | 20% | ---- |
| **Physical Tests (QC Lot: 1769230)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Turbidity | ---- | E121 | 0.10 | NTU | 0.45 | 0.44 | 0.01 | Diff <2x LOR | ---- |
| **Physical Tests (QC Lot: 1769231)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Oxidation-reduction potential [ORP] | ---- | E125 | 0.10 | mV | 170 | 182 | 6.31% | 10% | ---- |
| **Physical Tests (QC Lot: 1769456)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | pH | ---- | E108 | 0.10 | pH units | 7.66 | 7.79 | 1.68% | 4% | ---- |
| **Physical Tests (QC Lot: 1769458)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Conductivity | ---- | E100 | 2.0 | µS/cm | 587 | 577 | 1.72% | 10% | ---- |
| **Anions and Nutrients (QC Lot: 1769394)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Nitrogen, total | 7727-37-9 | E366 | 0.030 | mg/L | 1.41 | 1.41 | 0.165% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1769395)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Phosphorus, total | 7723-14-0 | E372-U | 0.0020 | mg/L | 0.0559 | 0.0556 | 0.430% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1769396)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Ammonia, total (as N) | 7664-41-7 | E298 | 0.0050 | mg/L | 0.362 | 0.364 | 0.363% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1769459)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Fluoride | 16984-48-8 | E235.F | 0.020 | mg/L | 0.136 | 0.132 | 0.004 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1769460)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Chloride | 16887-00-6 | E235.Cl | 0.50 | mg/L | 34.8 | 34.7 | 0.157% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1769461)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Bromide | 24959-67-9 | E235.Br-L | 0.050 | mg/L | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1769462)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.0050 | mg/L | 0.112 | 0.112 | 0.488% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1769463)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.0010 | mg/L | 0.0148 | 0.0146 | 1.50% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1769464)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.30 | mg/L | 117 | 117 | 0.0731% | 20% | ---- |
| **Organic / Inorganic Carbon (QC Lot: 1769392)** | | | | | | | | | | | |

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* |
| **Organic / Inorganic Carbon (QC Lot: 1769392) - continued** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Carbon, dissolved organic [DOC] | ---- | E358-L | 0.50 | mg/L | 5.05 | 5.24 | 3.77% | 20% | ---- |
| **Organic / Inorganic Carbon (QC Lot: 1769393)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Carbon, total organic [TOC] | ---- | E355-L | 0.50 | mg/L | 6.56 | 6.90 | 5.10% | 20% | ---- |
| **Total Metals (QC Lot: 1769065)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Aluminum, total | 7429-90-5 | E420 | 0.0030 | mg/L | 0.0093 | 0.0084 | 0.0009 | Diff <2x LOR | ---- |
| | | Antimony, total | 7440-36-0 | E420 | 0.00010 | mg/L | 0.00197 | 0.00192 | 2.70% | 20% | ---- |
| | | Arsenic, total | 7440-38-2 | E420 | 0.00010 | mg/L | 0.00095 | 0.00100 | 0.00005 | Diff <2x LOR | ---- |
| | | Barium, total | 7440-39-3 | E420 | 0.00010 | mg/L | 0.0336 | 0.0324 | 3.52% | 20% | ---- |
| | | Beryllium, total | 7440-41-7 | E420 | 0.000100 | mg/L | <0.000100 | <0.000100 | 0 | Diff <2x LOR | ---- |
| | | Bismuth, total | 7440-69-9 | E420 | 0.000050 | mg/L | <0.000050 | <0.000050 | 0 | Diff <2x LOR | ---- |
| | | Boron, total | 7440-42-8 | E420 | 0.010 | mg/L | 0.045 | 0.046 | 0.002 | Diff <2x LOR | ---- |
| | | Cadmium, total | 7440-43-9 | E420 | 0.0000450 | mg/L | <0.0000450 | <0.0000450 | 0 | Diff <2x LOR | ---- |
| | | Calcium, total | 7440-70-2 | E420 | 0.050 | mg/L | 52.3 | 54.5 | 4.07% | 20% | ---- |
| | | Cesium, total | 7440-46-2 | E420 | 0.000010 | mg/L | 0.00576 | 0.00564 | 2.07% | 20% | ---- |
| | | Chromium, total | 7440-47-3 | E420 | 0.00050 | mg/L | 0.0341 | 0.0346 | 1.46% | 20% | ---- |
| | | 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 | 0.00128 | 0.00130 | 0.00001 | 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 | 0.0146 | 0.0148 | 1.43% | 20% | ---- |
| | | Magnesium, total | 7439-95-4 | E420 | 0.0050 | mg/L | 0.349 | 0.348 | 0.265% | 20% | ---- |
| | | Manganese, total | 7439-96-5 | E420 | 0.00010 | mg/L | 0.00107 | 0.00099 | 7.52% | 20% | ---- |
| | | Molybdenum, total | 7439-98-7 | E420 | 0.000050 | mg/L | 0.303 | 0.302 | 0.0736% | 20% | ---- |
| | | Nickel, total | 7440-02-0 | E420 | 0.00050 | mg/L | 0.00062 | 0.00062 | 0.00000007 | 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 | 31.0 | 31.8 | 2.43% | 20% | ---- |
| | | Rubidium, total | 7440-17-7 | E420 | 0.00020 | mg/L | 0.114 | 0.113 | 0.852% | 20% | ---- |
| | | Selenium, total | 7782-49-2 | E420 | 0.000050 | mg/L | 0.00232 | 0.00246 | 5.65% | 20% | ---- |
| | | Silicon, total | 7440-21-3 | E420 | 0.10 | mg/L | 6.58 | 6.96 | 5.68% | 20% | ---- |
| | | Silver, total | 7440-22-4 | E420 | 0.000010 | mg/L | <0.000010 | <0.000010 | 0 | Diff <2x LOR | ---- |
| | | Sodium, total | 7440-23-5 | E420 | 0.050 | mg/L | 49.7 | 51.5 | 3.64% | 20% | ---- |
| | | Strontium, total | 7440-24-6 | E420 | 0.00020 | mg/L | 0.690 | 0.669 | 3.06% | 20% | ---- |
| | | Sulfur, total | 7704-34-9 | E420 | 0.50 | mg/L | 40.6 | 41.9 | 3.03% | 20% | ---- |
| | | Tellurium, total | 13494-80-9 | E420 | 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* |
| **Total Metals (QC Lot: 1769065) - continued** | | | | | | | | | | | |
| VA24D1001-001 | WTP | 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 | 0.00031 | 0.000008 | Diff <2x LOR | ---- |
| | | Tungsten, total | 7440-33-7 | E420 | 0.00010 | mg/L | 0.00094 | 0.00092 | 0.00002 | 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 | 0.00178 | 0.00176 | 0.00001 | Diff <2x LOR | ---- |
| | | Zinc, total | 7440-66-6 | E420 | 0.0030 | mg/L | <0.0030 | <0.0030 | 0 | Diff <2x LOR | ---- |
| | | Zirconium, total | 7440-67-7 | E420 | 0.00020 | mg/L | <0.00020 | <0.00020 | 0 | Diff <2x LOR | ---- |
| **Total Metals (QC Lot: 1769282)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Mercury, total | 7439-97-6 | E508 | 0.0000050 | mg/L | <0.0000050 | <0.0000050 | 0 | Diff <2x LOR | ---- |
| **Dissolved Metals (QC Lot: 1769066)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Aluminum, dissolved | 7429-90-5 | E421 | 0.0010 | mg/L | 0.0042 | 0.0042 | 0.00002 | Diff <2x LOR | ---- |
| | | Antimony, dissolved | 7440-36-0 | E421 | 0.00010 | mg/L | 0.00193 | 0.00190 | 1.80% | 20% | ---- |
| | | Arsenic, dissolved | 7440-38-2 | E421 | 0.00010 | mg/L | 0.00100 | 0.00095 | 0.00005 | Diff <2x LOR | ---- |
| | | Barium, dissolved | 7440-39-3 | E421 | 0.00010 | mg/L | 0.0328 | 0.0329 | 0.0971% | 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 | 0.046 | 0.046 | 0.0002 | Diff <2x LOR | ---- |
| | | Cadmium, dissolved | 7440-43-9 | E421 | 0.0000500 | mg/L | <0.0000500 | <0.0000500 | 0 | Diff <2x LOR | ---- |
| | | Calcium, dissolved | 7440-70-2 | E421 | 0.050 | mg/L | 53.6 | 52.2 | 2.65% | 20% | ---- |
| | | Cesium, dissolved | 7440-46-2 | E421 | 0.000010 | mg/L | 0.00572 | 0.00564 | 1.50% | 20% | ---- |
| | | Chromium, dissolved | 7440-47-3 | E421 | 0.00050 | mg/L | 0.0334 | 0.0330 | 1.28% | 20% | ---- |
| | | 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 | 0.00114 | 0.00116 | 0.00002 | 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 | 0.0151 | 0.0151 | 0.195% | 20% | ---- |
| | | Magnesium, dissolved | 7439-95-4 | E421 | 0.0050 | mg/L | 0.343 | 0.341 | 0.553% | 20% | ---- |
| | | Manganese, dissolved | 7439-96-5 | E421 | 0.00010 | mg/L | 0.00092 | 0.00093 | 0.000003 | Diff <2x LOR | ---- |
| | | Molybdenum, dissolved | 7439-98-7 | E421 | 0.000050 | mg/L | 0.282 | 0.282 | 0.00869% | 20% | ---- |
| | | Nickel, dissolved | 7440-02-0 | E421 | 0.00050 | mg/L | 0.00062 | 0.00058 | 0.00003 | 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 | 29.6 | 30.4 | 2.71% | 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: 1769066) - continued** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Rubidium, dissolved | 7440-17-7 | E421 | 0.00020 | mg/L | 0.111 | 0.110 | 1.32% | 20% | ---- |
| | | Selenium, dissolved | 7782-49-2 | E421 | 0.000050 | mg/L | 0.00254 | 0.00264 | 3.74% | 20% | ---- |
| | | Silicon, dissolved | 7440-21-3 | E421 | 0.050 | mg/L | 6.79 | 6.55 | 3.54% | 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 | 47.9 | 48.1 | 0.352% | 20% | ---- |
| | | Strontium, dissolved | 7440-24-6 | E421 | 0.00020 | mg/L | 0.664 | 0.653 | 1.69% | 20% | ---- |
| | | Sulfur, dissolved | 7704-34-9 | E421 | 0.50 | mg/L | 41.5 | 40.2 | 3.37% | 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 | 0.00036 | 0.00006 | Diff <2x LOR | ---- |
| | | Tungsten, dissolved | 7440-33-7 | E421 | 0.00010 | mg/L | 0.00091 | 0.00088 | 0.00004 | Diff <2x LOR | ---- |
| | | Uranium, dissolved | 7440-61-1 | E421 | 0.000010 | mg/L | <0.000010 | <0.000010 | 0 | Diff <2x LOR | ---- |
| | | Vanadium, dissolved | 7440-62-2 | E421 | 0.00050 | mg/L | 0.00171 | 0.00168 | 0.00003 | Diff <2x LOR | ---- |
| | | Zinc, dissolved | 7440-66-6 | E421 | 0.0010 | mg/L | 0.0018 | 0.0018 | 0.00005 | 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: 1769283)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Mercury, dissolved | 7439-97-6 | E509 | 0.0000050 | mg/L | <0.0000050 | <0.0000050 | 0 | Diff <2x LOR | ---- |
| **Aggregate Organics (QC Lot: 1770976)** | | | | | | | | | | | |
| EO2406865-001 | Anonymous | Phenols, total (4AAP) | ---- | E562 | 0.0010 | mg/L | 0.0078 | 0.0089 | 0.0011 | Diff <2x LOR | ---- |
| **Volatile Organic Compounds (QC Lot: 1769285)** | | | | | | | | | | | |
| VA24D0954-001 | Anonymous | Benzene | 71-43-2 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Bromodichloromethane | 75-27-4 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| | | Bromoform | 75-25-2 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| | | Carbon tetrachloride | 56-23-5 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Chlorobenzene | 108-90-7 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| | | Chloroethane | 75-00-3 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| | | Chloroform | 67-66-3 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| | | Chloromethane | 74-87-3 | E611C | 5.0 | µg/L | <5.0 | <5.0 | 0 | Diff <2x LOR | ---- |
| | | Dibromochloromethane | 124-48-1 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| | | Dichlorobenzene, 1,2- | 95-50-1 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichlorobenzene, 1,3- | 541-73-1 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| | | Dichlorobenzene, 1,4- | 106-46-7 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 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* |
| **Volatile Organic Compounds (QC Lot: 1769285) - continued** | | | | | | | | | | | |
| VA24D0954-001 | Anonymous | Dichloroethane, 1,1- | 75-34-3 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethane, 1,2- | 107-06-2 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethylene, 1,1- | 75-35-4 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethylene, cis-1,2- | 156-59-2 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethylene, trans-1,2- | 156-60-5 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| | | Dichloromethane | 75-09-2 | E611C | 5.0 | µg/L | <5.0 | <5.0 | 0 | Diff <2x LOR | ---- |
| | | Dichloropropane, 1,2- | 78-87-5 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| | | Dichloropropylene, cis-1,3- | 10061-01-5 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloropropylene, trans-1,3- | 10061-02-6 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Ethylbenzene | 100-41-4 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Styrene | 100-42-5 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| | | Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611C | 0.20 | µg/L | <0.40 | <0.20 | 0.20 | Diff <2x LOR | ---- |
| | | Tetrachloroethylene | 127-18-4 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| | | Toluene | 108-88-3 | E611C | 0.40 | µg/L | <0.40 | <0.40 | 0 | Diff <2x LOR | ---- |
| | | Trichloroethane, 1,1,1- | 71-55-6 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Trichloroethane, 1,1,2- | 79-00-5 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Trichloroethylene | 79-01-6 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| | | Trichlorofluoromethane | 75-69-4 | E611C | 1.00 | µg/L | <1.00 | <1.00 | 0 | Diff <2x LOR | ---- |
| | | Vinyl chloride | 75-01-4 | E611C | 0.40 | µg/L | <0.40 | <0.40 | 0 | Diff <2x LOR | ---- |
| | | Xylene, m+p- | 179601-23-1 | E611C | 0.40 | µg/L | <0.40 | <0.40 | 0 | Diff <2x LOR | ---- |
| | | Xylene, o- | 95-47-6 | E611C | 0.30 | µg/L | <0.30 | <0.30 | 0 | Diff <2x LOR | ---- |
| **Hydrocarbons (QC Lot: 1769284)** | | | | | | | | | | | |
| VA24D0954-001 | Anonymous | VHw (C6-C10) | ---- | E581.VH+F1 | 100 | µg/L | <100 | <100 | 0.0% | 30% | ---- |
| **Glycols (QC Lot: 1769031)** | | | | | | | | | | | |
| VA24D1001-001 | WTP | Diethylene glycol | 111-46-6 | E680E | 5.0 | mg/L | <5.0 | <5.0 | 0 | Diff <2x LOR | ---- |
| | | Ethylene glycol | 107-21-1 | E680E | 5.0 | mg/L | <5.0 | <5.0 | 0 | Diff <2x LOR | ---- |
| | | Propylene glycol, 1,2- | 57-55-6 | E680E | 5.0 | mg/L | <5.0 | <5.0 | 0 | Diff <2x LOR | ---- |
| | | Triethylene glycol | 112-27-6 | E680E | 5.0 | mg/L | <5.0 | <5.0 | 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: 1769049)** | | | | | | |
| Solids, total suspended [TSS] | ---- | E160 | 3 | mg/L | <3.0 | ---- |
| **Physical Tests (QCLot: 1769064)** | | | | | | |
| Solids, total dissolved [TDS] | ---- | E162 | 10 | mg/L | <10 | ---- |
| **Physical Tests (QCLot: 1769230)** | | | | | | |
| Turbidity | ---- | E121 | 0.1 | NTU | <0.10 | ---- |
| **Physical Tests (QCLot: 1769457)** | | | | | | |
| Alkalinity, bicarbonate (as CaCO3) | ---- | E290 | 1 | mg/L | <1.0 | ---- |
| Alkalinity, carbonate (as CaCO3) | ---- | E290 | 1 | mg/L | <1.0 | ---- |
| Alkalinity, hydroxide (as CaCO3) | ---- | E290 | 1 | mg/L | <1.0 | ---- |
| Alkalinity, phenolphthalein (as CaCO3) | ---- | E290 | 1 | mg/L | <1.0 | ---- |
| Alkalinity, total (as CaCO3) | ---- | E290 | 1 | mg/L | <1.0 | ---- |
| **Physical Tests (QCLot: 1769458)** | | | | | | |
| Conductivity | ---- | E100 | 1 | µS/cm | 1.0 | ---- |
| **Anions and Nutrients (QCLot: 1769394)** | | | | | | |
| Nitrogen, total | 7727-37-9 | E366 | 0.03 | mg/L | <0.030 | ---- |
| **Anions and Nutrients (QCLot: 1769395)** | | | | | | |
| Phosphorus, total | 7723-14-0 | E372-U | 0.002 | mg/L | <0.0020 | ---- |
| **Anions and Nutrients (QCLot: 1769396)** | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298 | 0.005 | mg/L | <0.0050 | ---- |
| **Anions and Nutrients (QCLot: 1769459)** | | | | | | |
| Fluoride | 16984-48-8 | E235.F | 0.02 | mg/L | <0.020 | ---- |
| **Anions and Nutrients (QCLot: 1769460)** | | | | | | |
| Chloride | 16887-00-6 | E235.Cl | 0.5 | mg/L | <0.50 | ---- |
| **Anions and Nutrients (QCLot: 1769461)** | | | | | | |
| Bromide | 24959-67-9 | E235.Br-L | 0.05 | mg/L | <0.050 | ---- |
| **Anions and Nutrients (QCLot: 1769462)** | | | | | | |
| Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.005 | mg/L | <0.0050 | ---- |
| **Anions and Nutrients (QCLot: 1769463)** | | | | | | |
| Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.001 | mg/L | <0.0010 | ---- |
| **Anions and Nutrients (QCLot: 1769464)** | | | | | | |
| Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.3 | mg/L | <0.30 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1769392)** | | | | | | |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|---|---|---|---|---|---|
| **Organic / Inorganic Carbon (QCLot: 1769392) - continued** | | | | | | |
| Carbon, dissolved organic [DOC] | ---- | E358-L | 0.5 | mg/L | <0.50 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1769393)** | | | | | | |
| Carbon, total organic [TOC] | ---- | E355-L | 0.5 | mg/L | <0.50 | ---- |
| **Total Metals (QCLot: 1769065)** | | | | | | |
| Aluminum, total | 7429-90-5 | E420 | 0.003 | mg/L | <0.0030 | ---- |
| Antimony, total | 7440-36-0 | E420 | 0.0001 | mg/L | <0.00010 | ---- |
| Arsenic, total | 7440-38-2 | E420 | 0.0001 | mg/L | <0.00010 | ---- |
| Barium, total | 7440-39-3 | E420 | 0.0001 | mg/L | <0.00010 | ---- |
| Beryllium, total | 7440-41-7 | E420 | 0.00002 | mg/L | <0.000020 | ---- |
| Bismuth, total | 7440-69-9 | E420 | 0.00005 | mg/L | <0.000050 | ---- |
| Boron, total | 7440-42-8 | E420 | 0.01 | mg/L | <0.010 | ---- |
| Cadmium, total | 7440-43-9 | E420 | 0.000005 | mg/L | <0.0000050 | ---- |
| Calcium, total | 7440-70-2 | E420 | 0.05 | mg/L | <0.050 | ---- |
| Cesium, total | 7440-46-2 | E420 | 0.00001 | mg/L | <0.000010 | ---- |
| Chromium, total | 7440-47-3 | E420 | 0.0005 | mg/L | <0.00050 | ---- |
| Cobalt, total | 7440-48-4 | E420 | 0.0001 | mg/L | <0.00010 | ---- |
| Copper, total | 7440-50-8 | E420 | 0.0005 | mg/L | <0.00050 | ---- |
| Iron, total | 7439-89-6 | E420 | 0.01 | mg/L | <0.010 | ---- |
| Lead, total | 7439-92-1 | E420 | 0.00005 | mg/L | <0.000050 | ---- |
| Lithium, total | 7439-93-2 | E420 | 0.001 | mg/L | <0.0010 | ---- |
| Magnesium, total | 7439-95-4 | E420 | 0.005 | mg/L | <0.0050 | ---- |
| Manganese, total | 7439-96-5 | E420 | 0.0001 | mg/L | # 0.00010 | B |
| 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 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|---|---|---|---|---|---|
| **Total Metals (QCLot: 1769065) - continued** | | | | | | |
| 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 | ---- |
| **Total Metals (QCLot: 1769282)** | | | | | | |
| Mercury, total | 7439-97-6 | E508 | 0.000005 | mg/L | <0.0000050 | ---- |
| **Dissolved Metals (QCLot: 1769066)** | | | | | | |
| 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 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|---|---|---|---|---|---|
| **Dissolved Metals (QCLot: 1769066) - continued** | | | | | | |
| Silicon, dissolved | 7440-21-3 | E421 | 0.05 | mg/L | <0.050 | ---- |
| Silver, dissolved | 7440-22-4 | E421 | 0.00001 | mg/L | <0.000010 | ---- |
| Sodium, dissolved | 7440-23-5 | E421 | 0.05 | mg/L | <0.050 | ---- |
| Strontium, dissolved | 7440-24-6 | E421 | 0.0002 | mg/L | <0.00020 | ---- |
| Sulfur, dissolved | 7704-34-9 | E421 | 0.5 | mg/L | <0.50 | ---- |
| Tellurium, dissolved | 13494-80-9 | E421 | 0.0002 | mg/L | <0.00020 | ---- |
| Thallium, dissolved | 7440-28-0 | E421 | 0.00001 | mg/L | <0.000010 | ---- |
| Thorium, dissolved | 7440-29-1 | E421 | 0.0001 | mg/L | <0.00010 | ---- |
| Tin, dissolved | 7440-31-5 | E421 | 0.0001 | mg/L | <0.00010 | ---- |
| Titanium, dissolved | 7440-32-6 | E421 | 0.0003 | mg/L | <0.00030 | ---- |
| Tungsten, dissolved | 7440-33-7 | E421 | 0.0001 | mg/L | <0.00010 | ---- |
| Uranium, dissolved | 7440-61-1 | E421 | 0.00001 | mg/L | <0.000010 | ---- |
| Vanadium, dissolved | 7440-62-2 | E421 | 0.0005 | mg/L | <0.00050 | ---- |
| Zinc, dissolved | 7440-66-6 | E421 | 0.001 | mg/L | <0.0010 | ---- |
| Zirconium, dissolved | 7440-67-7 | E421 | 0.0002 | mg/L | <0.00020 | ---- |
| **Dissolved Metals (QCLot: 1769283)** | | | | | | |
| Mercury, dissolved | 7439-97-6 | E509 | 0.000005 | mg/L | <0.0000050 | ---- |
| **Aggregate Organics (QCLot: 1770976)** | | | | | | |
| Phenols, total (4AAP) | ---- | E562 | 0.001 | mg/L | <0.0010 | ---- |
| **Volatile Organic Compounds (QCLot: 1769285)** | | | | | | |
| Benzene | 71-43-2 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Bromodichloromethane | 75-27-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Bromoform | 75-25-2 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Carbon tetrachloride | 56-23-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Chlorobenzene | 108-90-7 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Chloroethane | 75-00-3 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Chloroform | 67-66-3 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Chloromethane | 74-87-3 | E611C | 5 | µg/L | <5.0 | ---- |
| Dibromochloromethane | 124-48-1 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichlorobenzene, 1,2- | 95-50-1 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichlorobenzene, 1,3- | 541-73-1 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichlorobenzene, 1,4- | 106-46-7 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethane, 1,1- | 75-34-3 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethane, 1,2- | 107-06-2 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethylene, 1,1- | 75-35-4 | E611C | 0.5 | µg/L | <0.50 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|---|---|---|---|---|---|
| **Volatile Organic Compounds (QCLot: 1769285) - continued** | | | | | | |
| Dichloroethylene, cis-1,2- | 156-59-2 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethylene, trans-1,2- | 156-60-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloromethane | 75-09-2 | E611C | 1 | µg/L | <1.0 | ---- |
| Dichloropropane, 1,2- | 78-87-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloropropylene, cis-1,3- | 10061-01-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloropropylene, trans-1,3- | 10061-02-6 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Ethylbenzene | 100-41-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Styrene | 100-42-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611C | 0.2 | µg/L | <0.20 | ---- |
| Tetrachloroethylene | 127-18-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Toluene | 108-88-3 | E611C | 0.4 | µg/L | <0.40 | ---- |
| Trichloroethane, 1,1,1- | 71-55-6 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Trichloroethane, 1,1,2- | 79-00-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Trichloroethylene | 79-01-6 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Trichlorofluoromethane | 75-69-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Vinyl chloride | 75-01-4 | E611C | 0.4 | µg/L | <0.40 | ---- |
| Xylene, m+p- | 179601-23-1 | E611C | 0.4 | µg/L | <0.40 | ---- |
| Xylene, o- | 95-47-6 | E611C | 0.3 | µg/L | <0.30 | ---- |
| **Hydrocarbons (QCLot: 1769284)** | | | | | | |
| VHw (C6-C10) | ---- | E581.VH+F1 | 100 | µg/L | <100 | ---- |
| **Hydrocarbons (QCLot: 1769413)** | | | | | | |
| EPH (C10-C19) | ---- | E601A | 250 | µg/L | <250 | ---- |
| EPH (C19-C32) | ---- | E601A | 250 | µg/L | <250 | ---- |
| **Polycyclic Aromatic Hydrocarbons (QCLot: 1769412)** | | | | | | |
| Acenaphthene | 83-32-9 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Acenaphthylene | 208-96-8 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Acridine | 260-94-6 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Anthracene | 120-12-7 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Benz(a)anthracene | 56-55-3 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Benzo(a)pyrene | 50-32-8 | E641A | 0.005 | µg/L | <0.0050 | ---- |
| Benzo(b+j)fluoranthene | n/a | E641A | 0.01 | µg/L | <0.010 | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Benzo(k)fluoranthene | 207-08-9 | E641A | 0.01 | µg/L | <0.010 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|---|---|---|---|---|---|
| **Polycyclic Aromatic Hydrocarbons (QCLot: 1769412) - continued** | | | | | | |
| Chrysene | 218-01-9 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | E641A | 0.005 | µg/L | <0.0050 | ---- |
| Fluoranthene | 206-44-0 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Fluorene | 86-73-7 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Indeno(1,2,3-c,d)pyrene | 193-39-5 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Methylnaphthalene, 1- | 90-12-0 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Methylnaphthalene, 2- | 91-57-6 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Naphthalene | 91-20-3 | E641A | 0.05 | µg/L | <0.050 | ---- |
| Phenanthrene | 85-01-8 | E641A | 0.02 | µg/L | <0.020 | ---- |
| Pyrene | 129-00-0 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Quinoline | 91-22-5 | E641A | 0.05 | µg/L | <0.050 | ---- |
| **Glycols (QCLot: 1769031)** | | | | | | |
| Diethylene glycol | 111-46-6 | E680E | 5 | mg/L | <5.0 | ---- |
| Ethylene glycol | 107-21-1 | E680E | 5 | mg/L | <5.0 | ---- |
| Propylene glycol, 1,2- | 57-55-6 | E680E | 5 | mg/L | <5.0 | ---- |
| Triethylene glycol | 112-27-6 | E680E | 5 | mg/L | <5.0 | ---- |

## Qualifiers

| Qualifier | Description |
|---|---|
| B | *Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.* |

## 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: 1769049)** | | | | | | | | | |
| Solids, total suspended [TSS] | ---- | E160 | 3 | mg/L | 150 mg/L | 102 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1769064)** | | | | | | | | | |
| Solids, total dissolved [TDS] | ---- | E162 | 10 | mg/L | 1000 mg/L | 110 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1769230)** | | | | | | | | | |
| Turbidity | ---- | E121 | 0.1 | NTU | 200 NTU | 98.5 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1769456)** | | | | | | | | | |
| pH | ---- | E108 | ---- | pH units | 7 pH units | 100 | 98.0 | 102 | ---- |
| **Physical Tests (QCLot: 1769457)** | | | | | | | | | |
| Alkalinity, phenolphthalein (as CaCO3) | ---- | E290 | 1 | mg/L | 229 mg/L | 110 | 75.0 | 125 | ---- |
| Alkalinity, total (as CaCO3) | ---- | E290 | 1 | mg/L | 500 mg/L | 104 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1769458)** | | | | | | | | | |
| Conductivity | ---- | E100 | 1 | µS/cm | 147 µS/cm | 101 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1769394)** | | | | | | | | | |
| Nitrogen, total | 7727-37-9 | E366 | 0.03 | mg/L | 0.5 mg/L | 97.3 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1769395)** | | | | | | | | | |
| Phosphorus, total | 7723-14-0 | E372-U | 0.002 | mg/L | 0.05 mg/L | 93.6 | 80.0 | 120 | ---- |
| **Anions and Nutrients (QCLot: 1769396)** | | | | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298 | 0.005 | mg/L | 0.2 mg/L | 98.7 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1769459)** | | | | | | | | | |
| Fluoride | 16984-48-8 | E235.F | 0.02 | mg/L | 1 mg/L | 97.7 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1769460)** | | | | | | | | | |
| Chloride | 16887-00-6 | E235.Cl | 0.5 | mg/L | 100 mg/L | 98.8 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1769461)** | | | | | | | | | |
| Bromide | 24959-67-9 | E235.Br-L | 0.05 | mg/L | 0.5 mg/L | 102 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1769462)** | | | | | | | | | |
| 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: 1769463)** | | | | | | | | | |
| Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.001 | mg/L | 0.5 mg/L | 98.7 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1769464)** | | | | | | | | | |
| Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.3 | mg/L | 100 mg/L | 100 | 90.0 | 110 | ---- |

Sub-Matrix: **Water**

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Target Concentration | LCS | Low | High | Qualifier |
| **Organic / Inorganic Carbon (QCLot: 1769392)** | | | | | | | | | |
| Carbon, dissolved organic [DOC] | ---- | E358-L | 0.5 | mg/L | 8.57 mg/L | 97.9 | 80.0 | 120 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1769393)** | | | | | | | | | |
| Carbon, total organic [TOC] | ---- | E355-L | 0.5 | mg/L | 8.57 mg/L | 102 | 80.0 | 120 | ---- |
| **Total Metals (QCLot: 1769065)** | | | | | | | | | |
| Aluminum, total | 7429-90-5 | E420 | 0.003 | mg/L | 2 mg/L | 106 | 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 | 107 | 80.0 | 120 | ---- |
| Barium, total | 7440-39-3 | E420 | 0.0001 | mg/L | 0.25 mg/L | 107 | 80.0 | 120 | ---- |
| Beryllium, total | 7440-41-7 | E420 | 0.00002 | mg/L | 0.1 mg/L | 102 | 80.0 | 120 | ---- |
| Bismuth, total | 7440-69-9 | E420 | 0.00005 | mg/L | 1 mg/L | 113 | 80.0 | 120 | ---- |
| Boron, total | 7440-42-8 | E420 | 0.01 | mg/L | 1 mg/L | 95.2 | 80.0 | 120 | ---- |
| Cadmium, total | 7440-43-9 | E420 | 0.000005 | mg/L | 0.1 mg/L | 99.6 | 80.0 | 120 | ---- |
| Calcium, total | 7440-70-2 | E420 | 0.05 | mg/L | 50 mg/L | 103 | 80.0 | 120 | ---- |
| Cesium, total | 7440-46-2 | E420 | 0.00001 | mg/L | 0.05 mg/L | 109 | 80.0 | 120 | ---- |
| Chromium, total | 7440-47-3 | E420 | 0.0005 | mg/L | 0.25 mg/L | 104 | 80.0 | 120 | ---- |
| Cobalt, total | 7440-48-4 | E420 | 0.0001 | mg/L | 0.25 mg/L | 104 | 80.0 | 120 | ---- |
| Copper, total | 7440-50-8 | E420 | 0.0005 | mg/L | 0.25 mg/L | 104 | 80.0 | 120 | ---- |
| Iron, total | 7439-89-6 | E420 | 0.01 | mg/L | 1 mg/L | 97.1 | 80.0 | 120 | ---- |
| Lead, total | 7439-92-1 | E420 | 0.00005 | mg/L | 0.5 mg/L | 110 | 80.0 | 120 | ---- |
| Lithium, total | 7439-93-2 | E420 | 0.001 | mg/L | 0.25 mg/L | 103 | 80.0 | 120 | ---- |
| Magnesium, total | 7439-95-4 | E420 | 0.005 | mg/L | 50 mg/L | 106 | 80.0 | 120 | ---- |
| Manganese, total | 7439-96-5 | E420 | 0.0001 | mg/L | 0.25 mg/L | 105 | 80.0 | 120 | ---- |
| Molybdenum, total | 7439-98-7 | E420 | 0.00005 | mg/L | 0.25 mg/L | 109 | 80.0 | 120 | ---- |
| Nickel, total | 7440-02-0 | E420 | 0.0005 | mg/L | 0.5 mg/L | 103 | 80.0 | 120 | ---- |
| Phosphorus, total | 7723-14-0 | E420 | 0.05 | mg/L | 10 mg/L | 103 | 80.0 | 120 | ---- |
| Potassium, total | 7440-09-7 | E420 | 0.05 | mg/L | 50 mg/L | 104 | 80.0 | 120 | ---- |
| Rubidium, total | 7440-17-7 | E420 | 0.0002 | mg/L | 0.1 mg/L | 112 | 80.0 | 120 | ---- |
| Selenium, total | 7782-49-2 | E420 | 0.00005 | mg/L | 1 mg/L | 102 | 80.0 | 120 | ---- |
| Silicon, total | 7440-21-3 | E420 | 0.1 | mg/L | 10 mg/L | 115 | 80.0 | 120 | ---- |
| Silver, total | 7440-22-4 | E420 | 0.00001 | mg/L | 0.1 mg/L | 106 | 80.0 | 120 | ---- |
| Sodium, total | 7440-23-5 | E420 | 0.05 | mg/L | 50 mg/L | 112 | 80.0 | 120 | ---- |
| Strontium, total | 7440-24-6 | E420 | 0.0002 | mg/L | 0.25 mg/L | 103 | 80.0 | 120 | ---- |
| Sulfur, total | 7704-34-9 | E420 | 0.5 | mg/L | 50 mg/L | 109 | 80.0 | 120 | ---- |
| Tellurium, total | 13494-80-9 | E420 | 0.0002 | mg/L | 0.1 mg/L | 106 | 80.0 | 120 | ---- |
| Thallium, total | 7440-28-0 | E420 | 0.00001 | mg/L | 1 mg/L | 106 | 80.0 | 120 | ---- |

Sub-Matrix: **Water**

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Target Concentration | LCS | Low | High | Qualifier |
| **Total Metals (QCLot: 1769065) - continued** | | | | | | | | | |
| Thorium, total | 7440-29-1 | E420 | 0.0001 | mg/L | 0.1 mg/L | 109 | 80.0 | 120 | ---- |
| Tin, total | 7440-31-5 | E420 | 0.0001 | mg/L | 0.5 mg/L | 103 | 80.0 | 120 | ---- |
| Titanium, total | 7440-32-6 | E420 | 0.0003 | mg/L | 0.25 mg/L | 103 | 80.0 | 120 | ---- |
| Tungsten, total | 7440-33-7 | E420 | 0.0001 | mg/L | 0.1 mg/L | 111 | 80.0 | 120 | ---- |
| Uranium, total | 7440-61-1 | E420 | 0.00001 | mg/L | 0.005 mg/L | 115 | 80.0 | 120 | ---- |
| Vanadium, total | 7440-62-2 | E420 | 0.0005 | mg/L | 0.5 mg/L | 106 | 80.0 | 120 | ---- |
| Zinc, total | 7440-66-6 | E420 | 0.003 | mg/L | 0.5 mg/L | 104 | 80.0 | 120 | ---- |
| Zirconium, total | 7440-67-7 | E420 | 0.0002 | mg/L | 0.1 mg/L | 104 | 80.0 | 120 | ---- |
| **Total Metals (QCLot: 1769282)** | | | | | | | | | |
| Mercury, total | 7439-97-6 | E508 | 0.000005 | mg/L | 0 mg/L | 87.3 | 80.0 | 120 | ---- |
| **Dissolved Metals (QCLot: 1769066)** | | | | | | | | | |
| Aluminum, dissolved | 7429-90-5 | E421 | 0.001 | mg/L | 2 mg/L | 99.5 | 80.0 | 120 | ---- |
| Antimony, dissolved | 7440-36-0 | E421 | 0.0001 | mg/L | 1 mg/L | 99.1 | 80.0 | 120 | ---- |
| Arsenic, dissolved | 7440-38-2 | E421 | 0.0001 | mg/L | 1 mg/L | 104 | 80.0 | 120 | ---- |
| Barium, dissolved | 7440-39-3 | E421 | 0.0001 | mg/L | 0.25 mg/L | 102 | 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 | 94.6 | 80.0 | 120 | ---- |
| Boron, dissolved | 7440-42-8 | E421 | 0.01 | mg/L | 1 mg/L | 94.3 | 80.0 | 120 | ---- |
| Cadmium, dissolved | 7440-43-9 | E421 | 0.000005 | mg/L | 0.1 mg/L | 94.5 | 80.0 | 120 | ---- |
| Calcium, dissolved | 7440-70-2 | E421 | 0.05 | mg/L | 50 mg/L | 101 | 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 | 100.0 | 80.0 | 120 | ---- |
| Cobalt, dissolved | 7440-48-4 | E421 | 0.0001 | mg/L | 0.25 mg/L | 98.6 | 80.0 | 120 | ---- |
| Copper, dissolved | 7440-50-8 | E421 | 0.0002 | mg/L | 0.25 mg/L | 97.2 | 80.0 | 120 | ---- |
| Iron, dissolved | 7439-89-6 | E421 | 0.01 | mg/L | 1 mg/L | 93.0 | 80.0 | 120 | ---- |
| Lead, dissolved | 7439-92-1 | E421 | 0.00005 | mg/L | 0.5 mg/L | 98.8 | 80.0 | 120 | ---- |
| Lithium, dissolved | 7439-93-2 | E421 | 0.001 | mg/L | 0.25 mg/L | 106 | 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 | 100 | 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 | 97.2 | 80.0 | 120 | ---- |
| Phosphorus, dissolved | 7723-14-0 | E421 | 0.05 | mg/L | 10 mg/L | 103 | 80.0 | 120 | ---- |
| Potassium, dissolved | 7440-09-7 | E421 | 0.05 | mg/L | 50 mg/L | 97.7 | 80.0 | 120 | ---- |
| Rubidium, dissolved | 7440-17-7 | E421 | 0.0002 | mg/L | 0.1 mg/L | 106 | 80.0 | 120 | ---- |
| Selenium, dissolved | 7782-49-2 | E421 | 0.00005 | mg/L | 1 mg/L | 93.5 | 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: 1769066) - continued** | | | | | | | | | |
| Silicon, dissolved | 7440-21-3 | E421 | 0.05 | mg/L | 10 mg/L | 102 | 80.0 | 120 | ---- |
| Silver, dissolved | 7440-22-4 | E421 | 0.00001 | mg/L | 0.1 mg/L | 99.4 | 80.0 | 120 | ---- |
| Sodium, dissolved | 7440-23-5 | E421 | 0.05 | mg/L | 50 mg/L | 102 | 80.0 | 120 | ---- |
| Strontium, dissolved | 7440-24-6 | E421 | 0.0002 | mg/L | 0.25 mg/L | 98.3 | 80.0 | 120 | ---- |
| Sulfur, dissolved | 7704-34-9 | E421 | 0.5 | mg/L | 50 mg/L | 97.5 | 80.0 | 120 | ---- |
| Tellurium, dissolved | 13494-80-9 | E421 | 0.0002 | mg/L | 0.1 mg/L | 98.4 | 80.0 | 120 | ---- |
| Thallium, dissolved | 7440-28-0 | E421 | 0.00001 | mg/L | 1 mg/L | 98.2 | 80.0 | 120 | ---- |
| Thorium, dissolved | 7440-29-1 | E421 | 0.0001 | mg/L | 0.1 mg/L | 96.5 | 80.0 | 120 | ---- |
| Tin, dissolved | 7440-31-5 | E421 | 0.0001 | mg/L | 0.5 mg/L | 96.6 | 80.0 | 120 | ---- |
| Titanium, dissolved | 7440-32-6 | E421 | 0.0003 | mg/L | 0.25 mg/L | 92.5 | 80.0 | 120 | ---- |
| Tungsten, dissolved | 7440-33-7 | E421 | 0.0001 | mg/L | 0.1 mg/L | 99.8 | 80.0 | 120 | ---- |
| Uranium, dissolved | 7440-61-1 | E421 | 0.00001 | mg/L | 0.005 mg/L | 101 | 80.0 | 120 | ---- |
| Vanadium, dissolved | 7440-62-2 | E421 | 0.0005 | mg/L | 0.5 mg/L | 101 | 80.0 | 120 | ---- |
| Zinc, dissolved | 7440-66-6 | E421 | 0.001 | mg/L | 0.5 mg/L | 98.8 | 80.0 | 120 | ---- |
| Zirconium, dissolved | 7440-67-7 | E421 | 0.0002 | mg/L | 0.1 mg/L | 99.2 | 80.0 | 120 | ---- |
| Mercury, dissolved | 7439-97-6 | E509 | 0.000005 | mg/L | 0 mg/L | 89.1 | 80.0 | 120 | ---- |
| **Aggregate Organics (QCLot: 1770976)** | | | | | | | | | |
| Phenols, total (4AAP) | ---- | E562 | 0.001 | mg/L | 0.02 mg/L | 108 | 85.0 | 115 | ---- |
| **Volatile Organic Compounds (QCLot: 1769285)** | | | | | | | | | |
| Benzene | 71-43-2 | E611C | 0.5 | µg/L | 100 µg/L | 99.1 | 70.0 | 130 | ---- |
| Bromodichloromethane | 75-27-4 | E611C | 0.5 | µg/L | 100 µg/L | 94.1 | 70.0 | 130 | ---- |
| Bromoform | 75-25-2 | E611C | 0.5 | µg/L | 100 µg/L | 107 | 70.0 | 130 | ---- |
| Carbon tetrachloride | 56-23-5 | E611C | 0.5 | µg/L | 100 µg/L | 91.2 | 70.0 | 130 | ---- |
| Chlorobenzene | 108-90-7 | E611C | 0.5 | µg/L | 100 µg/L | 102 | 70.0 | 130 | ---- |
| Chloroethane | 75-00-3 | E611C | 0.5 | µg/L | 100 µg/L | 114 | 60.0 | 140 | ---- |
| Chloroform | 67-66-3 | E611C | 0.5 | µg/L | 100 µg/L | 95.4 | 70.0 | 130 | ---- |
| Chloromethane | 74-87-3 | E611C | 5 | µg/L | 100 µg/L | 110 | 60.0 | 140 | ---- |
| Dibromochloromethane | 124-48-1 | E611C | 0.5 | µg/L | 100 µg/L | 98.4 | 70.0 | 130 | ---- |
| Dichlorobenzene, 1,2- | 95-50-1 | E611C | 0.5 | µg/L | 100 µg/L | 102 | 70.0 | 130 | ---- |
| Dichlorobenzene, 1,3- | 541-73-1 | E611C | 0.5 | µg/L | 100 µg/L | 105 | 70.0 | 130 | ---- |
| Dichlorobenzene, 1,4- | 106-46-7 | E611C | 0.5 | µg/L | 100 µg/L | 104 | 70.0 | 130 | ---- |
| Dichloroethane, 1,1- | 75-34-3 | E611C | 0.5 | µg/L | 100 µg/L | 99.1 | 70.0 | 130 | ---- |
| Dichloroethane, 1,2- | 107-06-2 | E611C | 0.5 | µg/L | 100 µg/L | 96.8 | 70.0 | 130 | ---- |
| Dichloroethylene, 1,1- | 75-35-4 | E611C | 0.5 | µg/L | 100 µg/L | 94.2 | 70.0 | 130 | ---- |

Sub-Matrix: **Water**

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Target Concentration | LCS | Low | High | Qualifier |
| **Volatile Organic Compounds (QCLot: 1769285) - continued** | | | | | | | | | |
| Dichloroethylene, cis-1,2- | 156-59-2 | E611C | 0.5 | µg/L | 100 µg/L | 96.8 | 70.0 | 130 | ---- |
| Dichloroethylene, trans-1,2- | 156-60-5 | E611C | 0.5 | µg/L | 100 µg/L | 95.9 | 70.0 | 130 | ---- |
| Dichloromethane | 75-09-2 | E611C | 1 | µg/L | 100 µg/L | 94.1 | 70.0 | 130 | ---- |
| Dichloropropane, 1,2- | 78-87-5 | E611C | 0.5 | µg/L | 100 µg/L | 103 | 70.0 | 130 | ---- |
| Dichloropropylene, cis-1,3- | 10061-01-5 | E611C | 0.5 | µg/L | 100 µg/L | 102 | 70.0 | 130 | ---- |
| Dichloropropylene, trans-1,3- | 10061-02-6 | E611C | 0.5 | µg/L | 100 µg/L | 104 | 70.0 | 130 | ---- |
| Ethylbenzene | 100-41-4 | E611C | 0.5 | µg/L | 100 µg/L | 98.6 | 70.0 | 130 | ---- |
| Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611C | 0.5 | µg/L | 100 µg/L | 105 | 70.0 | 130 | ---- |
| Styrene | 100-42-5 | E611C | 0.5 | µg/L | 100 µg/L | 99.4 | 70.0 | 130 | ---- |
| Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611C | 0.5 | µg/L | 100 µg/L | 98.1 | 70.0 | 130 | ---- |
| Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611C | 0.2 | µg/L | 100 µg/L | 98.8 | 70.0 | 130 | ---- |
| Tetrachloroethylene | 127-18-4 | E611C | 0.5 | µg/L | 100 µg/L | 104 | 70.0 | 130 | ---- |
| Toluene | 108-88-3 | E611C | 0.4 | µg/L | 100 µg/L | 101 | 70.0 | 130 | ---- |
| Trichloroethane, 1,1,1- | 71-55-6 | E611C | 0.5 | µg/L | 100 µg/L | 94.2 | 70.0 | 130 | ---- |
| Trichloroethane, 1,1,2- | 79-00-5 | E611C | 0.5 | µg/L | 100 µg/L | 99.5 | 70.0 | 130 | ---- |
| Trichloroethylene | 79-01-6 | E611C | 0.5 | µg/L | 100 µg/L | 102 | 70.0 | 130 | ---- |
| Trichlorofluoromethane | 75-69-4 | E611C | 0.5 | µg/L | 100 µg/L | 92.6 | 60.0 | 140 | ---- |
| Vinyl chloride | 75-01-4 | E611C | 0.4 | µg/L | 100 µg/L | 110 | 60.0 | 140 | ---- |
| Xylene, m+p- | 179601-23-1 | E611C | 0.4 | µg/L | 200 µg/L | 100 | 70.0 | 130 | ---- |
| Xylene, o- | 95-47-6 | E611C | 0.3 | µg/L | 100 µg/L | 97.4 | 70.0 | 130 | ---- |
| **Hydrocarbons (QCLot: 1769284)** | | | | | | | | | |
| VHw (C6-C10) | ---- | E581.VH+F1 | 100 | µg/L | 6310 µg/L | 74.7 | 70.0 | 130 | ---- |
| **Hydrocarbons (QCLot: 1769413)** | | | | | | | | | |
| EPH (C10-C19) | ---- | E601A | 250 | µg/L | 6490 µg/L | 103 | 70.0 | 130 | ---- |
| EPH (C19-C32) | ---- | E601A | 250 | µg/L | 3360 µg/L | 90.0 | 70.0 | 130 | ---- |
| **Polycyclic Aromatic Hydrocarbons (QCLot: 1769412)** | | | | | | | | | |
| Acenaphthene | 83-32-9 | E641A | 0.01 | µg/L | 0.5 µg/L | 112 | 60.0 | 130 | ---- |
| Acenaphthylene | 208-96-8 | E641A | 0.01 | µg/L | 0.5 µg/L | 118 | 60.0 | 130 | ---- |
| Acridine | 260-94-6 | E641A | 0.01 | µg/L | 0.5 µg/L | 116 | 60.0 | 130 | ---- |
| Anthracene | 120-12-7 | E641A | 0.01 | µg/L | 0.5 µg/L | 123 | 60.0 | 130 | ---- |
| Benz(a)anthracene | 56-55-3 | E641A | 0.01 | µg/L | 0.5 µg/L | 115 | 60.0 | 130 | ---- |
| Benzo(a)pyrene | 50-32-8 | E641A | 0.005 | µg/L | 0.5 µg/L | 116 | 60.0 | 130 | ---- |
| Benzo(b+j)fluoranthene | n/a | E641A | 0.01 | µg/L | 0.5 µg/L | 118 | 60.0 | 130 | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | E641A | 0.01 | µg/L | 0.5 µg/L | 108 | 60.0 | 130 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| | | | | | Target Concentration | LCS | Low | High | Qualifier |
| **Polycyclic Aromatic Hydrocarbons (QCLot: 1769412) - continued** | | | | | | | | | |
| Benzo(k)fluoranthene | 207-08-9 | E641A | 0.01 | µg/L | 0.5 µg/L | 114 | 60.0 | 130 | ---- |
| Chrysene | 218-01-9 | E641A | 0.01 | µg/L | 0.5 µg/L | 114 | 60.0 | 130 | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | E641A | 0.005 | µg/L | 0.5 µg/L | 122 | 60.0 | 130 | ---- |
| Fluoranthene | 206-44-0 | E641A | 0.01 | µg/L | 0.5 µg/L | 114 | 60.0 | 130 | ---- |
| Fluorene | 86-73-7 | E641A | 0.01 | µg/L | 0.5 µg/L | 110 | 60.0 | 130 | ---- |
| Indeno(1,2,3-c,d)pyrene | 193-39-5 | E641A | 0.01 | µg/L | 0.5 µg/L | 114 | 60.0 | 130 | ---- |
| Methylnaphthalene, 1- | 90-12-0 | E641A | 0.01 | µg/L | 0.5 µg/L | 105 | 60.0 | 130 | ---- |
| Methylnaphthalene, 2- | 91-57-6 | E641A | 0.01 | µg/L | 0.5 µg/L | 118 | 60.0 | 130 | ---- |
| Naphthalene | 91-20-3 | E641A | 0.05 | µg/L | 0.5 µg/L | 110 | 50.0 | 130 | ---- |
| Phenanthrene | 85-01-8 | E641A | 0.02 | µg/L | 0.5 µg/L | 117 | 60.0 | 130 | ---- |
| Pyrene | 129-00-0 | E641A | 0.01 | µg/L | 0.5 µg/L | 115 | 60.0 | 130 | ---- |
| Quinoline | 91-22-5 | E641A | 0.05 | µg/L | 0.5 µg/L | 123 | 60.0 | 130 | ---- |
| **Glycols (QCLot: 1769031)** | | | | | | | | | |
| Diethylene glycol | 111-46-6 | E680E | 5 | mg/L | 25 mg/L | 88.6 | 70.0 | 130 | ---- |
| Ethylene glycol | 107-21-1 | E680E | 5 | mg/L | 25 mg/L | 89.0 | 70.0 | 130 | ---- |
| Propylene glycol, 1,2- | 57-55-6 | E680E | 5 | mg/L | 25 mg/L | 89.3 | 70.0 | 130 | ---- |
| Triethylene glycol | 112-27-6 | E680E | 5 | mg/L | 25 mg/L | 88.4 | 70.0 | 130 | ---- |

## 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: 1769459)** | | | | | | | | | | |
| VA24D1066-001 | Anonymous | Fluoride | 16984-48-8 | E235.F | 0.973 mg/L | 1 mg/L | 97.3 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1769460)** | | | | | | | | | | |
| VA24D1066-001 | Anonymous | Chloride | 16887-00-6 | E235.Cl | 100 mg/L | 100 mg/L | 100 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1769461)** | | | | | | | | | | |
| VA24D1066-001 | Anonymous | Bromide | 24959-67-9 | E235.Br-L | 0.506 mg/L | 0.5 mg/L | 101 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1769462)** | | | | | | | | | | |
| VA24D1066-001 | Anonymous | Nitrate (as N) | 14797-55-8 | E235.NO3-L | 2.48 mg/L | 2.5 mg/L | 99.1 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1769463)** | | | | | | | | | | |
| VA24D1066-001 | Anonymous | Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.503 mg/L | 0.5 mg/L | 101 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1769464)** | | | | | | | | | | |
| VA24D1066-001 | Anonymous | Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 98.4 mg/L | 100 mg/L | 98.4 | 75.0 | 125 | ---- |
| **Aggregate Organics (QCLot: 1770976)** | | | | | | | | | | |
| EO2406865-002 | Anonymous | Phenols, total (4AAP) | ---- | E562 | 0.0222 mg/L | 0.02 mg/L | 111 | 75.0 | 125 | ---- |
| **Volatile Organic Compounds (QCLot: 1769285)** | | | | | | | | | | |
| VA24D0954-001 | Anonymous | Benzene | 71-43-2 | E611C | 95.3 µg/L | 100 µg/L | 95.3 | 60.0 | 140 | ---- |
| | | Bromodichloromethane | 75-27-4 | E611C | 91.8 µg/L | 100 µg/L | 91.8 | 60.0 | 140 | ---- |
| | | Bromoform | 75-25-2 | E611C | 104 µg/L | 100 µg/L | 104 | 60.0 | 140 | ---- |
| | | Carbon tetrachloride | 56-23-5 | E611C | 87.6 µg/L | 100 µg/L | 87.6 | 60.0 | 140 | ---- |
| | | Chlorobenzene | 108-90-7 | E611C | 98.7 µg/L | 100 µg/L | 98.7 | 60.0 | 140 | ---- |
| | | Chloroethane | 75-00-3 | E611C | 101 µg/L | 100 µg/L | 101 | 50.0 | 150 | ---- |
| | | Chloroform | 67-66-3 | E611C | 92.0 µg/L | 100 µg/L | 92.0 | 60.0 | 140 | ---- |
| | | Chloromethane | 74-87-3 | E611C | 91.7 µg/L | 100 µg/L | 91.7 | 50.0 | 150 | ---- |
| | | Dibromochloromethane | 124-48-1 | E611C | 95.5 µg/L | 100 µg/L | 95.5 | 60.0 | 140 | ---- |
| | | Dichlorobenzene, 1,2- | 95-50-1 | E611C | 101 µg/L | 100 µg/L | 101 | 60.0 | 140 | ---- |
| | | Dichlorobenzene, 1,3- | 541-73-1 | E611C | 105 µg/L | 100 µg/L | 105 | 60.0 | 140 | ---- |
| | | Dichlorobenzene, 1,4- | 106-46-7 | E611C | 105 µg/L | 100 µg/L | 105 | 60.0 | 140 | ---- |
| | | Dichloroethane, 1,1- | 75-34-3 | E611C | 93.6 µg/L | 100 µg/L | 93.6 | 60.0 | 140 | ---- |
| | | Dichloroethane, 1,2- | 107-06-2 | E611C | 93.4 µg/L | 100 µg/L | 93.4 | 60.0 | 140 | ---- |
| | | Dichloroethylene, 1,1- | 75-35-4 | E611C | 86.5 µg/L | 100 µg/L | 86.5 | 60.0 | 140 | ---- |
| | | Dichloroethylene, cis-1,2- | 156-59-2 | E611C | 92.6 µg/L | 100 µg/L | 92.6 | 60.0 | 140 | ---- |
| | | Dichloroethylene, trans-1,2- | 156-60-5 | E611C | 90.6 µg/L | 100 µg/L | 90.6 | 60.0 | 140 | ---- |
| | | Dichloromethane | 75-09-2 | E611C | 89.4 µg/L | 100 µg/L | 89.4 | 60.0 | 140 | ---- |
| | | Dichloropropane, 1,2- | 78-87-5 | E611C | 98.7 µg/L | 100 µg/L | 98.7 | 60.0 | 140 | ---- |
| | | Dichloropropylene, cis-1,3- | 10061-01-5 | E611C | 99.8 µg/L | 100 µg/L | 99.8 | 60.0 | 140 | ---- |
| | | Dichloropropylene, trans-1,3- | 10061-02-6 | E611C | 101 µg/L | 100 µg/L | 101 | 60.0 | 140 | ---- |

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 |
| **Volatile Organic Compounds (QCLot: 1769285) - continued** | | | | | | | | | | |
| VA24D0954-001 | Anonymous | Ethylbenzene | 100-41-4 | E611C | 95.7 µg/L | 100 µg/L | 95.7 | 60.0 | 140 | ---- |
| | | Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611C | 102 µg/L | 100 µg/L | 102 | 60.0 | 140 | ---- |
| | | Styrene | 100-42-5 | E611C | 95.4 µg/L | 100 µg/L | 95.4 | 60.0 | 140 | ---- |
| | | Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611C | 95.2 µg/L | 100 µg/L | 95.2 | 60.0 | 140 | ---- |
| | | Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611C | 95.4 µg/L | 100 µg/L | 95.4 | 60.0 | 140 | ---- |
| | | Tetrachloroethylene | 127-18-4 | E611C | 102 µg/L | 100 µg/L | 102 | 60.0 | 140 | ---- |
| | | Toluene | 108-88-3 | E611C | 96.7 µg/L | 100 µg/L | 96.7 | 60.0 | 140 | ---- |
| | | Trichloroethane, 1,1,1- | 71-55-6 | E611C | 89.7 µg/L | 100 µg/L | 89.7 | 60.0 | 140 | ---- |
| | | Trichloroethane, 1,1,2- | 79-00-5 | E611C | 95.2 µg/L | 100 µg/L | 95.2 | 60.0 | 140 | ---- |
| | | Trichloroethylene | 79-01-6 | E611C | 99.7 µg/L | 100 µg/L | 99.7 | 60.0 | 140 | ---- |
| | | Trichlorofluoromethane | 75-69-4 | E611C | 84.0 µg/L | 100 µg/L | 84.0 | 50.0 | 150 | ---- |
| | | Vinyl chloride | 75-01-4 | E611C | 93.6 µg/L | 100 µg/L | 93.6 | 50.0 | 150 | ---- |
| | | Xylene, m+p- | 179601-23-1 | E611C | 196 µg/L | 200 µg/L | 98.2 | 60.0 | 140 | ---- |
| | | Xylene, o- | 95-47-6 | E611C | 95.4 µg/L | 100 µg/L | 95.4 | 60.0 | 140 | ---- |
| **Hydrocarbons (QCLot: 1769284)** | | | | | | | | | | |
| VA24D1001-001 | WTP | VHw (C6-C10) | ---- | E581.VH+F1 | 4510 µg/L | 6310 µg/L | 71.4 | 60.0 | 140 | ---- |

## Reference Material (RM) Report

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

Sub-Matrix:

| | | | | | Reference Material (RM) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | RM Target | Recovery (%) | Recovery Limits (%) | | |
| Laboratory sample ID | Reference Material ID | Analyte | CAS Number | Method | Concentration | RM | Low | High | Qualifier |
| **Physical Tests (QCLot: 1769231)** | | | | | | | | | |
| QC-1769231-001 | RM | Oxidation-reduction potential [ORP] | ---- | E125 | 220 mV | 101 | 95.0 | 105 | ---- |

ALS Canada Ltd.

# QUALITY CONTROL INTERPRETIVE REPORT

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24D1001** | Page | : 1 of 15 |
| Client | : **Frontier-Kemper Michels Joint Venture** | Laboratory | : ALS Environmental - Vancouver |
| Contact | : Sara Derakhshi | Account Manager | : Thomas Chang |
| Address | : 404-850 Harbourside Drive<br>North Vancouver BC Canada V7P 0A3 | Address | : 8081 Lougheed Highway<br>Burnaby, British Columbia Canada V5A 1W9 |
| Telephone | : ---- | Telephone | : +1 604 253 4188 |
| Project | : ---- | Date Samples Received | : 15-Nov-2024 13:25 |
| PO | : ---- | Issue Date | : 19-Nov-2024 13:02 |
| C-O-C number | : 23-1083430 | | |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : WTP Discharge | | |
| No. of samples received | : 1 | | |
| No. of samples analysed | : 1 | | |

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

- Analysis Holding Time Outliers exist - please see following pages for full details.

## *Outliers : Frequency of Quality Control Samples*

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

## 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 |
|---|---|---|---|---|---|---|---|---|
| **Method Blank (MB) Values** | | | | | | | | |
| Total Metals | QC-1769065-001 | ---- | Manganese, total | 7439-96-5 | E420 | 0.00010 B mg/L | 0.0001 mg/L | Blank result exceeds permitted value |

## Result Qualifiers

| Qualifier | Description |
|---|---|
| *B* | *Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.* |

# 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 |
| **Aggregate Organics : Phenols (4AAP) in Water by Colorimetry** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** WTP | E562 | 15-Nov-2024 | 18-Nov-2024 | 28 days | 3 days | ✓ | 18-Nov-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Ammonia by Fluorescence** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** WTP | E298 | 15-Nov-2024 | 15-Nov-2024 | 28 days | 0 days | ✓ | 16-Nov-2024 | 28 days | 1 days | ✓ |
| **Anions and Nutrients : Bromide in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** WTP | E235.Br-L | 15-Nov-2024 | 16-Nov-2024 | 28 days | 1 days | ✓ | 16-Nov-2024 | 28 days | 1 days | ✓ |
| **Anions and Nutrients : Chloride in Water by IC** | | | | | | | | | | |
| **HDPE** WTP | E235.Cl | 15-Nov-2024 | 16-Nov-2024 | 28 days | 1 days | ✓ | 16-Nov-2024 | 28 days | 1 days | ✓ |
| **Anions and Nutrients : Fluoride in Water by IC** | | | | | | | | | | |
| **HDPE** WTP | E235.F | 15-Nov-2024 | 16-Nov-2024 | 28 days | 1 days | ✓ | 16-Nov-2024 | 28 days | 1 days | ✓ |
| **Anions and Nutrients : Nitrate in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** WTP | E235.NO3-L | 15-Nov-2024 | 16-Nov-2024 | 3 days | 1 days | ✓ | 16-Nov-2024 | 3 days | 1 days | ✓ |
| **Anions and Nutrients : Nitrite in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** WTP | E235.NO2-L | 15-Nov-2024 | 16-Nov-2024 | 3 days | 1 days | ✓ | 16-Nov-2024 | 3 days | 1 days | ✓ |

Matrix: **Water**

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

| Analyte Group : Analytical Method / Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preparation Date | Holding Times Rec | Holding Times Actual | Eval | Analysis Date | Holding Times Rec | Holding Times Actual | Eval |
| **Anions and Nutrients : Sulfate in Water by IC** | | | | | | | | | | |
| **HDPE** WTP | E235.SO4 | 15-Nov-2024 | 16-Nov-2024 | 28 days | 1 days | ✓ | 16-Nov-2024 | 28 days | 1 days | ✓ |
| **Anions and Nutrients : Total Nitrogen by Colourimetry** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** WTP | E366 | 15-Nov-2024 | 15-Nov-2024 | 28 days | 0 days | ✓ | 17-Nov-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** WTP | E372-U | 15-Nov-2024 | 15-Nov-2024 | 28 days | 0 days | ✓ | 16-Nov-2024 | 28 days | 1 days | ✓ |
| **Dissolved Metals : Dissolved Mercury in Water by CVAAS** | | | | | | | | | | |
| **HDPE dissolved (nitric acid)** WTP | E509 | 15-Nov-2024 | 15-Nov-2024 | 0 hrs | 7 hrs | × UCP | 15-Nov-2024 | 0 hrs | 7 hrs | × UCP |
| **Dissolved Metals : Dissolved Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE dissolved (nitric acid)** WTP | E421 | 15-Nov-2024 | 15-Nov-2024 | 180 days | 0 days | ✓ | 15-Nov-2024 | 180 days | 0 days | ✓ |
| **Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine** | | | | | | | | | | |
| **HDPE total (nitric acid)** WTP | EF001 | 15-Nov-2024 | ---- | ---- | ---- | | 18-Nov-2024 | ---- | 3 days | |
| **Glycols : Glycols (4 analytes) by GC-FID** | | | | | | | | | | |
| **Glass vial (sodium bisulfate)** WTP | E680E | 15-Nov-2024 | 15-Nov-2024 | 14 days | 0 days | ✓ | 15-Nov-2024 | 40 days | 0 days | ✓ |
| **Hydrocarbons : BC PHCs - EPH by GC-FID** | | | | | | | | | | |
| **Amber glass/Teflon lined cap (sodium bisulfate)** WTP | E601A | 15-Nov-2024 | 15-Nov-2024 | 14 days | 0 days | ✓ | 16-Nov-2024 | 40 days | 0 days | ✓ |
| **Hydrocarbons : VH and F1 by Headspace GC-FID** | | | | | | | | | | |
| **Glass vial (sodium bisulfate)** WTP | E581.VH+F1 | 15-Nov-2024 | 15-Nov-2024 | 14 days | 0 days | ✓ | 16-Nov-2024 | 14 days | 1 days | ✓ |

Matrix: **Water**

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

| *Analyte Group : Analytical Method* / Container / Client Sample ID(s) | *Method* | *Sampling Date* | *Extraction / Preparation* | | | | *Analysis* | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | *Preparation Date* | *Holding Times* | | *Eval* | *Analysis Date* | *Holding Times* | | *Eval* |
| | | | | *Rec* | *Actual* | | | *Rec* | *Actual* | |
| **Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)** | | | | | | | | | | |
| **Amber glass dissolved (lab preserved)** WTP | E358-L | 15-Nov-2024 | 15-Nov-2024 | 3 days | 0 days | ✓ | 15-Nov-2024 | 28 days | 0 days | ✓ |
| **Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** WTP | E355-L | 15-Nov-2024 | 15-Nov-2024 | 28 days | 0 days | ✓ | 15-Nov-2024 | 28 days | 0 days | ✓ |
| **Physical Tests : Alkalinity Species by Titration** | | | | | | | | | | |
| **HDPE** WTP | E290 | 15-Nov-2024 | 16-Nov-2024 | 14 days | 1 days | ✓ | 16-Nov-2024 | 14 days | 1 days | ✓ |
| **Physical Tests : Conductivity in Water** | | | | | | | | | | |
| **HDPE** WTP | E100 | 15-Nov-2024 | 16-Nov-2024 | 28 days | 1 days | ✓ | 16-Nov-2024 | 28 days | 1 days | ✓ |
| **Physical Tests : ORP by Electrode** | | | | | | | | | | |
| **HDPE** WTP | E125 | 15-Nov-2024 | ---- | ---- | ---- | | 15-Nov-2024 | 0.25 hrs | 6 hrs | × EHTR-FM |
| **Physical Tests : pH by Meter** | | | | | | | | | | |
| **HDPE** WTP | E108 | 15-Nov-2024 | 16-Nov-2024 | 0.25 hrs | 13 hrs | × EHTR-FM | 16-Nov-2024 | 0.25 hrs | 22 hrs | × EHTR-FM |
| **Physical Tests : TDS by Gravimetry** | | | | | | | | | | |
| **HDPE** WTP | E162 | 15-Nov-2024 | ---- | ---- | ---- | | 15-Nov-2024 | 7 days | 0 days | ✓ |
| **Physical Tests : TSS by Gravimetry** | | | | | | | | | | |
| **HDPE** WTP | E160 | 15-Nov-2024 | ---- | ---- | ---- | | 15-Nov-2024 | 7 days | 0 days | ✓ |
| **Physical Tests : Turbidity by Nephelometry** | | | | | | | | | | |
| **HDPE** WTP | E121 | 15-Nov-2024 | ---- | ---- | ---- | | 15-Nov-2024 | 3 days | 0 days | ✓ |

Matrix: **Water**

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

| *Analyte Group : Analytical Method* / Container / Client Sample ID(s) | *Method* | *Sampling Date* | *Extraction / Preparation* | | | | *Analysis* | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | *Preparation Date* | *Holding Times* Rec | *Holding Times* Actual | *Eval* | *Analysis Date* | *Holding Times* Rec | *Holding Times* Actual | *Eval* |
| **Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS** | | | | | | | | | | |
| **Amber glass/Teflon lined cap (sodium bisulfate)** WTP | E641A | 15-Nov-2024 | 15-Nov-2024 | 14 days | 0 days | ✓ | 15-Nov-2024 | 40 days | 0 days | ✓ |
| **Total Metals : Total Mercury in Water by CVAAS** | | | | | | | | | | |
| **HDPE total (nitric acid)** WTP | E508 | 15-Nov-2024 | 15-Nov-2024 | 0 hrs | 7 hrs | × UCP | 15-Nov-2024 | 0 hrs | 7 hrs | × UCP |
| **Total Metals : Total Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE total (nitric acid)** WTP | E420 | 15-Nov-2024 | 15-Nov-2024 | 180 days | 0 days | ✓ | 15-Nov-2024 | 180 days | 0 days | ✓ |
| **Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS** | | | | | | | | | | |
| **Glass vial (sodium bisulfate)** WTP | E611C | 15-Nov-2024 | 15-Nov-2024 | 14 days | 0 days | ✓ | 16-Nov-2024 | 14 days | 1 days | ✓ |

**Legend & Qualifier Definitions**

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

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

UCP: Unsuitable Container and/or Preservative used (invalidates standard hold time). Maximum hold time of zero applied. Test results may be biased low / unreliable, and may not meet regulatory requirements.

# 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 | 1769457 | 0 | 2 | 0.0 | 5.0 | ✗ |
| Ammonia by Fluorescence | E298 | 1769396 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1769461 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1769460 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Conductivity in Water | E100 | 1769458 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1769283 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1769066 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1769392 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1769459 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Glycols (4 analytes) by GC-FID | E680E | 1769031 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1769462 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1769463 | 1 | 2 | 50.0 | 5.0 | ✓ |
| ORP by Electrode | E125 | 1769231 | 1 | 1 | 100.0 | 5.0 | ✓ |
| pH by Meter | E108 | 1769456 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Phenols (4AAP) in Water by Colorimetry | E562 | 1770976 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1769464 | 1 | 2 | 50.0 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1769064 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1769282 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1769065 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1769394 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Total Organic Carbon (Non-Purgeable) by Combustion (Low Level) | E355-L | 1769393 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1769395 | 1 | 1 | 100.0 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1769049 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Turbidity by Nephelometry | E121 | 1769230 | 1 | 1 | 100.0 | 5.0 | ✓ |
| VH and F1 by Headspace GC-FID | E581.VH+F1 | 1769284 | 1 | 2 | 50.0 | 5.0 | ✓ |
| VOCs (BC List) by Headspace GC-MS | E611C | 1769285 | 1 | 2 | 50.0 | 5.0 | ✓ |
| **Laboratory Control Samples (LCS)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1769457 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1769396 | 1 | 1 | 100.0 | 5.0 | ✓ |
| BC PHCs - EPH by GC-FID | E601A | 1769413 | 1 | 4 | 25.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1769461 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1769460 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Conductivity in Water | E100 | 1769458 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1769283 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1769066 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1769392 | 1 | 1 | 100.0 | 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** | | | | | | | |
| Fluoride in Water by IC | E235.F | 1769459 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Glycols (4 analytes) by GC-FID | E680E | 1769031 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1769462 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1769463 | 1 | 2 | 50.0 | 5.0 | ✓ |
| ORP by Electrode | E125 | 1769231 | 1 | 1 | 100.0 | 5.0 | ✓ |
| PAHs in Water by Hexane LVI GC-MS | E641A | 1769412 | 1 | 5 | 20.0 | 5.0 | ✓ |
| pH by Meter | E108 | 1769456 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Phenols (4AAP) in Water by Colorimetry | E562 | 1770976 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1769464 | 1 | 2 | 50.0 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1769064 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1769282 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1769065 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1769394 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Total Organic Carbon (Non-Purgeable) by Combustion (Low Level) | E355-L | 1769393 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1769395 | 1 | 1 | 100.0 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1769049 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Turbidity by Nephelometry | E121 | 1769230 | 1 | 1 | 100.0 | 5.0 | ✓ |
| VH and F1 by Headspace GC-FID | E581.VH+F1 | 1769284 | 1 | 2 | 50.0 | 5.0 | ✓ |
| VOCs (BC List) by Headspace GC-MS | E611C | 1769285 | 1 | 2 | 50.0 | 5.0 | ✓ |
| **Method Blanks (MB)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1769457 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1769396 | 1 | 1 | 100.0 | 5.0 | ✓ |
| BC PHCs - EPH by GC-FID | E601A | 1769413 | 1 | 4 | 25.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1769461 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1769460 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Conductivity in Water | E100 | 1769458 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1769283 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1769066 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1769392 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1769459 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Glycols (4 analytes) by GC-FID | E680E | 1769031 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1769462 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1769463 | 1 | 2 | 50.0 | 5.0 | ✓ |
| PAHs in Water by Hexane LVI GC-MS | E641A | 1769412 | 1 | 5 | 20.0 | 5.0 | ✓ |
| Phenols (4AAP) in Water by Colorimetry | E562 | 1770976 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1769464 | 1 | 2 | 50.0 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1769064 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1769282 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1769065 | 1 | 1 | 100.0 | 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* |
| **Method Blanks (MB) - Continued** | | | | | | | |
| Total Nitrogen by Colourimetry | E366 | 1769394 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Total Organic Carbon (Non-Purgeable) by Combustion (Low Level) | E355-L | 1769393 | 1 | 1 | 100.0 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1769395 | 1 | 1 | 100.0 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1769049 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Turbidity by Nephelometry | E121 | 1769230 | 1 | 1 | 100.0 | 5.0 | ✓ |
| VH and F1 by Headspace GC-FID | E581.VH+F1 | 1769284 | 1 | 2 | 50.0 | 5.0 | ✓ |
| VOCs (BC List) by Headspace GC-MS | E611C | 1769285 | 1 | 2 | 50.0 | 5.0 | ✓ |
| **Matrix Spikes (MS)** | | | | | | | |
| Ammonia by Fluorescence | E298 | 1769396 | 0 | 1 | 0.0 | 5.0 | ✗ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1769461 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1769460 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1769283 | 0 | 1 | 0.0 | 5.0 | ✗ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1769066 | 0 | 1 | 0.0 | 5.0 | ✗ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1769392 | 0 | 1 | 0.0 | 5.0 | ✗ |
| Fluoride in Water by IC | E235.F | 1769459 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1769462 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1769463 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Phenols (4AAP) in Water by Colorimetry | E562 | 1770976 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1769464 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1769282 | 0 | 1 | 0.0 | 5.0 | ✗ |
| Total Metals in Water by CRC ICPMS | E420 | 1769065 | 0 | 1 | 0.0 | 5.0 | ✗ |
| Total Nitrogen by Colourimetry | E366 | 1769394 | 0 | 1 | 0.0 | 5.0 | ✗ |
| Total Organic Carbon (Non-Purgeable) by Combustion (Low Level) | E355-L | 1769393 | 0 | 1 | 0.0 | 5.0 | ✗ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1769395 | 0 | 1 | 0.0 | 5.0 | ✗ |
| VH and F1 by Headspace GC-FID | E581.VH+F1 | 1769284 | 1 | 2 | 50.0 | 5.0 | ✓ |
| VOCs (BC List) by Headspace GC-MS | E611C | 1769285 | 1 | 2 | 50.0 | 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 |
|---|---|---|---|---|
| Conductivity in Water | E100<br>ALS Environmental - Vancouver | Water | APHA 2510 (mod) | Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C. |
| pH by Meter | E108<br>ALS Environmental - Vancouver | Water | APHA 4500-H (mod) | pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time. |
| Turbidity by Nephelometry | E121<br>ALS Environmental - Vancouver | Water | APHA 2130 B (mod) | Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions. |
| ORP by Electrode | E125<br>ALS Environmental - Vancouver | Water | ASTM D1498 (mod) | Oxidation redution potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field. |
| 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. |

| Analytical Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|---|---|---|---|
| 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. |
| 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) |
| Total Organic Carbon (Non-Purgeable) by Combustion (Low Level) | E355-L<br>ALS Environmental - Vancouver | Water | APHA 5310 B (mod) | Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of $CO_2$. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC). |
| 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 $CO_2$. 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. |

| Analytical Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|---|---|---|---|
| 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. |
| Phenols (4AAP) in Water by Colorimetry | E562<br><br>ALS Environmental - Edmonton | Water | EPA 9066 | This automated method is based on the distillation of phenol and subsequent reaction of the distillate with alkaline ferricyanide (K3Fe(CN)6) and 4-amino-antipyrine (4-AAP) to form a red complex which is measured colorimetrically. |
| VH and F1 by Headspace GC-FID | E581.VH+F1<br><br>ALS Environmental - Vancouver | Water | BC MOE Lab Manual / CCME PHC in Soil - Tier 1 (mod) | Volatile Hydrocarbons (VH and F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.<br><br>Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements. |
| BC PHCs - EPH by GC-FID | E601A<br><br>ALS Environmental - Vancouver | Water | BC MOE Lab Manual | Sample extracts are analyzed by GC-FID for BC hydrocarbon fractions. |
| VOCs (BC List) by Headspace GC-MS | E611C<br><br>ALS Environmental - Vancouver | Water | EPA 8260D (mod) | Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.<br><br>Total Xylenes is the sum of m,p-Xylene & o-Xylene. Total BTEX is the sum of Benzene, Toluene, Ethylbenzene, & Total Xylenes. Total BTEX+Styrene is the sum of Total BTEX & Styrene. Total Trihalomethanes [THMs] is the sum of Bromodichloromethane, Bromoform, Chloroform, & Dibromochloromethane. |

| Analytical Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|---|---|---|---|
| PAHs in Water by Hexane LVI GC-MS | E641A<br>ALS Environmental - Vancouver | Water | EPA 8270E (mod) | Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by large volume injection (LVI) GC-MS. |
| Glycols (4 analytes) by GC-FID | E680E<br>ALS Environmental - Vancouver | Water | EPA 8015D (mod) | Derivatized glycols are analyzed by GC-FID. |
| 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 and Ionized Ammonia (Calculation) (Field Temperature and pH) | EC298A<br>ALS Environmental - Vancouver | Water | CCME CWQG Ammonia | Un-ionized ammonia is calculated from test results for total ammonia, field temperature and pH, and is expressed in units of mg/L "as N". |
| VPH: VH-BTEX-Styrene | EC580A<br>ALS Environmental - Vancouver | Water | BC MOE Lab Manual (VPH in Water and Solids) (mod) | Volatile Petroleum Hydrocarbons (VPH) is calculated as follows: VPHw = Volatile Hydrocarbons (VH C6-C10) minus benzene, toluene, ethylbenzene, xylenes (BTEX) and styrene. |
| LEPH and HEPH: EPH-PAH | EC600A<br>ALS Environmental - Vancouver | Water | BC MOE Lab Manual (LEPH and HEPH) | Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are calculated as follows: LEPH = Extractable Petroleum Hydrocarbons (EPH10-19) minus Acenaphthene, Acridine, Anthracene, Fluorene, Naphthalene and Phenanthrene; HEPH = Extractable Petroleum Hydrocarbons (EPH19-32) minus Benz(a)anthracene, Benzo(a)pyrene, Fluoranthene, and Pyrene. |
| Field pH,EC,Salinity, TDS, 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, TDS, 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 Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|---|---|---|---|
| Preparation for Total Organic Carbon by Combustion | EP355<br>ALS Environmental - Vancouver | Water | | Preparation for Total Organic Carbon by Combustion |
| 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. |
| Dissolved Mercury Water Filtration | EP509<br>ALS Environmental - Vancouver | Water | APHA 3030B | Water samples are filtered (0.45 um), and preserved with HCl. |
| VOCs Preparation for Headspace Analysis | EP581<br>ALS Environmental - Vancouver | Water | EPA 5021A (mod) | Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID. |
| PHCs and PAHs Hexane Extraction | EP601<br>ALS Environmental - Vancouver | Water | EPA 3511 (mod) | Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction. |
| Glycols Extraction and Derivatization (BC Only) | EP680E<br>ALS Environmental - Vancouver | Water | EPA 8015D (mod) | Aqueous sample is derivatized and extracted with orgaic solvent. |

# Chain of Custody (COC) / Analytical Request Form

COC Number: 23 - 1083430

Page of

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

| Report To | Contact and company name below will appear on the final report |
|---|---|
| Company: | FKM |
| Contact: | Sara Derakhshi |
| Phone: | 5148912993 |
| | Company address below will appear on the final report |
| Street: | |
| City/Province: | |
| Postal Code: | |
| **Invoice To** | Same as Report To ☐ YES ☐ NO |
| | Copy of Invoice with Report ☐ YES ☐ NO |
| Company: | |
| Contact: | |

**Reports / Recipients**

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

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

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

Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: SaraDerakhshi@MichelsCanada.com

Email 2: BradClarke@MichelsCanada.com

Email 3:

**Invoice Recipients**

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

**Turnaround Time (TAT) Requested**

- ☐ Routine [R] if received by 3pm M-F - no surcharges apply
- ☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
- ☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
- ☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
- ☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
- ☑ same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: 16-nov-24 hh:mm am/pm

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

AFFIX ALS BARCODE LABEL HERE (ALS use only)

| Project Information | | Oil and Gas Required Fields (client use) | |
|---|---|---|---|
| ALS Client Code / QUOTE #: | EGP150 | AFE/Cost Center: | PO#: |
| Job / Project #: | | Major/Minor Code: | Routing Code: |
| PO / AFE: | | Requisitioner: | |
| LSD: | BC Rail | Location: | |
| ALS Lab Work Order # (ALS use only): | D1001 | ALS Contact: | Sampler: |

**Analysis Request**

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

| ALS Sample # | Sample Identification and/or Coordinates (This description will appear on the report) | Date (dd-mmm-yy) | Time (hh:mm) | Sample Type | NUMBER OF CONTAINERS | Physical test (P) | Total metals (FP) | dissolved metals (P) | Phenols (P) | Anions Nutrients (P) | glycols (P) | VOC (P) | PAH, VPH, EPH (P) | organics (P) | Hydrocarbons (P) | SAMPLES ON HOLD | EXTENDED STORAGE REQUIRED | SUSPECTED HAZARD (see notes) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WTP | 15-oct | 10:30 | water | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |

Environmental Division
Vancouver
Work Order Reference
VA24D1001

Telephone : +1 604 253 4188

| Drinking Water (DW) Samples[1] (client use) | Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only) |
|---|---|
| Are samples taken from a Regulated DW System? ☐ YES ☐ NO | pH: 7.3 |
| Are samples for human consumption/ use? ☐ YES ☐ NO | Temp: 11 |
| | Rush, Report by 16 November |

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

Cooling Method: ☑ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☒ COOLING INITIATED

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

| INITIAL COOLER TEMPERATURES °C | | | | FINAL COOLER TEMPERATURES °C | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | 15 | |

| SHIPMENT RELEASE (client use) | | | INITIAL SHIPMENT RECEPTION (ALS use only) | | | FINAL SHIPMENT RECEPTION (ALS use only) | | |
|---|---|---|---|---|---|---|---|---|
| Released by: Sara Derakhshi | Date: | Time: | Received by: | Date: | Time: | Received by: JC | Date: 15-11-24 | Time: 1325 |

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JAN 2023 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**.

White Paper Co. 604 951-3900

# Appendix B: BCR Site Receiving Environment Documentation

# BCR Site Receiving Environment Sample Analysis

| TRITON Environmental Consultants | Sample ID | | Reviewed and signed off by: | | | Farshad Shafiei Ph.D., R.P.Bio. | SQU US1 (Upstream) | SQU DS1 (Downstream) | Sample or value notes | BCWQ FAL - Short Term | BCWQ FAL - Long Term | BCWQ MAL - Short Term | BCWQ MAL - Long Term |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LAB ID | | | | | | VA24D0620-001 | VA24D0620-002 | | | | | |
| | Date Sampled | | | | | | 12-Nov-2024 | 12-Nov-2024 | | | | | |
| | Time Sampled | | | | | | 10:38 | 11:12 | | | | | |
| Analyte | Units | FAL-ST [1,2] | FAL-LT [1,2] | MAL-ST [1] | MAL-LT [1,2] | | Water | Water | | | | | |
| | | | | | | | N/A | N/A | | Guideline notes | | | |
| **In Situ Parameters** | | | | | | | | | | | | | |
| pH (field) | pH units | 6.5-9.0 | 6.5-9.0 | 7.0-8.7 | 7.0-8.7 | | 6.95 | 6.98 | | If natural pH < 6.5, no statisticaly significant decrease from background. No restriction in increase except in areas with unique flora or fauna. Unrestricted change permitted within range of 6.5 to 9.0. If natural pH > 9.0, no statistically significant increase from background. Refer to BC Water Quality Guidelines for more information. | | Unrestricted change within this range (for protection of mollusc embryo development). | |
| Temperature (field) | °C | Max +/- from BKG 1°C [4] | - | Max +/- from BKG 1°C [4] | - | | 7.18 | 7.8 | | Guideline is species-dependent. Short-term daily temperature guideline is 19°C for streams wih unknown fish distribution. Refer to footnote 4 for background temperature range for the Squamish River. Refer to BC Water Quality Guidelines for more information<br>Hourly rate of change not to exceed 1°C.<br>Calculation: US value +/- 1 = guideline range | | Guideline for marine waters are based on natural ambient conditions. Max and min. 1°C change from natural condition. Natural temperature cycle characteristic of the site should not be altered in amplitude or frequency by human activities. Max rate of any human-induced temperature change not to exceed 0.5°C hourly. trearms with unknown fish distribution. Refer to footnote 4 for background temperature range for the Squamish River. | |
| Conductivity (field) | µS/cm | - | - | - | - | | 35 | 37 | | | | | |
| Turbidity (field) | NTU | Varies with background, see note<br>Guideline = 15.2 | Varies with background, see note<br>Guideline = 71.26<br>5-week discrete sampling average = 65.0 (DS) | Varies with background, see note<br>Guideline = 15.2 | Varies with background, see note<br>Guideline = 71.26<br>5-week discrete sampling average = 65.0 (DS) | | 7.2 | 8.3 | | Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters.<br>Calculation: US value + 8 = DS guideline<br><br>Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters.<br>Calculation: US value + 5 = DS guideline<br><br>Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters.<br>Calculation: US value + (US value*0.1) = DS guideline | Change from background of 2 NTU at any one time for 30 days in clear flows.<br><br>Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling. | Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters.<br>Calculation: US value + 8 = DS guideline<br><br>Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters.<br>Calculation: US value + 5 = DS guideline<br><br>Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters.<br>Calculation: US value + (US value*0.1) = DS guideline | Change from background of 2 NTU at any one time for 30 days in clear flows.<br><br>Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling. |
| Dissolved Oxygen (field) | mg/L | Varies with life stage, see note | Varies with life stage, see note | Varies with life stage, see note | Varies with life stage, see note | | 11.81 | 11.38 | | Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information. | Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L. Refer to BC Water Quality Guidelines for more information. | Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information. | Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L. Refer to BC Water Quality Guidelines for more information. |
| **General Parameters** | | | | | | | | | | | | | |
| Hardness (as $CaCO_3$) (total) | mg/L | - | - | - | - | | 13.8 | 13.4 | | | | | |
| Total Dissolved Solids | mg/L | - | - | - | - | | 30 | 34 | | | | | |
| Total Suspended Solids | mg/L | Varies with background, see note<br>Guideline = 41.4 | Varies with background, see note<br>Guideline = 66.46<br>5-week discrete sampling average = 70.94 (DS) | Varies with background, see note<br>Guideline = 41.4 | Varies with background, see note<br>Guideline = 66.46<br>5-week discrete sampling average = 70.94 (DS) | | 16.4 | 19.8 | | Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters.<br>Calculation: US value + 25 = DS guideline<br><br>Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters.<br>Calculation: US value + 10 = DS guideline<br><br>Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters.<br>Calculation: US value + (US value*0.1) = DS guideline | Change from background of 5 mg/L @ one time for a druation of 30 days in clear flow.<br><br>Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling. | Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters.<br>Calculation: US value + 25 = DS guideline<br><br>Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters.<br>Calculation: US value + 10 = DS guideline<br><br>Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters.<br>Calculation: US value + (US value*0.1) = DS guideline | Change from background of 5 mg/L @ one time for a druation of 30 days in clear flow.<br><br>Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling. |
| Dissolved Organic Carbon (DOC) | mg/L | - | - | - | - | | 3.89 | 4.11 | | | Long-term (30-day) median within 20% of background median [3] | | |
| Total Alkalinity ($CaCO_3$) | mg/L | - | Categorical | - | - | | 11 | 10.9 | | | Guideline is for alkalinity (as CaCO3) and categorizes the sensitivity of a water body to acid inputs. Alkalinity < 10 mg/L is considered highly sensitive to acid inputs; 10 - 20 mg/L is considered moderately sensitive to acid inputs; > 20 mg/L is considered low sensitivity. | | |
| Total Sulfide (as S) | mg/L | - | - | - | - | | < 0.0015 | < 0.0015 | | | | | |
| Total Sulfide (un-ionized as $H_2S$) | mg/L | - | 0.002 | - | - | | < 0.0015 | < 0.0015 | | | Working guideline | | |
| Total Sulfide (as $H_2S$) | mg/L | - | - | - | - | | < 0.0016 | < 0.0016 | | | | | |
| **Anions and Nutrients** | | | | | | | | | | | | | |
| Ammonia | mg/L ammonia-N | Varies with pH and temperature. See note.<br>Guideline = 21.1 | Varies with pH and temperature. See note.<br>Guideline = 1.86 | Varies with pH, temperature and salinity. See note.<br>Guideline = 191 | Varies with pH, temperature and salinity. See note.<br>Guideline = 12 | | 0.048 | 0.0375 | | Guideline for ammonia as N and is pH and temperature dependent.<br>Refer to Table 27D in BC WQG for guideline values. | Guideline for ammonia as N and is pH and temperature dependent.<br>Refer to Table 27C in BC WQG for guideline values. | Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent.<br>Refer to Table 27F in BC WQG for guideline values. | Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent.<br>Refer to Table 27E in BC WQG for guideline values. |
| Bromide | mg/L | - | - | - | - | | < 0.050 | < 0.050 | | | | | |
| Chloride | mg/L | 600 | 150 | +/- 10% from BKG | +/- 10% from BKG | | 0.93 | 0.91 | | | | Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride expected at that time and depth. | Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride expected at that time and depth. |
| Fluoride | mg/L | Varies with hardness<br>Guideline = 0.538 | - | 1.5 | - | | < 0.020 | < 0.020 | | Guideline has interim status.<br>Guideline is calculated with the following equation: Guideline = [ - 51.73 + 92.57 log10 (hardness)] * 0.01 | | | |
| Nitrate (as N) | mg/L | 32.8 | 3 | - | 3.7 | | 0.0736 | 0.0709 | | | | | |
| Nitrite (as N) | mg/L | Varies with chloride. See note.<br>Guideline = 0.06 | Varies with chloride. See note.<br>Guideline = 0.02 | - | - | | 0.0022 | 0.0016 | | Varies with chloride. Refer to Table 27B in BC WQG for guideline values. | Varies with chloride. Refer to Table 27B in BC WQG for guideline values. | | |
| Total Nitrogen | mg/L | - | - | - | - | | 0.225 | 0.201 | | | | | |
| Total Phosphorous | mg/L | - | 0.005 to 0.015 | - | - | | 0.0208 | 0.021 | | | Guideline is for lakes, refer to BCWQ guideline for nutrients and algae for more information. Guideline does not apply to site. | | |
| Sulfate (as $SO_4$) | mg/L | - | Varies with hardness. See note.<br>Guideline = 128 | - | - | | 2.92 | 2.87 | | | Guidelines for hardness ranges below:<br>Hardness 0 - 30: 128<br>Hardness 31 - 75: 218<br>Hardness 76 - 180: 309<br>Hardness 181 - 250: 429 | | |
| **Total Metals** | | | | | | | | | | | | | |
| Aluminum (Al)-Total | mg/L | - | Varies with pH, DOC, hardness<br>Guideline = 0.097<br>5-week field average = 2.45 (US), 2.46 (DS) | - | - | | 0.439 | 0.458 | | | Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated with the following equation:<br>Guideline = (EXP((0.645 * LN(DOC)) + (2.255 * LN(hardness)) + (1.995 * pH) + (-0.284 * (LN(hardness) * pH))-9.898)/3/1000)<br>If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation. | | |
| Antimony (Sb)-Total | mg/L | 0.25 | 0.074 | - | - | | < 0.00010 | < 0.00010 | | | | | |
| Arsenic (As)-Total | mg/L | - | 0.005 | - | 0.0125 | | 0.00014 | 0.00013 | | | | | Interim guideline status |
| Barium (Ba)-Total | mg/L | - | 1 | - | - | | 0.0087 | 0.0090 | | | Working guideline status | | |
| Beryllium (Be)-Total | mg/L | - | 0.00013 | - | 0.100 | | < 0.000100 | < 0.000100 | | | Working guideline status | | Working guideline status |
| Bismuth (Bi)-Total | mg/L | - | - | - | - | | < 0.00005 | < 0.00005 | | | | | |
| Boron (B)-Total | mg/L | - | 1.2 | - | 1.2 | | < 0.010 | < 0.010 | | | | | |
| Cadmium (Cd)-Total | mg/L | - | - | - | 0.00012 | | 0.0000097 | 0.0000092 | | | | | Working guideline status |
| Calcium (Ca)-Total | mg/L | - | - | - | - | | 4.67 | 4.52 | | | | | |
| Cesium (Cs)-Total | mg/L | - | - | - | - | | 0.000016 | 0.000015 | | | | | |
| Chromium (Cr) - Total | mg/L | - | - | - | - | | < 0.00050 | < 0.00050 | | | | | |
| Chromium (Cr(III))-Total | mg/L | - | 0.0089 | - | 0.056 | | < 0.00050 | < 0.00050 | | | Working guideline status | | Working guideline status |
| Chromium (Cr(VI))-Total | mg/L | - | 0.0025 | - | 0.0015 | | < 0.00050 | < 0.00050 | | | Working guideline status | | Working guideline status |
| Cobalt (Co)-Total | mg/L | 0.11 | 0.004 | - | - | | 0.00013 | 0.00015 | | | | | |
| Copper (Cu)-Total | mg/L | - | - | 0.003 | 0.002<br>5-week field average = 0.00518 (US), 0.00520 (DS) | | 0.00153 | 0.0015 | | | | | |
| Iron (Fe)-Total | mg/L | 1 | - | - | - | | 0.286 | 0.28 | | | | | |
| Lead (Pb)-Total | mg/L | - | - | 0.14 | 0.002<br>5-week field average = 0.00044 (US), 0.00039 (DS) | | 0.00009 | 0.000092 | | | | | |
| Lithium (Li)-Total | mg/L | - | - | - | - | | < 0.0010 | < 0.0010 | | | | | |
| Magnesium (Mg)-Total | mg/L | - | - | - | - | | 0.5140 | 0.5230 | | | | | |
| Manganese (Mn)-Total | mg/L | Varies with hardness<br>Guideline = 0.715 | Varies with hardness<br>Guideline = 0.768 | - | - | | 0.0090 | 0.0101 | | Guideline varies with hardness. The guideline is calculated using the following equation:<br>Guideline = (0.0044 * hardness + 0.605)<br>Guideline applies to samples with hardness 25-259 mg/L. Lowest value for guideline is 0.77 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation. | Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. The guideline is calculated using the following formula:<br>Guideline = (0.01102 * hardness + 0.54)<br>Guideline applies to samples with hardness 37-450 mg/L. Lowest value for guideline is 0.81 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation. | | |
| Mercury (Hg)-Total | mg/L | - | Varies with methyl mercury<br>Guideline = N/A | - | - | | < 0.0000050 | < 0.0000050 | | | When MeHg ≤ 0.5% of total Hg, guideline is equal to 0.02 mg/L<br>Guideline = 0.1([MeHg/totalHg]. When MeHg ≤ 0.5% of total Hg, guideline is equal to 0.02 mg/L | | |
| Molybdenum (Mo)-Total | mg/L | 46 | 7.6 | - | - | | 0.000431 | 0.000419 | | | | | |
| Nickel (Ni)-Total | mg/L | - | - | - | 0.0083 | | < 0.00050 | < 0.00050 | | | | | Working guideline status |
| Phosphorus (P)-Total | mg/L | - | 0.005 to 0.015 | - | - | | < 0.050 | < 0.050 | | | Guideline only applies to lakes with salmonid species being the dominant fish species. Guideline is for reference only and does not apply to site. | | |
| Potassium (K)-Total | mg/L | - | - | - | - | | 0.412 | 0.434 | | | | | |
| Rubidium (Rb)-Total | mg/L | - | - | - | - | | 0.00063 | 0.00062 | | | | | |
| Selenium (Se)-Total | mg/L | - | 0.002 | - | 0.002 | | < 0.000050 | < 0.000050 | | | Guideline for freshwater aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guideliens for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guideliens and sampling guidance. | | Guideline for marine aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guideliens for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for |
| Silicon (Si)-Total | mg/L | - | - | - | - | | 3.86 | 3.65 | | | | | |
| Silver (Ag)-Total | mg/L | Varies with hardness, see note<br>Guideline = 0.0001 | Varies with hardness, see note<br>Guideline = 0.00005<br>5-week field average = 0.000074 (US), 0.000016 (DS) | 0.003 | 0.0015 | | < 0.000010 | < 0.000010 | | Varies with hardness<br>Guideline ranges:<br>Hardness ≤ 100: 0.0001<br>Hardness > 100: 0.003 | Varies with hardness<br>Guideline ranges:<br>Hardness ≤ 100: 0.00005<br>Hardness > 100: 0.0015 | | Guideline applies to open coast and estuaries. Guideline is applicable to the EGP site. |
| Sodium (Na)-Total | mg/L | - | - | - | - | | 1.41 | 1.4 | | | | | |
| Strontium (Sr)-Total | mg/L | - | - | - | - | | 0.0292 | 0.0281 | | | | | |
| Sulfur (S)-Total | mg/L | - | - | - | - | | 0.84 | 0.67 | | | | | |
| Tellurium (Te)-Total | mg/L | - | - | - | - | | < 0.00020 | < 0.00020 | | | | | |
| Thallium (Tl)-Total | mg/L | - | 0.00003 | - | - | | < 0.000010 | < 0.000010 | | | 30-day average, site-specific objective for the lower Columbia River, BC. Guideline is for reference only and does not apply to tnhe EGP site. | | |
| Thorium (Th)-Total | mg/L | - | - | - | - | | < 0.00010 | < 0.00010 | | | | | |
| Tin (Sn)-Total | mg/L | - | - | - | - | | < 0.00010 | < 0.00010 | | | | | |
| Titanium (Ti)-Total | mg/L | - | - | - | - | | 0.00908 | <0.0114 | | | | | |
| Tungsten (W)-Total | mg/L | - | - | - | - | | < 0.00010 | < 0.00010 | | | | | |
| Uranium (U)-Total | mg/L | 0.0165 | 0.0075 | - | - | | 0.00004 | 0.00004 | | | Working guideline status | | |
| Vanadium (V)-Total | mg/L | - | 0.06 | - | 0.005<br>5-week field average = 0.00514 (US), 0.0053 (DS) | | 0.00106 | 0.00112 | | | | | Working guideline status |
| Zinc (Zn)-Total | mg/L | - | - | 0.055 | Guideline = 0.010<br>5-week field average = 0.00784 (US), 0.00884 (DS) | | < 0.0030 | < 0.0030 | | | | | |
| Zirconium (Zr)-Total | mg/L | - | - | - | - | | < 0.00020 | < 0.00020 | | | | | |
| **Dissolved Metals** | | | | | | | | | | | | | |
| Aluminum (Al)-Dissolved | mg/L | - | - | - | - | | 0.11 | 0.113 | | | | | |
| Antimony (Sb)-Dissolved | mg/L | - | - | - | - | | < 0.00010 | < 0.00010 | | | | | |
| Arsenic (As)-Dissolved | mg/L | - | - | - | - | | 0.00011 | 0.0001 | | | | | |
| Barium (Ba)-Dissolved | mg/L | - | - | - | - | | 0.00645 | 0.00683 | | | | | |
| Beryllium (Be)-Dissolved | mg/L | - | - | - | - | | < 0.00010 | < 0.00010 | | | | | |
| Bismuth (Bi)-Dissolved | mg/L | - | - | - | - | | < 0.000050 | < 0.000050 | | | | | |
| Boron (B)-Dissolved | mg/L | - | - | - | - | | < 0.010 | < 0.010 | | | | | |
| Cadmium (Cd)-Dissolved | mg/L | Varies with hardness, see note<br>Guideline = 0.000076 | Varies with hardness, see note<br>Guideline = 0.000064 | - | - | | 0.00001 | 0.0000109 | | Guideline is hardness dependent. Guideline is appilcable to water hardness between 7.0 and 455 mg/L.<br>Guideline is calculated with the following formula:<br>Guideline = (EXP(1.03 * (LN(hardness)) - 5.274)/1000)<br>Lowest value for guideline is 0.000018 mg/L.<br>If hardness is below the hardness range, the minimum hardness will be applied in the calculation. | Guideline is hardness dependent. Guideline is applicable to hardness between 3.4 and 285 mg/L.<br>Guideline is calculated with the following formula:<br>Guideline = (EXP(0.736 * (LN(hardness)) - 4.943)/1000)<br>Lowest value for guiedeline is 0.00004.<br>If hardness is below the hardness range, the minimum hardness will be applied in the calculation. | | |
| Calcium (Ca)-Dissolved | mg/L | - | Categorical, see note | - | - | | 4.87 | 4.73 | | | Guideline categorizes the sensitivty of a water body to acid inputs (i.e. buffering capacity). Standard is 4 mg/L dissolved Ca for the most sensitive waterbodies,5 - 8 mg/L for waterbodies with moderate sensitivity to acid inputs. Waterbodies with dissolved calcium > 8mg/L are considered to have low sensitivity to acid inputs. | | |
| Cesium (Cs)-Dissolved | mg/L | - | - | - | - | | < 0.000010 | < 0.000010 | | | | | |
| Chromium (Cr)-Dissolved | mg/L | - | - | - | - | | < 0.00050 | < 0.00050 | | | | | |
| Chromium (Cr(III))-Dissolved | mg/L | - | - | - | - | | - | - | | | | | |
| Chromium (Cr(VI))-Dissolved | mg/L | - | - | - | - | | - | - | | | | | |
| Cobalt (Co)-Dissolved | mg/L | - | - | - | - | | < 0.00010 | < 0.00010 | | | | | |
| Copper (Cu)-Dissolved | mg/L | Guideline varies with other parameters, see note<br>Guideline = 0.0025 | Guideline varies with other parameters, see note<br><br>Guideline = 0.0004<br>5-week field average = 0.00109 (US), 0.00106 (DS) | - | - | | 0.00115 | 0.00122 | | Guideline varies with other parameters and is calculated using BC BLM software.<br>Simplified model: Temperature, pH, DOC and hardness<br>Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity<br><br>Guideline calculated using values for parameters above taken at the specific site on each sampling date | Guideline varies with other parameters and is calculated using BC BLM software.<br>Simplified model: Temperature, pH, DOC and hardness<br>Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity<br><br>Guideline calculated using values for parameters above taken at the specific site on each sampling date | | |
| Iron (Fe)-Dissolved | mg/L | 0.35 | - | - | - | | 0.087 | 0.069 | | | | | |
| Lead (Pb)-Dissolved | mg/L | - | Guideline varies with DOC and hardness<br><br>Guideline = 0.00242<br>5-week field average = 0.00005 (US), 0.00005 (DS) | - | - | | < 0.000050 | < 0.000050 | | | Guideline varies with DOC and hardness, refer to BC Water Quality Guidelines for more information.<br>Guideline uses equation (EXP((0.514*LN(DOC))+(0.214*(LN(Hardness)))+0.4354))/2/1000 where DOC range is 0.5-31.5 mg/L and hardness range is 4.7-511 mg/L. | | |
| Lithium (Li)-Dissolved | mg/L | - | - | - | - | | < 0.0010 | < 0.0010 | | | | | |
| Magnesium (Mg)-Dissolved | mg/L | - | - | - | - | | 0.464 | 0.453 | | | | | |
| Manganese (Mn)-Dissolved | mg/L | - | - | - | - | | 0.00404 | 0.00377 | | | | | |
| Mercury (Hg)-Dissolved | mg/L | - | - | - | - | | < 0.0000050 | < 0.0000050 | | | | | |
| Molybdenum (Mo)-Dissolved | mg/L | - | - | - | - | | 0.000429 | 0.000391 | | | | | |
| Nickel (Ni)-Dissolved | mg/L | Guideline varies with other parameters, see note<br><br>Guideline = 0.0202 | Guideline varies with other parameters, see note<br><br>Guideline = 0.00120<br>5-week field average = 0.0005 (US), 0.0005 (DS) | - | - | | < 0.00050 | < 0.00050 | | Guideline varies with other parameters and is calculated using BC BLM software.<br>Simplified model: Temperature, pH, DOC and hardness<br>Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity<br><br>Guideline calculated using values for parameters above taken at the specific site on each sampling date | Guideline varies with other parameters and is calculated using BC BLM software.<br>Simplified model: Temperature, pH, DOC and hardness<br>Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity<br><br>Guideline calculated using values for parameters above taken at the specific site on each sampling date | | |
| Phosphorus (P)-Dissolved | mg/L | - | - | - | - | | < 0.050 | < 0.050 | | | | | |
| Potassium (K)-Dissolved | mg/L | - | - | - | - | | 0.552 | 0.472 | | | | | |
| Rubidium (Rb)-Dissolved | mg/L | - | - | - | - | | 0.00055 | 0.00057 | | | | | |
| Selenium (Se)-Dissolved | mg/L | - | - | - | - | | < 0.000050 | < 0.000050 | | | | | |
| Silicon (Si)-Dissolved | mg/L | - | - | - | - | | 3.37 | 3.25 | | | | | |
| Silver (Ag)-Dissolved | mg/L | - | - | - | - | | < 0.000010 | < 0.000010 | | | | | |
| Sodium (Na)-Dissolved | mg/L | - | - | - | - | | 1.48 | 1.46 | | | | | |
| Strontium (Sr)-Dissolved | mg/L | - | - | - | - | | 0.0264 | 0.0265 | | | | | |
| Sulfur (S)-Dissolved | mg/L | - | - | - | - | | 0.82 | 0.84 | | | | | |
| Tellurium (Te)-Dissolved | mg/L | - | - | - | - | | < 0.00020 | < 0.00020 | | | | | |
| Thallium (Tl)-Dissolved | mg/L | - | - | - | - | | < 0.000010 | < 0.000010 | | | | | |
| Thorium (Th)-Dissolved | mg/L | - | - | - | - | | < 0.00010 | < 0.00010 | | | | | |
| Tin (Sn)-Dissolved | mg/L | - | - | - | - | | < 0.00010 | < 0.00010 | | | | | |
| Titanium (Ti)-Dissolved | mg/L | - | - | - | - | | 0.00095 | 0.00125 | | | | | |
| Tungsten (W)-Dissolved | mg/L | - | - | - | - | | < 0.00010 | < 0.00010 | | | | | |
| Uranium (U)-Dissolved | mg/L | - | - | - | - | | 0.000034 | 0.000037 | | | | | |
| Vanadium (V)-Dissolved | mg/L | - | - | - | - | | 0.00087 | 0.00081 | | | | | |
| Zinc (Zn)-Dissolved | mg/L | Varies with DOC and hardness<br>Guideline = 0.010 | Varies with pH, DOC, hardness<br><br>Guideline = 0.0044<br>5-week field average = 0.0018 (US), 0.0024 (DS) | - | - | | 0.0036 | 0.0068 | | Guideline varies with DOC and hardness. Guideline is calculated using the following formula:<br>Guideline = (EXP((0.833 * (LN(hardness))) + (0.24 * (LN(DOC))) + 0.526)/2/1000)<br>If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation. | Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC).<br>Guideline is calculated using the following formula:<br>Guideline = (EXP((0.974 * (LN(hardness))) - (0.815 * pH) + (0.398 * (LN(DOC))) + 4.625)/2/1000)<br>Guideline only applies to water with pH between 6.5 and 8.13, DOC between 0.3 and 22.9 mg/L, annd hardness between 23.4 and 399 mg/L. If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation. | | |
| Zirconium (Zr)-Dissolved | mg/L | - | - | - | - | | < 0.00020 | < 0.00020 | | | | | |
| **Applied Guideline:** | | **British Columbia Approved and Working Water Quality Guidelines (NOV 2023) for Freshwater Aquatic Life (FAL) & Marine Aquatic Life (MAL) Short-Term (ST) & Long-Term (LT)** | | | | | | | | | | | |
| **Color Key:** | | **Exceeds FAL Short term Guideline** | ***Exceeds both FAL and MAL Guidelines*** | **Exceeds MAL Short term Guideline** | | | | | | | | | |

[1] BC MOECCS. 2023. BC Water Qualtiy Guidelines for the Protection of Aquatic Life, Wildlife & Agriculture. Accessed from: wqg_summary_aquaticlife_wildlife_agri.pdf (gov.bc.ca)

[2] BC MOECCS. 2021. BC Working Water Qualtiy Guidelines for the Protection of Aquatic Life, Widlife & Agriculture. Accessed from: bc_env_working_water_quality_guidelines.pdf (gov.bc.ca)

[3] Note that long-term guidelines apply to averaged data to account for chronic impacts to aquatic life. Ideally, five samples collected at evenly spaced intervals over 30 days is considered to be the minimum number needed to calculate the long-term average of any parameter, though this may vary by parameter and site conditions. Long-term guidelines applied here are for reference only and may not indicate chronic impacts to aquatic life if exceedances occur in the short term.

[4] Background temperature ranges: Dec-Feb: 2.0-4.0C; Mar-Apr: 4.0-6.0C; May-June: 6.0-12.0C; Jul-Sept: 9.0-12.0C; Oct-Nov: 3.0-5.0
Reference: Triton Environmental Consulants Ltd. 2023. Memo - Background water quality values for the BC Rail Discharge to Squamish River
For guidelines dependent on other parameters, when hardness, pH or DOC are below the range stated in the guideline, the lowest value in the range is used to calculate the guideline.

**Parameters Used to Calculate Guidelines**

| Analyte | Units | Method of Measurements | Values | |
|---|---|---|---|---|
| | | | SQU US1 (Upstream) | SQU DS1 (Downstream) |
| pH (field) | pH units | Field pH taken using handheld meters during sampling used in calculations | 6.95 | 6.98 |
| Temperature (field) | °C | Field temperature taken using handheld meters during sampling used in calculations | 7.18 | 7.8 |
| Turbidity (field) | NTU | Field turbidity taken using handheld meters during sampling used in calculations | 7.24 | 8.29 |
| Hardness (as CaCO3) (total) | mg/L | Laboratory tested total hardness taken at each respective sample site on the day of sampling used in guideline calculations | 13.8 | 13.4 |
| Dissolved Organic Carbon (DOC) | mg/L | Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations | 3.89 | 4.11 |
| Total Alkalinity ($CaCO_3$) | mg/L | Laboratory tested total alkalinity used in calculations | 11 | 10.9 |
| Chloride | mg/L | Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations | 0.93 | 0.91 |

# BCR Site Receiving Environment Lab Documentation

# CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24D0620** | | |
| Client | : **Triton Environmental Consultants Ltd.** | Laboratory | : ALS Environmental - Vancouver |
| Contact | | Account Manager | |
| Address | | Address | |
| Telephone | | Telephone | |
| Project | : 11964 | Date Samples Received | : 12-Nov-2024 13:50 |
| PO | : 11964 - Task 20-Phase 3C-4C | Date Analysis Commenced | : 14-Nov-2024 |
| C-O-C number | : ---- | Issue Date | : 20-Nov-2024 14:24 |
| Sampler | : ---- | | |
| Site | : Water Analysis | | |
| Quote number | : VA23-TRIT100-012 | | |
| No. of samples received | : 3 | | |
| No. of samples analysed | : 3 | | |

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* |
|---|---|---|
| | | Metals, Burnaby, British Columbia |
| | Analyst | Metals, Burnaby, British Columbia |
| | Manager - Inorganics | Metals, Waterloo, Ontario |
| | Production Manager, Environmental | Inorganics, Waterloo, Ontario |
| | Production Manager, Environmental | Metals, Waterloo, Ontario |
| | Supervisor - Metals ICP Instrumentation | Metals, Burnaby, British Columbia |
| | Lab Assistant | Metals, Burnaby, British Columbia |
| | Department Manager - Inorganics | Inorganics, Burnaby, British Columbia |
| | | Metals, Burnaby, British Columbia |
| | Account Manager Assistant | Administration, Burnaby, British Columbia |
| | Supervisor - Water Quality Instrumentation | Inorganics, Burnaby, British Columbia |
| | Analyst- General | Metals, Burnaby, British Columbia |

## General Comments

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

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

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

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

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

| *Unit* | *Description* |
|---|---|
| mg/L | milligrams per litre |
| °C | degrees celsius |
| pH units | pH units |
| µS/cm | microsiemens per centimetre |
| - | no 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). |
| DTC | Dissolved concentration exceeds total. Results were confirmed by re-analysis. |
| RRV | Reported result verified by repeat analysis. |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | SQU US1 | SQU DS1 | Field Blank | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 12-Nov-2024 10:38 | 12-Nov-2024 11:12 | 12-Nov-2024 10:30 | ---- | ---- |
| | | | | | | VA24D0620-001 | VA24D0620-002 | VA24D0620-003 | ---- | ---- |
| | | | | | | Result | Result | Result | ---- | ---- |
| **Field Tests** | | | | | | | | | | |
| **Conductivity, field** | ---- | EF001/VA | 0.10 | µS/cm | | 35.000 | 37.000 | 1.0000 | ---- | ---- |
| **pH, field** | ---- | EF001/VA | 0.10 | pH units | | 6.95 | 6.98 | 6.52 | ---- | ---- |
| **Temperature, field** | ---- | EF001/VA | 0.10 | °C | | 7.18 | 7.80 | 18.3 | ---- | ---- |
| **Physical Tests** | | | | | | | | | | |
| **Hardness (as CaCO3), dissolved** | ---- | EC100/VA | 0.60 | mg/L | | 14.1 | 13.7 | <0.60 | ---- | ---- |
| **Hardness (as CaCO3), from total Ca/Mg** | ---- | EC100A/VA | 0.60 | mg/L | | 13.8 | 13.4 | <0.60 | ---- | ---- |
| **Solids, total dissolved [TDS]** | ---- | E162/VA | 10 | mg/L | | 30 | 34 | <10 | ---- | ---- |
| **Solids, total suspended [TSS]** | ---- | E160/VA | 3.0 | mg/L | | 16.4 | 19.8 | <3.0 | ---- | ---- |
| **Alkalinity, total (as CaCO3)** | ---- | E290/VA | 2.0 | mg/L | | 11.0 | 10.9 | <2.0 | ---- | ---- |
| **Anions and Nutrients** | | | | | | | | | | |
| **Ammonia, total (as N)** | 7664-41-7 | E298/VA | 0.0050 | mg/L | | 0.0480 | 0.0375 | <0.0050 | ---- | ---- |
| **Bromide** | 24959-67-9 | E235.Br-L/VA | 0.050 | mg/L | | <0.050 | <0.050 | <0.050 | ---- | ---- |
| **Chloride** | 16887-00-6 | E235.Cl/VA | 0.50 | mg/L | | 0.93 | 0.91 | <0.50 | ---- | ---- |
| **Fluoride** | 16984-48-8 | E235.F/VA | 0.020 | mg/L | | <0.020 | <0.020 | <0.020 | ---- | ---- |
| **Nitrate (as N)** | 14797-55-8 | E235.NO3-L/VA | 0.0050 | mg/L | | 0.0736 | 0.0709 | <0.0050 | ---- | ---- |
| **Nitrite (as N)** | 14797-65-0 | E235.NO2-L/VA | 0.0010 | mg/L | | 0.0022 | 0.0016 | <0.0010 | ---- | ---- |
| **Nitrogen, total** | 7727-37-9 | E366/VA | 0.030 | mg/L | | 0.225 | 0.201 | <0.030 | ---- | ---- |
| **Phosphorus, total** | 7723-14-0 | E372-U/VA | 0.0020 | mg/L | | 0.0208 | 0.0210 | 0.0055 RRV | ---- | ---- |
| **Sulfate (as SO4)** | 14808-79-8 | E235.SO4/VA | 0.30 | mg/L | | 2.92 | 2.87 | <0.30 | ---- | ---- |
| **Organic / Inorganic Carbon** | | | | | | | | | | |
| **Carbon, dissolved organic [DOC]** | ---- | E358-L/VA | 0.50 | mg/L | | 3.89 | 4.11 | <0.50 | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | SQU US1 | SQU DS1 | Field Blank | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 12-Nov-2024 10:38 | 12-Nov-2024 11:12 | 12-Nov-2024 10:30 | ---- | ---- |
| | | | | | | VA24D0620-001 | VA24D0620-002 | VA24D0620-003 | ---- | ---- |
| | | | | | | Result | Result | Result | ---- | ---- |
| **Total Sulfides** | | | | | | | | | | |
| **Sulfide, total (as S)** | 18496-25-8 | E395/VA | 0.0015 | mg/L | | <0.0015 | <0.0015 | <0.0015 | ---- | ---- |
| **Sulfide, un-ionized (as H2S), from total** | 7783-06-4 | EC395/VA | 0.0015 | mg/L | | <0.0015 | <0.0015 | <0.0015 | ---- | ---- |
| **Sulfide, total (as H2S)** | 7783-06-4 | E395/VA | 0.0016 | mg/L | | <0.0016 | <0.0016 | <0.0016 | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **Aluminum, total** | 7429-90-5 | E420/VA | 0.0030 | mg/L | | 0.439 | 0.458 | <0.0030 | ---- | ---- |
| **Antimony, total** | 7440-36-0 | E420/VA | 0.00010 | mg/L | | <0.00010 | <0.00010 | <0.00010 | ---- | ---- |
| **Arsenic, total** | 7440-38-2 | E420/VA | 0.00010 | mg/L | | 0.00014 | 0.00013 | <0.00010 | ---- | ---- |
| **Barium, total** | 7440-39-3 | E420/VA | 0.00010 | mg/L | | 0.00866 | 0.00898 | <0.00010 | ---- | ---- |
| **Beryllium, total** | 7440-41-7 | E420/VA | 0.000100 | mg/L | | <0.000100 | <0.000100 | <0.000100 | ---- | ---- |
| **Bismuth, total** | 7440-69-9 | E420/VA | 0.000050 | mg/L | | <0.000050 | <0.000050 | <0.000050 | ---- | ---- |
| **Boron, total** | 7440-42-8 | E420/VA | 0.010 | mg/L | | <0.010 | <0.010 | <0.010 | ---- | ---- |
| **Cadmium, total** | 7440-43-9 | E420/VA | 0.0000050 | mg/L | | 0.0000097 | 0.0000092 | <0.0000050 | ---- | ---- |
| **Calcium, total** | 7440-70-2 | E420/VA | 0.050 | mg/L | | 4.67 | 4.52 | <0.050 | ---- | ---- |
| **Cesium, total** | 7440-46-2 | E420/VA | 0.000010 | mg/L | | 0.000016 | 0.000015 | <0.000010 | ---- | ---- |
| **Chromium, total** | 7440-47-3 | E420/VA | 0.00050 | mg/L | | <0.00050 | <0.00050 | <0.00050 | ---- | ---- |
| **Cobalt, total** | 7440-48-4 | E420/VA | 0.00010 | mg/L | | 0.00013 | 0.00015 | <0.00010 | ---- | ---- |
| **Copper, total** | 7440-50-8 | E420/VA | 0.00050 | mg/L | | 0.00153 | 0.00150 | <0.00050 | ---- | ---- |
| **Iron, total** | 7439-89-6 | E420/VA | 0.010 | mg/L | | 0.286 | 0.280 | <0.010 | ---- | ---- |
| **Lead, total** | 7439-92-1 | E420/VA | 0.000050 | mg/L | | 0.000090 | 0.000092 | <0.000050 | ---- | ---- |
| **Lithium, total** | 7439-93-2 | E420/VA | 0.0010 | mg/L | | <0.0010 | <0.0010 | <0.0010 | ---- | ---- |
| **Magnesium, total** | 7439-95-4 | E420/VA | 0.0050 | mg/L | | 0.514 | 0.523 | <0.0050 | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | SQU US1 | SQU DS1 | Field Blank | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 12-Nov-2024 10:38 | 12-Nov-2024 11:12 | 12-Nov-2024 10:30 | ---- | ---- |
| | | | | | | VA24D0620-001 | VA24D0620-002 | VA24D0620-003 | ---- | ---- |
| | | | | | | Result | Result | Result | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **Manganese, total** | 7439-96-5 | E420/VA | 0.00010 | mg/L | | 0.00898 | 0.0101 | <0.00010 | ---- | ---- |
| **Mercury, total** | 7439-97-6 | E508/VA | 0.0000050 | mg/L | | <0.0000050 | <0.0000050 | <0.0000050 | ---- | ---- |
| **Molybdenum, total** | 7439-98-7 | E420/VA | 0.000050 | mg/L | | 0.000431 | 0.000419 | <0.000050 | ---- | ---- |
| **Nickel, total** | 7440-02-0 | E420/VA | 0.00050 | mg/L | | <0.00050 | <0.00050 | <0.00050 | ---- | ---- |
| **Phosphorus, total** | 7723-14-0 | E420/VA | 0.050 | mg/L | | <0.050 | <0.050 | <0.050 | ---- | ---- |
| **Potassium, total** | 7440-09-7 | E420/VA | 0.050 | mg/L | | 0.412 | 0.434 | <0.050 | ---- | ---- |
| **Rubidium, total** | 7440-17-7 | E420/VA | 0.00020 | mg/L | | 0.00063 | 0.00062 | <0.00020 | ---- | ---- |
| **Selenium, total** | 7782-49-2 | E420/VA | 0.000050 | mg/L | | <0.000050 | <0.000050 | <0.000050 | ---- | ---- |
| **Silicon, total** | 7440-21-3 | E420/VA | 0.10 | mg/L | | 3.86 | 3.65 | <0.10 | ---- | ---- |
| **Silver, total** | 7440-22-4 | E420/VA | 0.000010 | mg/L | | <0.000010 | <0.000010 | <0.000010 | ---- | ---- |
| **Sodium, total** | 7440-23-5 | E420/VA | 0.050 | mg/L | | 1.41 | 1.40 | 0.061 | ---- | ---- |
| **Strontium, total** | 7440-24-6 | E420/VA | 0.00020 | mg/L | | 0.0292 | 0.0281 | <0.00020 | ---- | ---- |
| **Sulfur, total** | 7704-34-9 | E420/VA | 0.50 | mg/L | | 0.84 | 0.67 | <0.50 | ---- | ---- |
| **Tellurium, total** | 13494-80-9 | E420/VA | 0.00020 | mg/L | | <0.00020 | <0.00020 | <0.00020 | ---- | ---- |
| **Thallium, total** | 7440-28-0 | E420/VA | 0.000010 | mg/L | | <0.000010 | <0.000010 | <0.000010 | ---- | ---- |
| **Thorium, total** | 7440-29-1 | E420/VA | 0.00010 | mg/L | | <0.00010 | <0.00010 | <0.00010 | ---- | ---- |
| **Tin, total** | 7440-31-5 | E420/VA | 0.00010 | mg/L | | <0.00010 | <0.00010 | <0.00010 | ---- | ---- |
| **Titanium, total** | 7440-32-6 | E420/VA | 0.00030 | mg/L | | 0.00908 | <0.0114 DLM | <0.00030 | ---- | ---- |
| **Tungsten, total** | 7440-33-7 | E420/VA | 0.00010 | mg/L | | <0.00010 | <0.00010 | <0.00010 | ---- | ---- |
| **Uranium, total** | 7440-61-1 | E420/VA | 0.000010 | mg/L | | 0.000040 | 0.000040 | <0.000010 | ---- | ---- |
| **Vanadium, total** | 7440-62-2 | E420/VA | 0.00050 | mg/L | | 0.00106 | 0.00112 | <0.00050 | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | SQU US1 | SQU DS1 | Field Blank | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 12-Nov-2024 10:38 | 12-Nov-2024 11:12 | 12-Nov-2024 10:30 | ---- | ---- |
| | | | | | | VA24D0620-001 | VA24D0620-002 | VA24D0620-003 | ---- | ---- |
| | | | | | | Result | Result | Result | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **Zinc, total** | 7440-66-6 | E420/VA | 0.0030 | mg/L | | <0.0030 | <0.0030 | <0.0030 | ---- | ---- |
| **Zirconium, total** | 7440-67-7 | E420/VA | 0.00020 | mg/L | | <0.00020 | <0.00020 | <0.00020 | ---- | ---- |
| **Dissolved Metals** | | | | | | | | | | |
| **Aluminum, dissolved** | 7429-90-5 | E421/VA | 0.0010 | mg/L | | 0.110 | 0.113 | <0.0010 | ---- | ---- |
| **Antimony, dissolved** | 7440-36-0 | E421/VA | 0.00010 | mg/L | | <0.00010 | <0.00010 | <0.00010 | ---- | ---- |
| **Arsenic, dissolved** | 7440-38-2 | E421/VA | 0.00010 | mg/L | | 0.00011 | 0.00010 | <0.00010 | ---- | ---- |
| **Barium, dissolved** | 7440-39-3 | E421/VA | 0.00010 | mg/L | | 0.00645 | 0.00683 | <0.00010 | ---- | ---- |
| **Beryllium, dissolved** | 7440-41-7 | E421/VA | 0.000100 | mg/L | | <0.000100 | <0.000100 | <0.000100 | ---- | ---- |
| **Bismuth, dissolved** | 7440-69-9 | E421/VA | 0.000050 | mg/L | | <0.000050 | <0.000050 | <0.000050 | ---- | ---- |
| **Boron, dissolved** | 7440-42-8 | E421/VA | 0.010 | mg/L | | <0.010 | <0.010 | <0.010 | ---- | ---- |
| **Cadmium, dissolved** | 7440-43-9 | E421/VA | 0.0000050 | mg/L | | 0.0000100 | 0.0000109 | <0.0000050 | ---- | ---- |
| **Calcium, dissolved** | 7440-70-2 | E421/VA | 0.050 | mg/L | | 4.87 | 4.73 | <0.050 | ---- | ---- |
| **Cesium, dissolved** | 7440-46-2 | E421/VA | 0.000010 | mg/L | | <0.000010 | <0.000010 | <0.000010 | ---- | ---- |
| **Chromium, dissolved** | 7440-47-3 | E421/VA | 0.00050 | mg/L | | <0.00050 | <0.00050 | <0.00050 | ---- | ---- |
| **Cobalt, dissolved** | 7440-48-4 | E421/VA | 0.00010 | mg/L | | <0.00010 | <0.00010 | <0.00010 | ---- | ---- |
| **Copper, dissolved** | 7440-50-8 | E421/VA | 0.00020 | mg/L | | 0.00115 | 0.00122 | <0.00020 | ---- | ---- |
| **Iron, dissolved** | 7439-89-6 | E421/VA | 0.010 | mg/L | | 0.087 | 0.069 | <0.010 | ---- | ---- |
| **Lead, dissolved** | 7439-92-1 | E421/VA | 0.000050 | mg/L | | <0.000050 | <0.000050 | <0.000050 | ---- | ---- |
| **Lithium, dissolved** | 7439-93-2 | E421/VA | 0.0010 | mg/L | | <0.0010 | <0.0010 | <0.0010 | ---- | ---- |
| **Magnesium, dissolved** | 7439-95-4 | E421/VA | 0.0050 | mg/L | | 0.464 | 0.453 | <0.0050 | ---- | ---- |
| **Manganese, dissolved** | 7439-96-5 | E421/VA | 0.00010 | mg/L | | 0.00404 | 0.00377 | <0.00010 | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | SQU US1 | SQU DS1 | Field Blank | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 12-Nov-2024 10:38 | 12-Nov-2024 11:12 | 12-Nov-2024 10:30 | ---- | ---- |
| | | | | | | VA24D0620-001 | VA24D0620-002 | VA24D0620-003 | ---- | ---- |
| | | | | | | Result | Result | Result | ---- | ---- |
| **Dissolved Metals** | | | | | | | | | | |
| **Mercury, dissolved** | 7439-97-6 | E509/VA | 0.0000050 | mg/L | | <0.0000050 | <0.0000050 | <0.0000050 | ---- | ---- |
| **Molybdenum, dissolved** | 7439-98-7 | E421/VA | 0.000050 | mg/L | | 0.000429 | 0.000391 | <0.000050 | ---- | ---- |
| **Nickel, dissolved** | 7440-02-0 | E421/VA | 0.00050 | mg/L | | <0.00050 | <0.00050 | <0.00050 | ---- | ---- |
| **Phosphorus, dissolved** | 7723-14-0 | E421/VA | 0.050 | mg/L | | <0.050 | <0.050 | <0.050 | ---- | ---- |
| **Potassium, dissolved** | 7440-09-7 | E421/VA | 0.050 | mg/L | | 0.552 | 0.472 | <0.050 | ---- | ---- |
| **Rubidium, dissolved** | 7440-17-7 | E421/VA | 0.00020 | mg/L | | 0.00055 | 0.00057 | <0.00020 | ---- | ---- |
| **Selenium, dissolved** | 7782-49-2 | E421/VA | 0.000050 | mg/L | | <0.000050 | <0.000050 | <0.000050 | ---- | ---- |
| **Silicon, dissolved** | 7440-21-3 | E421/VA | 0.050 | mg/L | | 3.37 | 3.25 | <0.050 | ---- | ---- |
| **Silver, dissolved** | 7440-22-4 | E421/VA | 0.000010 | mg/L | | <0.000010 | <0.000010 | <0.000010 | ---- | ---- |
| **Sodium, dissolved** | 7440-23-5 | E421/VA | 0.050 | mg/L | | 1.48 | 1.46 | <0.050 | ---- | ---- |
| **Strontium, dissolved** | 7440-24-6 | E421/VA | 0.00020 | mg/L | | 0.0264 | 0.0265 | <0.00020 | ---- | ---- |
| **Sulfur, dissolved** | 7704-34-9 | E421/VA | 0.50 | mg/L | | 0.82 | 0.84 | <0.50 | ---- | ---- |
| **Tellurium, dissolved** | 13494-80-9 | E421/VA | 0.00020 | mg/L | | <0.00020 | <0.00020 | <0.00020 | ---- | ---- |
| **Thallium, dissolved** | 7440-28-0 | E421/VA | 0.000010 | mg/L | | <0.000010 | <0.000010 | <0.000010 | ---- | ---- |
| **Thorium, dissolved** | 7440-29-1 | E421/VA | 0.00010 | mg/L | | <0.00010 | <0.00010 | <0.00010 | ---- | ---- |
| **Tin, dissolved** | 7440-31-5 | E421/VA | 0.00010 | mg/L | | <0.00010 | <0.00010 | <0.00010 | ---- | ---- |
| **Titanium, dissolved** | 7440-32-6 | E421/VA | 0.00030 | mg/L | | 0.00095 | 0.00125 | <0.00030 | ---- | ---- |
| **Tungsten, dissolved** | 7440-33-7 | E421/VA | 0.00010 | mg/L | | <0.00010 | <0.00010 | <0.00010 | ---- | ---- |
| **Uranium, dissolved** | 7440-61-1 | E421/VA | 0.000010 | mg/L | | 0.000034 | 0.000037 | <0.000010 | ---- | ---- |
| **Vanadium, dissolved** | 7440-62-2 | E421/VA | 0.00050 | mg/L | | 0.00087 | 0.00081 | <0.00050 | ---- | ---- |
| **Zinc, dissolved** | 7440-66-6 | E421/VA | 0.0010 | mg/L | | 0.0036 | 0.0068 DTC | <0.0010 | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | SQU US1 | SQU DS1 | Field Blank | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 12-Nov-2024 10:38 | 12-Nov-2024 11:12 | 12-Nov-2024 10:30 | ---- | ---- |
| | | | | | | VA24D0620-001 | VA24D0620-002 | VA24D0620-003 | ---- | ---- |
| | | | | | | Result | Result | Result | ---- | ---- |
| **Dissolved Metals** | | | | | | | | | | |
| **Zirconium, dissolved** | 7440-67-7 | E421/VA | 0.00020 | mg/L | | <0.00020 | <0.00020 | <0.00020 | ---- | ---- |
| **Dissolved mercury filtration location** | ---- | EP509/VA | - | - | | Field | Field | Field | ---- | ---- |
| **Dissolved metals filtration location** | ---- | EP421/VA | - | - | | Field | Field | Field | ---- | ---- |
| **Speciated Metals** | | | | | | | | | | |
| **Chromium, hexavalent [Cr VI], total** | 18540-29-9 | E532/WT | 0.00050 | mg/L | | <0.00050 | <0.00050 | <0.00050 | ---- | ---- |
| **Chromium, trivalent [Cr III], total** | 16065-83-1 | EC535/WT | 0.00050 | mg/L | | <0.00050 | <0.00050 | <0.00050 | ---- | ---- |

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

ALS Canada Ltd.

# QUALITY CONTROL INTERPRETIVE REPORT

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24D0620** | Page | : 1 of 16 |
| Client | : **Triton Environmental Consultants Ltd.** | Laboratory | : ALS Environmental - Vancouver |
| Contact | | Account Manager | |
| Address | | Address | |
| Telephone | | Telephone | |
| Project | : 11964 | Date Samples Received | : 12-Nov-2024 13:50 |
| PO | : 11964 - Task 20-Phase 3C-4C | Issue Date | : 20-Nov-2024 14:24 |
| C-O-C number | : ---- | | |
| Sampler | : ---- | | |
| Site | : Water Analysis | | |
| Quote number | : VA23-TRIT100-012 _V2 | | |
| No. of samples received | : 3 | | |
| No. of samples analysed | : 3 | | |

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

**Key**

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

## *Workorder Comments*

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

## *Summary of Outliers*

### *Outliers : Quality Control Samples*

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

### *Outliers: Reference Material (RM) Samples*

- No Reference Material (RM) Sample outliers occur.

## *Outliers : Analysis Holding Time Compliance (Breaches)*

- No Analysis Holding Time Outliers exist.

## *Outliers : Frequency of Quality Control Samples*

- No Quality Control Sample Frequency Outliers occur.

# Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

| Analyte Group : Analytical Method / Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preparation Date | Holding Times 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)** | | | | | | | | | | |
| Field Blank | E298 | 12-Nov-2024 | 13-Nov-2024 | 28 days | 1 days | ✓ | 18-Nov-2024 | 28 days | 6 days | ✓ |
| **Anions and Nutrients : Ammonia by Fluorescence** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** | | | | | | | | | | |
| SQU DS1 | E298 | 12-Nov-2024 | 13-Nov-2024 | 28 days | 1 days | ✓ | 18-Nov-2024 | 28 days | 6 days | ✓ |
| **Anions and Nutrients : Ammonia by Fluorescence** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** | | | | | | | | | | |
| SQU US1 | E298 | 12-Nov-2024 | 13-Nov-2024 | 28 days | 1 days | ✓ | 18-Nov-2024 | 28 days | 6 days | ✓ |
| **Anions and Nutrients : Bromide in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| Field Blank | E235.Br-L | 12-Nov-2024 | 14-Nov-2024 | 28 days | 2 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Bromide in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| SQU DS1 | E235.Br-L | 12-Nov-2024 | 14-Nov-2024 | 28 days | 2 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Bromide in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| SQU US1 | E235.Br-L | 12-Nov-2024 | 14-Nov-2024 | 28 days | 2 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Chloride in Water by IC** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| Field Blank | E235.Cl | 12-Nov-2024 | 14-Nov-2024 | 28 days | 2 days | ✓ | 14-Nov-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 : Chloride in Water by IC** | | | | | | | | | | |
| **HDPE** SQU DS1 | E235.Cl | 12-Nov-2024 | 14-Nov-2024 | 28 days | 2 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Chloride in Water by IC** | | | | | | | | | | |
| **HDPE** SQU US1 | E235.Cl | 12-Nov-2024 | 14-Nov-2024 | 28 days | 2 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Fluoride in Water by IC** | | | | | | | | | | |
| **HDPE** Field Blank | E235.F | 12-Nov-2024 | 14-Nov-2024 | 28 days | 2 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Fluoride in Water by IC** | | | | | | | | | | |
| **HDPE** SQU DS1 | E235.F | 12-Nov-2024 | 14-Nov-2024 | 28 days | 2 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Fluoride in Water by IC** | | | | | | | | | | |
| **HDPE** SQU US1 | E235.F | 12-Nov-2024 | 14-Nov-2024 | 28 days | 2 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Nitrate in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** Field Blank | E235.NO3-L | 12-Nov-2024 | 14-Nov-2024 | 3 days | 2 days | ✓ | 14-Nov-2024 | 3 days | 2 days | ✓ |
| **Anions and Nutrients : Nitrate in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** SQU DS1 | E235.NO3-L | 12-Nov-2024 | 14-Nov-2024 | 3 days | 2 days | ✓ | 14-Nov-2024 | 3 days | 2 days | ✓ |
| **Anions and Nutrients : Nitrate in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** SQU US1 | E235.NO3-L | 12-Nov-2024 | 14-Nov-2024 | 3 days | 2 days | ✓ | 14-Nov-2024 | 3 days | 2 days | ✓ |
| **Anions and Nutrients : Nitrite in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** Field Blank | E235.NO2-L | 12-Nov-2024 | 14-Nov-2024 | 3 days | 2 days | ✓ | 14-Nov-2024 | 3 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 : Nitrite in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** SQU DS1 | E235.NO2-L | 12-Nov-2024 | 14-Nov-2024 | 3 days | 2 days | ✓ | 14-Nov-2024 | 3 days | 2 days | ✓ |
| **Anions and Nutrients : Nitrite in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** SQU US1 | E235.NO2-L | 12-Nov-2024 | 14-Nov-2024 | 3 days | 2 days | ✓ | 14-Nov-2024 | 3 days | 2 days | ✓ |
| **Anions and Nutrients : Sulfate in Water by IC** | | | | | | | | | | |
| **HDPE** Field Blank | E235.SO4 | 12-Nov-2024 | 14-Nov-2024 | 28 days | 2 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Sulfate in Water by IC** | | | | | | | | | | |
| **HDPE** SQU DS1 | E235.SO4 | 12-Nov-2024 | 14-Nov-2024 | 28 days | 2 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Sulfate in Water by IC** | | | | | | | | | | |
| **HDPE** SQU US1 | E235.SO4 | 12-Nov-2024 | 14-Nov-2024 | 28 days | 2 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Total Nitrogen by Colourimetry** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** Field Blank | E366 | 12-Nov-2024 | 13-Nov-2024 | 28 days | 1 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Total Nitrogen by Colourimetry** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** SQU DS1 | E366 | 12-Nov-2024 | 13-Nov-2024 | 28 days | 1 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Total Nitrogen by Colourimetry** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** SQU US1 | E366 | 12-Nov-2024 | 13-Nov-2024 | 28 days | 1 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** SQU DS1 | E372-U | 12-Nov-2024 | 13-Nov-2024 | 28 days | 1 days | ✓ | 14-Nov-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 : Total Phosphorus by Colourimetry (0.002 mg/L)** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** | | | | | | | | | | |
| SQU US1 | E372-U | 12-Nov-2024 | 13-Nov-2024 | 28 days | 1 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** | | | | | | | | | | |
| Field Blank | E372-U | 12-Nov-2024 | 13-Nov-2024 | 28 days | 1 days | ✓ | 14-Nov-2024 | 28 days | 3 days | ✓ |
| **Dissolved Metals : Dissolved Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial dissolved (hydrochloric acid)** | | | | | | | | | | |
| Field Blank | E509 | 12-Nov-2024 | 16-Nov-2024 | 28 days | 4 days | ✓ | 16-Nov-2024 | 28 days | 4 days | ✓ |
| **Dissolved Metals : Dissolved Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial dissolved (hydrochloric acid)** | | | | | | | | | | |
| SQU DS1 | E509 | 12-Nov-2024 | 16-Nov-2024 | 28 days | 4 days | ✓ | 16-Nov-2024 | 28 days | 4 days | ✓ |
| **Dissolved Metals : Dissolved Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial dissolved (hydrochloric acid)** | | | | | | | | | | |
| SQU US1 | E509 | 12-Nov-2024 | 16-Nov-2024 | 28 days | 4 days | ✓ | 16-Nov-2024 | 28 days | 4 days | ✓ |
| **Dissolved Metals : Dissolved Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE dissolved (nitric acid)** | | | | | | | | | | |
| Field Blank | E421 | 12-Nov-2024 | 15-Nov-2024 | 180 days | 3 days | ✓ | 19-Nov-2024 | 180 days | 7 days | ✓ |
| **Dissolved Metals : Dissolved Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE dissolved (nitric acid)** | | | | | | | | | | |
| SQU DS1 | E421 | 12-Nov-2024 | 15-Nov-2024 | 180 days | 3 days | ✓ | 19-Nov-2024 | 180 days | 7 days | ✓ |
| **Dissolved Metals : Dissolved Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE dissolved (nitric acid)** | | | | | | | | | | |
| SQU US1 | E421 | 12-Nov-2024 | 15-Nov-2024 | 180 days | 3 days | ✓ | 19-Nov-2024 | 180 days | 7 days | ✓ |
| **Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine** | | | | | | | | | | |
| **Glass vial dissolved (hydrochloric acid)** | | | | | | | | | | |
| Field Blank | EF001 | 12-Nov-2024 | ---- | ---- | ---- | | 15-Nov-2024 | ---- | 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 |
| **Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine** | | | | | | | | | | |
| **Glass vial total (hydrochloric acid)** | | | | | | | | | | |
| SQU DS1 | EF001 | 12-Nov-2024 | ---- | ---- | ---- | | 15-Nov-2024 | ---- | 3 days | |
| **Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine** | | | | | | | | | | |
| **Glass vial total (hydrochloric acid)** | | | | | | | | | | |
| SQU US1 | EF001 | 12-Nov-2024 | ---- | ---- | ---- | | 15-Nov-2024 | ---- | 3 days | |
| **Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)** | | | | | | | | | | |
| **Amber glass dissolved (sulfuric acid)** | | | | | | | | | | |
| Field Blank | E358-L | 12-Nov-2024 | 13-Nov-2024 | 28 days | 1 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)** | | | | | | | | | | |
| **Amber glass dissolved (sulfuric acid)** | | | | | | | | | | |
| SQU DS1 | E358-L | 12-Nov-2024 | 13-Nov-2024 | 28 days | 1 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)** | | | | | | | | | | |
| **Amber glass dissolved (sulfuric acid)** | | | | | | | | | | |
| SQU US1 | E358-L | 12-Nov-2024 | 13-Nov-2024 | 28 days | 1 days | ✓ | 14-Nov-2024 | 28 days | 2 days | ✓ |
| **Physical Tests : Alkalinity Species by Titration** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| Field Blank | E290 | 12-Nov-2024 | 14-Nov-2024 | 14 days | 2 days | ✓ | 14-Nov-2024 | 14 days | 2 days | ✓ |
| **Physical Tests : Alkalinity Species by Titration** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| SQU DS1 | E290 | 12-Nov-2024 | 14-Nov-2024 | 14 days | 2 days | ✓ | 14-Nov-2024 | 14 days | 2 days | ✓ |
| **Physical Tests : Alkalinity Species by Titration** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| SQU US1 | E290 | 12-Nov-2024 | 14-Nov-2024 | 14 days | 2 days | ✓ | 14-Nov-2024 | 14 days | 2 days | ✓ |
| **Physical Tests : TDS by Gravimetry** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| Field Blank | E162 | 12-Nov-2024 | ---- | ---- | ---- | | 18-Nov-2024 | 7 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 |
| **Physical Tests : TDS by Gravimetry** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| SQU DS1 | E162 | 12-Nov-2024 | ---- | ---- | ---- | | 18-Nov-2024 | 7 days | 6 days | ✓ |
| **Physical Tests : TDS by Gravimetry** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| SQU US1 | E162 | 12-Nov-2024 | ---- | ---- | ---- | | 18-Nov-2024 | 7 days | 6 days | ✓ |
| **Physical Tests : TSS by Gravimetry** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| Field Blank | E160 | 12-Nov-2024 | ---- | ---- | ---- | | 18-Nov-2024 | 7 days | 6 days | ✓ |
| **Physical Tests : TSS by Gravimetry** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| SQU DS1 | E160 | 12-Nov-2024 | ---- | ---- | ---- | | 18-Nov-2024 | 7 days | 6 days | ✓ |
| **Physical Tests : TSS by Gravimetry** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| SQU US1 | E160 | 12-Nov-2024 | ---- | ---- | ---- | | 18-Nov-2024 | 7 days | 6 days | ✓ |
| **Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC** | | | | | | | | | | |
| **UV-inhibited HDPE - total (sodium hydroxide)** | | | | | | | | | | |
| Field Blank | E532 | 12-Nov-2024 | ---- | ---- | ---- | | 15-Nov-2024 | 28 days | 3 days | ✓ |
| **Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC** | | | | | | | | | | |
| **UV-inhibited HDPE - total (sodium hydroxide)** | | | | | | | | | | |
| SQU DS1 | E532 | 12-Nov-2024 | ---- | ---- | ---- | | 15-Nov-2024 | 28 days | 3 days | ✓ |
| **Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC** | | | | | | | | | | |
| **UV-inhibited HDPE - total (sodium hydroxide)** | | | | | | | | | | |
| SQU US1 | E532 | 12-Nov-2024 | ---- | ---- | ---- | | 15-Nov-2024 | 28 days | 3 days | ✓ |
| **Total Metals : Total Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial total (hydrochloric acid)** | | | | | | | | | | |
| Field Blank | E508 | 12-Nov-2024 | 16-Nov-2024 | 28 days | 4 days | ✓ | 16-Nov-2024 | 28 days | 4 days | ✓ |

Matrix: **Water**

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

| Analyte Group : Analytical Method / Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preparation Date | Holding Times 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 (hydrochloric acid)** | | | | | | | | | | |
| SQU DS1 | E508 | 12-Nov-2024 | 16-Nov-2024 | 28 days | 4 days | ✓ | 16-Nov-2024 | 28 days | 4 days | ✓ |
| **Total Metals : Total Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial total (hydrochloric acid)** | | | | | | | | | | |
| SQU US1 | E508 | 12-Nov-2024 | 16-Nov-2024 | 28 days | 4 days | ✓ | 16-Nov-2024 | 28 days | 4 days | ✓ |
| **Total Metals : Total Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE total (nitric acid)** | | | | | | | | | | |
| Field Blank | E420 | 12-Nov-2024 | 15-Nov-2024 | 180 days | 3 days | ✓ | 17-Nov-2024 | 180 days | 5 days | ✓ |
| **Total Metals : Total Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE total (nitric acid)** | | | | | | | | | | |
| SQU DS1 | E420 | 12-Nov-2024 | 15-Nov-2024 | 180 days | 3 days | ✓ | 17-Nov-2024 | 180 days | 5 days | ✓ |
| **Total Metals : Total Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE total (nitric acid)** | | | | | | | | | | |
| SQU US1 | E420 | 12-Nov-2024 | 15-Nov-2024 | 180 days | 3 days | ✓ | 17-Nov-2024 | 180 days | 5 days | ✓ |
| **Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)** | | | | | | | | | | |
| **HDPE total (zinc acetate+sodium hydroxide)** | | | | | | | | | | |
| Field Blank | E395 | 12-Nov-2024 | ---- | ---- | ---- | | 14-Nov-2024 | 7 days | 2 days | ✓ |
| **Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)** | | | | | | | | | | |
| **HDPE total (zinc acetate+sodium hydroxide)** | | | | | | | | | | |
| SQU DS1 | E395 | 12-Nov-2024 | ---- | ---- | ---- | | 14-Nov-2024 | 7 days | 2 days | ✓ |
| **Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)** | | | | | | | | | | |
| **HDPE total (zinc acetate+sodium hydroxide)** | | | | | | | | | | |
| SQU US1 | E395 | 12-Nov-2024 | ---- | ---- | ---- | | 14-Nov-2024 | 7 days | 2 days | ✓ |

**Legend & Qualifier Definitions**

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

# Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

| Quality Control Sample Type | | | Count | | Frequency (%) | | |
|---|---|---|---|---|---|---|---|
| *Analytical Methods* | *Method* | *QC Lot #* | *QC* | *Regular* | *Actual* | *Expected* | *Evaluation* |
| **Laboratory Duplicates (DUP)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1765578 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1764752 | 1 | 11 | 9.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1765583 | 1 | 10 | 10.0 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1765582 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1769537 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1764926 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1764749 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1765581 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1765584 | 1 | 19 | 5.2 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1765585 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1765586 | 1 | 12 | 8.3 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1772319 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1767831 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1770048 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1764626 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1764746 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1764751 | 1 | 4 | 25.0 | 5.0 | ✓ |
| Total Sulfide by Colourimetry (Automated Flow) | E395 | 1765850 | 1 | 14 | 7.1 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1772310 | 1 | 20 | 5.0 | 5.0 | ✓ |
| **Laboratory Control Samples (LCS)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1765578 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1764752 | 1 | 11 | 9.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1765583 | 1 | 10 | 10.0 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1765582 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1769537 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1764926 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1764749 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1765581 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1765584 | 1 | 19 | 5.2 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1765585 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1765586 | 1 | 12 | 8.3 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1772319 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1767831 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1770048 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1764626 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1764746 | 1 | 6 | 16.6 | 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 | 1764751 | 1 | 4 | 25.0 | 5.0 | ✓ |
| Total Sulfide by Colourimetry (Automated Flow) | E395 | 1765850 | 1 | 14 | 7.1 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1772310 | 1 | 20 | 5.0 | 5.0 | ✓ |
| **Method Blanks (MB)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1765578 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1764752 | 1 | 11 | 9.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1765583 | 1 | 10 | 10.0 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1765582 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1769537 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1764926 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1764749 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1765581 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1765584 | 1 | 19 | 5.2 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1765585 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1765586 | 1 | 12 | 8.3 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1772319 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1767831 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1770048 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1764626 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1764746 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1764751 | 1 | 4 | 25.0 | 5.0 | ✓ |
| Total Sulfide by Colourimetry (Automated Flow) | E395 | 1765850 | 1 | 14 | 7.1 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1772310 | 1 | 20 | 5.0 | 5.0 | ✓ |
| **Matrix Spikes (MS)** | | | | | | | |
| Ammonia by Fluorescence | E298 | 1764752 | 1 | 11 | 9.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1765583 | 1 | 10 | 10.0 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1765582 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1769537 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1764926 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1764749 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1765581 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1765584 | 1 | 19 | 5.2 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1765585 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1765586 | 1 | 12 | 8.3 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1767831 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1770048 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1764626 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1764746 | 1 | 6 | 16.6 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1764751 | 1 | 4 | 25.0 | 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 | 1765850 | 1 | 14 | 7.1 | 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<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 - Waterloo | 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 - Waterloo | 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, TDS, 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, TDS, 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. |

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# QUALITY CONTROL REPORT

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24D0620** | Page | : 1 of 17 |
| Client | : Triton Environmental Consultants Ltd. | Laboratory | : ALS Environmental - Vancouver |
| Contact | | Account Manager | |
| Address | | Address | |
| Telephone | | Telephone | |
| Project | : 11964 | Date Samples Received | : 12-Nov-2024 13:50 |
| PO | : 11964 - Task 20-Phase 3C-4C | Date Analysis Commenced | : 13-Nov-2024 |
| C-O-C number | : ---- | Issue Date | : 20-Nov-2024 14:25 |
| Sampler | : ---- | | |
| Site | : Water Analysis | | |
| Quote number | : VA23-TRIT100-012 _V2 | | |
| No. of samples received | : 3 | | |
| No. of samples analysed | : 3 | | |

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* |
|---|---|---|
| | | Vancouver Metals, Burnaby, British Columbia |
| | Analyst | Vancouver Metals, Burnaby, British Columbia |
| | Manager - Inorganics | Waterloo Metals, Waterloo, Ontario |
| | Production Manager, Environmental | Waterloo Inorganics, Waterloo, Ontario |
| | Production Manager, Environmental | Waterloo Metals, Waterloo, Ontario |
| | Supervisor - Metals ICP Instrumentation | Vancouver Metals, Burnaby, British Columbia |
| | Lab Assistant | Vancouver Metals, Burnaby, British Columbia |
| | Department Manager - Inorganics | Vancouver Inorganics, Burnaby, British Columbia |
| | | Vancouver Metals, Burnaby, British Columbia |
| | Account Manager Assistant | Vancouver Administration, Burnaby, British Columbia |
| | Supervisor - Water Quality Instrumentation | Vancouver Inorganics, Burnaby, British Columbia |
| | Analyst- General | Vancouver Metals, Burnaby, British Columbia |

## General Comments

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

Key :

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

## Workorder Comments

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

## Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **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: 1765578)** | | | | | | | | | | | |
| FJ2403461-003 | Anonymous | Alkalinity, total (as CaCO3) | ---- | E290 | 2.0 | mg/L | 160 | 159 | 0.251% | 20% | ---- |
| **Physical Tests (QC Lot: 1772310)** | | | | | | | | | | | |
| FJ2403458-001 | Anonymous | Solids, total suspended [TSS] | ---- | E160 | 3.0 | mg/L | <3.0 | <3.0 | 0 | Diff <2x LOR | ---- |
| **Physical Tests (QC Lot: 1772319)** | | | | | | | | | | | |
| FJ2403458-001 | Anonymous | Solids, total dissolved [TDS] | ---- | E162 | 20 | mg/L | 330 | 343 | 4.01% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1764746)** | | | | | | | | | | | |
| VA24D0620-001 | SQU US1 | Nitrogen, total | 7727-37-9 | E366 | 0.030 | mg/L | 0.225 | 0.225 | 0.0002 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1764751)** | | | | | | | | | | | |
| VA24D0620-001 | SQU US1 | Phosphorus, total | 7723-14-0 | E372-U | 0.0020 | mg/L | 0.0208 | 0.0206 | 1.06% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1764752)** | | | | | | | | | | | |
| VA24D0620-001 | SQU US1 | Ammonia, total (as N) | 7664-41-7 | E298 | 0.0050 | mg/L | 0.0480 | 0.0493 | 0.0013 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1765581)** | | | | | | | | | | | |
| FJ2403461-001 | Anonymous | Fluoride | 16984-48-8 | E235.F | 0.100 | mg/L | 0.326 | 0.329 | 0.003 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1765582)** | | | | | | | | | | | |
| FJ2403461-001 | Anonymous | Chloride | 16887-00-6 | E235.Cl | 2.50 | mg/L | 91.2 | 91.6 | 0.399% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1765583)** | | | | | | | | | | | |
| FJ2403461-001 | Anonymous | Bromide | 24959-67-9 | E235.Br-L | 0.250 | mg/L | 1.32 | 1.33 | 0.012 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1765584)** | | | | | | | | | | | |
| FJ2403461-001 | Anonymous | Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.0250 | mg/L | 0.254 | 0.256 | 0.883% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1765585)** | | | | | | | | | | | |
| FJ2403461-001 | Anonymous | Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.0050 | mg/L | 0.0082 | 0.0080 | 0.0002 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1765586)** | | | | | | | | | | | |
| FJ2403461-001 | Anonymous | Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 1.50 | mg/L | 82.2 | 83.5 | 1.49% | 20% | ---- |
| **Organic / Inorganic Carbon (QC Lot: 1764749)** | | | | | | | | | | | |
| VA24D0373-001 | Anonymous | Carbon, dissolved organic [DOC] | ---- | E358-L | 0.50 | mg/L | 2.44 | 2.50 | 0.06 | Diff <2x LOR | ---- |
| **Total Sulfides (QC Lot: 1765850)** | | | | | | | | | | | |
| TY2412981-002 | Anonymous | Sulfide, total (as S) | 18496-25-8 | E395 | 0.0015 | mg/L | 0.0022 | 0.0024 | 0.0002 | Diff <2x LOR | ---- |
| **Total Metals (QC Lot: 1764626)** | | | | | | | | | | | |
| VA24D0260-001 | Anonymous | Aluminum, total | 7429-90-5 | E420 | 0.0150 | mg/L | 68.9 | 74.6 | 7.94% | 20% | ---- |
| | | Antimony, total | 7440-36-0 | E420 | 0.00050 | mg/L | <0.00050 | <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: 1764626) - continued** | | | | | | | | | | | |
| VA24D0260-001 | Anonymous | Arsenic, total | 7440-38-2 | E420 | 0.00050 | mg/L | 0.0143 | 0.0160 | 11.2% | 20% | ---- |
| | | Barium, total | 7440-39-3 | E420 | 0.00050 | mg/L | 0.294 | 0.314 | 6.34% | 20% | ---- |
| | | Beryllium, total | 7440-41-7 | E420 | 0.000100 | mg/L | 0.000797 | 0.000807 | 0.000009 | Diff <2x LOR | ---- |
| | | Bismuth, total | 7440-69-9 | E420 | 0.000250 | mg/L | <0.000250 | <0.000250 | 0 | Diff <2x LOR | ---- |
| | | Boron, total | 7440-42-8 | E420 | 0.050 | mg/L | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Cadmium, total | 7440-43-9 | E420 | 0.0000250 | mg/L | 0.000208 | 0.000205 | 0.0000032 | Diff <2x LOR | ---- |
| | | Calcium, total | 7440-70-2 | E420 | 0.250 | mg/L | 189 | 191 | 0.940% | 20% | ---- |
| | | Cesium, total | 7440-46-2 | E420 | 0.000050 | mg/L | 0.00185 | 0.00197 | 6.28% | 20% | ---- |
| | | Chromium, total | 7440-47-3 | E420 | 0.00250 | mg/L | 0.0288 | 0.0312 | 7.86% | 20% | ---- |
| | | Cobalt, total | 7440-48-4 | E420 | 0.00050 | mg/L | 0.0713 | 0.0772 | 7.93% | 20% | ---- |
| | | Copper, total | 7440-50-8 | E420 | 0.00250 | mg/L | 0.286 | 0.299 | 4.70% | 20% | ---- |
| | | Iron, total | 7439-89-6 | E420 | 0.050 | mg/L | 162 | 175 | 7.94% | 20% | ---- |
| | | Lead, total | 7439-92-1 | E420 | 0.000250 | mg/L | 0.0170 | 0.0176 | 3.06% | 20% | ---- |
| | | Lithium, total | 7439-93-2 | E420 | 0.0050 | mg/L | 0.0861 | 0.0920 | 6.64% | 20% | ---- |
| | | Magnesium, total | 7439-95-4 | E420 | 0.0250 | mg/L | 51.4 | 54.7 | 6.23% | 20% | ---- |
| | | Manganese, total | 7439-96-5 | E420 | 0.00050 | mg/L | 2.51 | 2.60 | 3.68% | 20% | ---- |
| | | Molybdenum, total | 7439-98-7 | E420 | 0.000250 | mg/L | 0.00182 | 0.00202 | 0.000201 | Diff <2x LOR | ---- |
| | | Nickel, total | 7440-02-0 | E420 | 0.00250 | mg/L | 0.0335 | 0.0366 | 8.97% | 20% | ---- |
| | | Phosphorus, total | 7723-14-0 | E420 | 0.250 | mg/L | 2.48 | 2.19 | 0.293 | Diff <2x LOR | ---- |
| | | Potassium, total | 7440-09-7 | E420 | 0.250 | mg/L | 3.82 | 4.06 | 6.12% | 20% | ---- |
| | | Rubidium, total | 7440-17-7 | E420 | 0.00100 | mg/L | 0.0180 | 0.0198 | 9.11% | 20% | ---- |
| | | Selenium, total | 7782-49-2 | E420 | 0.000250 | mg/L | 0.000508 | 0.000388 | 0.000120 | Diff <2x LOR | ---- |
| | | Silicon, total | 7440-21-3 | E420 | 0.50 | mg/L | 82.3 | 86.5 | 5.00% | 20% | ---- |
| | | Silver, total | 7440-22-4 | E420 | 0.000050 | mg/L | 0.000124 | 0.000132 | 0.000008 | Diff <2x LOR | ---- |
| | | Sodium, total | 7440-23-5 | E420 | 0.250 | mg/L | 1.67 | 1.75 | 0.085 | Diff <2x LOR | ---- |
| | | Strontium, total | 7440-24-6 | E420 | 0.00100 | mg/L | 1.17 | 1.17 | 0.188% | 20% | ---- |
| | | Sulfur, total | 7704-34-9 | E420 | 2.50 | mg/L | 20.6 | 20.7 | 0.04 | Diff <2x LOR | ---- |
| | | Tellurium, total | 13494-80-9 | E420 | 0.00100 | mg/L | <0.00100 | <0.00100 | 0 | Diff <2x LOR | ---- |
| | | Thallium, total | 7440-28-0 | E420 | 0.000050 | mg/L | 0.000115 | 0.000128 | 0.000013 | Diff <2x LOR | ---- |
| | | Thorium, total | 7440-29-1 | E420 | 0.00050 | mg/L | 0.00808 | 0.00905 | 11.2% | 20% | ---- |
| | | Tin, total | 7440-31-5 | E420 | 0.00050 | mg/L | 0.00055 | 0.00060 | 0.00005 | Diff <2x LOR | ---- |
| | | Titanium, total | 7440-32-6 | E420 | 0.00150 | mg/L | 0.199 | 0.214 | 7.37% | 20% | ---- |
| | | Tungsten, total | 7440-33-7 | E420 | 0.00050 | mg/L | <0.00050 | <0.00050 | 0 | Diff <2x LOR | ---- |
| | | Uranium, total | 7440-61-1 | E420 | 0.000050 | mg/L | 0.00798 | 0.00829 | 3.80% | 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* |
| **Total Metals (QC Lot: 1764626) - continued** | | | | | | | | | | | |
| VA24D0260-001 | Anonymous | Vanadium, total | 7440-62-2 | E420 | 0.00250 | mg/L | 0.272 | 0.295 | 8.40% | 20% | ---- |
| | | Zinc, total | 7440-66-6 | E420 | 0.0150 | mg/L | 0.195 | 0.214 | 9.25% | 20% | ---- |
| | | Zirconium, total | 7440-67-7 | E420 | 0.00100 | mg/L | 0.00151 | 0.00158 | 0.00006 | Diff <2x LOR | ---- |
| **Total Metals (QC Lot: 1770048)** | | | | | | | | | | | |
| VA24D0595-004 | Anonymous | Mercury, total | 7439-97-6 | E508 | 0.0000050 | mg/L | 0.0000067 | 0.0000076 | 0.0000009 | Diff <2x LOR | ---- |
| **Dissolved Metals (QC Lot: 1764926)** | | | | | | | | | | | |
| FJ2403445-001 | Anonymous | Aluminum, dissolved | 7429-90-5 | E421 | 0.0010 | mg/L | 0.0024 | 0.0023 | 0.00004 | Diff <2x LOR | ---- |
| | | Antimony, dissolved | 7440-36-0 | E421 | 0.00010 | mg/L | 0.00166 | 0.00166 | 0.638% | 20% | ---- |
| | | Arsenic, dissolved | 7440-38-2 | E421 | 0.00010 | mg/L | 0.00018 | 0.00021 | 0.00003 | Diff <2x LOR | ---- |
| | | Barium, dissolved | 7440-39-3 | E421 | 0.00010 | mg/L | 0.0562 | 0.0562 | 0.149% | 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 | 0.249 | 0.235 | 5.56% | 20% | ---- |
| | | Cadmium, dissolved | 7440-43-9 | E421 | 0.0000050 | mg/L | 0.0000069 | 0.0000072 | 0.0000003 | Diff <2x LOR | ---- |
| | | Calcium, dissolved | 7440-70-2 | E421 | 0.050 | mg/L | 149 | 153 | 2.28% | 20% | ---- |
| | | Cesium, dissolved | 7440-46-2 | E421 | 0.000010 | mg/L | 0.000023 | 0.000022 | 0.0000002 | Diff <2x LOR | ---- |
| | | Chromium, dissolved | 7440-47-3 | E421 | 0.00050 | mg/L | <0.00050 | <0.00050 | 0 | Diff <2x LOR | ---- |
| | | Cobalt, dissolved | 7440-48-4 | E421 | 0.00010 | mg/L | 0.00023 | 0.00023 | 0.000003 | Diff <2x LOR | ---- |
| | | Copper, dissolved | 7440-50-8 | E421 | 0.00020 | mg/L | 0.00035 | 0.00033 | 0.00002 | 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 | 0.335 | 0.329 | 1.82% | 20% | ---- |
| | | Magnesium, dissolved | 7439-95-4 | E421 | 0.0050 | mg/L | 61.2 | 62.6 | 2.41% | 20% | ---- |
| | | Manganese, dissolved | 7439-96-5 | E421 | 0.00010 | mg/L | 0.00214 | 0.00211 | 1.29% | 20% | ---- |
| | | Molybdenum, dissolved | 7439-98-7 | E421 | 0.000050 | mg/L | 0.00465 | 0.00464 | 0.0993% | 20% | ---- |
| | | Nickel, dissolved | 7440-02-0 | E421 | 0.00050 | mg/L | 0.0186 | 0.0188 | 1.23% | 20% | ---- |
| | | Phosphorus, dissolved | 7723-14-0 | E421 | 0.050 | mg/L | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Potassium, dissolved | 7440-09-7 | E421 | 0.050 | mg/L | 3.05 | 3.18 | 4.16% | 20% | ---- |
| | | Rubidium, dissolved | 7440-17-7 | E421 | 0.00020 | mg/L | 0.00330 | 0.00339 | 2.68% | 20% | ---- |
| | | Selenium, dissolved | 7782-49-2 | E421 | 0.000050 | mg/L | 0.00407 | 0.00436 | 6.78% | 20% | ---- |
| | | Silicon, dissolved | 7440-21-3 | E421 | 0.050 | mg/L | 2.90 | 2.88 | 0.522% | 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 | 238 | 248 | 4.14% | 20% | ---- |
| | | Strontium, dissolved | 7440-24-6 | E421 | 0.00020 | mg/L | 0.269 | 0.278 | 3.24% | 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: 1764926) - continued** | | | | | | | | | | | |
| FJ2403445-001 | Anonymous | Sulfur, dissolved | 7704-34-9 | E421 | 0.50 | mg/L | 210 | 202 | 3.68% | 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 | 0.000031 | 0.000032 | 0.000001 | 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 | 0.0177 | 0.0176 | 0.790% | 20% | ---- |
| | | Vanadium, dissolved | 7440-62-2 | E421 | 0.00050 | mg/L | 0.00056 | 0.00058 | 0.00003 | Diff <2x LOR | ---- |
| | | Zinc, dissolved | 7440-66-6 | E421 | 0.0010 | mg/L | 0.0015 | 0.0016 | 0.0001 | 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: 1769537)** | | | | | | | | | | | |
| VA24D0613-005 | Anonymous | Mercury, dissolved | 7439-97-6 | E509 | 0.0000050 | mg/L | 0.00128 | 0.00128 | 0.0783% | 20% | ---- |
| **Speciated Metals (QC Lot: 1767831)** | | | | | | | | | | | |
| VA24D0620-001 | 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: 1765578)** | | | | | | |
| Alkalinity, total (as CaCO3) | ---- | E290 | 1 | mg/L | <1.0 | ---- |
| **Physical Tests (QCLot: 1772310)** | | | | | | |
| Solids, total suspended [TSS] | ---- | E160 | 3 | mg/L | <3.0 | ---- |
| **Physical Tests (QCLot: 1772319)** | | | | | | |
| Solids, total dissolved [TDS] | ---- | E162 | 10 | mg/L | <10 | ---- |
| **Anions and Nutrients (QCLot: 1764746)** | | | | | | |
| Nitrogen, total | 7727-37-9 | E366 | 0.03 | mg/L | <0.030 | ---- |
| **Anions and Nutrients (QCLot: 1764751)** | | | | | | |
| Phosphorus, total | 7723-14-0 | E372-U | 0.002 | mg/L | <0.0020 | ---- |
| **Anions and Nutrients (QCLot: 1764752)** | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298 | 0.005 | mg/L | <0.0050 | ---- |
| **Anions and Nutrients (QCLot: 1765581)** | | | | | | |
| Fluoride | 16984-48-8 | E235.F | 0.02 | mg/L | <0.020 | ---- |
| **Anions and Nutrients (QCLot: 1765582)** | | | | | | |
| Chloride | 16887-00-6 | E235.Cl | 0.5 | mg/L | <0.50 | ---- |
| **Anions and Nutrients (QCLot: 1765583)** | | | | | | |
| Bromide | 24959-67-9 | E235.Br-L | 0.05 | mg/L | <0.050 | ---- |
| **Anions and Nutrients (QCLot: 1765584)** | | | | | | |
| Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.005 | mg/L | <0.0050 | ---- |
| **Anions and Nutrients (QCLot: 1765585)** | | | | | | |
| Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.001 | mg/L | <0.0010 | ---- |
| **Anions and Nutrients (QCLot: 1765586)** | | | | | | |
| Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.3 | mg/L | <0.30 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1764749)** | | | | | | |
| Carbon, dissolved organic [DOC] | ---- | E358-L | 0.5 | mg/L | <0.50 | ---- |
| **Total Sulfides (QCLot: 1765850)** | | | | | | |
| Sulfide, total (as S) | 18496-25-8 | E395 | 0.0015 | mg/L | <0.0015 | ---- |
| **Total Metals (QCLot: 1764626)** | | | | | | |
| 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: 1764626) - 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: 1770048)** | | | | | | |
| Mercury, total | 7439-97-6 | E508 | 0.000005 | mg/L | <0.0000050 | ---- |
| **Dissolved Metals (QCLot: 1764926)** | | | | | | |
| 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: 1764926) - 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: 1769537)** | | | | | | |
| Mercury, dissolved | 7439-97-6 | E509 | 0.000005 | mg/L | <0.0000050 | ---- |
| **Speciated Metals (QCLot: 1767831)** | | | | | | |
| 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: 1765578)** | | | | | | | | | |
| Alkalinity, total (as CaCO3) | ---- | E290 | 1 | mg/L | 500 mg/L | 104 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1772310)** | | | | | | | | | |
| Solids, total suspended [TSS] | ---- | E160 | 3 | mg/L | 150 mg/L | 108 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1772319)** | | | | | | | | | |
| Solids, total dissolved [TDS] | ---- | E162 | 10 | mg/L | 1000 mg/L | 106 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1764746)** | | | | | | | | | |
| Nitrogen, total | 7727-37-9 | E366 | 0.03 | mg/L | 0.5 mg/L | 108 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1764751)** | | | | | | | | | |
| Phosphorus, total | 7723-14-0 | E372-U | 0.002 | mg/L | 0.05 mg/L | 95.1 | 80.0 | 120 | ---- |
| **Anions and Nutrients (QCLot: 1764752)** | | | | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298 | 0.005 | mg/L | 0.2 mg/L | 105 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1765581)** | | | | | | | | | |
| Fluoride | 16984-48-8 | E235.F | 0.02 | mg/L | 1 mg/L | 97.2 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1765582)** | | | | | | | | | |
| Chloride | 16887-00-6 | E235.Cl | 0.5 | mg/L | 100 mg/L | 97.8 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1765583)** | | | | | | | | | |
| Bromide | 24959-67-9 | E235.Br-L | 0.05 | mg/L | 0.5 mg/L | 104 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1765584)** | | | | | | | | | |
| Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.005 | mg/L | 2.5 mg/L | 98.0 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1765585)** | | | | | | | | | |
| Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.001 | mg/L | 0.5 mg/L | 96.6 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1765586)** | | | | | | | | | |
| Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.3 | mg/L | 100 mg/L | 100 | 90.0 | 110 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1764749)** | | | | | | | | | |
| Carbon, dissolved organic [DOC] | ---- | E358-L | 0.5 | mg/L | 8.57 mg/L | 97.2 | 80.0 | 120 | ---- |
| **Total Sulfides (QCLot: 1765850)** | | | | | | | | | |
| Sulfide, total (as S) | 18496-25-8 | E395 | 0.0015 | mg/L | 0.08 mg/L | 104 | 80.0 | 120 | ---- |
| **Total Metals (QCLot: 1764626)** | | | | | | | | | |

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: 1764626) - continued** | | | | | | | | | |
| Aluminum, total | 7429-90-5 | E420 | 0.003 | mg/L | 2 mg/L | 105 | 80.0 | 120 | ---- |
| Antimony, total | 7440-36-0 | E420 | 0.0001 | mg/L | 1 mg/L | 103 | 80.0 | 120 | ---- |
| Arsenic, total | 7440-38-2 | E420 | 0.0001 | mg/L | 1 mg/L | 104 | 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 | 101 | 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 | 105 | 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 | 103 | 80.0 | 120 | ---- |
| Chromium, total | 7440-47-3 | E420 | 0.0005 | mg/L | 0.25 mg/L | 103 | 80.0 | 120 | ---- |
| Cobalt, total | 7440-48-4 | E420 | 0.0001 | mg/L | 0.25 mg/L | 101 | 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 | 105 | 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 | 104 | 80.0 | 120 | ---- |
| Magnesium, total | 7439-95-4 | E420 | 0.005 | mg/L | 50 mg/L | 101 | 80.0 | 120 | ---- |
| Manganese, total | 7439-96-5 | E420 | 0.0001 | mg/L | 0.25 mg/L | 102 | 80.0 | 120 | ---- |
| Molybdenum, total | 7439-98-7 | E420 | 0.00005 | mg/L | 0.25 mg/L | 104 | 80.0 | 120 | ---- |
| Nickel, total | 7440-02-0 | E420 | 0.0005 | mg/L | 0.5 mg/L | 103 | 80.0 | 120 | ---- |
| Phosphorus, total | 7723-14-0 | E420 | 0.05 | mg/L | 10 mg/L | 98.8 | 80.0 | 120 | ---- |
| Potassium, total | 7440-09-7 | E420 | 0.05 | mg/L | 50 mg/L | 108 | 80.0 | 120 | ---- |
| Rubidium, total | 7440-17-7 | E420 | 0.0002 | mg/L | 0.1 mg/L | 101 | 80.0 | 120 | ---- |
| Selenium, total | 7782-49-2 | E420 | 0.00005 | mg/L | 1 mg/L | 98.4 | 80.0 | 120 | ---- |
| Silicon, total | 7440-21-3 | E420 | 0.1 | mg/L | 10 mg/L | 108 | 80.0 | 120 | ---- |
| Silver, total | 7440-22-4 | E420 | 0.00001 | mg/L | 0.1 mg/L | 95.5 | 80.0 | 120 | ---- |
| Sodium, total | 7440-23-5 | E420 | 0.05 | mg/L | 50 mg/L | 105 | 80.0 | 120 | ---- |
| Strontium, total | 7440-24-6 | E420 | 0.0002 | mg/L | 0.25 mg/L | 104 | 80.0 | 120 | ---- |
| Sulfur, total | 7704-34-9 | E420 | 0.5 | mg/L | 50 mg/L | 87.4 | 80.0 | 120 | ---- |
| Tellurium, total | 13494-80-9 | E420 | 0.0002 | mg/L | 0.1 mg/L | 103 | 80.0 | 120 | ---- |
| Thallium, total | 7440-28-0 | E420 | 0.00001 | mg/L | 1 mg/L | 99.2 | 80.0 | 120 | ---- |
| Thorium, total | 7440-29-1 | E420 | 0.0001 | mg/L | 0.1 mg/L | 100 | 80.0 | 120 | ---- |
| Tin, total | 7440-31-5 | E420 | 0.0001 | mg/L | 0.5 mg/L | 101 | 80.0 | 120 | ---- |
| Titanium, total | 7440-32-6 | E420 | 0.0003 | mg/L | 0.25 mg/L | 97.2 | 80.0 | 120 | ---- |
| Tungsten, total | 7440-33-7 | E420 | 0.0001 | mg/L | 0.1 mg/L | 100 | 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: 1764626) - continued** | | | | | | | | | |
| Vanadium, total | 7440-62-2 | E420 | 0.0005 | mg/L | 0.5 mg/L | 104 | 80.0 | 120 | ---- |
| 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 | 102 | 80.0 | 120 | ---- |
| **Total Metals (QCLot: 1770048)** | | | | | | | | | |
| Mercury, total | 7439-97-6 | E508 | 0.000005 | mg/L | 0 mg/L | 95.8 | 80.0 | 120 | ---- |
| **Dissolved Metals (QCLot: 1764926)** | | | | | | | | | |
| Aluminum, dissolved | 7429-90-5 | E421 | 0.001 | mg/L | 2 mg/L | 97.7 | 80.0 | 120 | ---- |
| Antimony, dissolved | 7440-36-0 | E421 | 0.0001 | mg/L | 1 mg/L | 99.2 | 80.0 | 120 | ---- |
| Arsenic, dissolved | 7440-38-2 | E421 | 0.0001 | mg/L | 1 mg/L | 101 | 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 | 101 | 80.0 | 120 | ---- |
| Bismuth, dissolved | 7440-69-9 | E421 | 0.00005 | mg/L | 1 mg/L | 98.3 | 80.0 | 120 | ---- |
| Boron, dissolved | 7440-42-8 | E421 | 0.01 | mg/L | 1 mg/L | 98.8 | 80.0 | 120 | ---- |
| Cadmium, dissolved | 7440-43-9 | E421 | 0.000005 | mg/L | 0.1 mg/L | 96.6 | 80.0 | 120 | ---- |
| Calcium, dissolved | 7440-70-2 | E421 | 0.05 | mg/L | 50 mg/L | 100 | 80.0 | 120 | ---- |
| Cesium, dissolved | 7440-46-2 | E421 | 0.00001 | mg/L | 0.05 mg/L | 98.9 | 80.0 | 120 | ---- |
| Chromium, dissolved | 7440-47-3 | E421 | 0.0005 | mg/L | 0.25 mg/L | 96.7 | 80.0 | 120 | ---- |
| Cobalt, dissolved | 7440-48-4 | E421 | 0.0001 | mg/L | 0.25 mg/L | 94.8 | 80.0 | 120 | ---- |
| Copper, dissolved | 7440-50-8 | E421 | 0.0002 | mg/L | 0.25 mg/L | 93.6 | 80.0 | 120 | ---- |
| Iron, dissolved | 7439-89-6 | E421 | 0.01 | mg/L | 1 mg/L | 100 | 80.0 | 120 | ---- |
| Lead, dissolved | 7439-92-1 | E421 | 0.00005 | mg/L | 0.5 mg/L | 96.7 | 80.0 | 120 | ---- |
| Lithium, dissolved | 7439-93-2 | E421 | 0.001 | mg/L | 0.25 mg/L | 98.7 | 80.0 | 120 | ---- |
| Magnesium, dissolved | 7439-95-4 | E421 | 0.005 | mg/L | 50 mg/L | 93.9 | 80.0 | 120 | ---- |
| Manganese, dissolved | 7439-96-5 | E421 | 0.0001 | mg/L | 0.25 mg/L | 93.3 | 80.0 | 120 | ---- |
| Molybdenum, dissolved | 7439-98-7 | E421 | 0.00005 | mg/L | 0.25 mg/L | 99.6 | 80.0 | 120 | ---- |
| Nickel, dissolved | 7440-02-0 | E421 | 0.0005 | mg/L | 0.5 mg/L | 94.1 | 80.0 | 120 | ---- |
| Phosphorus, dissolved | 7723-14-0 | E421 | 0.05 | mg/L | 10 mg/L | 83.9 | 80.0 | 120 | ---- |
| Potassium, dissolved | 7440-09-7 | E421 | 0.05 | mg/L | 50 mg/L | 99.0 | 80.0 | 120 | ---- |
| Rubidium, dissolved | 7440-17-7 | E421 | 0.0002 | mg/L | 0.1 mg/L | 98.3 | 80.0 | 120 | ---- |
| Selenium, dissolved | 7782-49-2 | E421 | 0.00005 | mg/L | 1 mg/L | 94.2 | 80.0 | 120 | ---- |
| Silicon, dissolved | 7440-21-3 | E421 | 0.05 | mg/L | 10 mg/L | 99.6 | 80.0 | 120 | ---- |
| Silver, dissolved | 7440-22-4 | E421 | 0.00001 | mg/L | 0.1 mg/L | 95.2 | 80.0 | 120 | ---- |
| Sodium, dissolved | 7440-23-5 | E421 | 0.05 | mg/L | 50 mg/L | 94.2 | 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 | 91.5 | 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: 1764926) - continued** | | | | | | | | | |
| Tellurium, dissolved | 13494-80-9 | E421 | 0.0002 | mg/L | 0.1 mg/L | 94.9 | 80.0 | 120 | ---- |
| Thallium, dissolved | 7440-28-0 | E421 | 0.00001 | mg/L | 1 mg/L | 95.5 | 80.0 | 120 | ---- |
| Thorium, dissolved | 7440-29-1 | E421 | 0.0001 | mg/L | 0.1 mg/L | 97.3 | 80.0 | 120 | ---- |
| Tin, dissolved | 7440-31-5 | E421 | 0.0001 | mg/L | 0.5 mg/L | 98.1 | 80.0 | 120 | ---- |
| Titanium, dissolved | 7440-32-6 | E421 | 0.0003 | mg/L | 0.25 mg/L | 94.7 | 80.0 | 120 | ---- |
| Tungsten, dissolved | 7440-33-7 | E421 | 0.0001 | mg/L | 0.1 mg/L | 93.6 | 80.0 | 120 | ---- |
| Uranium, dissolved | 7440-61-1 | E421 | 0.00001 | mg/L | 0.005 mg/L | 96.5 | 80.0 | 120 | ---- |
| Vanadium, dissolved | 7440-62-2 | E421 | 0.0005 | mg/L | 0.5 mg/L | 96.2 | 80.0 | 120 | ---- |
| Zinc, dissolved | 7440-66-6 | E421 | 0.001 | mg/L | 0.5 mg/L | 92.9 | 80.0 | 120 | ---- |
| Zirconium, dissolved | 7440-67-7 | E421 | 0.0002 | mg/L | 0.1 mg/L | 98.8 | 80.0 | 120 | ---- |
| Mercury, dissolved | 7439-97-6 | E509 | 0.000005 | mg/L | 0 mg/L | 96.9 | 80.0 | 120 | ---- |
| **Speciated Metals (QCLot: 1767831)** | | | | | | | | | |
| Chromium, hexavalent [Cr VI], total | 18540-29-9 | E532 | 0.0005 | mg/L | 0.025 mg/L | 99.3 | 80.0 | 120 | ---- |

## Matrix Spike (MS) Report

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

Sub-Matrix: **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: 1764746)** | | | | | | | | | | |
| VA24D0620-002 | SQU DS1 | Nitrogen, total | 7727-37-9 | E366 | 0.410 mg/L | 0.4 mg/L | 102 | 70.0 | 130 | ---- |
| **Anions and Nutrients (QCLot: 1764751)** | | | | | | | | | | |
| VA24D0620-002 | SQU DS1 | Phosphorus, total | 7723-14-0 | E372-U | 0.0474 mg/L | 0.05 mg/L | 94.8 | 70.0 | 130 | ---- |
| **Anions and Nutrients (QCLot: 1764752)** | | | | | | | | | | |
| VA24D0620-002 | SQU DS1 | Ammonia, total (as N) | 7664-41-7 | E298 | 0.0998 mg/L | 0.1 mg/L | 99.8 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1765581)** | | | | | | | | | | |
| FJ2403461-002 | Anonymous | Fluoride | 16984-48-8 | E235.F | 5.00 mg/L | 5 mg/L | 100.0 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1765582)** | | | | | | | | | | |
| FJ2403461-002 | Anonymous | Chloride | 16887-00-6 | E235.Cl | 499 mg/L | 500 mg/L | 99.8 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1765583)** | | | | | | | | | | |
| FJ2403461-002 | Anonymous | Bromide | 24959-67-9 | E235.Br-L | 2.63 mg/L | 2.5 mg/L | 105 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1765584)** | | | | | | | | | | |
| FJ2403461-002 | Anonymous | Nitrate (as N) | 14797-55-8 | E235.NO3-L | 12.4 mg/L | 12.5 mg/L | 99.5 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1765585)** | | | | | | | | | | |
| FJ2403461-002 | Anonymous | Nitrite (as N) | 14797-65-0 | E235.NO2-L | 2.46 mg/L | 2.5 mg/L | 98.5 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1765586)** | | | | | | | | | | |
| FJ2403461-002 | Anonymous | Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 497 mg/L | 500 mg/L | 99.4 | 75.0 | 125 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1764749)** | | | | | | | | | | |
| VA24D0373-002 | Anonymous | Carbon, dissolved organic [DOC] | ---- | E358-L | 5.03 mg/L | 5 mg/L | 101 | 70.0 | 130 | ---- |
| **Total Sulfides (QCLot: 1765850)** | | | | | | | | | | |
| VA24D0620-001 | SQU US1 | Sulfide, total (as S) | 18496-25-8 | E395 | 0.172 mg/L | 0.2 mg/L | 86.2 | 75.0 | 125 | ---- |
| **Total Metals (QCLot: 1764626)** | | | | | | | | | | |
| VA24D0260-002 | Anonymous | Aluminum, total | 7429-90-5 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Antimony, total | 7440-36-0 | E420 | 0.0197 mg/L | 0.02 mg/L | 98.7 | 70.0 | 130 | ---- |
| | | Arsenic, total | 7440-38-2 | E420 | 0.0204 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 | 0.0400 mg/L | 0.04 mg/L | 100 | 70.0 | 130 | ---- |
| | | Bismuth, total | 7440-69-9 | E420 | 0.00971 mg/L | 0.01 mg/L | 97.1 | 70.0 | 130 | ---- |
| | | Boron, total | 7440-42-8 | E420 | 0.100 mg/L | 0.1 mg/L | 100 | 70.0 | 130 | ---- |
| | | Cadmium, total | 7440-43-9 | E420 | 0.00393 mg/L | 0.004 mg/L | 98.3 | 70.0 | 130 | ---- |
| | | Calcium, total | 7440-70-2 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Cesium, total | 7440-46-2 | E420 | 0.0101 mg/L | 0.01 mg/L | 101 | 70.0 | 130 | ---- |
| | | Chromium, total | 7440-47-3 | E420 | 0.0389 mg/L | 0.04 mg/L | 97.2 | 70.0 | 130 | ---- |

Sub-Matrix: **Water**

| | | | | | Matrix Spike (MS) Report | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | | Recovery (%) | Recovery Limits (%) | | |
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | Concentration | Target | MS | Low | High | Qualifier |
| **Total Metals (QCLot: 1764626) - continued** | | | | | | | | | | |
| VA24D0260-002 | Anonymous | Cobalt, total | 7440-48-4 | E420 | 0.0188 mg/L | 0.02 mg/L | 94.2 | 70.0 | 130 | ---- |
| | | Copper, total | 7440-50-8 | E420 | 0.0182 mg/L | 0.02 mg/L | 91.1 | 70.0 | 130 | ---- |
| | | Iron, total | 7439-89-6 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Lead, total | 7439-92-1 | E420 | 0.0190 mg/L | 0.02 mg/L | 95.3 | 70.0 | 130 | ---- |
| | | Lithium, total | 7439-93-2 | E420 | 0.0966 mg/L | 0.1 mg/L | 96.6 | 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 | 0.0204 mg/L | 0.02 mg/L | 102 | 70.0 | 130 | ---- |
| | | Nickel, total | 7440-02-0 | E420 | 0.0375 mg/L | 0.04 mg/L | 93.7 | 70.0 | 130 | ---- |
| | | Phosphorus, total | 7723-14-0 | E420 | 10.4 mg/L | 10 mg/L | 104 | 70.0 | 130 | ---- |
| | | Potassium, total | 7440-09-7 | E420 | 4.16 mg/L | 4 mg/L | 104 | 70.0 | 130 | ---- |
| | | Rubidium, total | 7440-17-7 | E420 | 0.0188 mg/L | 0.02 mg/L | 93.9 | 70.0 | 130 | ---- |
| | | Selenium, total | 7782-49-2 | E420 | 0.0391 mg/L | 0.04 mg/L | 97.7 | 70.0 | 130 | ---- |
| | | Silicon, total | 7440-21-3 | E420 | 9.69 mg/L | 10 mg/L | 96.9 | 70.0 | 130 | ---- |
| | | Silver, total | 7440-22-4 | E420 | 0.00390 mg/L | 0.004 mg/L | 97.6 | 70.0 | 130 | ---- |
| | | Sodium, total | 7440-23-5 | E420 | 2.04 mg/L | 2 mg/L | 102 | 70.0 | 130 | ---- |
| | | Strontium, total | 7440-24-6 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Sulfur, total | 7704-34-9 | E420 | 18.4 mg/L | 20 mg/L | 92.2 | 70.0 | 130 | ---- |
| | | Tellurium, total | 13494-80-9 | E420 | 0.0392 mg/L | 0.04 mg/L | 97.9 | 70.0 | 130 | ---- |
| | | Thallium, total | 7440-28-0 | E420 | 0.00366 mg/L | 0.004 mg/L | 91.4 | 70.0 | 130 | ---- |
| | | Thorium, total | 7440-29-1 | E420 | 0.0202 mg/L | 0.02 mg/L | 101 | 70.0 | 130 | ---- |
| | | Tin, total | 7440-31-5 | E420 | 0.0196 mg/L | 0.02 mg/L | 98.1 | 70.0 | 130 | ---- |
| | | Titanium, total | 7440-32-6 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Tungsten, total | 7440-33-7 | E420 | 0.0187 mg/L | 0.02 mg/L | 93.6 | 70.0 | 130 | ---- |
| | | Uranium, total | 7440-61-1 | E420 | 0.00383 mg/L | 0.004 mg/L | 95.9 | 70.0 | 130 | ---- |
| | | Vanadium, total | 7440-62-2 | E420 | 0.0985 mg/L | 0.1 mg/L | 98.5 | 70.0 | 130 | ---- |
| | | Zinc, total | 7440-66-6 | E420 | 0.384 mg/L | 0.4 mg/L | 96.1 | 70.0 | 130 | ---- |
| | | Zirconium, total | 7440-67-7 | E420 | 0.0404 mg/L | 0.04 mg/L | 101 | 70.0 | 130 | ---- |
| **Total Metals (QCLot: 1770048)** | | | | | | | | | | |
| VA24D0595-005 | Anonymous | Mercury, total | 7439-97-6 | E508 | 0.0000948 mg/L | 0 mg/L | 94.8 | 70.0 | 130 | ---- |
| **Dissolved Metals (QCLot: 1764926)** | | | | | | | | | | |
| FJ2403445-002 | Anonymous | Aluminum, dissolved | 7429-90-5 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Antimony, dissolved | 7440-36-0 | E421 | 0.0198 mg/L | 0.02 mg/L | 98.8 | 70.0 | 130 | ---- |
| | | Arsenic, dissolved | 7440-38-2 | E421 | 0.0213 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 | 0.0404 mg/L | 0.04 mg/L | 101 | 70.0 | 130 | ---- |
| | | Bismuth, dissolved | 7440-69-9 | E421 | 0.00855 mg/L | 0.01 mg/L | 85.5 | 70.0 | 130 | ---- |
| | | Boron, dissolved | 7440-42-8 | E421 | 0.097 mg/L | 0.1 mg/L | 96.9 | 70.0 | 130 | ---- |
| | | Cadmium, dissolved | 7440-43-9 | E421 | 0.00385 mg/L | 0.004 mg/L | 96.4 | 70.0 | 130 | ---- |
| | | Calcium, dissolved | 7440-70-2 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Cesium, dissolved | 7440-46-2 | E421 | 0.00997 mg/L | 0.01 mg/L | 99.7 | 70.0 | 130 | ---- |
| | | Chromium, dissolved | 7440-47-3 | E421 | 0.0383 mg/L | 0.04 mg/L | 95.8 | 70.0 | 130 | ---- |
| | | Cobalt, dissolved | 7440-48-4 | E421 | 0.0187 mg/L | 0.02 mg/L | 93.5 | 70.0 | 130 | ---- |

Sub-Matrix: **Water**

| | | | | | Matrix Spike (MS) Report | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | | Recovery (%) | Recovery Limits (%) | | |
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | Concentration | Target | MS | Low | High | Qualifier |
| **Dissolved Metals (QCLot: 1764926) - continued** | | | | | | | | | | |
| FJ2403445-002 | Anonymous | Copper, dissolved | 7440-50-8 | E421 | 0.0179 mg/L | 0.02 mg/L | 89.3 | 70.0 | 130 | ---- |
| | | Iron, dissolved | 7439-89-6 | E421 | 1.58 mg/L | 2 mg/L | 79.0 | 70.0 | 130 | ---- |
| | | Lead, dissolved | 7439-92-1 | E421 | 0.0181 mg/L | 0.02 mg/L | 90.6 | 70.0 | 130 | ---- |
| | | Lithium, dissolved | 7439-93-2 | E421 | 0.0954 mg/L | 0.1 mg/L | 95.4 | 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 | 0.0205 mg/L | 0.02 mg/L | 102 | 70.0 | 130 | ---- |
| | | Nickel, dissolved | 7440-02-0 | E421 | 0.0358 mg/L | 0.04 mg/L | 89.5 | 70.0 | 130 | ---- |
| | | Phosphorus, dissolved | 7723-14-0 | E421 | 9.86 mg/L | 10 mg/L | 98.6 | 70.0 | 130 | ---- |
| | | Potassium, dissolved | 7440-09-7 | E421 | 3.75 mg/L | 4 mg/L | 93.7 | 70.0 | 130 | ---- |
| | | Rubidium, dissolved | 7440-17-7 | E421 | 0.0192 mg/L | 0.02 mg/L | 96.3 | 70.0 | 130 | ---- |
| | | Selenium, dissolved | 7782-49-2 | E421 | 0.0429 mg/L | 0.04 mg/L | 107 | 70.0 | 130 | ---- |
| | | Silicon, dissolved | 7440-21-3 | E421 | 8.63 mg/L | 10 mg/L | 86.3 | 70.0 | 130 | ---- |
| | | Silver, dissolved | 7440-22-4 | E421 | 0.00399 mg/L | 0.004 mg/L | 99.9 | 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 | 0.0435 mg/L | 0.04 mg/L | 109 | 70.0 | 130 | ---- |
| | | Thallium, dissolved | 7440-28-0 | E421 | 0.00364 mg/L | 0.004 mg/L | 91.1 | 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 | 0.0194 mg/L | 0.02 mg/L | 97.0 | 70.0 | 130 | ---- |
| | | Titanium, dissolved | 7440-32-6 | E421 | 0.0305 mg/L | 0.04 mg/L | 76.2 | 70.0 | 130 | ---- |
| | | Tungsten, dissolved | 7440-33-7 | E421 | 0.0188 mg/L | 0.02 mg/L | 93.9 | 70.0 | 130 | ---- |
| | | Uranium, dissolved | 7440-61-1 | E421 | 0.00372 mg/L | 0.004 mg/L | 93.0 | 70.0 | 130 | ---- |
| | | Vanadium, dissolved | 7440-62-2 | E421 | 0.0966 mg/L | 0.1 mg/L | 96.6 | 70.0 | 130 | ---- |
| | | Zinc, dissolved | 7440-66-6 | E421 | 0.375 mg/L | 0.4 mg/L | 93.7 | 70.0 | 130 | ---- |
| | | Zirconium, dissolved | 7440-67-7 | E421 | ---- | ---- | | 70.0 | 130 | ---- |
| **Dissolved Metals (QCLot: 1769537)** | | | | | | | | | | |
| VA24D0613-006 | Anonymous | Mercury, dissolved | 7439-97-6 | E509 | 0.0000982 mg/L | 0 mg/L | 98.2 | 70.0 | 130 | ---- |
| **Speciated Metals (QCLot: 1767831)** | | | | | | | | | | |
| VA24D0620-001 | SQU US1 | Chromium, hexavalent [Cr VI], total | 18540-29-9 | E532 | 0.0417 mg/L | 0.04 mg/L | 104 | 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 |
|---|---|
| Company: | Triton Environmental |
| Contact: | |
| Phone: | |
| Street: | |
| City/Province: | |
| Postal Code: | |
| Invoice To | Same as Report To ☐ YES ☑ NO |
| | Copy of Invoice with Report ☐ YES ☑ NO |
| Company: | |
| Contact: | |

**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

**Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)**

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)
- 4 day [P4-20%] ☐
- 3 day [P3-25%] ☐
- 2 day [P2-50%] ☐

EMERGENCY
- 1 Business day [E1 - 100%] ☐
- Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

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

For tests that can not be performed according to the service level selected, you will be contacted.

**Project Information**

| | |
|---|---|
| ALS Account # / Quote #: | VA23-TRIT100-012 |
| Job #: | 11964 |
| PO / AFE: | 11964 - Task 20 - Phase 3C-4C |
| LSD: | |

**ALS Lab Work Order # (lab use only):** D0620 **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 (low) (as H2S), Unionized Sulfide (low) | Anions scan (Br, Cl, F, NO2, NO3, SO4) | General parameters (alkalinity) | DOC | | | | SAMPLES ON HOLD | Sample is hazardous (please provide further detail | NUMBER OF CONTAINERS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | F | | | | | P | P | | | F/P | | | | | | |
| | Sau US 1 | Nov 12/24 | 10:38 | Water | R | R | R | R | R | R | R | R | R | R | R | | | | | N | 9 |
| | pH: 6.95 cond: 35.0 temp: 7.18 | | | | | | | | | | | | | | | | | | | | |
| | Sau DS 1 | Nov 12/24 | 11:12 | Water | R | R | R | R | R | R | R | R | R | R | R | | | | | N | 9 |
| | pH: 6.98 cond: 37.0 temp: 7.80 | | | | | | | | | | | | | | | | | | | | |
| | Field blank | Nov 12/24 | 10:30 | Water | R | R | R | R | R | R | R | R | R | R | R | | | | | N | 9 |
| | pH: 6.52 cond: 1.0 temp: 18.3 | | | | | | | | | | | | | | | | | | | | |

Environmental Division
Vancouver
Work Order Reference
VA24D0620

Telephone : +1 604 253 4188

**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 (electronic COC only)**

Triton project # 11964

**SAMPLE CONDITION AS RECEIVED (lab use only)**

☐ SIF Observations Yes ☐ No ☐
☑ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
ated ☐

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

**SHIPMENT RELEASE (client use)**

Released by: NOV 12/2024 Time: 1:51

**INITIAL SHIPME**

Received by:

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

Received by: Date: 11/12/24 Time: 1350

REFER TO BACK PAGE FOR ALS LOCATIONS 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**.

# BCR Site Receiving Environment Field Notes and Logs

# FortisBC Eagle Mountain-Woodfibre Gas Pipeline

## Water Discharge Authorization Water Quality Monitoring

2024-11-12-Renkers-5D371

| | | | |
|---|---|---|---|
| **Project Component:** | Tunnel | **Site Name:** | Receiving Environment - Downstream of Discharge |
| **Inspection Date:** | 11/12/2024 | **Location:** | BC Rail Site |
| **Triton QP:** | Stephanie Renkers | **Latitude/Longitude:** | 49.725324 -123.165261 |
| **Temperature(c):** | Low 5 High 9 | **Permit:** | AE 111824 |
| **Weather Conditions:** | Overcast | **Ground Conditions:** | Damp |

### Observations

**Time:** 11:12:00 **Flow Volume (visual):** high

**Notes:** Checked online VuLink and readings were accurate. Sonde suspended in the water.

| | | | |
|---|---|---|---|
| **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:** | |
| **Dissolved Metals + Mercury** | Yes | **Total Sulfide, Unionized Sulfide** | Yes | | |
| **TSS** | Yes | **Anions** | Yes | | |
| **TDS** | Yes | **Total Trivalent Chromium** | Yes | **QA Samples:** | Yes |
| **Nutrients** | Yes | **VOC/VPH** | No | | |
| **DOC** | Yes | **EPH, PAH, LEPH/HEPH** | No | | |
| | | **Trout LC50** | No | | |

### Logger Maintenance

| | | | |
|---|---|---|---|
| **Logger Maintenance Performed?** | No | **Photo of COC with Lab Signature?** | Yes |

**Describe Logger Maintenance**

## Photos

**Photo:** 1

**Location:** SQU DS1

**Description:** Upstream view

**Photo:** 2

**Location:** SQU DS1

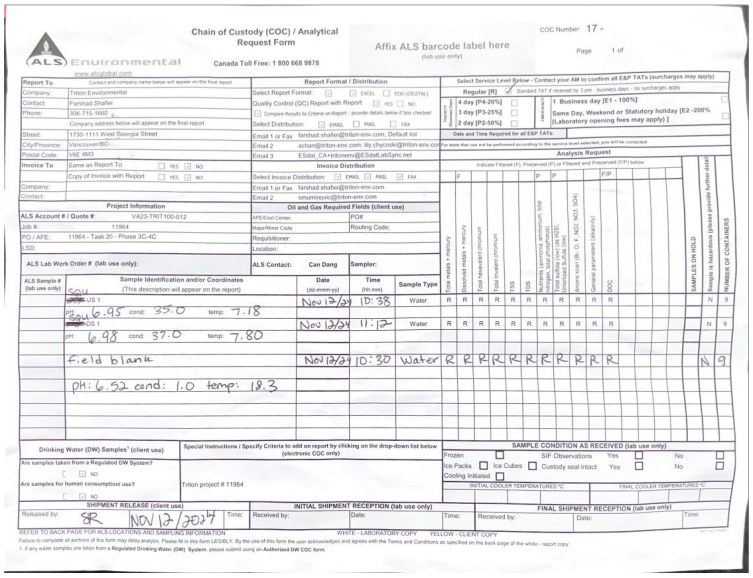
**Description:** Across view

## Photos

**Photo:** 3

**Location:** SQU DS1

**Description:** Downstream view


Chain of Custody (COC) / Analytical Request Form

Affix ALS barcode label here

Environmental

Canada Toll Free: 1 800 668 9878

| Sample Identification and/or Coordinates | Date | Time | Sample Type |
|---|---|---|---|
| SQU | Nov 12/24 | 10:35 | Water |
| pH: 6.95 cond: 35.0 temp: 7.18 | | | |
| EAS DS1 | Nov 12/24 | 11:12 | Water |
| pH: 6.98 cond: 37.0 temp: 7.80 | | | |
| Field blank | Nov 13/24 | 10:30 | Water |
| pH: 6.52 cond: 1.0 temp: 18.3 | | | |

**Photo:** 4

**Location:** Lab COC

**Description:** Lab COC

## Sign Off

| | | | |
|---|---|---|---|
| **Report Prepared By:** | Stephanie Renkers | **Report Reviewed:** | Yes |
| **Report Reviewer:** | | **Professional(s) of Record:** | |
| **Name:** | | | |
| **Designation:** | | | |
| **Designation Number:** | | | |

# FortisBC Eagle Mountain-Woodfibre Gas Pipeline

## Water Discharge Authorization Water Quality Monitoring

2024-11-12-Renkers-4EDF6

| | | | |
|---|---|---|---|
| **Project Component:** | Tunnel | **Site Name:** | Receiving Environment - Upstream of Discharge |
| **Inspection Date:** | 11/12/2024 | **Location:** | BC Rail Site |
| **Triton QP:** | Stephanie Renkers | **Latitude/Longitude:** | 49.726866 -123.163912 |
| **Temperature(c):** | Low 5 High 9 | **Permit:** | AE 111824 |
| **Weather Conditions:** | Overcast | **Ground Conditions:** | Damp |

### Observations

**Time:** 10:38:25 **Flow Volume (visual):** high

**Notes:** Sonde was stuck in the river, but appeared to be suspended in the water. Checked online VuLink and readings were accurate.

| | | | |
|---|---|---|---|
| **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:** | |
| **Dissolved Metals + Mercury** | Yes | **Total Sulfide, Unionized Sulfide** | Yes | | |
| **TSS** | Yes | **Anions** | Yes | | |
| **TDS** | Yes | **Total Trivalent Chromium** | Yes | **QA Samples:** | Yes |
| **Nutrients** | Yes | **VOC/VPH** | No | | |
| **DOC** | Yes | **EPH, PAH, LEPH/HEPH** | No | | |
| | | **Trout LC50** | No | | |

### Logger Maintenance

| | | | |
|---|---|---|---|
| **Logger Maintenance Performed?** | No | **Photo of COC with Lab Signature?** | Yes |

**Describe Logger Maintenance**

## Photos

**Photo:** 1

**Location:** SQU US1

**Description:** Across view

**Photo:** 2

**Location:** SQU US1

**Description:** Upstream view

## Photos

**Photo:** 3

**Location:** SQU US1

**Description:** Downstream view

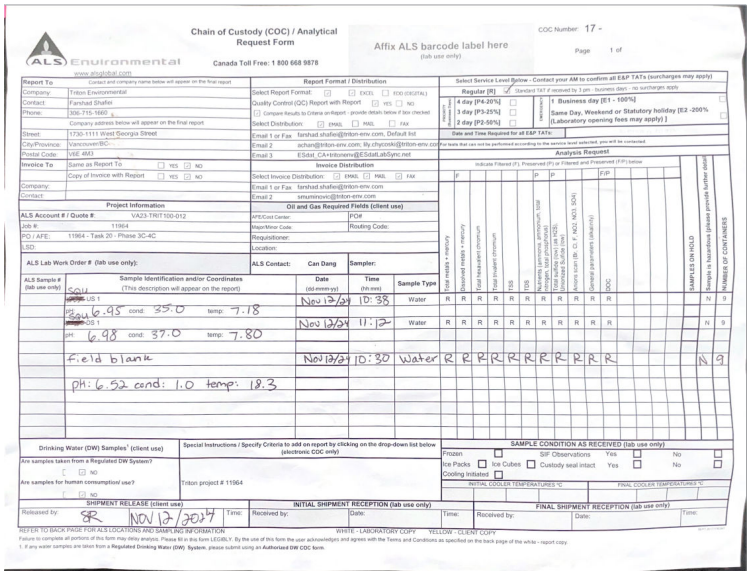



**Photo:** 4

**Location:** SQU US1

**Description:** Lab COC

## Sign Off

| | | | |
|---|---|---|---|
| **Report Prepared By:** | Stephanie Renkers | **Report Reviewed:** | Yes |
| **Report Reviewer:** | | **Professional(s) of Record:** | |
| **Name:** | | | |
| **Designation:** | | | |
| **Designation Number:** | | | |

| BCR Plant Site | SQU DS1 | | | | | | | SQU US1 (Background) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Temperature (c) | Specific Conductivity (µS/cm) | Salinity PSU | pH | Dissolved Oxygen (mg/L) | Turbidity (NTU) | Date | Temperature (c) | Specific Conductivity (µS/cm) | Salinity PSU | pH | Dissolved Oxygen (mg/L) | Turbidity (NTU) |
| 11/11/2024 0:00 | 6.4 | 30.4 | 0.0 | 7.4 | 11.1 | 6.2 | 11/11/2024 0:00 | 7.5 | 49.1 | 0.0 | 6.8 | 11.5 | 28.9 |
| 11/11/2024 0:15 | 6.4 | 30.3 | 0.0 | 7.4 | 11.1 | 5.3 | 11/11/2024 0:15 | 7.4 | 48.9 | 0.0 | 6.8 | 11.5 | 28.7 |
| 11/11/2024 0:30 | 6.3 | 30.2 | 0.0 | 7.4 | 11.1 | 4.0 | 11/11/2024 0:30 | 7.4 | 49.5 | 0.0 | 6.8 | 11.5 | 33.7 |
| 11/11/2024 0:45 | 6.3 | 30.2 | 0.0 | 7.4 | 11.1 | 3.7 | 11/11/2024 0:45 | 7.4 | 49.4 | 0.0 | 6.8 | 11.5 | 31.1 |
| 11/11/2024 1:00 | 6.3 | 30.3 | 0.0 | 7.4 | 11.1 | 4.7 | 11/11/2024 1:00 | 7.4 | 48.9 | 0.0 | 6.8 | 11.5 | 34.4 |
| 11/11/2024 1:15 | 6.3 | 30.2 | 0.0 | 7.4 | 11.1 | 4.1 | 11/11/2024 1:15 | 7.4 | 49.0 | 0.0 | 6.8 | 11.5 | 33.5 |
| 11/11/2024 1:30 | 6.3 | 30.2 | 0.0 | 7.4 | 11.1 | 3.5 | 11/11/2024 1:30 | 7.4 | 48.9 | 0.0 | 6.8 | 11.5 | 34.3 |
| 11/11/2024 1:45 | 6.3 | 30.2 | 0.0 | 7.4 | 11.1 | 6.2 | 11/11/2024 1:45 | 7.4 | 48.7 | 0.0 | 6.8 | 11.5 | 32.6 |
| 11/11/2024 2:00 | 6.3 | 30.2 | 0.0 | 7.4 | 11.1 | 6.5 | 11/11/2024 2:00 | 7.4 | 48.6 | 0.0 | 6.8 | 11.5 | 33.9 |
| 11/11/2024 2:15 | 6.3 | 30.1 | 0.0 | 7.4 | 11.1 | 4.9 | 11/11/2024 2:15 | 7.4 | 49.0 | 0.0 | 6.8 | 11.5 | 34.9 |
| 11/11/2024 2:30 | 6.3 | 30.1 | 0.0 | 7.4 | 11.1 | 6.3 | 11/11/2024 2:30 | 7.4 | 48.7 | 0.0 | 6.8 | 11.5 | 36.2 |
| 11/11/2024 2:45 | 6.3 | 30.0 | 0.0 | 7.4 | 11.1 | 4.3 | 11/11/2024 2:45 | 7.4 | 48.5 | 0.0 | 6.8 | 11.5 | 31.0 |
| 11/11/2024 3:00 | 6.3 | 30.1 | 0.0 | 7.4 | 11.1 | 4.8 | 11/11/2024 3:00 | 7.4 | 48.5 | 0.0 | 6.8 | 11.5 | 37.0 |
| 11/11/2024 3:15 | 6.3 | 30.0 | 0.0 | 7.4 | 11.1 | 9.3 | 11/11/2024 3:15 | 7.4 | 48.6 | 0.0 | 6.8 | 11.5 | 37.5 |
| 11/11/2024 3:30 | 6.3 | 29.9 | 0.0 | 7.4 | 11.1 | 5.5 | 11/11/2024 3:30 | 7.4 | 48.4 | 0.0 | 6.8 | 11.5 | 35.3 |
| 11/11/2024 3:45 | 6.3 | 29.9 | 0.0 | 7.4 | 11.1 | 4.0 | 11/11/2024 3:45 | 7.4 | 48.5 | 0.0 | 6.8 | 11.5 | 35.6 |
| 11/11/2024 4:00 | 6.3 | 30.1 | 0.0 | 7.4 | 11.1 | 4.4 | 11/11/2024 4:00 | 7.4 | 48.3 | 0.0 | 6.8 | 11.5 | 38.6 |
| 11/11/2024 4:15 | 6.3 | 30.1 | 0.0 | 7.4 | 11.1 | 9.2 | 11/11/2024 4:15 | 7.4 | 48.3 | 0.0 | 6.8 | 11.5 | 37.6 |
| 11/11/2024 4:30 | 6.3 | 30.1 | 0.0 | 7.4 | 11.1 | 5.9 | 11/11/2024 4:30 | 7.4 | 48.2 | 0.0 | 6.8 | 11.5 | 39.1 |
| 11/11/2024 4:45 | 6.3 | 29.5 | 0.0 | 7.4 | 11.1 | 15.6 | 11/11/2024 4:45 | 7.4 | 47.2 | 0.0 | 6.8 | 11.5 | 37.1 |
| 11/11/2024 5:00 | 6.3 | 29.1 | 0.0 | 7.4 | 11.2 | 16.6 | 11/11/2024 5:00 | 7.4 | 46.8 | 0.0 | 6.8 | 11.6 | 47.3 |
| 11/11/2024 5:15 | 6.3 | 28.6 | 0.0 | 7.4 | 11.2 | 22.2 | 11/11/2024 5:15 | 7.4 | 45.9 | 0.0 | 6.8 | 11.6 | 45.3 |
| 11/11/2024 5:30 | 6.3 | 28.1 | 0.0 | 7.4 | 11.2 | 18.8 | 11/11/2024 5:30 | 7.4 | 45.0 | 0.0 | 6.8 | 11.7 | 54.1 |
| 11/11/2024 5:45 | 6.3 | 27.3 | 0.0 | 7.4 | 11.3 | 26.3 | 11/11/2024 5:45 | 7.4 | 44.5 | 0.0 | 6.8 | 11.7 | 56.0 |
| 11/11/2024 6:00 | 6.3 | 27.2 | 0.0 | 7.4 | 11.3 | 29.7 | 11/11/2024 6:00 | 7.4 | 44.0 | 0.0 | 6.8 | 11.7 | 54.0 |
| 11/11/2024 6:15 | 6.3 | 26.6 | 0.0 | 7.4 | 11.3 | 24.6 | 11/11/2024 6:15 | 7.4 | 43.0 | 0.0 | 6.8 | 11.8 | 56.5 |
| 11/11/2024 6:30 | 6.3 | 26.2 | 0.0 | 7.4 | 11.4 | 30.7 | 11/11/2024 6:30 | 7.4 | 42.8 | 0.0 | 6.8 | 11.8 | 60.0 |
| 11/11/2024 6:45 | 6.3 | 25.7 | 0.0 | 7.4 | 11.4 | 24.7 | 11/11/2024 6:45 | 7.4 | 41.6 | 0.0 | 6.8 | 11.8 | 68.4 |
| 11/11/2024 7:00 | 6.3 | 25.2 | 0.0 | 7.4 | 11.4 | 35.6 | 11/11/2024 7:00 | 7.4 | 41.4 | 0.0 | 6.8 | 11.9 | 63.0 |
| 11/11/2024 7:15 | 6.3 | 24.7 | 0.0 | 7.4 | 11.5 | 26.4 | 11/11/2024 7:15 | 7.4 | 40.5 | 0.0 | 6.8 | 11.9 | 86.9 |
| 11/11/2024 7:30 | 6.3 | 24.3 | 0.0 | 7.4 | 11.5 | 36.3 | 11/11/2024 7:30 | 7.4 | 39.9 | 0.0 | 6.8 | 11.9 | 68.7 |
| 11/11/2024 7:45 | 6.3 | 23.9 | 0.0 | 7.4 | 11.5 | 31.1 | 11/11/2024 7:45 | 7.4 | 39.5 | 0.0 | 6.8 | 11.9 | 62.7 |
| 11/11/2024 8:00 | 6.3 | 23.8 | 0.0 | 7.4 | 11.5 | 48.9 | 11/11/2024 8:00 | 7.4 | 38.8 | 0.0 | 6.8 | 12.0 | 71.7 |
| 11/11/2024 8:15 | 6.2 | 21.7 | 0.0 | 7.4 | 11.6 | 35.4 | 11/11/2024 8:15 | 7.4 | 38.5 | 0.0 | 6.7 | 12.0 | 69.3 |
| 11/11/2024 8:30 | 6.2 | 23.2 | 0.0 | 7.4 | 11.6 | 41.1 | 11/11/2024 8:30 | 7.3 | 40.3 | 0.0 | 6.7 | 12.0 | 74.9 |
| 11/11/2024 8:45 | 6.2 | 20.2 | 0.0 | 7.4 | 11.6 | 44.8 | 11/11/2024 8:45 | 7.4 | 37.6 | 0.0 | 6.7 | 12.0 | 75.6 |
| 11/11/2024 9:00 | 6.2 | 21.5 | 0.0 | 7.4 | 11.6 | 44.2 | 11/11/2024 9:00 | 7.3 | 40.1 | 0.0 | 6.7 | 12.0 | 69.9 |
| 11/11/2024 9:15 | 6.2 | 22.0 | 0.0 | 7.3 | 11.6 | 46.5 | 11/11/2024 9:15 | 7.3 | 36.7 | 0.0 | 6.7 | 12.0 | 84.1 |
| 11/11/2024 9:30 | 6.2 | 20.9 | 0.0 | 7.4 | 11.6 | 46.7 | 11/11/2024 9:30 | 7.3 | 36.0 | 0.0 | 6.7 | 12.1 | 126.0 |
| 11/11/2024 9:45 | 6.2 | 21.9 | 0.0 | 7.3 | 11.6 | 44.2 | 11/11/2024 9:45 | 7.4 | 36.3 | 0.0 | 6.7 | 12.1 | 78.7 |
| 11/11/2024 10:00 | 6.2 | 21.4 | 0.0 | 7.3 | 11.7 | 49.1 | 11/11/2024 10:00 | 7.4 | 38.6 | 0.0 | 6.7 | 12.1 | 71.0 |
| 11/11/2024 10:15 | 6.2 | 21.3 | 0.0 | 7.4 | 11.7 | 45.6 | 11/11/2024 10:15 | 7.4 | 37.7 | 0.0 | 6.7 | 12.1 | 97.3 |
| 11/11/2024 10:30 | 6.3 | 21.0 | 0.0 | 7.4 | 11.7 | 49.0 | 11/11/2024 10:30 | 7.4 | 39.3 | 0.0 | 6.7 | 12.1 | 82.7 |
| 11/11/2024 10:45 | 6.3 | 20.6 | 0.0 | 7.3 | 11.7 | 63.2 | 11/11/2024 10:45 | 7.4 | 34.6 | 0.0 | 6.7 | 12.2 | 85.7 |
| 11/11/2024 11:00 | 6.3 | 20.5 | 0.0 | 7.3 | 11.8 | 69.8 | 11/11/2024 11:00 | 7.4 | 37.4 | 0.0 | 6.7 | 12.2 | 129.2 |
| 11/11/2024 11:15 | 6.3 | 18.8 | 0.0 | 7.3 | 11.8 | 77.4 | 11/11/2024 11:15 | 7.4 | 37.8 | 0.0 | 6.7 | 12.2 | 89.3 |
| 11/11/2024 11:30 | 6.3 | 20.4 | 0.0 | 7.3 | 11.8 | 75.3 | 11/11/2024 11:30 | 7.5 | 38.6 | 0.0 | 6.7 | 12.3 | 98.2 |
| 11/11/2024 11:45 | 6.4 | 20.4 | 0.0 | 7.3 | 11.9 | 80.6 | 11/11/2024 11:45 | 7.5 | 38.4 | 0.0 | 6.7 | 12.3 | 82.1 |
| 11/11/2024 12:00 | 6.4 | 19.8 | 0.0 | 7.4 | 11.9 | 91.3 | 11/11/2024 12:00 | 7.5 | 37.8 | 0.0 | 6.7 | 12.4 | 101.3 |
| 11/11/2024 12:15 | 6.4 | 19.7 | 0.0 | 7.3 | 12.0 | 80.6 | 11/11/2024 12:15 | 7.5 | 37.1 | 0.0 | 6.7 | 12.4 | 98.1 |
| 11/11/2024 12:30 | 6.4 | 19.6 | 0.0 | 7.3 | 12.0 | 84.5 | 11/11/2024 12:30 | 7.5 | 32.9 | 0.0 | 6.7 | 12.5 | 105.5 |
| 11/11/2024 12:45 | 6.4 | 19.0 | 0.0 | 7.4 | 12.0 | 106.2 | 11/11/2024 12:45 | 7.5 | 33.0 | 0.0 | 6.7 | 12.5 | 103.9 |
| 11/11/2024 13:00 | 6.4 | 19.2 | 0.0 | 7.3 | 12.0 | 88.0 | 11/11/2024 13:00 | 7.5 | 34.0 | 0.0 | 6.7 | 12.5 | 99.3 |
| 11/11/2024 13:15 | 6.4 | 18.6 | 0.0 | 7.3 | 12.0 | 76.0 | 11/11/2024 13:15 | 7.5 | 32.6 | 0.0 | 6.7 | 12.5 | 114.0 |
| 11/11/2024 13:30 | 6.4 | 18.5 | 0.0 | 7.3 | 12.0 | 77.0 | 11/11/2024 13:30 | 7.5 | 31.9 | 0.0 | 6.7 | 12.5 | 108.4 |
| 11/11/2024 13:45 | 6.4 | 18.9 | 0.0 | 7.3 | 12.0 | 73.3 | 11/11/2024 13:45 | 7.6 | 32.4 | 0.0 | 6.7 | 12.5 | 90.8 |
| 11/11/2024 14:00 | 6.5 | 18.5 | 0.0 | 7.3 | 12.0 | 71.6 | 11/11/2024 14:00 | 7.6 | 32.0 | 0.0 | 6.7 | 12.5 | 84.3 |
| 11/11/2024 14:15 | 6.5 | 18.5 | 0.0 | 7.3 | 12.0 | 60.2 | 11/11/2024 14:15 | 7.6 | 31.3 | 0.0 | 6.7 | 12.4 | 152.5 |
| 11/11/2024 14:30 | 6.5 | 18.9 | 0.0 | 7.3 | 11.9 | 58.5 | 11/11/2024 14:30 | 7.6 | 31.8 | 0.0 | 6.7 | 12.4 | 74.3 |
| 11/11/2024 14:45 | 6.6 | 18.7 | 0.0 | 7.3 | 11.9 | 61.2 | 11/11/2024 14:45 | 7.7 | 31.7 | 0.0 | 6.7 | 12.4 | 72.2 |
| 11/11/2024 15:00 | 6.6 | 19.2 | 0.0 | 7.3 | 11.9 | 63.1 | 11/11/2024 15:00 | 7.7 | 32.1 | 0.0 | 6.7 | 12.3 | 72.7 |
| 11/11/2024 15:15 | 6.6 | 17.7 | 0.0 | 7.3 | 11.8 | 48.1 | 11/11/2024 15:15 | 7.7 | 31.6 | 0.0 | 6.7 | 12.3 | 77.1 |
| 11/11/2024 15:30 | 6.6 | 18.7 | 0.0 | 7.3 | 11.8 | 47.9 | 11/11/2024 15:30 | 7.7 | 31.8 | 0.0 | 6.7 | 12.3 | 69.6 |
| 11/11/2024 15:45 | 6.5 | 18.9 | 0.0 | 7.2 | 11.8 | 46.0 | 11/11/2024 15:45 | 7.7 | 32.0 | 0.0 | 6.7 | 12.2 | 70.1 |
| 11/11/2024 16:00 | 6.6 | 19.0 | 0.0 | 7.2 | 11.7 | 39.4 | 11/11/2024 16:00 | 7.7 | 32.5 | 0.0 | 6.7 | 12.2 | 67.2 |
| 11/11/2024 16:15 | 6.6 | 18.0 | 0.0 | 7.3 | 11.7 | 40.8 | 11/11/2024 16:15 | 7.7 | 32.3 | 0.0 | 6.7 | 12.2 | 75.1 |
| 11/11/2024 16:30 | 6.6 | 19.1 | 0.0 | 7.3 | 11.7 | 37.9 | 11/11/2024 16:30 | 7.7 | 32.7 | 0.0 | 6.7 | 12.2 | 63.4 |
| 11/11/2024 16:45 | 6.6 | 19.3 | 0.0 | 7.3 | 11.7 | 39.9 | 11/11/2024 16:45 | 7.7 | 33.0 | 0.0 | 6.7 | 12.1 | 66.1 |
| 11/11/2024 17:00 | 6.5 | 19.0 | 0.0 | 7.3 | 11.6 | 41.1 | 11/11/2024 17:00 | 7.6 | 32.5 | 0.0 | 6.7 | 12.1 | 55.0 |
| 11/11/2024 17:15 | 6.6 | 19.4 | 0.0 | 7.3 | 11.6 | 36.4 | 11/11/2024 17:15 | 7.6 | 32.8 | 0.0 | 6.7 | 12.1 | 54.9 |
| 11/11/2024 17:30 | 6.6 | 19.6 | 0.0 | 7.3 | 11.6 | 29.1 | 11/11/2024 17:30 | 7.7 | 33.5 | 0.0 | 6.7 | 12.0 | 83.7 |
| 11/11/2024 17:45 | 6.5 | 19.5 | 0.0 | 7.3 | 11.6 | 24.6 | 11/11/2024 17:45 | 7.7 | 33.8 | 0.0 | 6.7 | 12.0 | 55.4 |
| 11/11/2024 18:00 | 6.5 | 19.5 | 0.0 | 7.3 | 11.6 | 24.7 | 11/11/2024 18:00 | 7.7 | 34.3 | 0.0 | 6.7 | 12.0 | 54.6 |
| 11/11/2024 18:15 | 6.5 | 19.8 | 0.0 | 7.3 | 11.5 | 21.7 | 11/11/2024 18:15 | 7.7 | 34.2 | 0.0 | 6.7 | 12.0 | 129.6 |
| 11/11/2024 18:30 | 6.5 | 19.7 | 0.0 | 7.3 | 11.5 | 22.3 | 11/11/2024 18:30 | 7.6 | 33.9 | 0.0 | 6.7 | 12.0 | 50.0 |
| 11/11/2024 18:45 | 6.5 | 19.9 | 0.0 | 7.3 | 11.5 | 18.6 | 11/11/2024 18:45 | 7.6 | 34.3 | 0.0 | 6.7 | 11.9 | 46.9 |
| 11/11/2024 19:00 | 6.5 | 20.2 | 0.0 | 7.2 | 11.5 | 21.1 | 11/11/2024 19:00 | 7.6 | 34.6 | 0.0 | 6.7 | 11.9 | 43.2 |
| 11/11/2024 19:15 | 6.5 | 20.2 | 0.0 | 7.3 | 11.5 | 25.5 | 11/11/2024 19:15 | 7.6 | 34.6 | 0.0 | 6.7 | 11.9 | 73.5 |
| 11/11/2024 19:30 | 6.5 | 20.5 | 0.0 | 7.3 | 11.5 | 20.0 | 11/11/2024 19:30 | 7.6 | 35.4 | 0.0 | 6.7 | 11.9 | 84.2 |
| 11/11/2024 19:45 | 6.5 | 20.4 | 0.0 | 7.3 | 11.5 | 18.7 | 11/11/2024 19:45 | 7.6 | 34.8 | 0.0 | 6.7 | 11.9 | 39.7 |
| 11/11/2024 20:00 | 6.5 | 20.6 | 0.0 | 7.3 | 11.5 | 17.8 | 11/11/2024 20:00 | 7.6 | 35.1 | 0.0 | 6.7 | 11.9 | 44.2 |
| 11/11/2024 20:15 | 6.5 | 20.6 | 0.0 | 7.2 | 11.5 | 15.5 | 11/11/2024 20:15 | 7.6 | 35.3 | 0.0 | 6.7 | 11.9 | 37.7 |
| 11/11/2024 20:30 | 6.5 | 20.9 | 0.0 | 7.3 | 11.5 | 15.4 | 11/11/2024 20:30 | 7.6 | 35.9 | 0.0 | 6.7 | 11.9 | 73.2 |
| 11/11/2024 20:45 | 6.5 | 21.0 | 0.0 | 7.2 | 11.4 | 19.5 | 11/11/2024 20:45 | 7.6 | 35.8 | 0.0 | 6.7 | 11.9 | 42.9 |
| 11/11/2024 21:00 | 6.5 | 21.0 | 0.0 | 7.3 | 11.4 | 15.8 | 11/11/2024 21:00 | 7.6 | 36.0 | 0.0 | 6.7 | 11.9 | 39.3 |
| 11/11/2024 21:15 | 6.5 | 21.2 | 0.0 | 7.3 | 11.4 | 15.1 | 11/11/2024 21:15 | 7.6 | 36.1 | 0.0 | 6.7 | 11.9 | 40.6 |
| 11/11/2024 21:30 | 6.5 | 21.5 | 0.0 | 7.3 | 11.4 | 14.7 | 11/11/2024 21:30 | 7.6 | 36.3 | 0.0 | 6.7 | 11.9 | 41.4 |
| 11/11/2024 21:45 | 6.5 | 21.5 | 0.0 | 7.3 | 11.4 | 15.1 | 11/11/2024 21:45 | 7.5 | 36.7 | 0.0 | 6.7 | 11.9 | 50.5 |

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|---|---|---|---|---|---|---|
| 11/11/2024 22:00 | 6.4 | 21.6 | 0.0 | 7.3 | 11.4 | 11.6 |
| 11/11/2024 22:15 | 6.4 | 21.6 | 0.0 | 7.3 | 11.4 | 12.8 |
| 11/11/2024 22:30 | 6.4 | 21.8 | 0.0 | 7.3 | 11.4 | 14.0 |
| 11/11/2024 22:45 | 6.4 | 21.9 | 0.0 | 7.3 | 11.4 | 12.0 |
| 11/11/2024 23:00 | 6.4 | 22.0 | 0.0 | 7.3 | 11.4 | 14.7 |
| 11/11/2024 23:15 | 6.4 | 22.0 | 0.0 | 7.3 | 11.4 | 11.7 |
| 11/11/2024 23:30 | 6.4 | 22.1 | 0.0 | 7.3 | 11.4 | 12.1 |
| 11/11/2024 23:45 | 6.4 | 22.3 | 0.0 | 7.3 | 11.4 | 12.9 |
| 11/12/2024 0:00 | 6.4 | 22.4 | 0.0 | 7.3 | 11.4 | 18.0 |
| 11/12/2024 0:15 | 6.3 | 22.2 | 0.0 | 7.3 | 11.4 | 10.5 |
| 11/12/2024 0:30 | 6.3 | 22.2 | 0.0 | 7.3 | 11.4 | 9.3 |
| 11/12/2024 0:45 | 6.3 | 22.3 | 0.0 | 7.3 | 11.4 | 12.0 |
| 11/12/2024 1:00 | 6.3 | 22.2 | 0.0 | 7.3 | 11.5 | 10.4 |
| 11/12/2024 1:15 | 6.3 | 22.2 | 0.0 | 7.3 | 11.5 | 11.1 |
| 11/12/2024 1:30 | 6.3 | 22.1 | 0.0 | 7.3 | 11.5 | 11.3 |
| 11/12/2024 1:45 | 6.2 | 22.1 | 0.0 | 7.3 | 11.5 | 12.3 |
| 11/12/2024 2:00 | 6.2 | 22.1 | 0.0 | 7.3 | 11.5 | 7.5 |
| 11/12/2024 2:15 | 6.2 | 22.1 | 0.0 | 7.3 | 11.5 | 8.8 |
| 11/12/2024 2:30 | 6.2 | 22.1 | 0.0 | 7.3 | 11.5 | 7.0 |
| 11/12/2024 2:45 | 6.2 | 22.2 | 0.0 | 7.4 | 11.5 | 6.6 |
| 11/12/2024 3:00 | 6.2 | 22.3 | 0.0 | 7.3 | 11.5 | 6.9 |
| 11/12/2024 3:15 | 6.1 | 22.1 | 0.0 | 7.3 | 11.5 | 7.9 |
| 11/12/2024 3:30 | 6.1 | 22.2 | 0.0 | 7.3 | 11.5 | 11.1 |
| 11/12/2024 3:45 | 6.1 | 22.2 | 0.0 | 7.3 | 11.5 | 8.8 |
| 11/12/2024 4:00 | 6.1 | 22.3 | 0.0 | 7.3 | 11.5 | 6.9 |
| 11/12/2024 4:15 | 6.1 | 22.4 | 0.0 | 7.4 | 11.5 | 6.0 |
| 11/12/2024 4:30 | 6.1 | 22.2 | 0.0 | 7.3 | 11.5 | 8.6 |
| 11/12/2024 4:45 | 6.1 | 22.3 | 0.0 | 7.3 | 11.6 | 8.0 |
| 11/12/2024 5:00 | 6.1 | 22.3 | 0.0 | 7.3 | 11.6 | 8.8 |
| 11/12/2024 5:15 | 6.1 | 22.3 | 0.0 | 7.3 | 11.6 | 8.9 |
| 11/12/2024 5:30 | 6.0 | 22.4 | 0.0 | 7.3 | 11.6 | 5.8 |
| 11/12/2024 5:45 | 6.0 | 22.5 | 0.0 | 7.3 | 11.6 | 6.9 |
| 11/12/2024 6:00 | 6.0 | 22.4 | 0.0 | 7.4 | 11.6 | 6.8 |
| 11/12/2024 6:15 | 6.0 | 22.6 | 0.0 | 7.3 | 11.6 | 6.9 |
| 11/12/2024 6:30 | 6.0 | 22.6 | 0.0 | 7.3 | 11.6 | 6.3 |
| 11/12/2024 6:45 | 6.0 | 22.7 | 0.0 | 7.3 | 11.6 | 8.9 |
| 11/12/2024 7:00 | 6.0 | 22.6 | 0.0 | 7.3 | 11.6 | 5.8 |
| 11/12/2024 7:15 | 6.0 | 22.7 | 0.0 | 7.3 | 11.6 | 6.5 |
| 11/12/2024 7:30 | 6.0 | 22.6 | 0.0 | 7.3 | 11.6 | 7.1 |
| 11/12/2024 7:45 | 6.0 | 22.8 | 0.0 | 7.3 | 11.6 | 7.6 |
| 11/12/2024 8:00 | 6.0 | 22.8 | 0.0 | 7.3 | 11.6 | 4.3 |
| 11/12/2024 8:15 | 6.0 | 22.7 | 0.0 | 7.3 | 11.5 | 9.9 |
| 11/12/2024 8:30 | 6.0 | 24.0 | 0.0 | 7.3 | 11.5 | 5.7 |
| 11/12/2024 8:45 | 6.0 | 22.1 | 0.0 | 7.3 | 11.5 | 5.3 |
| 11/12/2024 9:00 | 6.0 | 21.3 | 0.0 | 7.3 | 11.5 | 4.9 |
| 11/12/2024 9:15 | 6.0 | 22.8 | 0.0 | 7.3 | 11.5 | 7.1 |
| 11/12/2024 9:30 | 6.0 | 23.5 | 0.0 | 7.2 | 11.5 | 4.7 |
| 11/12/2024 9:45 | 6.0 | 23.5 | 0.0 | 7.3 | 11.5 | 6.6 |
| 11/12/2024 10:00 | 6.0 | 23.4 | 0.0 | 7.3 | 11.5 | 6.1 |
| 11/12/2024 10:15 | 6.0 | 21.7 | 0.0 | 7.3 | 11.5 | 6.4 |
| 11/12/2024 10:30 | 6.0 | 20.4 | 0.0 | 7.3 | 11.5 | 6.7 |
| 11/12/2024 10:45 | 6.0 | 20.9 | 0.0 | 7.3 | 11.5 | 4.2 |
| 11/12/2024 11:00 | 6.1 | 23.0 | 0.0 | 7.3 | 11.5 | 6.2 |
| 11/12/2024 11:15 | 6.1 | 22.7 | 0.0 | 7.3 | 11.5 | 6.0 |
| 11/12/2024 11:30 | 6.1 | 21.6 | 0.0 | 7.3 | 11.5 | 10.3 |
| 11/12/2024 11:45 | 6.1 | 23.0 | 0.0 | 7.2 | 11.5 | 6.3 |
| 11/12/2024 12:00 | 6.1 | 22.3 | 0.0 | 7.3 | 11.5 | 4.0 |
| 11/12/2024 12:15 | 6.1 | 22.7 | 0.0 | 7.3 | 11.4 | 4.5 |
| 11/12/2024 12:30 | 6.2 | 24.5 | 0.0 | 7.3 | 11.4 | 8.5 |
| 11/12/2024 12:45 | 6.2 | 24.7 | 0.0 | 7.3 | 11.4 | 8.5 |
| 11/12/2024 13:00 | 6.2 | 24.7 | 0.0 | 7.3 | 11.4 | 6.1 |
| 11/12/2024 13:15 | 6.2 | 24.5 | 0.0 | 7.3 | 11.4 | 3.3 |
| 11/12/2024 13:30 | 6.2 | 24.5 | 0.0 | 7.4 | 11.4 | 2.7 |
| 11/12/2024 13:45 | 6.2 | 24.6 | 0.0 | 7.4 | 11.4 | 3.4 |
| 11/12/2024 14:00 | 6.3 | 24.7 | 0.0 | 7.3 | 11.4 | 2.6 |
| 11/12/2024 14:15 | 6.3 | 24.9 | 0.0 | 7.3 | 11.4 | 4.1 |
| 11/12/2024 14:30 | 6.3 | 24.9 | 0.0 | 7.3 | 11.4 | 11.3 |
| 11/12/2024 14:45 | 6.3 | 25.0 | 0.0 | 7.4 | 11.4 | 3.1 |
| 11/12/2024 15:00 | 6.3 | 25.1 | 0.0 | 7.4 | 11.4 | 3.4 |
| 11/12/2024 15:15 | 6.3 | 25.2 | 0.0 | 7.4 | 11.4 | 2.0 |
| 11/12/2024 15:30 | 6.3 | 25.2 | 0.0 | 7.4 | 11.4 | 4.4 |
| 11/12/2024 15:45 | 6.3 | 25.5 | 0.0 | 7.4 | 11.3 | 4.6 |
| 11/12/2024 16:00 | 6.4 | 25.6 | 0.0 | 7.4 | 11.3 | 4.1 |
| 11/12/2024 16:15 | 6.4 | 25.6 | 0.0 | 7.4 | 11.3 | 3.8 |
| 11/12/2024 16:30 | 6.4 | 25.7 | 0.0 | 7.3 | 11.3 | 2.6 |
| 11/12/2024 16:45 | 6.4 | 26.0 | 0.0 | 7.4 | 11.3 | 7.7 |
| 11/12/2024 17:00 | 6.4 | 26.1 | 0.0 | 7.4 | 11.3 | 1.5 |
| 11/12/2024 17:15 | 6.4 | 26.1 | 0.0 | 7.3 | 11.3 | 1.9 |
| 11/12/2024 17:30 | 6.4 | 26.4 | 0.0 | 7.4 | 11.2 | 5.9 |
| 11/12/2024 17:45 | 6.4 | 26.4 | 0.0 | 7.4 | 11.2 | 1.6 |
| 11/12/2024 18:00 | 6.4 | 26.3 | 0.0 | 7.3 | 11.2 | 2.8 |
| 11/12/2024 18:15 | 6.4 | 26.7 | 0.0 | 7.3 | 11.2 | 4.7 |
| 11/12/2024 18:30 | 6.4 | 26.8 | 0.0 | 7.3 | 11.2 | 5.4 |
| 11/12/2024 18:45 | 6.4 | 26.8 | 0.0 | 7.3 | 11.2 | 1.4 |
| 11/12/2024 19:00 | 6.4 | 26.8 | 0.0 | 7.3 | 11.1 | 2.4 |
| 11/12/2024 19:15 | 6.4 | 26.8 | 0.0 | 7.3 | 11.1 | 3.7 |
| 11/12/2024 19:30 | 6.4 | 26.9 | 0.0 | 7.3 | 11.1 | 4.0 |
| 11/12/2024 19:45 | 6.4 | 26.9 | 0.0 | 7.3 | 11.1 | 6.5 |
| 11/12/2024 20:00 | 6.4 | 27.0 | 0.0 | 7.3 | 11.1 | 4.6 |
| 11/12/2024 20:15 | 6.4 | 27.0 | 0.0 | 7.3 | 11.1 | 7.5 |
| 11/12/2024 20:30 | 6.4 | 27.0 | 0.0 | 7.3 | 11.1 | 2.7 |
| 11/12/2024 20:45 | 6.4 | 27.2 | 0.0 | 7.3 | 11.1 | 4.0 |
| 11/12/2024 21:00 | 6.4 | 27.4 | 0.0 | 7.3 | 11.1 | 4.9 |

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|---|---|---|---|---|---|---|
| 11/11/2024 22:00 | 7.5 | 36.6 | 0.0 | 6.7 | 11.9 | 39.8 |
| 11/11/2024 22:15 | 7.5 | 36.7 | 0.0 | 6.7 | 11.9 | 44.4 |
| 11/11/2024 22:30 | 7.5 | 36.9 | 0.0 | 6.7 | 11.8 | 39.5 |
| 11/11/2024 22:45 | 7.5 | 37.1 | 0.0 | 6.7 | 11.8 | 39.4 |
| 11/11/2024 23:00 | 7.5 | 37.2 | 0.0 | 6.7 | 11.8 | 62.7 |
| 11/11/2024 23:15 | 7.5 | 37.4 | 0.0 | 6.7 | 11.8 | 36.4 |
| 11/11/2024 23:30 | 7.5 | 37.3 | 0.0 | 6.7 | 11.8 | 41.0 |
| 11/11/2024 23:45 | 7.5 | 37.4 | 0.0 | 6.7 | 11.9 | 40.5 |
| 11/12/2024 0:00 | 7.4 | 37.8 | 0.0 | 6.7 | 11.9 | 35.8 |
| 11/12/2024 0:15 | 7.4 | 37.4 | 0.0 | 6.7 | 11.9 | 50.9 |
| 11/12/2024 0:30 | 7.4 | 37.5 | 0.0 | 6.7 | 11.9 | 42.6 |
| 11/12/2024 0:45 | 7.4 | 37.6 | 0.0 | 6.7 | 11.9 | 56.4 |
| 11/12/2024 1:00 | 7.4 | 37.5 | 0.0 | 6.8 | 11.9 | 41.3 |
| 11/12/2024 1:15 | 7.3 | 37.0 | 0.0 | 6.8 | 11.9 | 35.9 |
| 11/12/2024 1:30 | 7.3 | 37.2 | 0.0 | 6.8 | 11.9 | 41.7 |
| 11/12/2024 1:45 | 7.3 | 37.1 | 0.0 | 6.8 | 11.9 | 38.8 |
| 11/12/2024 2:00 | 7.3 | 37.3 | 0.0 | 6.8 | 11.9 | 38.2 |
| 11/12/2024 2:15 | 7.3 | 37.1 | 0.0 | 6.8 | 12.0 | 45.8 |
| 11/12/2024 2:30 | 7.3 | 37.6 | 0.0 | 6.8 | 12.0 | 38.0 |
| 11/12/2024 2:45 | 7.3 | 37.3 | 0.0 | 6.8 | 12.0 | 38.9 |
| 11/12/2024 3:00 | 7.2 | 37.6 | 0.0 | 6.8 | 12.0 | 35.7 |
| 11/12/2024 3:15 | 7.2 | 37.2 | 0.0 | 6.8 | 12.0 | 39.6 |
| 11/12/2024 3:30 | 7.2 | 37.4 | 0.0 | 6.8 | 12.0 | 33.0 |
| 11/12/2024 3:45 | 7.2 | 37.7 | 0.0 | 6.8 | 12.0 | 55.0 |
| 11/12/2024 4:00 | 7.2 | 37.7 | 0.0 | 6.8 | 12.0 | 37.8 |
| 11/12/2024 4:15 | 7.2 | 37.6 | 0.0 | 6.7 | 12.0 | 44.9 |
| 11/12/2024 4:30 | 7.2 | 37.7 | 0.0 | 6.7 | 12.0 | 49.4 |
| 11/12/2024 4:45 | 7.2 | 37.8 | 0.0 | 6.7 | 12.0 | 54.8 |
| 11/12/2024 5:00 | 7.2 | 40.2 | 0.0 | 6.7 | 12.0 | 41.2 |
| 11/12/2024 5:15 | 7.1 | 38.9 | 0.0 | 6.6 | 12.0 | 39.6 |
| 11/12/2024 5:30 | 7.1 | 44.4 | 0.0 | 6.6 | 12.0 | 44.5 |
| 11/12/2024 5:45 | 7.1 | 45.1 | 0.0 | 6.6 | 12.0 | 42.5 |
| 11/12/2024 6:00 | 7.1 | 45.0 | 0.0 | 6.6 | 12.0 | 36.1 |
| 11/12/2024 6:15 | 7.1 | 45.5 | 0.0 | 6.6 | 12.0 | 45.8 |
| 11/12/2024 6:30 | 7.1 | 45.3 | 0.0 | 6.6 | 12.0 | 40.5 |
| 11/12/2024 6:45 | 7.1 | 45.1 | 0.0 | 6.6 | 12.0 | 37.0 |
| 11/12/2024 7:00 | 7.1 | 44.8 | 0.0 | 6.6 | 12.0 | 39.1 |
| 11/12/2024 7:15 | 7.1 | 45.5 | 0.0 | 6.6 | 12.0 | 40.6 |
| 11/12/2024 7:30 | 7.1 | 38.5 | 0.0 | 6.6 | 12.0 | 40.6 |
| 11/12/2024 7:45 | 7.1 | 38.9 | 0.0 | 6.6 | 12.0 | 41.2 |
| 11/12/2024 8:00 | 7.1 | 38.9 | 0.0 | 6.6 | 12.0 | 36.7 |
| 11/12/2024 8:15 | 7.1 | 41.7 | 0.0 | 6.6 | 12.0 | 33.4 |
| 11/12/2024 8:30 | 7.1 | 42.6 | 0.0 | 6.6 | 12.0 | 38.4 |
| 11/12/2024 8:45 | 7.1 | 42.6 | 0.0 | 6.6 | 12.0 | 35.3 |
| 11/12/2024 9:00 | 7.1 | 42.9 | 0.0 | 6.6 | 12.0 | 35.2 |
| 11/12/2024 9:15 | 7.1 | 43.7 | 0.0 | 6.6 | 12.0 | 38.1 |
| 11/12/2024 9:30 | 7.1 | 43.1 | 0.0 | 6.6 | 12.0 | 39.5 |
| 11/12/2024 9:45 | 7.1 | 43.3 | 0.0 | 6.6 | 11.9 | 37.7 |
| 11/12/2024 10:00 | 7.1 | 43.6 | 0.0 | 6.6 | 12.0 | 41.2 |
| 11/12/2024 10:15 | 7.1 | 43.3 | 0.0 | 6.6 | 11.9 | 36.8 |
| 11/12/2024 10:30 | 7.1 | 44.2 | 0.0 | 6.6 | 11.9 | 37.1 |
| 11/12/2024 10:45 | 7.1 | 43.2 | 0.0 | 6.6 | 11.9 | 43.5 |
| 11/12/2024 11:00 | 7.2 | 44.0 | 0.0 | 6.6 | 11.9 | 37.1 |
| 11/12/2024 11:15 | 7.2 | 40.3 | 0.0 | 6.6 | 11.9 | 43.0 |
| 11/12/2024 11:30 | 7.2 | 43.9 | 0.0 | 6.6 | 11.9 | 38.1 |
| 11/12/2024 11:45 | 7.2 | 44.3 | 0.0 | 6.6 | 11.9 | 40.0 |
| 11/12/2024 12:00 | 7.2 | 43.5 | 0.0 | 6.6 | 11.9 | 34.2 |
| 11/12/2024 12:15 | 7.3 | 44.3 | 0.0 | 6.6 | 11.9 | 27.8 |
| 11/12/2024 12:30 | 7.3 | 44.0 | 0.0 | 6.6 | 11.9 | 38.6 |
| 11/12/2024 12:45 | 7.3 | 44.1 | 0.0 | 6.6 | 11.9 | 32.6 |
| 11/12/2024 13:00 | 7.3 | 48.4 | 0.0 | 6.6 | 11.9 | 30.9 |
| 11/12/2024 13:15 | 7.3 | 48.0 | 0.0 | 6.6 | 11.9 | 31.9 |
| 11/12/2024 13:30 | 7.3 | 48.0 | 0.0 | 6.7 | 11.9 | 32.4 |
| 11/12/2024 13:45 | 7.4 | 48.1 | 0.0 | 6.7 | 11.9 | 30.2 |
| 11/12/2024 14:00 | 7.4 | 49.0 | 0.0 | 6.7 | 11.8 | 30.4 |
| 11/12/2024 14:15 | 7.4 | 48.3 | 0.0 | 6.7 | 11.8 | 33.0 |
| 11/12/2024 14:30 | 7.4 | 48.5 | 0.0 | 6.7 | 11.8 | 32.9 |
| 11/12/2024 14:45 | 7.4 | 49.0 | 0.0 | 6.7 | 11.8 | 31.2 |
| 11/12/2024 15:00 | 7.4 | 48.5 | 0.0 | 6.7 | 11.8 | 32.3 |
| 11/12/2024 15:15 | 7.4 | 49.2 | 0.0 | 6.7 | 11.8 | 28.9 |
| 11/12/2024 15:30 | 7.4 | 48.6 | 0.0 | 6.7 | 11.8 | 31.5 |
| 11/12/2024 15:45 | 7.4 | 48.9 | 0.0 | 6.7 | 11.8 | 32.3 |
| 11/12/2024 16:00 | 7.5 | 49.6 | 0.0 | 6.7 | 11.8 | 30.7 |
| 11/12/2024 16:15 | 7.5 | 50.2 | 0.0 | 6.7 | 11.8 | 33.2 |
| 11/12/2024 16:30 | 7.5 | 50.2 | 0.0 | 6.7 | 11.8 | 28.9 |
| 11/12/2024 16:45 | 7.5 | 50.1 | 0.0 | 6.7 | 11.7 | 31.4 |
| 11/12/2024 17:00 | 7.5 | 50.5 | 0.0 | 6.7 | 11.7 | 32.2 |
| 11/12/2024 17:15 | 7.5 | 45.2 | 0.0 | 6.6 | 11.6 | 32.9 |
| 11/12/2024 17:30 | 7.5 | 43.7 | 0.0 | 6.6 | 11.6 | 34.3 |
| 11/12/2024 17:45 | 7.5 | 46.3 | 0.0 | 6.6 | 11.6 | 34.2 |
| 11/12/2024 18:00 | 7.5 | 46.9 | 0.0 | 6.5 | 11.5 | 40.1 |
| 11/12/2024 18:15 | 7.5 | 47.4 | 0.0 | 6.5 | 11.5 | 34.5 |
| 11/12/2024 18:30 | 7.5 | 44.7 | 0.0 | 6.5 | 11.5 | 33.8 |
| 11/12/2024 18:45 | 7.5 | 47.8 | 0.0 | 6.5 | 11.6 | 31.8 |
| 11/12/2024 19:00 | 7.5 | 52.2 | 0.0 | 6.6 | 11.6 | 34.3 |
| 11/12/2024 19:15 | 7.5 | 52.0 | 0.0 | 6.6 | 11.6 | 37.7 |
| 11/12/2024 19:30 | 7.5 | 52.0 | 0.0 | 6.6 | 11.6 | 36.2 |
| 11/12/2024 19:45 | 7.5 | 52.2 | 0.0 | 6.6 | 11.6 | 40.8 |
| 11/12/2024 20:00 | 7.5 | 52.0 | 0.0 | 6.6 | 11.6 | 36.9 |
| 11/12/2024 20:15 | 7.5 | 52.3 | 0.0 | 6.6 | 11.6 | 37.9 |
| 11/12/2024 20:30 | 7.5 | 52.8 | 0.0 | 6.6 | 11.5 | 37.8 |
| 11/12/2024 20:45 | 7.5 | 52.6 | 0.0 | 6.6 | 11.6 | 40.2 |
| 11/12/2024 21:00 | 7.5 | 52.6 | 0.0 | 6.6 | 11.6 | 39.4 |

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|---|---|---|---|---|---|---|
| 11/12/2024 21:15 | 6.4 | 27.5 | 0.0 | 7.3 | 11.1 | 5.8 |
| 11/12/2024 21:30 | 6.4 | 27.4 | 0.0 | 7.3 | 11.1 | 3.0 |
| 11/12/2024 21:45 | 6.4 | 27.3 | 0.0 | 7.2 | 11.1 | 2.4 |
| 11/12/2024 22:00 | 6.4 | 27.5 | 0.0 | 7.3 | 11.1 | 2.5 |
| 11/12/2024 22:15 | 6.4 | 27.7 | 0.0 | 7.3 | 11.1 | 3.9 |
| 11/12/2024 22:30 | 6.4 | 27.4 | 0.0 | 7.4 | 11.1 | 1.4 |
| 11/12/2024 22:45 | 6.4 | 27.5 | 0.0 | 7.4 | 11.1 | 1.0 |
| 11/12/2024 23:00 | 6.3 | 27.8 | 0.0 | 7.3 | 11.1 | 1.9 |
| 11/12/2024 23:15 | 6.3 | 27.9 | 0.0 | 7.3 | 11.1 | 2.5 |
| 11/12/2024 23:30 | 6.3 | 27.6 | 0.0 | 7.3 | 11.1 | 4.0 |
| 11/12/2024 23:45 | 6.3 | 27.6 | 0.0 | 7.3 | 11.1 | 2.3 |
| 11/13/2024 0:00 | 6.3 | 27.8 | 0.0 | 7.3 | 11.1 | 2.6 |
| 11/13/2024 0:15 | 6.3 | 27.8 | 0.0 | 7.3 | 11.1 | 1.5 |
| 11/13/2024 0:30 | 6.3 | 28.1 | 0.0 | 7.2 | 11.1 | 4.4 |
| 11/13/2024 0:45 | 6.3 | 27.7 | 0.0 | 7.3 | 11.1 | 1.4 |
| 11/13/2024 1:00 | 6.3 | 27.8 | 0.0 | 7.3 | 11.1 | 0.6 |
| 11/13/2024 1:15 | 6.3 | 27.8 | 0.0 | 7.3 | 11.1 | 3.2 |
| 11/13/2024 1:30 | 6.3 | 27.7 | 0.0 | 7.3 | 11.1 | 4.3 |
| 11/13/2024 1:45 | 6.3 | 27.7 | 0.0 | 7.3 | 11.1 | 3.7 |
| 11/13/2024 2:00 | 6.3 | 27.6 | 0.0 | 7.4 | 11.2 | 1.9 |
| 11/13/2024 2:15 | 6.3 | 27.3 | 0.0 | 7.4 | 11.2 | 1.4 |
| 11/13/2024 2:30 | 6.3 | 27.1 | 0.0 | 7.4 | 11.2 | 2.2 |
| 11/13/2024 2:45 | 6.3 | 27.0 | 0.0 | 7.4 | 11.2 | 1.9 |
| 11/13/2024 3:00 | 6.2 | 26.8 | 0.0 | 7.3 | 11.3 | 3.4 |
| 11/13/2024 3:15 | 6.2 | 26.5 | 0.0 | 7.4 | 11.3 | 4.2 |
| 11/13/2024 3:30 | 6.2 | 26.2 | 0.0 | 7.3 | 11.3 | 5.5 |
| 11/13/2024 3:45 | 6.2 | 25.9 | 0.0 | 7.3 | 11.4 | 7.2 |
| 11/13/2024 4:00 | 6.2 | 25.7 | 0.0 | 7.4 | 11.4 | 3.6 |
| 11/13/2024 4:15 | 6.2 | 25.6 | 0.0 | 7.4 | 11.4 | 7.9 |
| 11/13/2024 4:30 | 6.2 | 25.1 | 0.0 | 7.4 | 11.5 | 11.8 |
| 11/13/2024 4:45 | 6.2 | 24.9 | 0.0 | 7.4 | 11.5 | 16.2 |
| 11/13/2024 5:00 | 6.2 | 24.7 | 0.0 | 7.4 | 11.5 | 14.2 |
| 11/13/2024 5:15 | 6.2 | 24.2 | 0.0 | 7.3 | 11.6 | 11.6 |
| 11/13/2024 5:30 | 6.2 | 24.0 | 0.0 | 7.4 | 11.6 | 21.9 |
| 11/13/2024 5:45 | 6.2 | 23.9 | 0.0 | 7.4 | 11.6 | 11.1 |
| 11/13/2024 6:00 | 6.2 | 23.4 | 0.0 | 7.4 | 11.6 | 19.9 |
| 11/13/2024 6:15 | 6.2 | 23.0 | 0.0 | 7.2 | 11.6 | 19.0 |
| 11/13/2024 6:30 | 6.2 | 22.8 | 0.0 | 7.4 | 11.6 | 12.6 |
| 11/13/2024 6:45 | 6.2 | 22.4 | 0.0 | 7.3 | 11.6 | 19.1 |
| 11/13/2024 7:00 | 6.2 | 22.3 | 0.0 | 7.3 | 11.7 | 20.1 |
| 11/13/2024 7:15 | 6.2 | 22.3 | 0.0 | 7.4 | 11.6 | 21.0 |
| 11/13/2024 7:30 | 6.2 | 22.1 | 0.0 | 7.4 | 11.7 | 18.7 |
| 11/13/2024 7:45 | 6.2 | 21.9 | 0.0 | 7.3 | 11.7 | 16.7 |
| 11/13/2024 8:00 | 6.2 | 21.8 | 0.0 | 7.3 | 11.6 | 15.8 |
| 11/13/2024 8:15 | 6.2 | 21.8 | 0.0 | 7.4 | 11.6 | 23.8 |
| 11/13/2024 8:30 | 6.2 | 21.6 | 0.0 | 7.4 | 11.6 | 18.5 |
| 11/13/2024 8:45 | 6.2 | 21.7 | 0.0 | 7.4 | 11.6 | 16.7 |
| 11/13/2024 9:00 | 6.2 | 21.7 | 0.0 | 7.4 | 11.6 | 7.7 |
| 11/13/2024 9:15 | 6.2 | 21.8 | 0.0 | 7.3 | 11.6 | 18.1 |
| 11/13/2024 9:30 | 6.2 | 21.9 | 0.0 | 7.4 | 11.6 | 15.0 |
| 11/13/2024 9:45 | 6.2 | 21.8 | 0.0 | 7.3 | 11.6 | 15.1 |
| 11/13/2024 10:00 | 6.2 | 21.9 | 0.0 | 7.3 | 11.6 | 14.5 |
| 11/13/2024 10:15 | 6.2 | 21.5 | 0.0 | 7.3 | 11.6 | 11.6 |
| 11/13/2024 10:30 | 6.2 | 21.7 | 0.0 | 7.3 | 11.6 | 15.4 |
| 11/13/2024 10:45 | 6.2 | 21.7 | 0.0 | 7.3 | 11.7 | 17.8 |
| 11/13/2024 11:00 | 6.3 | 23.6 | 0.0 | 7.3 | 11.7 | 18.3 |
| 11/13/2024 11:15 | 6.3 | 22.3 | 0.0 | 7.3 | 11.7 | 22.3 |
| 11/13/2024 11:30 | 6.3 | 21.2 | 0.0 | 7.3 | 11.7 | 31.6 |
| 11/13/2024 11:45 | 6.3 | 21.6 | 0.0 | 7.4 | 11.7 | 26.4 |
| 11/13/2024 12:00 | 6.3 | 21.0 | 0.0 | 7.3 | 11.8 | 24.6 |
| 11/13/2024 12:15 | 6.3 | 21.1 | 0.0 | 7.4 | 11.8 | 30.9 |
| 11/13/2024 12:30 | 6.3 | 20.8 | 0.0 | 7.4 | 11.8 | 22.9 |
| 11/13/2024 12:45 | 6.3 | 20.3 | 0.0 | 7.3 | 11.9 | 27.1 |
| 11/13/2024 13:00 | 6.3 | 20.4 | 0.0 | 7.3 | 11.9 | 30.5 |
| 11/13/2024 13:15 | 6.3 | 20.2 | 0.0 | 7.4 | 11.9 | 35.9 |
| 11/13/2024 13:30 | 6.3 | 20.1 | 0.0 | 7.4 | 11.9 | 33.3 |
| 11/13/2024 13:45 | 6.3 | 19.9 | 0.0 | 7.3 | 11.9 | 29.3 |
| 11/13/2024 14:00 | 6.3 | 20.5 | 0.0 | 7.4 | 11.8 | 29.5 |
| 11/13/2024 14:15 | 6.3 | 19.9 | 0.0 | 7.3 | 11.9 | 31.9 |
| 11/13/2024 14:30 | 6.3 | 19.6 | 0.0 | 7.3 | 11.8 | 28.1 |
| 11/13/2024 14:45 | 6.3 | 19.4 | 0.0 | 7.3 | 11.8 | 26.6 |
| 11/13/2024 15:00 | 6.3 | 19.6 | 0.0 | 7.3 | 11.8 | 30.8 |
| 11/13/2024 15:15 | 6.3 | 19.6 | 0.0 | 7.3 | 11.8 | 24.3 |
| 11/13/2024 15:30 | 6.4 | 19.6 | 0.0 | 7.3 | 11.8 | 23.8 |
| 11/13/2024 15:45 | 6.4 | 19.6 | 0.0 | 7.4 | 11.8 | 27.7 |
| 11/13/2024 16:00 | 6.4 | 20.0 | 0.0 | 7.4 | 11.8 | 28.1 |
| 11/13/2024 16:15 | 6.4 | 19.8 | 0.0 | 7.3 | 11.8 | 18.8 |
| 11/13/2024 16:30 | 6.4 | 19.6 | 0.0 | 7.4 | 11.8 | 41.2 |
| 11/13/2024 16:45 | 6.4 | 19.6 | 0.0 | 7.3 | 11.8 | 28.2 |
| 11/13/2024 17:00 | 6.4 | 19.4 | 0.0 | 7.3 | 11.8 | 23.6 |
| 11/13/2024 17:15 | 6.4 | 19.7 | 0.0 | 7.3 | 11.8 | 27.7 |
| 11/13/2024 17:30 | 6.4 | 20.0 | 0.0 | 7.3 | 11.9 | 26.6 |
| 11/13/2024 17:45 | 6.4 | 19.5 | 0.0 | 7.3 | 11.9 | 29.7 |
| 11/13/2024 18:00 | 6.4 | 19.2 | 0.0 | 7.2 | 11.9 | 33.4 |
| 11/13/2024 18:15 | 6.4 | 19.3 | 0.0 | 7.3 | 11.9 | 56.7 |
| 11/13/2024 18:30 | 6.4 | 19.6 | 0.0 | 7.4 | 11.9 | 30.5 |
| 11/13/2024 18:45 | 6.4 | 19.7 | 0.0 | 7.2 | 11.9 | 39.8 |
| 11/13/2024 19:00 | 6.4 | 20.4 | 0.0 | 7.3 | 11.9 | 36.5 |
| 11/13/2024 19:15 | 6.4 | 19.4 | 0.0 | 7.1 | 11.9 | 34.0 |
| 11/13/2024 19:30 | 6.4 | 19.6 | 0.0 | 7.3 | 11.9 | 37.5 |
| 11/13/2024 19:45 | 6.4 | 19.5 | 0.0 | 7.2 | 11.9 | 34.5 |
| 11/13/2024 20:00 | 6.4 | 19.4 | 0.0 | 7.2 | 11.9 | 38.3 |
| 11/13/2024 20:15 | 6.4 | 19.4 | 0.0 | 7.2 | 11.9 | 34.2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11/12/2024 21:15 | 7.5 | 52.9 | 0.0 | 6.6 | 11.5 | 34.2 |
| 11/12/2024 21:30 | 7.5 | 53.0 | 0.0 | 6.6 | 11.5 | 40.9 |
| 11/12/2024 21:45 | 7.5 | 53.0 | 0.0 | 6.6 | 11.5 | 37.6 |
| 11/12/2024 22:00 | 7.5 | 53.2 | 0.0 | 6.6 | 11.5 | 37.4 |
| 11/12/2024 22:15 | 7.5 | 53.8 | 0.0 | 6.6 | 11.6 | 39.8 |
| 11/12/2024 22:30 | 7.5 | 53.4 | 0.0 | 6.6 | 11.5 | 40.4 |
| 11/12/2024 22:45 | 7.4 | 53.0 | 0.0 | 6.6 | 11.5 | 38.7 |
| 11/12/2024 23:00 | 7.4 | 53.7 | 0.0 | 6.6 | 11.6 | 37.3 |
| 11/12/2024 23:15 | 7.4 | 53.7 | 0.0 | 6.6 | 11.5 | 38.6 |
| 11/12/2024 23:30 | 7.4 | 54.0 | 0.0 | 6.6 | 11.5 | 37.5 |
| 11/12/2024 23:45 | 7.4 | 53.5 | 0.0 | 6.6 | 11.5 | 38.6 |
| 11/13/2024 0:00 | 7.4 | 54.1 | 0.0 | 6.6 | 11.5 | 35.3 |
| 11/13/2024 0:15 | 7.4 | 54.0 | 0.0 | 6.6 | 11.5 | 36.6 |
| 11/13/2024 0:30 | 7.4 | 54.2 | 0.0 | 6.6 | 11.5 | 34.2 |
| 11/13/2024 0:45 | 7.4 | 53.7 | 0.0 | 6.6 | 11.6 | 37.6 |
| 11/13/2024 1:00 | 7.4 | 53.9 | 0.0 | 6.7 | 11.6 | 37.8 |
| 11/13/2024 1:15 | 7.4 | 53.8 | 0.0 | 6.7 | 11.6 | 38.4 |
| 11/13/2024 1:30 | 7.4 | 53.6 | 0.0 | 6.6 | 11.6 | 41.0 |
| 11/13/2024 1:45 | 7.4 | 53.7 | 0.0 | 6.6 | 11.6 | 38.4 |
| 11/13/2024 2:00 | 7.4 | 52.7 | 0.0 | 6.6 | 11.6 | 39.2 |
| 11/13/2024 2:15 | 7.4 | 45.0 | 0.0 | 6.6 | 11.6 | 37.3 |
| 11/13/2024 2:30 | 7.4 | 47.8 | 0.0 | 6.6 | 11.6 | 41.2 |
| 11/13/2024 2:45 | 7.4 | 44.1 | 0.0 | 6.6 | 11.7 | 40.2 |
| 11/13/2024 3:00 | 7.3 | 47.6 | 0.0 | 6.6 | 11.7 | 40.7 |
| 11/13/2024 3:15 | 7.3 | 45.2 | 0.0 | 6.7 | 11.7 | 43.0 |
| 11/13/2024 3:30 | 7.3 | 45.8 | 0.0 | 6.7 | 11.8 | 45.1 |
| 11/13/2024 3:45 | 7.3 | 45.3 | 0.0 | 6.7 | 11.8 | 45.5 |
| 11/13/2024 4:00 | 7.3 | 45.8 | 0.0 | 6.7 | 11.9 | 51.0 |
| 11/13/2024 4:15 | 7.3 | 45.1 | 0.0 | 6.7 | 11.9 | 47.2 |
| 11/13/2024 4:30 | 7.3 | 41.3 | 0.0 | 6.7 | 11.9 | 47.3 |
| 11/13/2024 4:45 | 7.3 | 44.7 | 0.0 | 6.7 | 12.0 | 49.0 |
| 11/13/2024 5:00 | 7.3 | 42.9 | 0.0 | 6.7 | 12.0 | 57.0 |
| 11/13/2024 5:15 | 7.3 | 48.0 | 0.0 | 6.7 | 12.0 | 51.7 |
| 11/13/2024 5:30 | 7.3 | 43.2 | 0.0 | 6.7 | 12.0 | 50.7 |
| 11/13/2024 5:45 | 7.3 | 42.3 | 0.0 | 6.6 | 12.0 | 62.7 |
| 11/13/2024 6:00 | 7.3 | 42.1 | 0.0 | 6.6 | 12.0 | 53.6 |
| 11/13/2024 6:15 | 7.3 | 42.0 | 0.0 | 6.6 | 12.1 | 67.4 |
| 11/13/2024 6:30 | 7.3 | 42.3 | 0.0 | 6.6 | 12.1 | 57.0 |
| 11/13/2024 6:45 | 7.3 | 41.4 | 0.0 | 6.6 | 12.1 | 53.0 |
| 11/13/2024 7:00 | 7.3 | 45.7 | 0.0 | 6.6 | 12.1 | 102.1 |
| 11/13/2024 7:15 | 7.3 | 45.4 | 0.0 | 6.6 | 12.1 | 75.4 |
| 11/13/2024 7:30 | 7.3 | 45.2 | 0.0 | 6.6 | 12.1 | 58.8 |
| 11/13/2024 7:45 | 7.3 | 45.2 | 0.0 | 6.6 | 12.1 | 56.6 |
| 11/13/2024 8:00 | 7.3 | 45.0 | 0.0 | 6.6 | 12.1 | 53.8 |
| 11/13/2024 8:15 | 7.3 | 45.3 | 0.0 | 6.6 | 12.1 | 63.5 |
| 11/13/2024 8:30 | 7.3 | 44.4 | 0.0 | 6.6 | 12.1 | 58.2 |
| 11/13/2024 8:45 | 7.3 | 44.6 | 0.0 | 6.6 | 12.1 | 60.7 |
| 11/13/2024 9:00 | 7.3 | 45.3 | 0.0 | 6.6 | 12.1 | 54.0 |
| 11/13/2024 9:15 | 7.3 | 41.2 | 0.0 | 6.6 | 12.1 | 54.7 |
| 11/13/2024 9:30 | 7.3 | 41.9 | 0.0 | 6.6 | 12.1 | 53.0 |
| 11/13/2024 9:45 | 7.3 | 44.9 | 0.0 | 6.6 | 12.1 | 55.0 |
| 11/13/2024 10:00 | 7.3 | 44.8 | 0.0 | 6.6 | 12.1 | 54.0 |
| 11/13/2024 10:15 | 7.3 | 45.2 | 0.0 | 6.6 | 12.1 | 51.7 |
| 11/13/2024 10:30 | 7.3 | 44.9 | 0.0 | 6.6 | 12.1 | 51.8 |
| 11/13/2024 10:45 | 7.4 | 44.9 | 0.0 | 6.6 | 12.1 | 55.0 |
| 11/13/2024 11:00 | 7.4 | 44.4 | 0.0 | 6.6 | 12.1 | 61.1 |
| 11/13/2024 11:15 | 7.4 | 44.3 | 0.0 | 6.6 | 12.1 | 56.7 |
| 11/13/2024 11:30 | 7.4 | 43.9 | 0.0 | 6.6 | 12.2 | 63.4 |
| 11/13/2024 11:45 | 7.4 | 43.8 | 0.0 | 6.6 | 12.2 | 82.6 |
| 11/13/2024 12:00 | 7.4 | 43.1 | 0.0 | 6.6 | 12.2 | 66.3 |
| 11/13/2024 12:15 | 7.5 | 43.6 | 0.0 | 6.6 | 12.3 | 67.4 |
| 11/13/2024 12:30 | 7.5 | 43.1 | 0.0 | 6.6 | 12.3 | 65.1 |
| 11/13/2024 12:45 | 7.4 | 42.4 | 0.0 | 6.6 | 12.3 | 63.8 |
| 11/13/2024 13:00 | 7.4 | 38.6 | 0.0 | 6.6 | 12.4 | 66.4 |
| 11/13/2024 13:15 | 7.4 | 38.2 | 0.0 | 6.6 | 12.3 | 60.1 |
| 11/13/2024 13:30 | 7.4 | 37.2 | 0.0 | 6.6 | 12.3 | 63.6 |
| 11/13/2024 13:45 | 7.4 | 38.1 | 0.0 | 6.6 | 12.3 | 54.4 |
| 11/13/2024 14:00 | 7.4 | 38.7 | 0.0 | 6.6 | 12.3 | 59.2 |
| 11/13/2024 14:15 | 7.4 | 37.8 | 0.0 | 6.6 | 12.3 | 69.6 |
| 11/13/2024 14:30 | 7.4 | 37.8 | 0.0 | 6.6 | 12.3 | 59.3 |
| 11/13/2024 14:45 | 7.4 | 41.2 | 0.0 | 6.6 | 12.3 | 68.2 |
| 11/13/2024 15:00 | 7.5 | 41.7 | 0.0 | 6.6 | 12.3 | 49.9 |
| 11/13/2024 15:15 | 7.5 | 41.3 | 0.0 | 6.6 | 12.3 | 63.7 |
| 11/13/2024 15:30 | 7.5 | 41.6 | 0.0 | 6.6 | 12.3 | 72.9 |
| 11/13/2024 15:45 | 7.5 | 41.8 | 0.0 | 6.6 | 12.3 | 62.2 |
| 11/13/2024 16:00 | 7.5 | 42.4 | 0.0 | 6.6 | 12.3 | 60.5 |
| 11/13/2024 16:15 | 7.5 | 41.4 | 0.0 | 6.6 | 12.3 | 59.1 |
| 11/13/2024 16:30 | 7.5 | 41.9 | 0.0 | 6.6 | 12.3 | 56.7 |
| 11/13/2024 16:45 | 7.5 | 41.1 | 0.0 | 6.6 | 12.3 | 59.9 |
| 11/13/2024 17:00 | 7.5 | 41.3 | 0.0 | 6.6 | 12.3 | 55.0 |
| 11/13/2024 17:15 | 7.5 | 41.9 | 0.0 | 6.6 | 12.3 | 59.6 |
| 11/13/2024 17:30 | 7.5 | 41.6 | 0.0 | 6.6 | 12.3 | 65.8 |
| 11/13/2024 17:45 | 7.5 | 41.0 | 0.0 | 6.6 | 12.3 | 66.3 |
| 11/13/2024 18:00 | 7.5 | 41.0 | 0.0 | 6.6 | 12.3 | 64.8 |
| 11/13/2024 18:15 | 7.5 | 41.6 | 0.0 | 6.6 | 12.3 | 60.2 |
| 11/13/2024 18:30 | 7.5 | 41.9 | 0.0 | 6.6 | 12.3 | 57.6 |
| 11/13/2024 18:45 | 7.5 | 41.6 | 0.0 | 6.6 | 12.3 | 57.7 |
| 11/13/2024 19:00 | 7.5 | 41.7 | 0.0 | 6.6 | 12.3 | 60.5 |
| 11/13/2024 19:15 | 7.5 | 41.3 | 0.0 | 6.6 | 12.3 | 55.8 |
| 11/13/2024 19:30 | 7.5 | 41.7 | 0.0 | 6.5 | 12.3 | 68.5 |
| 11/13/2024 19:45 | 7.5 | 42.5 | 0.0 | 6.5 | 12.3 | 68.8 |
| 11/13/2024 20:00 | 7.5 | 41.8 | 0.0 | 6.5 | 12.3 | 127.0 |
| 11/13/2024 20:15 | 7.5 | 42.1 | 0.0 | 6.5 | 12.3 | 60.8 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11/13/2024 20:30 | 6.4 | 19.5 | 0.0 | 7.2 | 11.9 | 40.5 |
| 11/13/2024 20:45 | 6.4 | 19.3 | 0.0 | 7.2 | 12.0 | 39.9 |
| 11/13/2024 21:00 | 6.3 | 20.0 | 0.0 | 7.1 | 12.0 | 40.2 |
| 11/13/2024 21:15 | 6.3 | 19.8 | 0.0 | 7.2 | 12.0 | 39.2 |
| 11/13/2024 21:30 | 6.3 | 19.8 | 0.0 | 7.2 | 12.0 | 47.6 |
| 11/13/2024 21:45 | 6.3 | 19.6 | 0.0 | 7.2 | 12.0 | 37.8 |
| 11/13/2024 22:00 | 6.3 | 19.3 | 0.0 | 7.3 | 12.1 | 44.1 |
| 11/13/2024 22:15 | 6.2 | 19.5 | 0.0 | 7.2 | 12.1 | 47.0 |
| 11/13/2024 22:30 | 6.2 | 19.1 | 0.0 | 7.3 | 12.1 | 41.0 |
| 11/13/2024 22:45 | 6.2 | 19.0 | 0.0 | 7.1 | 12.1 | 43.2 |
| 11/13/2024 23:00 | 6.2 | 18.9 | 0.0 | 7.3 | 12.1 | 33.8 |
| 11/13/2024 23:15 | 6.2 | 19.1 | 0.0 | 7.3 | 12.1 | 41.4 |
| 11/13/2024 23:30 | 6.2 | 19.0 | 0.0 | 7.3 | 12.1 | 35.0 |
| 11/13/2024 23:45 | 6.2 | 19.6 | 0.0 | 7.2 | 12.1 | 37.3 |
| 11/14/2024 0:00 | 6.2 | 19.5 | 0.0 | 7.3 | 12.1 | 29.8 |
| 11/14/2024 0:15 | 6.2 | 19.0 | 0.0 | 7.2 | 12.1 | 31.4 |
| 11/14/2024 0:30 | 6.2 | 19.1 | 0.0 | 7.2 | 12.1 | 31.5 |
| 11/14/2024 0:45 | 6.2 | 19.5 | 0.0 | 7.3 | 12.0 | 28.5 |
| 11/14/2024 1:00 | 6.2 | 18.7 | 0.0 | 7.3 | 12.0 | 26.6 |
| 11/14/2024 1:15 | 6.2 | 18.5 | 0.0 | 7.2 | 12.0 | 33.5 |
| 11/14/2024 1:30 | 6.2 | 18.6 | 0.0 | 7.3 | 12.0 | 30.7 |
| 11/14/2024 1:45 | 6.2 | 18.4 | 0.0 | 7.3 | 12.0 | 32.6 |
| 11/14/2024 2:00 | 6.2 | 18.6 | 0.0 | 7.4 | 12.0 | 19.4 |
| 11/14/2024 2:15 | 6.2 | 19.3 | 0.0 | 7.2 | 12.0 | 27.2 |
| 11/14/2024 2:30 | 6.2 | 19.3 | 0.0 | 7.3 | 12.0 | 20.4 |
| 11/14/2024 2:45 | 6.2 | 18.9 | 0.0 | 7.2 | 12.0 | 19.1 |
| 11/14/2024 3:00 | 6.2 | 18.8 | 0.0 | 7.2 | 11.9 | 20.6 |
| 11/14/2024 3:15 | 6.2 | 18.8 | 0.0 | 7.2 | 11.9 | 21.7 |
| 11/14/2024 3:30 | 6.2 | 18.7 | 0.0 | 7.2 | 11.9 | 18.7 |
| 11/14/2024 3:45 | 6.2 | 18.9 | 0.0 | 7.3 | 11.9 | 16.9 |
| 11/14/2024 4:00 | 6.2 | 18.9 | 0.0 | 7.2 | 11.9 | 19.9 |
| 11/14/2024 4:15 | 6.2 | 18.7 | 0.0 | 7.2 | 11.9 | 16.3 |
| 11/14/2024 4:30 | 6.2 | 19.1 | 0.0 | 7.2 | 11.9 | 19.1 |
| 11/14/2024 4:45 | 6.2 | 19.2 | 0.0 | 7.2 | 11.8 | 18.0 |
| 11/14/2024 5:00 | 6.2 | 19.1 | 0.0 | 7.3 | 11.8 | 16.2 |
| 11/14/2024 5:15 | 6.2 | 19.3 | 0.0 | 7.2 | 11.8 | 15.8 |
| 11/14/2024 5:30 | 6.2 | 19.2 | 0.0 | 7.2 | 11.8 | 15.8 |
| 11/14/2024 5:45 | 6.2 | 19.4 | 0.0 | 7.3 | 11.8 | 14.2 |
| 11/14/2024 6:00 | 6.2 | 19.6 | 0.0 | 7.3 | 11.8 | 15.0 |
| 11/14/2024 6:15 | 6.2 | 19.5 | 0.0 | 7.3 | 11.8 | 12.6 |
| 11/14/2024 6:30 | 6.2 | 19.7 | 0.0 | 7.1 | 11.7 | 12.2 |
| 11/14/2024 6:45 | 6.2 | 19.9 | 0.0 | 7.3 | 11.7 | 13.6 |
| 11/14/2024 7:00 | 6.2 | 20.7 | 0.0 | 7.3 | 11.7 | 11.3 |
| 11/14/2024 7:15 | 6.2 | 20.8 | 0.0 | 7.2 | 11.7 | 11.8 |
| 11/14/2024 7:30 | 6.2 | 20.5 | 0.0 | 7.3 | 11.7 | 12.6 |
| 11/14/2024 7:45 | 6.2 | 20.4 | 0.0 | 7.3 | 11.7 | 12.1 |
| 11/14/2024 8:00 | 6.2 | 20.5 | 0.0 | 7.3 | 11.7 | 9.5 |
| 11/14/2024 8:15 | 6.2 | 20.6 | 0.0 | 7.2 | 11.7 | 16.1 |
| 11/14/2024 8:30 | 6.2 | 20.6 | 0.0 | 7.3 | 11.7 | 8.6 |
| 11/14/2024 8:45 | 6.2 | 21.0 | 0.0 | 7.3 | 11.6 | 8.9 |
| 11/14/2024 9:00 | 6.2 | 21.3 | 0.0 | 7.3 | 11.6 | 9.2 |
| 11/14/2024 9:15 | 6.2 | 21.4 | 0.0 | 7.2 | 11.6 | 9.4 |
| 11/14/2024 9:30 | 6.2 | 21.5 | 0.0 | 7.3 | 11.6 | 11.4 |
| 11/14/2024 9:45 | 6.2 | 21.5 | 0.0 | 7.1 | 11.6 | 8.2 |
| 11/14/2024 10:00 | 6.2 | 21.8 | 0.0 | 7.2 | 11.6 | 9.1 |
| 11/14/2024 10:15 | 6.2 | 21.9 | 0.0 | 7.1 | 11.6 | 8.1 |
| 11/14/2024 10:30 | 6.2 | 21.8 | 0.0 | 7.2 | 11.6 | 9.6 |
| 11/14/2024 10:45 | 6.2 | 21.9 | 0.0 | 7.2 | 11.6 | 9.3 |
| 11/14/2024 11:00 | 6.2 | 22.2 | 0.0 | 7.1 | 11.6 | 6.9 |
| 11/14/2024 11:15 | 6.2 | 22.4 | 0.0 | 7.3 | 11.6 | 8.6 |
| 11/14/2024 11:30 | 6.2 | 22.4 | 0.0 | 7.2 | 11.5 | 12.1 |
| 11/14/2024 11:45 | 6.2 | 22.4 | 0.0 | 7.2 | 11.6 | 11.1 |
| 11/14/2024 12:00 | 6.2 | 22.4 | 0.0 | 7.3 | 11.5 | 10.6 |
| 11/14/2024 12:15 | 6.2 | 22.6 | 0.0 | 7.1 | 11.5 | 9.3 |
| 11/14/2024 12:30 | 6.2 | 22.7 | 0.0 | 7.2 | 11.5 | 8.5 |
| 11/14/2024 12:45 | 6.2 | 22.7 | 0.0 | 7.2 | 11.5 | 8.0 |
| 11/14/2024 13:00 | 6.3 | 22.7 | 0.0 | 7.2 | 11.5 | 7.9 |
| 11/14/2024 13:15 | 6.3 | 24.4 | 0.0 | 7.3 | 11.5 | 7.3 |
| 11/14/2024 13:30 | 6.3 | 23.4 | 0.0 | 7.3 | 11.5 | 6.8 |
| 11/14/2024 13:45 | 6.3 | 23.9 | 0.0 | 7.1 | 11.5 | 4.8 |
| 11/14/2024 14:00 | 6.3 | 23.6 | 0.0 | 7.3 | 11.5 | 7.4 |
| 11/14/2024 14:15 | 6.4 | 23.6 | 0.0 | 7.2 | 11.5 | 5.8 |
| 11/14/2024 14:30 | 6.4 | 23.4 | 0.0 | 7.2 | 11.5 | 5.8 |
| 11/14/2024 14:45 | 6.4 | 23.3 | 0.0 | 7.3 | 11.5 | 3.4 |
| 11/14/2024 15:00 | 6.4 | 23.4 | 0.0 | 7.3 | 11.5 | 2.8 |
| 11/14/2024 15:15 | 6.4 | 23.5 | 0.0 | 7.2 | 11.4 | 4.4 |
| 11/14/2024 15:30 | 6.4 | 23.6 | 0.0 | 7.4 | 11.4 | 3.7 |
| 11/14/2024 15:45 | 6.4 | 23.5 | 0.0 | 7.3 | 11.4 | 3.7 |
| 11/14/2024 16:00 | 6.4 | 24.0 | 0.0 | 7.3 | 11.4 | 3.5 |
| 11/14/2024 16:15 | 6.4 | 24.0 | 0.0 | 7.3 | 11.4 | 3.2 |
| 11/14/2024 16:30 | 6.4 | 23.8 | 0.0 | 7.2 | 11.4 | 3.7 |
| 11/14/2024 16:45 | 6.4 | 24.4 | 0.0 | 7.3 | 11.4 | 3.9 |
| 11/14/2024 17:00 | 6.4 | 25.1 | 0.0 | 7.4 | 11.4 | 3.4 |
| 11/14/2024 17:15 | 6.4 | 24.8 | 0.0 | 7.3 | 11.4 | 3.5 |
| 11/14/2024 17:30 | 6.4 | 25.0 | 0.0 | 7.3 | 11.4 | 3.6 |
| 11/14/2024 17:45 | 6.4 | 24.9 | 0.0 | 7.2 | 11.4 | 3.1 |
| 11/14/2024 18:00 | 6.4 | 24.7 | 0.0 | 7.3 | 11.3 | 4.2 |
| 11/14/2024 18:15 | 6.4 | 25.3 | 0.0 | 7.3 | 11.3 | 4.6 |
| 11/14/2024 18:30 | 6.3 | 24.9 | 0.0 | 7.1 | 11.3 | 5.2 |
| 11/14/2024 18:45 | 6.3 | 27.1 | 0.0 | 7.2 | 11.3 | 3.8 |
| 11/14/2024 19:00 | 6.3 | 25.2 | 0.0 | 7.2 | 11.3 | 4.6 |
| 11/14/2024 19:15 | 6.3 | 25.6 | 0.0 | 7.1 | 11.2 | 2.5 |
| 11/14/2024 19:30 | 6.3 | 25.6 | 0.0 | 7.0 | 11.2 | 3.8 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11/13/2024 20:30 | 7.5 | 41.8 | 0.0 | 6.5 | 12.4 | 62.6 |
| 11/13/2024 20:45 | 7.5 | 41.5 | 0.0 | 6.5 | 12.4 | 56.1 |
| 11/13/2024 21:00 | 7.5 | 41.3 | 0.0 | 6.5 | 12.4 | 70.5 |
| 11/13/2024 21:15 | 7.4 | 41.5 | 0.0 | 6.5 | 12.4 | 70.0 |
| 11/13/2024 21:30 | 7.4 | 39.1 | 0.0 | 6.5 | 12.5 | 61.0 |
| 11/13/2024 21:45 | 7.4 | 40.2 | 0.0 | 6.5 | 12.5 | 68.3 |
| 11/13/2024 22:00 | 7.4 | 40.5 | 0.0 | 6.6 | 12.5 | 59.8 |
| 11/13/2024 22:15 | 7.4 | 40.6 | 0.0 | 6.6 | 12.5 | 76.5 |
| 11/13/2024 22:30 | 7.3 | 39.9 | 0.0 | 6.6 | 12.6 | 63.5 |
| 11/13/2024 22:45 | 7.3 | 38.4 | 0.0 | 6.6 | 12.6 | 63.2 |
| 11/13/2024 23:00 | 7.3 | 38.5 | 0.0 | 6.5 | 12.6 | 55.8 |
| 11/13/2024 23:15 | 7.3 | 38.5 | 0.0 | 6.5 | 12.6 | 56.2 |
| 11/13/2024 23:30 | 7.3 | 39.1 | 0.0 | 6.5 | 12.6 | 53.6 |
| 11/13/2024 23:45 | 7.3 | 38.5 | 0.0 | 6.5 | 12.6 | 47.9 |
| 11/14/2024 0:00 | 7.3 | 39.2 | 0.0 | 6.5 | 12.5 | 54.6 |
| 11/14/2024 0:15 | 7.3 | 38.9 | 0.0 | 6.5 | 12.5 | 99.5 |
| 11/14/2024 0:30 | 7.3 | 40.1 | 0.0 | 6.5 | 12.5 | 181.6 |
| 11/14/2024 0:45 | 7.3 | 39.8 | 0.0 | 6.5 | 12.5 | 88.6 |
| 11/14/2024 1:00 | 7.3 | 40.0 | 0.0 | 6.5 | 12.5 | 55.3 |
| 11/14/2024 1:15 | 7.3 | 39.8 | 0.0 | 6.5 | 12.5 | 56.6 |
| 11/14/2024 1:30 | 7.3 | 39.9 | 0.0 | 6.5 | 12.5 | 117.4 |
| 11/14/2024 1:45 | 7.3 | 39.8 | 0.0 | 6.5 | 12.5 | 42.4 |
| 11/14/2024 2:00 | 7.3 | 40.1 | 0.0 | 6.5 | 12.5 | 47.4 |
| 11/14/2024 2:15 | 7.3 | 40.1 | 0.0 | 6.5 | 12.4 | 39.4 |
| 11/14/2024 2:30 | 7.3 | 40.2 | 0.0 | 6.5 | 12.4 | 49.1 |
| 11/14/2024 2:45 | 7.3 | 39.1 | 0.0 | 6.5 | 12.4 | 43.4 |
| 11/14/2024 3:00 | 7.3 | 39.6 | 0.0 | 6.5 | 12.4 | 34.1 |
| 11/14/2024 3:15 | 7.3 | 39.8 | 0.0 | 6.5 | 12.4 | 35.7 |
| 11/14/2024 3:30 | 7.3 | 39.9 | 0.0 | 6.5 | 12.4 | 34.4 |
| 11/14/2024 3:45 | 7.3 | 40.6 | 0.0 | 6.5 | 12.4 | 75.5 |
| 11/14/2024 4:00 | 7.3 | 39.9 | 0.0 | 6.5 | 12.4 | 37.1 |
| 11/14/2024 4:15 | 7.3 | 40.4 | 0.0 | 6.6 | 12.3 | 66.8 |
| 11/14/2024 4:30 | 7.3 | 41.4 | 0.0 | 6.5 | 12.3 | 76.6 |
| 11/14/2024 4:45 | 7.3 | 40.7 | 0.0 | 6.5 | 12.3 | 42.3 |
| 11/14/2024 5:00 | 7.3 | 40.7 | 0.0 | 6.5 | 12.3 | 35.2 |
| 11/14/2024 5:15 | 7.3 | 41.0 | 0.0 | 6.5 | 12.3 | 29.0 |
| 11/14/2024 5:30 | 7.3 | 40.8 | 0.0 | 6.5 | 12.3 | 30.3 |
| 11/14/2024 5:45 | 7.3 | 40.9 | 0.0 | 6.5 | 12.3 | 32.9 |
| 11/14/2024 6:00 | 7.3 | 40.9 | 0.0 | 6.5 | 12.3 | 34.0 |
| 11/14/2024 6:15 | 7.3 | 41.2 | 0.0 | 6.5 | 12.2 | 34.4 |
| 11/14/2024 6:30 | 7.3 | 41.4 | 0.0 | 6.6 | 12.2 | 30.0 |
| 11/14/2024 6:45 | 7.3 | 41.9 | 0.0 | 6.6 | 12.2 | 29.4 |
| 11/14/2024 7:00 | 7.3 | 42.3 | 0.0 | 6.5 | 12.2 | 27.5 |
| 11/14/2024 7:15 | 7.3 | 42.3 | 0.0 | 6.5 | 12.2 | 32.5 |
| 11/14/2024 7:30 | 7.4 | 42.8 | 0.0 | 6.5 | 12.1 | 104.8 |
| 11/14/2024 7:45 | 7.3 | 43.1 | 0.0 | 6.5 | 12.1 | 105.5 |
| 11/14/2024 8:00 | 7.3 | 42.9 | 0.0 | 6.5 | 12.1 | 26.8 |
| 11/14/2024 8:15 | 7.3 | 43.2 | 0.0 | 6.5 | 12.1 | 52.0 |
| 11/14/2024 8:30 | 7.3 | 43.2 | 0.0 | 6.5 | 12.1 | 27.2 |
| 11/14/2024 8:45 | 7.3 | 44.4 | 0.0 | 6.5 | 12.0 | 29.0 |
| 11/14/2024 9:00 | 7.3 | 44.9 | 0.0 | 6.5 | 12.0 | 26.2 |
| 11/14/2024 9:15 | 7.3 | 44.9 | 0.0 | 6.4 | 12.0 | 26.8 |
| 11/14/2024 9:30 | 7.3 | 44.8 | 0.0 | 6.4 | 12.0 | 77.8 |
| 11/14/2024 9:45 | 7.3 | 45.3 | 0.0 | 6.4 | 12.0 | 24.8 |
| 11/14/2024 10:00 | 7.3 | 45.5 | 0.0 | 6.4 | 12.0 | 26.1 |
| 11/14/2024 10:15 | 7.3 | 45.8 | 0.0 | 6.4 | 12.0 | 26.3 |
| 11/14/2024 10:30 | 7.3 | 45.5 | 0.0 | 6.4 | 12.0 | 28.5 |
| 11/14/2024 10:45 | 7.3 | 46.3 | 0.0 | 6.4 | 12.0 | 60.1 |
| 11/14/2024 11:00 | 7.3 | 46.4 | 0.0 | 6.4 | 12.0 | 28.6 |
| 11/14/2024 11:15 | 7.3 | 46.5 | 0.0 | 6.5 | 12.0 | 27.3 |
| 11/14/2024 11:30 | 7.3 | 46.7 | 0.0 | 6.4 | 12.0 | 27.2 |
| 11/14/2024 11:45 | 7.3 | 46.2 | 0.0 | 6.5 | 12.0 | 31.3 |
| 11/14/2024 12:00 | 7.4 | 46.3 | 0.0 | 6.5 | 12.0 | 25.9 |
| 11/14/2024 12:15 | 7.4 | 46.9 | 0.0 | 6.5 | 11.9 | 27.4 |
| 11/14/2024 12:30 | 7.4 | 46.3 | 0.0 | 6.5 | 12.0 | 26.0 |
| 11/14/2024 12:45 | 7.4 | 46.8 | 0.0 | 6.5 | 12.0 | 24.7 |
| 11/14/2024 13:00 | 7.4 | 46.5 | 0.0 | 6.5 | 12.0 | 23.6 |
| 11/14/2024 13:15 | 7.4 | 46.7 | 0.0 | 6.5 | 11.9 | 68.0 |
| 11/14/2024 13:30 | 7.5 | 46.4 | 0.0 | 6.5 | 11.9 | 36.4 |
| 11/14/2024 13:45 | 7.5 | 46.9 | 0.0 | 6.5 | 11.9 | 23.6 |
| 11/14/2024 14:00 | 7.5 | 47.0 | 0.0 | 6.5 | 12.0 | 21.8 |
| 11/14/2024 14:15 | 7.5 | 46.8 | 0.0 | 6.5 | 11.9 | 23.2 |
| 11/14/2024 14:30 | 7.6 | 46.6 | 0.0 | 6.5 | 11.9 | 23.4 |
| 11/14/2024 14:45 | 7.6 | 46.9 | 0.0 | 6.5 | 11.9 | 22.5 |
| 11/14/2024 15:00 | 7.6 | 46.9 | 0.0 | 6.6 | 11.9 | 24.0 |
| 11/14/2024 15:15 | 7.6 | 47.2 | 0.0 | 6.6 | 11.9 | 25.7 |
| 11/14/2024 15:30 | 7.5 | 47.0 | 0.0 | 6.6 | 11.9 | 25.2 |
| 11/14/2024 15:45 | 7.5 | 47.3 | 0.0 | 6.6 | 11.9 | 23.0 |
| 11/14/2024 16:00 | 7.5 | 47.2 | 0.0 | 6.6 | 11.9 | 21.5 |
| 11/14/2024 16:15 | 7.5 | 48.3 | 0.0 | 6.6 | 11.9 | 22.2 |
| 11/14/2024 16:30 | 7.5 | 48.2 | 0.0 | 6.6 | 11.9 | 22.9 |
| 11/14/2024 16:45 | 7.5 | 48.8 | 0.0 | 6.6 | 11.9 | 23.1 |
| 11/14/2024 17:00 | 7.5 | 48.6 | 0.0 | 6.6 | 11.8 | 23.3 |
| 11/14/2024 17:15 | 7.5 | 48.4 | 0.0 | 6.6 | 11.8 | 21.9 |
| 11/14/2024 17:30 | 7.5 | 49.6 | 0.0 | 6.5 | 11.8 | 22.1 |
| 11/14/2024 17:45 | 7.5 | 49.1 | 0.0 | 6.5 | 11.8 | 22.1 |
| 11/14/2024 18:00 | 7.5 | 49.7 | 0.0 | 6.5 | 11.7 | 24.1 |
| 11/14/2024 18:15 | 7.5 | 50.4 | 0.0 | 6.5 | 11.7 | 21.6 |
| 11/14/2024 18:30 | 7.5 | 51.1 | 0.0 | 6.4 | 11.6 | 26.3 |
| 11/14/2024 18:45 | 7.5 | 52.1 | 0.0 | 6.4 | 11.6 | 30.1 |
| 11/14/2024 19:00 | 7.5 | 52.4 | 0.0 | 6.4 | 11.5 | 23.0 |
| 11/14/2024 19:15 | 7.5 | 53.1 | 0.0 | 6.3 | 11.5 | 20.6 |
| 11/14/2024 19:30 | 7.5 | 53.2 | 0.0 | 6.3 | 11.5 | 24.6 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11/14/2024 19:45 | 6.4 | 25.9 | 0.0 | 7.2 | 11.2 | 6.3 |
| 11/14/2024 20:00 | 6.4 | 25.8 | 0.0 | 7.2 | 11.2 | 4.3 |
| 11/14/2024 20:15 | 6.4 | 25.9 | 0.0 | 7.2 | 11.2 | 4.9 |
| 11/14/2024 20:30 | 6.3 | 26.1 | 0.0 | 7.2 | 11.2 | 2.9 |
| 11/14/2024 20:45 | 6.3 | 26.0 | 0.0 | 7.1 | 11.2 | 3.3 |
| 11/14/2024 21:00 | 6.3 | 26.2 | 0.0 | 7.2 | 11.2 | 3.3 |
| 11/14/2024 21:15 | 6.3 | 26.0 | 0.0 | 7.2 | 11.2 | 5.3 |
| 11/14/2024 21:30 | 6.3 | 26.1 | 0.0 | 7.2 | 11.2 | 3.0 |
| 11/14/2024 21:45 | 6.3 | 26.3 | 0.0 | 7.2 | 11.2 | 4.1 |
| 11/14/2024 22:00 | 6.2 | 26.1 | 0.0 | 7.3 | 11.3 | 1.5 |
| 11/14/2024 22:15 | 6.2 | 26.3 | 0.0 | 7.1 | 11.2 | 3.1 |
| 11/14/2024 22:30 | 6.2 | 26.3 | 0.0 | 7.2 | 11.3 | 3.3 |
| 11/14/2024 22:45 | 6.2 | 26.6 | 0.0 | 7.1 | 11.3 | 2.6 |
| 11/14/2024 23:00 | 6.1 | 26.6 | 0.0 | 7.2 | 11.3 | 2.4 |
| 11/14/2024 23:15 | 6.1 | 26.8 | 0.0 | 7.2 | 11.3 | 1.4 |
| 11/14/2024 23:30 | 6.1 | 26.8 | 0.0 | 7.2 | 11.3 | 4.3 |
| 11/14/2024 23:45 | 6.1 | 26.7 | 0.0 | 7.2 | 11.3 | 2.7 |
| 11/15/2024 0:00 | 6.1 | 27.0 | 0.0 | 7.2 | 11.3 | 4.8 |
| 11/15/2024 0:15 | 6.1 | 26.8 | 0.0 | 7.2 | 11.3 | 2.3 |
| 11/15/2024 0:30 | 6.0 | 26.9 | 0.0 | 7.2 | 11.3 | 3.5 |
| 11/15/2024 0:45 | 6.0 | 26.9 | 0.0 | 7.3 | 11.3 | 4.1 |
| 11/15/2024 1:00 | 6.0 | 27.0 | 0.0 | 7.2 | 11.3 | 7.6 |
| 11/15/2024 1:15 | 6.0 | 27.2 | 0.0 | 7.2 | 11.3 | 3.0 |
| 11/15/2024 1:30 | 5.9 | 27.1 | 0.0 | 7.3 | 11.3 | 1.8 |
| 11/15/2024 1:45 | 5.9 | 27.2 | 0.0 | 7.2 | 11.3 | 3.1 |
| 11/15/2024 2:00 | 5.9 | 27.2 | 0.0 | 7.2 | 11.3 | 5.6 |
| 11/15/2024 2:15 | 5.9 | 27.2 | 0.0 | 7.2 | 11.3 | 2.8 |
| 11/15/2024 2:30 | 5.8 | 27.3 | 0.0 | 7.2 | 11.3 | 2.4 |
| 11/15/2024 2:45 | 5.8 | 27.3 | 0.0 | 7.2 | 11.3 | 2.4 |
| 11/15/2024 3:00 | 5.8 | 27.2 | 0.0 | 7.2 | 11.3 | 2.4 |
| 11/15/2024 3:15 | 5.8 | 27.3 | 0.0 | 7.2 | 11.3 | 3.3 |
| 11/15/2024 3:30 | 5.8 | 27.4 | 0.0 | 7.3 | 11.3 | 3.3 |
| 11/15/2024 3:45 | 5.7 | 27.3 | 0.0 | 7.2 | 11.3 | 1.1 |
| 11/15/2024 4:00 | 5.7 | 27.4 | 0.0 | 7.2 | 11.4 | 2.1 |
| 11/15/2024 4:15 | 5.7 | 27.5 | 0.0 | 7.2 | 11.3 | 1.8 |
| 11/15/2024 4:30 | 5.7 | 27.3 | 0.0 | 7.3 | 11.4 | 1.2 |
| 11/15/2024 4:45 | 5.7 | 27.3 | 0.0 | 7.3 | 11.4 | 1.2 |
| 11/15/2024 5:00 | 5.7 | 27.2 | 0.0 | 7.3 | 11.4 | 1.6 |
| 11/15/2024 5:15 | 5.7 | 27.0 | 0.0 | 7.3 | 11.4 | 2.2 |
| 11/15/2024 5:30 | 5.6 | 27.1 | 0.0 | 7.4 | 11.4 | 2.4 |
| 11/15/2024 5:45 | 5.6 | 27.3 | 0.0 | 7.3 | 11.4 | 2.3 |
| 11/15/2024 6:00 | 5.6 | 27.3 | 0.0 | 7.3 | 11.4 | 1.5 |
| 11/15/2024 6:15 | 5.6 | 27.2 | 0.0 | 7.3 | 11.4 | 2.1 |
| 11/15/2024 6:30 | 5.6 | 27.4 | 0.0 | 7.3 | 11.4 | 1.5 |
| 11/15/2024 6:45 | 5.6 | 27.6 | 0.0 | 7.2 | 11.4 | 2.0 |
| 11/15/2024 7:00 | 5.6 | 27.7 | 0.0 | 7.3 | 11.4 | 1.6 |
| 11/15/2024 7:15 | 5.6 | 28.0 | 0.0 | 7.3 | 11.4 | 2.2 |
| 11/15/2024 7:30 | 5.6 | 28.0 | 0.0 | 7.3 | 11.4 | 1.7 |
| 11/15/2024 7:45 | 5.6 | 28.1 | 0.0 | 7.3 | 11.4 | 1.8 |
| 11/15/2024 8:00 | 5.6 | 28.5 | 0.0 | 7.3 | 11.4 | 1.2 |
| 11/15/2024 8:15 | 5.6 | 28.6 | 0.0 | 7.3 | 11.4 | 1.6 |
| 11/15/2024 8:30 | 5.6 | 28.8 | 0.0 | 7.3 | 11.4 | 1.4 |
| 11/15/2024 8:45 | 5.6 | 29.1 | 0.0 | 7.3 | 11.3 | 2.2 |
| 11/15/2024 9:00 | 5.6 | 30.4 | 0.0 | 7.2 | 11.3 | 2.0 |
| 11/15/2024 9:15 | 5.6 | 30.6 | 0.0 | 7.2 | 11.3 | 2.0 |
| 11/15/2024 9:30 | 5.6 | 30.1 | 0.0 | 7.2 | 11.3 | 2.1 |
| 11/15/2024 9:45 | 5.6 | 29.3 | 0.0 | 7.1 | 11.3 | 2.7 |
| 11/15/2024 10:00 | 5.6 | 29.8 | 0.0 | 7.3 | 11.3 | 1.5 |
| 11/15/2024 10:15 | 5.6 | 29.8 | 0.0 | 7.2 | 11.3 | 4.5 |
| 11/15/2024 10:30 | 5.6 | 29.7 | 0.0 | 7.2 | 11.3 | 0.7 |
| 11/15/2024 10:45 | 5.6 | 30.1 | 0.0 | 7.1 | 11.3 | 2.6 |
| 11/15/2024 11:00 | 5.6 | 29.7 | 0.0 | 7.2 | 11.3 | 1.9 |
| 11/15/2024 11:15 | 5.6 | 29.8 | 0.0 | 7.2 | 11.3 | 0.0 |
| 11/15/2024 11:30 | 5.6 | 29.8 | 0.0 | 7.2 | 11.3 | 1.5 |
| 11/15/2024 11:45 | 5.7 | 30.1 | 0.0 | 7.2 | 11.3 | 1.9 |
| 11/15/2024 12:00 | 5.7 | 30.0 | 0.0 | 7.2 | 11.3 | 1.1 |
| 11/15/2024 12:15 | 5.7 | 29.9 | 0.0 | 7.2 | 11.3 | 1.4 |
| 11/15/2024 12:30 | 5.7 | 30.1 | 0.0 | 7.3 | 11.3 | 1.1 |
| 11/15/2024 12:45 | 5.8 | 30.1 | 0.0 | 7.3 | 11.3 | 0.4 |
| 11/15/2024 13:00 | 5.8 | 30.0 | 0.0 | 7.3 | 11.3 | 1.3 |
| 11/15/2024 13:15 | 5.8 | 29.9 | 0.0 | 7.2 | 11.3 | 1.5 |
| 11/15/2024 13:30 | 5.8 | 30.3 | 0.0 | 7.3 | 11.3 | 1.0 |
| 11/15/2024 13:45 | 5.8 | 30.3 | 0.0 | 7.2 | 11.3 | 1.5 |
| 11/15/2024 14:00 | 5.8 | 30.3 | 0.0 | 7.2 | 11.3 | 0.7 |
| 11/15/2024 14:15 | 5.8 | 30.5 | 0.0 | 7.2 | 11.3 | 2.1 |
| 11/15/2024 14:30 | 5.8 | 30.4 | 0.0 | 7.2 | 11.4 | 2.6 |
| 11/15/2024 14:45 | 5.8 | 30.4 | 0.0 | 7.3 | 11.4 | 1.4 |
| 11/15/2024 15:00 | 5.8 | 30.3 | 0.0 | 7.3 | 11.4 | 1.1 |
| 11/15/2024 15:15 | 5.8 | 30.1 | 0.0 | 7.3 | 11.4 | 1.2 |
| 11/15/2024 15:30 | 5.8 | 30.2 | 0.0 | 7.3 | 11.4 | 1.3 |
| 11/15/2024 15:45 | 5.7 | 30.0 | 0.0 | 7.3 | 11.4 | 0.8 |
| 11/15/2024 16:00 | 5.7 | 30.1 | 0.0 | 7.4 | 11.4 | 0.3 |
| 11/15/2024 16:15 | 5.7 | 30.2 | 0.0 | 7.4 | 11.4 | 0.9 |
| 11/15/2024 16:30 | 5.7 | 30.1 | 0.0 | 7.3 | 11.4 | 2.6 |
| 11/15/2024 16:45 | 5.6 | 30.5 | 0.0 | 7.3 | 11.4 | 0.7 |
| 11/15/2024 17:00 | 5.6 | 30.7 | 0.0 | 7.3 | 11.4 | 1.8 |
| 11/15/2024 17:15 | 5.6 | 31.4 | 0.0 | 7.3 | 11.4 | 0.4 |
| 11/15/2024 17:30 | 5.6 | 31.3 | 0.0 | 7.3 | 11.4 | 1.6 |
| 11/15/2024 17:45 | 5.5 | 31.7 | 0.0 | 7.3 | 11.4 | 1.0 |
| 11/15/2024 18:00 | 5.5 | 31.8 | 0.0 | 7.4 | 11.4 | 2.0 |
| 11/15/2024 18:15 | 5.5 | 32.0 | 0.0 | 7.3 | 11.3 | 0.8 |
| 11/15/2024 18:30 | 5.5 | 32.1 | 0.0 | 7.2 | 11.3 | 1.0 |
| 11/15/2024 18:45 | 5.5 | 32.4 | 0.0 | 7.2 | 11.3 | 0.5 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11/14/2024 19:45 | 7.5 | 53.9 | 0.0 | 6.3 | 11.5 | 23.6 |
| 11/14/2024 20:00 | 7.5 | 54.2 | 0.0 | 6.3 | 11.5 | 26.3 |
| 11/14/2024 20:15 | 7.5 | 53.4 | 0.0 | 6.3 | 11.5 | 23.2 |
| 11/14/2024 20:30 | 7.5 | 54.1 | 0.0 | 6.3 | 11.5 | 23.9 |
| 11/14/2024 20:45 | 7.5 | 53.2 | 0.0 | 6.4 | 11.5 | 22.5 |
| 11/14/2024 21:00 | 7.5 | 53.5 | 0.0 | 6.4 | 11.6 | 26.1 |
| 11/14/2024 21:15 | 7.4 | 53.3 | 0.0 | 6.4 | 11.6 | 27.3 |
| 11/14/2024 21:30 | 7.4 | 53.4 | 0.0 | 6.4 | 11.6 | 22.4 |
| 11/14/2024 21:45 | 7.4 | 53.9 | 0.0 | 6.4 | 11.6 | 22.7 |
| 11/14/2024 22:00 | 7.4 | 53.0 | 0.0 | 6.4 | 11.6 | 23.7 |
| 11/14/2024 22:15 | 7.3 | 53.4 | 0.0 | 6.4 | 11.6 | 29.2 |
| 11/14/2024 22:30 | 7.3 | 53.4 | 0.0 | 6.4 | 11.6 | 26.8 |
| 11/14/2024 22:45 | 7.3 | 52.8 | 0.0 | 6.4 | 11.7 | 23.5 |
| 11/14/2024 23:00 | 7.3 | 53.0 | 0.0 | 6.4 | 11.6 | 25.8 |
| 11/14/2024 23:15 | 7.3 | 53.2 | 0.0 | 6.4 | 11.7 | 29.6 |
| 11/14/2024 23:30 | 7.3 | 53.3 | 0.0 | 6.4 | 11.7 | 25.0 |
| 11/14/2024 23:45 | 7.2 | 53.5 | 0.0 | 6.4 | 11.7 | 26.7 |
| 11/15/2024 0:00 | 7.2 | 53.7 | 0.0 | 6.4 | 11.7 | 22.0 |
| 11/15/2024 0:15 | 7.2 | 54.4 | 0.0 | 6.4 | 11.7 | 24.2 |
| 11/15/2024 0:30 | 7.2 | 54.4 | 0.0 | 6.4 | 11.7 | 24.1 |
| 11/15/2024 0:45 | 7.1 | 54.4 | 0.0 | 6.4 | 11.7 | 22.8 |
| 11/15/2024 1:00 | 7.1 | 54.7 | 0.0 | 6.4 | 11.7 | 24.5 |
| 11/15/2024 1:15 | 7.1 | 55.1 | 0.0 | 6.4 | 11.7 | 25.3 |
| 11/15/2024 1:30 | 7.1 | 55.0 | 0.0 | 6.4 | 11.7 | 26.4 |
| 11/15/2024 1:45 | 7.0 | 55.0 | 0.0 | 6.5 | 11.7 | 25.4 |
| 11/15/2024 2:00 | 7.0 | 54.4 | 0.0 | 6.5 | 11.7 | 23.7 |
| 11/15/2024 2:15 | 7.0 | 55.2 | 0.0 | 6.5 | 11.7 | 23.6 |
| 11/15/2024 2:30 | 7.0 | 55.2 | 0.0 | 6.5 | 11.7 | 25.5 |
| 11/15/2024 2:45 | 6.9 | 55.2 | 0.0 | 6.5 | 11.7 | 24.2 |
| 11/15/2024 3:00 | 6.9 | 55.2 | 0.0 | 6.5 | 11.7 | 25.1 |
| 11/15/2024 3:15 | 6.9 | 55.4 | 0.0 | 6.5 | 11.7 | 34.1 |
| 11/15/2024 3:30 | 6.9 | 55.4 | 0.0 | 6.5 | 11.7 | 24.8 |
| 11/15/2024 3:45 | 6.9 | 55.4 | 0.0 | 6.5 | 11.8 | 24.5 |
| 11/15/2024 4:00 | 6.8 | 55.4 | 0.0 | 6.5 | 11.7 | 24.9 |
| 11/15/2024 4:15 | 6.8 | 55.3 | 0.0 | 6.5 | 11.8 | 23.5 |
| 11/15/2024 4:30 | 6.8 | 55.6 | 0.0 | 6.5 | 11.8 | 24.3 |
| 11/15/2024 4:45 | 6.8 | 55.3 | 0.0 | 6.5 | 11.8 | 29.4 |
| 11/15/2024 5:00 | 6.8 | 54.6 | 0.0 | 6.5 | 11.8 | 25.0 |
| 11/15/2024 5:15 | 6.8 | 54.6 | 0.0 | 6.6 | 11.8 | 23.6 |
| 11/15/2024 5:30 | 6.8 | 54.8 | 0.0 | 6.6 | 11.9 | 28.6 |
| 11/15/2024 5:45 | 6.8 | 55.1 | 0.0 | 6.6 | 11.8 | 23.3 |
| 11/15/2024 6:00 | 6.7 | 53.8 | 0.0 | 6.6 | 11.8 | 24.0 |
| 11/15/2024 6:15 | 6.7 | 54.9 | 0.0 | 6.6 | 11.9 | 25.0 |
| 11/15/2024 6:30 | 6.7 | 55.1 | 0.0 | 6.6 | 11.9 | 27.0 |
| 11/15/2024 6:45 | 6.7 | 55.9 | 0.0 | 6.6 | 11.8 | 25.0 |
| 11/15/2024 7:00 | 6.7 | 56.2 | 0.0 | 6.6 | 11.8 | 24.5 |
| 11/15/2024 7:15 | 6.7 | 56.8 | 0.0 | 6.6 | 11.8 | 23.8 |
| 11/15/2024 7:30 | 6.7 | 55.3 | 0.0 | 6.6 | 11.8 | 24.2 |
| 11/15/2024 7:45 | 6.7 | 56.7 | 0.0 | 6.5 | 11.8 | 25.1 |
| 11/15/2024 8:00 | 6.7 | 58.9 | 0.0 | 6.5 | 11.7 | 27.0 |
| 11/15/2024 8:15 | 6.7 | 58.4 | 0.0 | 6.5 | 11.7 | 25.7 |
| 11/15/2024 8:30 | 6.7 | 58.6 | 0.0 | 6.5 | 11.7 | 25.4 |
| 11/15/2024 8:45 | 6.7 | 59.8 | 0.0 | 6.4 | 11.6 | 24.9 |
| 11/15/2024 9:00 | 6.7 | 60.0 | 0.0 | 6.5 | 11.6 | 24.7 |
| 11/15/2024 9:15 | 6.7 | 59.7 | 0.0 | 6.4 | 11.7 | 26.0 |
| 11/15/2024 9:30 | 6.7 | 59.5 | 0.0 | 6.4 | 11.7 | 60.2 |
| 11/15/2024 9:45 | 6.7 | 59.8 | 0.0 | 6.5 | 11.7 | 26.7 |
| 11/15/2024 10:00 | 6.7 | 60.1 | 0.0 | 6.5 | 11.7 | 26.0 |
| 11/15/2024 10:15 | 6.7 | 59.7 | 0.0 | 6.5 | 11.7 | 27.0 |
| 11/15/2024 10:30 | 6.7 | 59.6 | 0.0 | 6.5 | 11.7 | 26.1 |
| 11/15/2024 10:45 | 6.7 | 60.0 | 0.0 | 6.5 | 11.7 | 26.7 |
| 11/15/2024 11:00 | 6.7 | 59.7 | 0.0 | 6.5 | 11.7 | 25.9 |
| 11/15/2024 11:15 | 6.7 | 60.5 | 0.0 | 6.5 | 11.7 | 25.5 |
| 11/15/2024 11:30 | 6.8 | 59.9 | 0.0 | 6.5 | 11.7 | 27.8 |
| 11/15/2024 11:45 | 6.8 | 60.5 | 0.0 | 6.5 | 11.7 | 27.4 |
| 11/15/2024 12:00 | 6.8 | 59.5 | 0.0 | 6.5 | 11.7 | 27.9 |
| 11/15/2024 12:15 | 6.9 | 60.3 | 0.0 | 6.5 | 11.7 | 26.4 |
| 11/15/2024 12:30 | 6.9 | 60.8 | 0.0 | 6.5 | 11.7 | 26.7 |
| 11/15/2024 12:45 | 6.9 | 61.1 | 0.0 | 6.5 | 11.7 | 26.7 |
| 11/15/2024 13:00 | 6.9 | 60.1 | 0.0 | 6.5 | 11.7 | 26.9 |
| 11/15/2024 13:15 | 7.0 | 60.9 | 0.0 | 6.5 | 11.7 | 25.7 |
| 11/15/2024 13:30 | 7.0 | 59.4 | 0.0 | 6.5 | 11.7 | 27.7 |
| 11/15/2024 13:45 | 7.0 | 61.0 | 0.0 | 6.6 | 11.7 | 27.8 |
| 11/15/2024 14:00 | 7.0 | 59.7 | 0.0 | 6.6 | 11.7 | 26.7 |
| 11/15/2024 14:15 | 6.9 | 60.8 | 0.0 | 6.6 | 11.7 | 27.6 |
| 11/15/2024 14:30 | 6.9 | 60.9 | 0.0 | 6.6 | 11.7 | 26.1 |
| 11/15/2024 14:45 | 7.0 | 59.6 | 0.0 | 6.6 | 11.8 | 29.7 |
| 11/15/2024 15:00 | 6.9 | 60.5 | 0.0 | 6.6 | 11.8 | 28.7 |
| 11/15/2024 15:15 | 6.9 | 60.2 | 0.0 | 6.6 | 11.8 | 30.8 |
| 11/15/2024 15:30 | 6.9 | 59.2 | 0.0 | 6.6 | 11.8 | 27.7 |
| 11/15/2024 15:45 | 6.8 | 59.6 | 0.0 | 6.6 | 11.8 | 29.6 |
| 11/15/2024 16:00 | 6.8 | 59.1 | 0.0 | 6.6 | 11.8 | 30.2 |
| 11/15/2024 16:15 | 6.8 | 60.0 | 0.0 | 6.7 | 11.8 | 28.9 |
| 11/15/2024 16:30 | 6.8 | 60.2 | 0.0 | 6.7 | 11.8 | 29.3 |
| 11/15/2024 16:45 | 6.7 | 60.6 | 0.0 | 6.7 | 11.8 | 30.2 |
| 11/15/2024 17:00 | 6.7 | 61.9 | 0.0 | 6.7 | 11.8 | 30.9 |
| 11/15/2024 17:15 | 6.7 | 60.2 | 0.0 | 6.6 | 11.8 | 31.1 |
| 11/15/2024 17:30 | 6.7 | 61.3 | 0.0 | 6.6 | 11.8 | 29.7 |
| 11/15/2024 17:45 | 6.6 | 62.1 | 0.0 | 6.6 | 11.8 | 29.9 |
| 11/15/2024 18:00 | 6.7 | 63.3 | 0.0 | 6.6 | 11.7 | 31.1 |
| 11/15/2024 18:15 | 6.7 | 64.3 | 0.0 | 6.5 | 11.6 | 32.1 |
| 11/15/2024 18:30 | 6.7 | 64.4 | 0.0 | 6.5 | 11.6 | 31.5 |
| 11/15/2024 18:45 | 6.7 | 63.7 | 0.0 | 6.4 | 11.5 | 31.8 |

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|---|---|---|---|---|---|---|
| 11/15/2024 19:00 | 5.5 | 32.4 | 0.0 | 7.2 | 11.3 | 1.7 |
| 11/15/2024 19:15 | 5.5 | 33.7 | 0.0 | 7.2 | 11.3 | 1.0 |
| 11/15/2024 19:30 | 5.4 | 33.1 | 0.0 | 7.2 | 11.3 | 1.4 |
| 11/15/2024 19:45 | 5.4 | 32.5 | 0.0 | 7.2 | 11.3 | 2.7 |
| 11/15/2024 20:00 | 5.4 | 32.2 | 0.0 | 7.2 | 11.3 | 3.6 |
| 11/15/2024 20:15 | 5.4 | 32.2 | 0.0 | 7.2 | 11.3 | 1.6 |
| 11/15/2024 20:30 | 5.4 | 32.3 | 0.0 | 7.2 | 11.3 | 1.3 |
| 11/15/2024 20:45 | 5.4 | 32.4 | 0.0 | 7.3 | 11.3 | 2.6 |
| 11/15/2024 21:00 | 5.4 | 32.8 | 0.0 | 7.3 | 11.3 | 0.6 |
| 11/15/2024 21:15 | 5.4 | 32.5 | 0.0 | 7.2 | 11.3 | 2.0 |
| 11/15/2024 21:30 | 5.4 | 32.4 | 0.0 | 7.2 | 11.3 | 8.5 |
| 11/15/2024 21:45 | 5.4 | 32.6 | 0.0 | 7.3 | 11.3 | 0.9 |
| 11/15/2024 22:00 | 5.4 | 32.7 | 0.0 | 7.3 | 11.3 | 3.7 |
| 11/15/2024 22:15 | 5.4 | 33.1 | 0.0 | 7.3 | 11.3 | 1.3 |
| 11/15/2024 22:30 | 5.4 | 33.4 | 0.0 | 7.3 | 11.3 | 1.9 |
| 11/15/2024 22:45 | 5.4 | 33.2 | 0.0 | 7.3 | 11.4 | 0.5 |
| 11/15/2024 23:00 | 5.4 | 33.4 | 0.0 | 7.2 | 11.4 | 0.4 |
| 11/15/2024 23:15 | 5.4 | 33.8 | 0.0 | 7.3 | 11.4 | 1.8 |
| 11/15/2024 23:30 | 5.3 | 35.3 | 0.0 | 7.3 | 11.4 | 2.1 |
| 11/15/2024 23:45 | 5.3 | 34.9 | 0.0 | 7.3 | 11.4 | 1.1 |
| 11/16/2024 0:00 | 5.3 | 33.7 | 0.0 | 7.3 | 11.4 | 2.0 |
| 11/16/2024 0:15 | 5.3 | 33.0 | 0.0 | 7.3 | 11.4 | 1.1 |
| 11/16/2024 0:30 | 5.3 | 33.1 | 0.0 | 7.3 | 11.4 | 0.9 |
| 11/16/2024 0:45 | 5.3 | 33.1 | 0.0 | 7.3 | 11.4 | 0.5 |
| 11/16/2024 1:00 | 5.2 | 32.9 | 0.0 | 7.3 | 11.4 | 1.2 |
| 11/16/2024 1:15 | 5.2 | 33.1 | 0.0 | 7.3 | 11.4 | 2.0 |
| 11/16/2024 1:30 | 5.2 | 33.2 | 0.0 | 7.3 | 11.4 | 0.6 |
| 11/16/2024 1:45 | 5.2 | 32.9 | 0.0 | 7.3 | 11.4 | 0.0 |
| 11/16/2024 2:00 | 5.2 | 33.2 | 0.0 | 7.2 | 11.4 | 2.0 |
| 11/16/2024 2:15 | 5.2 | 33.3 | 0.0 | 7.2 | 11.4 | 1.5 |
| 11/16/2024 2:30 | 5.2 | 33.1 | 0.0 | 7.3 | 11.4 | 0.4 |
| 11/16/2024 2:45 | 5.2 | 33.2 | 0.0 | 7.3 | 11.4 | 1.9 |
| 11/16/2024 3:00 | 5.2 | 33.1 | 0.0 | 7.3 | 11.4 | 1.2 |
| 11/16/2024 3:15 | 5.1 | 33.0 | 0.0 | 7.3 | 11.4 | 1.6 |
| 11/16/2024 3:30 | 5.1 | 33.6 | 0.0 | 7.3 | 11.4 | 0.6 |
| 11/16/2024 3:45 | 5.1 | 33.3 | 0.0 | 7.3 | 11.4 | 1.8 |
| 11/16/2024 4:00 | 5.1 | 33.6 | 0.0 | 7.3 | 11.4 | 0.8 |
| 11/16/2024 4:15 | 5.1 | 33.5 | 0.0 | 7.3 | 11.4 | 1.3 |
| 11/16/2024 4:30 | 5.1 | 33.7 | 0.0 | 7.3 | 11.4 | 0.5 |
| 11/16/2024 4:45 | 5.1 | 33.8 | 0.0 | 7.3 | 11.4 | 1.7 |
| 11/16/2024 5:00 | 5.1 | 33.8 | 0.0 | 7.3 | 11.4 | 1.8 |
| 11/16/2024 5:15 | 5.1 | 33.5 | 0.0 | 7.3 | 11.5 | 1.6 |
| 11/16/2024 5:30 | 5.1 | 33.6 | 0.0 | 7.2 | 11.4 | 1.5 |
| 11/16/2024 5:45 | 5.1 | 33.4 | 0.0 | 7.3 | 11.5 | 0.2 |
| 11/16/2024 6:00 | 5.1 | 33.2 | 0.0 | 7.3 | 11.5 | 0.5 |
| 11/16/2024 6:15 | 5.1 | 33.1 | 0.0 | 7.3 | 11.5 | 0.7 |
| 11/16/2024 6:30 | 5.0 | 32.9 | 0.0 | 7.4 | 11.5 | 0.1 |
| 11/16/2024 6:45 | 5.0 | 32.8 | 0.0 | 7.4 | 11.5 | 0.3 |
| 11/16/2024 7:00 | 5.0 | 32.7 | 0.0 | 7.4 | 11.5 | 0.2 |
| 11/16/2024 7:15 | 5.0 | 32.7 | 0.0 | 7.4 | 11.5 | 0.6 |
| 11/16/2024 7:30 | 5.0 | 32.9 | 0.0 | 7.4 | 11.5 | 0.4 |
| 11/16/2024 7:45 | 5.0 | 33.1 | 0.0 | 7.4 | 11.5 | 0.0 |
| 11/16/2024 8:00 | 5.0 | 33.0 | 0.0 | 7.3 | 11.6 | 0.6 |
| 11/16/2024 8:15 | 5.0 | 33.6 | 0.0 | 7.3 | 11.5 | 1.1 |
| 11/16/2024 8:30 | 5.0 | 34.1 | 0.0 | 7.4 | 11.5 | 0.6 |
| 11/16/2024 8:45 | 5.0 | 34.9 | 0.0 | 7.3 | 11.5 | 0.5 |
| 11/16/2024 9:00 | 5.0 | 35.5 | 0.0 | 7.3 | 11.4 | 1.1 |
| 11/16/2024 9:15 | 5.0 | 35.7 | 0.0 | 7.3 | 11.4 | 0.0 |
| 11/16/2024 9:30 | 5.0 | 34.8 | 0.0 | 7.2 | 11.4 | 4.3 |
| 11/16/2024 9:45 | 5.0 | 34.8 | 0.0 | 7.2 | 11.4 | 0.8 |
| 11/16/2024 10:00 | 5.0 | 34.9 | 0.0 | 7.3 | 11.4 | 0.5 |
| 11/16/2024 10:15 | 5.0 | 35.0 | 0.0 | 7.3 | 11.4 | 0.6 |
| 11/16/2024 10:30 | 5.0 | 34.8 | 0.0 | 7.3 | 11.4 | 0.1 |
| 11/16/2024 10:45 | 5.1 | 34.9 | 0.0 | 7.3 | 11.4 | 0.3 |
| 11/16/2024 11:00 | 5.1 | 35.2 | 0.0 | 7.2 | 11.4 | 1.6 |
| 11/16/2024 11:15 | 5.1 | 35.0 | 0.0 | 7.2 | 11.3 | 1.7 |
| 11/16/2024 11:30 | 5.1 | 35.3 | 0.0 | 7.3 | 11.3 | 0.4 |
| 11/16/2024 11:45 | 5.1 | 35.5 | 0.0 | 7.3 | 11.3 | 0.3 |
| 11/16/2024 12:00 | 5.2 | 35.3 | 0.0 | 7.3 | 11.3 | 1.2 |
| 11/16/2024 12:15 | 5.2 | 35.2 | 0.0 | 7.2 | 11.3 | 0.5 |
| 11/16/2024 12:30 | 5.2 | 35.3 | 0.0 | 7.2 | 11.3 | 0.7 |
| 11/16/2024 12:45 | 5.2 | 35.6 | 0.0 | 7.3 | 11.3 | 0.5 |
| 11/16/2024 13:00 | 5.2 | 35.6 | 0.0 | 7.3 | 11.3 | 0.4 |
| 11/16/2024 13:15 | 5.2 | 35.6 | 0.0 | 7.2 | 11.3 | 0.4 |
| 11/16/2024 13:30 | 5.2 | 35.4 | 0.0 | 7.3 | 11.3 | 1.4 |
| 11/16/2024 13:45 | 5.2 | 35.6 | 0.0 | 7.3 | 11.3 | 0.8 |
| 11/16/2024 14:00 | 5.2 | 35.5 | 0.0 | 7.3 | 11.3 | 0.6 |
| 11/16/2024 14:15 | 5.2 | 35.2 | 0.0 | 7.3 | 11.3 | 0.5 |
| 11/16/2024 14:30 | 5.2 | 35.1 | 0.0 | 7.3 | 11.3 | 0.9 |
| 11/16/2024 14:45 | 5.2 | 35.1 | 0.0 | 7.3 | 11.3 | 1.5 |
| 11/16/2024 15:00 | 5.2 | 35.0 | 0.0 | 7.3 | 11.3 | 0.7 |
| 11/16/2024 15:15 | 5.2 | 35.0 | 0.0 | 7.3 | 11.3 | 2.1 |
| 11/16/2024 15:30 | 5.2 | 34.9 | 0.0 | 7.3 | 11.3 | 0.6 |
| 11/16/2024 15:45 | 5.2 | 34.7 | 0.0 | 7.3 | 11.4 | 3.1 |
| 11/16/2024 16:00 | 5.2 | 34.8 | 0.0 | 7.3 | 11.4 | 0.3 |
| 11/16/2024 16:15 | 5.2 | 34.8 | 0.0 | 7.3 | 11.4 | 0.0 |
| 11/16/2024 16:30 | 5.2 | 34.8 | 0.0 | 7.3 | 11.4 | 1.0 |
| 11/16/2024 16:45 | 5.1 | 34.1 | 0.0 | 7.3 | 11.4 | 1.2 |
| 11/16/2024 17:00 | 5.1 | 34.1 | 0.0 | 7.3 | 11.4 | 0.7 |
| 11/16/2024 17:15 | 5.1 | 33.8 | 0.0 | 7.4 | 11.4 | 1.0 |
| 11/16/2024 17:30 | 5.1 | 34.1 | 0.0 | 7.4 | 11.4 | 0.8 |
| 11/16/2024 17:45 | 5.1 | 34.6 | 0.0 | 7.4 | 11.4 | 0.1 |
| 11/16/2024 18:00 | 5.1 | 35.1 | 0.0 | 7.4 | 11.4 | 0.3 |

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|---|---|---|---|---|---|---|
| 11/15/2024 19:00 | 6.6 | 64.5 | 0.0 | 6.4 | 11.6 | 35.8 |
| 11/15/2024 19:15 | 6.6 | 64.6 | 0.0 | 6.5 | 11.6 | 31.9 |
| 11/15/2024 19:30 | 6.6 | 63.8 | 0.0 | 6.5 | 11.7 | 32.1 |
| 11/15/2024 19:45 | 6.6 | 64.0 | 0.0 | 6.5 | 11.7 | 32.5 |
| 11/15/2024 20:00 | 6.5 | 64.0 | 0.0 | 6.5 | 11.7 | 33.5 |
| 11/15/2024 20:15 | 6.5 | 63.9 | 0.0 | 6.5 | 11.7 | 32.9 |
| 11/15/2024 20:30 | 6.5 | 63.8 | 0.0 | 6.5 | 11.7 | 37.9 |
| 11/15/2024 20:45 | 6.5 | 63.8 | 0.0 | 6.5 | 11.7 | 33.3 |
| 11/15/2024 21:00 | 6.6 | 64.4 | 0.0 | 6.6 | 11.7 | 34.6 |
| 11/15/2024 21:15 | 6.5 | 64.3 | 0.0 | 6.6 | 11.7 | 34.5 |
| 11/15/2024 21:30 | 6.5 | 63.2 | 0.0 | 6.6 | 11.7 | 34.8 |
| 11/15/2024 21:45 | 6.5 | 64.1 | 0.0 | 6.6 | 11.7 | 33.7 |
| 11/15/2024 22:00 | 6.5 | 63.2 | 0.0 | 6.6 | 11.7 | 33.7 |
| 11/15/2024 22:15 | 6.5 | 65.1 | 0.0 | 6.6 | 11.7 | 34.2 |
| 11/15/2024 22:30 | 6.5 | 64.6 | 0.0 | 6.6 | 11.8 | 34.9 |
| 11/15/2024 22:45 | 6.5 | 64.6 | 0.0 | 6.6 | 11.8 | 33.7 |
| 11/15/2024 23:00 | 6.5 | 64.6 | 0.0 | 6.6 | 11.8 | 37.2 |
| 11/15/2024 23:15 | 6.5 | 65.1 | 0.0 | 6.6 | 11.8 | 34.8 |
| 11/15/2024 23:30 | 6.4 | 64.4 | 0.0 | 6.6 | 11.8 | 36.8 |
| 11/15/2024 23:45 | 6.4 | 64.7 | 0.0 | 6.6 | 11.8 | 35.2 |
| 11/16/2024 0:00 | 6.4 | 64.7 | 0.0 | 6.6 | 11.8 | 34.5 |
| 11/16/2024 0:15 | 6.4 | 65.1 | 0.0 | 6.6 | 11.8 | 34.8 |
| 11/16/2024 0:30 | 6.4 | 64.1 | 0.0 | 6.6 | 11.8 | 40.0 |
| 11/16/2024 0:45 | 6.4 | 64.4 | 0.0 | 6.6 | 11.8 | 35.5 |
| 11/16/2024 1:00 | 6.4 | 64.1 | 0.0 | 6.6 | 11.8 | 35.9 |
| 11/16/2024 1:15 | 6.3 | 65.3 | 0.0 | 6.6 | 11.8 | 35.4 |
| 11/16/2024 1:30 | 6.3 | 64.7 | 0.0 | 6.6 | 11.8 | 35.5 |
| 11/16/2024 1:45 | 6.3 | 64.9 | 0.0 | 6.6 | 11.8 | 36.0 |
| 11/16/2024 2:00 | 6.3 | 64.7 | 0.0 | 6.6 | 11.8 | 36.4 |
| 11/16/2024 2:15 | 6.3 | 64.2 | 0.0 | 6.6 | 11.8 | 35.7 |
| 11/16/2024 2:30 | 6.3 | 64.9 | 0.0 | 6.6 | 11.8 | 36.4 |
| 11/16/2024 2:45 | 6.3 | 65.4 | 0.0 | 6.6 | 11.8 | 36.6 |
| 11/16/2024 3:00 | 6.3 | 64.7 | 0.0 | 6.6 | 11.8 | 35.9 |
| 11/16/2024 3:15 | 6.3 | 65.3 | 0.0 | 6.6 | 11.8 | 36.0 |
| 11/16/2024 3:30 | 6.3 | 64.4 | 0.0 | 6.6 | 11.8 | 36.5 |
| 11/16/2024 3:45 | 6.2 | 65.9 | 0.0 | 6.6 | 11.8 | 36.4 |
| 11/16/2024 4:00 | 6.2 | 66.1 | 0.0 | 6.6 | 11.8 | 37.6 |
| 11/16/2024 4:15 | 6.2 | 65.5 | 0.0 | 6.6 | 11.8 | 39.2 |
| 11/16/2024 4:30 | 6.2 | 66.0 | 0.0 | 6.6 | 11.8 | 37.9 |
| 11/16/2024 4:45 | 6.2 | 65.8 | 0.0 | 6.6 | 11.8 | 36.7 |
| 11/16/2024 5:00 | 6.2 | 65.7 | 0.0 | 6.6 | 11.8 | 39.4 |
| 11/16/2024 5:15 | 6.2 | 64.9 | 0.0 | 6.6 | 11.8 | 38.0 |
| 11/16/2024 5:30 | 6.2 | 65.3 | 0.0 | 6.6 | 11.9 | 37.8 |
| 11/16/2024 5:45 | 6.2 | 65.3 | 0.0 | 6.6 | 11.9 | 37.1 |
| 11/16/2024 6:00 | 6.2 | 64.8 | 0.0 | 6.7 | 11.9 | 41.1 |
| 11/16/2024 6:15 | 6.2 | 64.7 | 0.0 | 6.7 | 11.9 | 39.3 |
| 11/16/2024 6:30 | 6.1 | 63.7 | 0.0 | 6.7 | 12.0 | 38.6 |
| 11/16/2024 6:45 | 6.1 | 62.7 | 0.0 | 6.7 | 12.0 | 35.8 |
| 11/16/2024 7:00 | 6.1 | 63.1 | 0.0 | 6.7 | 12.0 | 37.2 |
| 11/16/2024 7:15 | 6.1 | 63.8 | 0.0 | 6.7 | 12.0 | 37.3 |
| 11/16/2024 7:30 | 6.1 | 64.0 | 0.0 | 6.7 | 12.0 | 37.9 |
| 11/16/2024 7:45 | 6.1 | 63.8 | 0.0 | 6.7 | 12.0 | 38.3 |
| 11/16/2024 8:00 | 6.1 | 64.3 | 0.0 | 6.7 | 12.0 | 38.4 |
| 11/16/2024 8:15 | 6.1 | 66.3 | 0.0 | 6.7 | 11.9 | 39.0 |
| 11/16/2024 8:30 | 6.1 | 67.4 | 0.0 | 6.7 | 11.9 | 38.2 |
| 11/16/2024 8:45 | 6.2 | 70.9 | 0.0 | 6.6 | 11.7 | 37.9 |
| 11/16/2024 9:00 | 6.2 | 70.7 | 0.0 | 6.6 | 11.7 | 37.6 |
| 11/16/2024 9:15 | 6.2 | 70.3 | 0.0 | 6.6 | 11.7 | 38.2 |
| 11/16/2024 9:30 | 6.2 | 68.8 | 0.0 | 6.6 | 11.8 | 39.3 |
| 11/16/2024 9:45 | 6.2 | 68.9 | 0.0 | 6.6 | 11.7 | 35.0 |
| 11/16/2024 10:00 | 6.2 | 68.9 | 0.0 | 6.6 | 11.7 | 38.9 |
| 11/16/2024 10:15 | 6.2 | 67.6 | 0.0 | 6.6 | 11.8 | 39.8 |
| 11/16/2024 10:30 | 6.2 | 66.6 | 0.0 | 6.6 | 11.8 | 39.9 |
| 11/16/2024 10:45 | 6.2 | 67.3 | 0.0 | 6.6 | 11.8 | 40.7 |
| 11/16/2024 11:00 | 6.3 | 66.9 | 0.0 | 6.6 | 11.7 | 39.8 |
| 11/16/2024 11:15 | 6.3 | 68.6 | 0.0 | 6.6 | 11.7 | 39.5 |
| 11/16/2024 11:30 | 6.3 | 67.6 | 0.0 | 6.6 | 11.7 | 39.5 |
| 11/16/2024 11:45 | 6.3 | 67.8 | 0.0 | 6.6 | 11.7 | 39.3 |
| 11/16/2024 12:00 | 6.3 | 68.7 | 0.0 | 6.6 | 11.7 | 39.2 |
| 11/16/2024 12:15 | 6.3 | 68.4 | 0.0 | 6.6 | 11.7 | 39.2 |
| 11/16/2024 12:30 | 6.3 | 68.4 | 0.0 | 6.6 | 11.7 | 39.8 |
| 11/16/2024 12:45 | 6.4 | 68.9 | 0.0 | 6.6 | 11.7 | 40.0 |
| 11/16/2024 13:00 | 6.4 | 68.2 | 0.0 | 6.6 | 11.7 | 39.7 |
| 11/16/2024 13:15 | 6.4 | 68.8 | 0.0 | 6.6 | 11.7 | 39.2 |
| 11/16/2024 13:30 | 6.4 | 68.5 | 0.0 | 6.6 | 11.7 | 39.9 |
| 11/16/2024 13:45 | 6.4 | 67.9 | 0.0 | 6.6 | 11.7 | 39.5 |
| 11/16/2024 14:00 | 6.4 | 68.4 | 0.0 | 6.6 | 11.7 | 39.9 |
| 11/16/2024 14:15 | 6.4 | 68.4 | 0.0 | 6.6 | 11.7 | 40.2 |
| 11/16/2024 14:30 | 6.4 | 68.6 | 0.0 | 6.6 | 11.7 | 40.1 |
| 11/16/2024 14:45 | 6.4 | 68.3 | 0.0 | 6.6 | 11.7 | 40.1 |
| 11/16/2024 15:00 | 6.4 | 68.3 | 0.0 | 6.7 | 11.7 | 40.3 |
| 11/16/2024 15:15 | 6.3 | 68.2 | 0.0 | 6.7 | 11.7 | 39.5 |
| 11/16/2024 15:30 | 6.4 | 68.8 | 0.0 | 6.7 | 11.7 | 41.3 |
| 11/16/2024 15:45 | 6.3 | 68.2 | 0.0 | 6.7 | 11.8 | 40.8 |
| 11/16/2024 16:00 | 6.3 | 68.1 | 0.0 | 6.7 | 11.8 | 40.7 |
| 11/16/2024 16:15 | 6.3 | 67.1 | 0.0 | 6.7 | 11.8 | 40.8 |
| 11/16/2024 16:30 | 6.3 | 66.8 | 0.0 | 6.7 | 11.8 | 41.0 |
| 11/16/2024 16:45 | 6.3 | 66.0 | 0.0 | 6.7 | 11.8 | 41.1 |
| 11/16/2024 17:00 | 6.2 | 66.0 | 0.0 | 6.8 | 11.9 | 42.2 |
| 11/16/2024 17:15 | 6.2 | 66.5 | 0.0 | 6.8 | 11.9 | 41.1 |
| 11/16/2024 17:30 | 6.2 | 66.8 | 0.0 | 6.8 | 11.8 | 42.0 |
| 11/16/2024 17:45 | 6.3 | 68.4 | 0.0 | 6.8 | 11.8 | 41.7 |
| 11/16/2024 18:00 | 6.3 | 69.3 | 0.0 | 6.8 | 11.8 | 41.9 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11/16/2024 18:15 | 5.1 | 36.0 | 0.0 | 7.3 | 11.4 | 1.2 |
| 11/16/2024 18:30 | 5.1 | 39.1 | 0.0 | 7.3 | 11.3 | 2.4 |
| 11/16/2024 18:45 | 5.1 | 38.4 | 0.0 | 7.3 | 11.3 | 0.0 |
| 11/16/2024 19:00 | 5.1 | 38.5 | 0.0 | 7.3 | 11.3 | 0.4 |
| 11/16/2024 19:15 | 5.1 | 37.7 | 0.0 | 7.2 | 11.2 | 1.8 |
| 11/16/2024 19:30 | 5.1 | 38.4 | 0.0 | 7.3 | 11.2 | 0.1 |
| 11/16/2024 19:45 | 5.1 | 37.3 | 0.0 | 7.2 | 11.2 | 0.1 |
| 11/16/2024 20:00 | 5.1 | 37.1 | 0.0 | 7.3 | 11.2 | 0.9 |
| 11/16/2024 20:15 | 5.0 | 36.4 | 0.0 | 7.3 | 11.3 | 0.2 |
| 11/16/2024 20:30 | 5.0 | 36.4 | 0.0 | 7.3 | 11.2 | 0.9 |
| 11/16/2024 20:45 | 5.0 | 36.0 | 0.0 | 7.3 | 11.3 | 0.0 |
| 11/16/2024 21:00 | 5.0 | 35.8 | 0.0 | 7.2 | 11.3 | 1.2 |
| 11/16/2024 21:15 | 5.0 | 35.5 | 0.0 | 7.2 | 11.3 | 1.1 |
| 11/16/2024 21:30 | 4.9 | 35.6 | 0.0 | 7.3 | 11.3 | 1.6 |
| 11/16/2024 21:45 | 4.9 | 35.6 | 0.0 | 7.3 | 11.3 | 0.6 |
| 11/16/2024 22:00 | 4.9 | 35.5 | 0.0 | 7.3 | 11.3 | 0.8 |
| 11/16/2024 22:15 | 4.9 | 35.2 | 0.0 | 7.3 | 11.3 | 0.9 |
| 11/16/2024 22:30 | 4.8 | 35.3 | 0.0 | 7.3 | 11.3 | 0.8 |
| 11/16/2024 22:45 | 4.8 | 35.2 | 0.0 | 7.2 | 11.3 | 1.1 |
| 11/16/2024 23:00 | 4.8 | 35.1 | 0.0 | 7.3 | 11.3 | 1.5 |
| 11/16/2024 23:15 | 4.8 | 35.1 | 0.0 | 7.3 | 11.3 | 0.7 |
| 11/16/2024 23:30 | 4.8 | 35.0 | 0.0 | 7.3 | 11.4 | 0.6 |
| 11/16/2024 23:45 | 4.8 | 35.2 | 0.0 | 7.3 | 11.4 | 3.0 |
| 11/17/2024 0:00 | 4.7 | 35.1 | 0.0 | 7.3 | 11.4 | 1.1 |
| 11/17/2024 0:15 | 4.7 | 35.2 | 0.0 | 7.3 | 11.4 | 1.2 |
| 11/17/2024 0:30 | 4.7 | 35.1 | 0.0 | 7.3 | 11.4 | 0.2 |
| 11/17/2024 0:45 | 4.7 | 35.5 | 0.0 | 7.3 | 11.4 | 0.1 |
| 11/17/2024 1:00 | 4.7 | 35.3 | 0.0 | 7.3 | 11.4 | 1.1 |
| 11/17/2024 1:15 | 4.7 | 35.6 | 0.0 | 7.3 | 11.4 | 0.6 |
| 11/17/2024 1:30 | 4.7 | 35.7 | 0.0 | 7.3 | 11.4 | 0.5 |
| 11/17/2024 1:45 | 4.7 | 35.8 | 0.0 | 7.3 | 11.4 | 0.6 |
| 11/17/2024 2:00 | 4.7 | 35.7 | 0.0 | 7.3 | 11.4 | 0.3 |
| 11/17/2024 2:15 | 4.7 | 35.9 | 0.0 | 7.3 | 11.4 | 0.0 |
| 11/17/2024 2:30 | 4.7 | 35.9 | 0.0 | 7.3 | 11.4 | 1.0 |
| 11/17/2024 2:45 | 4.6 | 36.7 | 0.0 | 7.3 | 11.4 | 0.4 |
| 11/17/2024 3:00 | 4.6 | 36.9 | 0.0 | 7.3 | 11.4 | 1.2 |
| 11/17/2024 3:15 | 4.6 | 36.1 | 0.0 | 7.3 | 11.4 | 3.2 |
| 11/17/2024 3:30 | 4.6 | 35.9 | 0.0 | 7.3 | 11.4 | 0.2 |
| 11/17/2024 3:45 | 4.6 | 35.6 | 0.0 | 7.3 | 11.4 | 1.6 |
| 11/17/2024 4:00 | 4.6 | 35.6 | 0.0 | 7.3 | 11.4 | 0.0 |
| 11/17/2024 4:15 | 4.6 | 35.3 | 0.0 | 7.3 | 11.4 | 1.8 |
| 11/17/2024 4:30 | 4.6 | 35.1 | 0.0 | 7.3 | 11.4 | 1.2 |
| 11/17/2024 4:45 | 4.6 | 35.3 | 0.0 | 7.3 | 11.4 | 0.5 |
| 11/17/2024 5:00 | 4.6 | 35.1 | 0.0 | 7.3 | 11.4 | 0.0 |
| 11/17/2024 5:15 | 4.7 | 35.1 | 0.0 | 7.3 | 11.4 | 0.0 |
| 11/17/2024 5:30 | 4.7 | 35.1 | 0.0 | 7.3 | 11.4 | 1.7 |
| 11/17/2024 5:45 | 4.7 | 35.1 | 0.0 | 7.3 | 11.4 | 0.1 |
| 11/17/2024 6:00 | 4.7 | 34.6 | 0.0 | 7.3 | 11.4 | 0.1 |
| 11/17/2024 6:15 | 4.6 | 34.2 | 0.0 | 7.3 | 11.4 | 0.6 |
| 11/17/2024 6:30 | 4.6 | 34.0 | 0.0 | 7.4 | 11.5 | 0.0 |
| 11/17/2024 6:45 | 4.6 | 34.2 | 0.0 | 7.4 | 11.5 | 0.4 |
| 11/17/2024 7:00 | 4.6 | 36.5 | 0.0 | 7.4 | 11.5 | 1.1 |
| 11/17/2024 7:15 | 4.6 | 33.7 | 0.0 | 7.4 | 11.5 | 0.0 |
| 11/17/2024 7:30 | 4.6 | 33.8 | 0.0 | 7.4 | 11.5 | 1.0 |
| 11/17/2024 7:45 | 4.6 | 33.8 | 0.0 | 7.4 | 11.5 | 0.6 |
| 11/17/2024 8:00 | 4.6 | 34.8 | 0.0 | 7.4 | 11.5 | 0.5 |
| 11/17/2024 8:15 | 4.6 | 34.0 | 0.0 | 7.4 | 11.5 | 0.6 |
| 11/17/2024 8:30 | 4.6 | 33.9 | 0.0 | 7.4 | 11.5 | 0.1 |
| 11/17/2024 8:45 | 4.6 | 33.9 | 0.0 | 7.4 | 11.5 | 0.6 |
| 11/17/2024 9:00 | 4.6 | 34.4 | 0.0 | 7.4 | 11.5 | 0.1 |
| 11/17/2024 9:15 | 4.6 | 35.1 | 0.0 | 7.4 | 11.5 | 0.2 |
| 11/17/2024 9:30 | 4.6 | 35.7 | 0.0 | 7.4 | 11.5 | 0.2 |
| 11/17/2024 9:45 | 4.7 | 37.0 | 0.0 | 7.4 | 11.4 | 0.6 |
| 11/17/2024 10:00 | 4.7 | 37.1 | 0.0 | 7.4 | 11.4 | 0.0 |
| 11/17/2024 10:15 | 4.7 | 37.0 | 0.0 | 7.3 | 11.4 | 0.0 |
| 11/17/2024 10:30 | 4.7 | 36.6 | 0.0 | 7.4 | 11.4 | 0.0 |
| 11/17/2024 10:45 | 4.8 | 37.0 | 0.0 | 7.3 | 11.4 | 0.1 |
| 11/17/2024 11:00 | 4.8 | 36.9 | 0.0 | 7.3 | 11.3 | 0.0 |
| 11/17/2024 11:15 | 4.9 | 37.1 | 0.0 | 7.3 | 11.3 | 1.3 |
| 11/17/2024 11:30 | 4.9 | 37.0 | 0.0 | 7.3 | 11.3 | 0.1 |
| 11/17/2024 11:45 | 4.9 | 36.5 | 0.0 | 7.3 | 11.3 | 0.5 |
| 11/17/2024 12:00 | 4.9 | 38.0 | 0.0 | 7.3 | 11.3 | 0.0 |
| 11/17/2024 12:15 | 4.9 | 37.0 | 0.0 | 7.3 | 11.3 | 0.0 |
| 11/17/2024 12:30 | 4.9 | 36.7 | 0.0 | 7.4 | 11.3 | 0.0 |
| 11/17/2024 12:45 | 5.0 | 36.4 | 0.0 | 7.4 | 11.3 | 0.0 |
| 11/17/2024 13:00 | 5.0 | 36.2 | 0.0 | 7.3 | 11.3 | 0.3 |
| 11/17/2024 13:15 | 5.1 | 36.3 | 0.0 | 7.4 | 11.3 | 0.0 |
| 11/17/2024 13:30 | 5.1 | 36.4 | 0.0 | 7.4 | 11.3 | 0.0 |
| 11/17/2024 13:45 | 5.1 | 36.1 | 0.0 | 7.3 | 11.3 | 0.0 |
| 11/17/2024 14:00 | 5.1 | 36.4 | 0.0 | 7.4 | 11.3 | 0.0 |
| 11/17/2024 14:15 | 5.2 | 36.3 | 0.0 | 7.3 | 11.3 | 0.2 |
| 11/17/2024 14:30 | 5.2 | 36.3 | 0.0 | 7.4 | 11.3 | 0.0 |
| 11/17/2024 14:45 | 5.2 | 36.2 | 0.0 | 7.3 | 11.3 | 0.0 |
| 11/17/2024 15:00 | 5.2 | 36.0 | 0.0 | 7.3 | 11.3 | 0.0 |
| 11/17/2024 15:15 | 5.2 | 35.9 | 0.0 | 7.4 | 11.3 | 0.1 |
| 11/17/2024 15:30 | 5.2 | 36.0 | 0.0 | 7.4 | 11.3 | 0.0 |
| 11/17/2024 15:45 | 5.2 | 35.8 | 0.0 | 7.4 | 11.3 | 0.0 |
| 11/17/2024 16:00 | 5.2 | 36.0 | 0.0 | 7.3 | 11.3 | 0.0 |
| 11/17/2024 16:15 | 5.2 | 35.7 | 0.0 | 7.4 | 11.3 | 0.2 |
| 11/17/2024 16:30 | 5.2 | 35.8 | 0.0 | 7.4 | 11.3 | 0.0 |
| 11/17/2024 16:45 | 5.2 | 35.8 | 0.0 | 7.3 | 11.3 | 0.1 |
| 11/17/2024 17:00 | 5.2 | 35.8 | 0.0 | 7.4 | 11.3 | 0.0 |
| 11/17/2024 17:15 | 5.2 | 35.8 | 0.0 | 7.4 | 11.3 | 0.0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11/16/2024 18:15 | 6.3 | 72.4 | 0.0 | 6.7 | 11.7 | 41.7 |
| 11/16/2024 18:30 | 6.4 | 72.8 | 0.0 | 6.6 | 11.6 | 39.3 |
| 11/16/2024 18:45 | 6.4 | 74.4 | 0.0 | 6.6 | 11.5 | 41.2 |
| 11/16/2024 19:00 | 6.4 | 75.4 | 0.0 | 6.6 | 11.5 | 41.7 |
| 11/16/2024 19:15 | 6.3 | 72.4 | 0.0 | 6.6 | 11.5 | 42.9 |
| 11/16/2024 19:30 | 6.3 | 72.4 | 0.0 | 6.6 | 11.6 | 42.7 |
| 11/16/2024 19:45 | 6.3 | 71.3 | 0.0 | 6.6 | 11.6 | 44.4 |
| 11/16/2024 20:00 | 6.3 | 71.1 | 0.0 | 6.6 | 11.6 | 43.8 |
| 11/16/2024 20:15 | 6.2 | 69.7 | 0.0 | 6.6 | 11.6 | 44.5 |
| 11/16/2024 20:30 | 6.2 | 69.3 | 0.0 | 6.6 | 11.6 | 44.1 |
| 11/16/2024 20:45 | 6.2 | 70.1 | 0.0 | 6.6 | 11.6 | 44.5 |
| 11/16/2024 21:00 | 6.2 | 68.5 | 0.0 | 6.6 | 11.6 | 44.0 |
| 11/16/2024 21:15 | 6.1 | 68.1 | 0.0 | 6.6 | 11.7 | 45.3 |
| 11/16/2024 21:30 | 6.1 | 68.4 | 0.0 | 6.6 | 11.7 | 44.2 |
| 11/16/2024 21:45 | 6.1 | 69.3 | 0.0 | 6.6 | 11.7 | 42.2 |
| 11/16/2024 22:00 | 6.1 | 68.2 | 0.0 | 6.6 | 11.7 | 45.3 |
| 11/16/2024 22:15 | 6.0 | 67.8 | 0.0 | 6.6 | 11.7 | 43.7 |
| 11/16/2024 22:30 | 6.0 | 68.9 | 0.0 | 6.6 | 11.7 | 43.1 |
| 11/16/2024 22:45 | 6.0 | 68.5 | 0.0 | 6.6 | 11.7 | 41.4 |
| 11/16/2024 23:00 | 6.0 | 69.2 | 0.0 | 6.7 | 11.7 | 43.0 |
| 11/16/2024 23:15 | 6.0 | 68.7 | 0.0 | 6.7 | 11.7 | 44.6 |
| 11/16/2024 23:30 | 5.9 | 67.8 | 0.0 | 6.7 | 11.7 | 43.4 |
| 11/16/2024 23:45 | 5.9 | 67.9 | 0.0 | 6.7 | 11.7 | 44.4 |
| 11/17/2024 0:00 | 5.9 | 67.9 | 0.0 | 6.7 | 11.7 | 44.7 |
| 11/17/2024 0:15 | 5.9 | 68.1 | 0.0 | 6.7 | 11.7 | 43.9 |
| 11/17/2024 0:30 | 5.9 | 67.7 | 0.0 | 6.7 | 11.8 | 43.8 |
| 11/17/2024 0:45 | 5.9 | 68.8 | 0.0 | 6.7 | 11.7 | 44.4 |
| 11/17/2024 1:00 | 5.9 | 68.4 | 0.0 | 6.7 | 11.7 | 44.7 |
| 11/17/2024 1:15 | 5.9 | 68.0 | 0.0 | 6.7 | 11.8 | 44.5 |
| 11/17/2024 1:30 | 5.9 | 67.8 | 0.0 | 6.7 | 11.8 | 45.2 |
| 11/17/2024 1:45 | 5.9 | 68.2 | 0.0 | 6.7 | 11.8 | 44.7 |
| 11/17/2024 2:00 | 5.8 | 67.7 | 0.0 | 6.7 | 11.8 | 44.2 |
| 11/17/2024 2:15 | 5.8 | 68.4 | 0.0 | 6.7 | 11.8 | 45.7 |
| 11/17/2024 2:30 | 5.8 | 68.6 | 0.0 | 6.7 | 11.8 | 45.1 |
| 11/17/2024 2:45 | 5.8 | 68.1 | 0.0 | 6.7 | 11.8 | 45.8 |
| 11/17/2024 3:00 | 5.8 | 68.2 | 0.0 | 6.7 | 11.8 | 44.4 |
| 11/17/2024 3:15 | 5.8 | 68.4 | 0.0 | 6.7 | 11.8 | 44.5 |
| 11/17/2024 3:30 | 5.8 | 67.9 | 0.0 | 6.7 | 11.8 | 45.0 |
| 11/17/2024 3:45 | 5.8 | 68.0 | 0.0 | 6.7 | 11.8 | 45.2 |
| 11/17/2024 4:00 | 5.8 | 67.9 | 0.0 | 6.7 | 11.8 | 45.6 |
| 11/17/2024 4:15 | 5.8 | 67.5 | 0.0 | 6.7 | 11.8 | 44.5 |
| 11/17/2024 4:30 | 5.8 | 67.5 | 0.0 | 6.7 | 11.8 | 45.4 |
| 11/17/2024 4:45 | 5.8 | 68.0 | 0.0 | 6.7 | 11.8 | 45.4 |
| 11/17/2024 5:00 | 5.8 | 67.8 | 0.0 | 6.7 | 11.8 | 45.7 |
| 11/17/2024 5:15 | 5.8 | 67.4 | 0.0 | 6.7 | 11.8 | 45.8 |
| 11/17/2024 5:30 | 5.8 | 67.5 | 0.0 | 6.7 | 11.8 | 45.8 |
| 11/17/2024 5:45 | 5.8 | 67.1 | 0.0 | 6.7 | 11.8 | 45.7 |
| 11/17/2024 6:00 | 5.8 | 66.7 | 0.0 | 6.7 | 11.8 | 46.2 |
| 11/17/2024 6:15 | 5.8 | 66.0 | 0.0 | 6.7 | 11.8 | 45.9 |
| 11/17/2024 6:30 | 5.8 | 65.2 | 0.0 | 6.7 | 11.9 | 46.2 |
| 11/17/2024 6:45 | 5.8 | 64.8 | 0.0 | 6.8 | 11.9 | 45.8 |
| 11/17/2024 7:00 | 5.8 | 64.7 | 0.0 | 6.8 | 11.9 | 45.9 |
| 11/17/2024 7:15 | 5.8 | 64.7 | 0.0 | 6.8 | 11.9 | 45.6 |
| 11/17/2024 7:30 | 5.8 | 64.6 | 0.0 | 6.8 | 11.9 | 44.2 |
| 11/17/2024 7:45 | 5.8 | 64.8 | 0.0 | 6.8 | 11.9 | 45.8 |
| 11/17/2024 8:00 | 5.8 | 64.8 | 0.0 | 6.8 | 11.9 | 46.0 |
| 11/17/2024 8:15 | 5.8 | 64.7 | 0.0 | 6.8 | 11.9 | 45.3 |
| 11/17/2024 8:30 | 5.8 | 64.8 | 0.0 | 6.8 | 12.0 | 46.8 |
| 11/17/2024 8:45 | 5.7 | 64.9 | 0.0 | 6.8 | 12.0 | 45.8 |
| 11/17/2024 9:00 | 5.8 | 66.1 | 0.0 | 6.8 | 11.9 | 47.5 |
| 11/17/2024 9:15 | 5.8 | 67.5 | 0.0 | 6.8 | 11.9 | 46.5 |
| 11/17/2024 9:30 | 5.8 | 69.1 | 0.0 | 6.8 | 11.9 | 46.3 |
| 11/17/2024 9:45 | 5.9 | 70.8 | 0.0 | 6.8 | 11.8 | 47.3 |
| 11/17/2024 10:00 | 5.9 | 70.1 | 0.0 | 6.8 | 11.8 | 46.2 |
| 11/17/2024 10:15 | 5.9 | 70.0 | 0.0 | 6.7 | 11.8 | 47.8 |
| 11/17/2024 10:30 | 6.0 | 71.8 | 0.0 | 6.7 | 11.7 | 47.5 |
| 11/17/2024 10:45 | 6.1 | 72.5 | 0.0 | 6.6 | 11.6 | 46.5 |
| 11/17/2024 11:00 | 6.1 | 72.8 | 0.0 | 6.6 | 11.6 | 45.6 |
| 11/17/2024 11:15 | 6.1 | 72.3 | 0.0 | 6.6 | 11.6 | 47.0 |
| 11/17/2024 11:30 | 6.1 | 71.1 | 0.0 | 6.6 | 11.6 | 49.4 |
| 11/17/2024 11:45 | 6.1 | 70.9 | 0.0 | 6.6 | 11.6 | 48.7 |
| 11/17/2024 12:00 | 6.1 | 69.6 | 0.0 | 6.6 | 11.7 | 49.2 |
| 11/17/2024 12:15 | 6.2 | 69.9 | 0.0 | 6.7 | 11.7 | 52.3 |
| 11/17/2024 12:30 | 6.2 | 69.1 | 0.0 | 6.7 | 11.7 | 47.9 |
| 11/17/2024 12:45 | 6.2 | 69.3 | 0.0 | 6.7 | 11.7 | 48.7 |
| 11/17/2024 13:00 | 6.3 | 69.4 | 0.0 | 6.7 | 11.7 | 49.5 |
| 11/17/2024 13:15 | 6.3 | 69.6 | 0.0 | 6.7 | 11.7 | 49.2 |
| 11/17/2024 13:30 | 6.4 | 68.9 | 0.0 | 6.7 | 11.7 | 49.2 |
| 11/17/2024 13:45 | 6.4 | 69.4 | 0.0 | 6.7 | 11.7 | 46.1 |
| 11/17/2024 14:00 | 6.4 | 69.7 | 0.0 | 6.7 | 11.7 | 47.9 |
| 11/17/2024 14:15 | 6.4 | 69.4 | 0.0 | 6.7 | 11.7 | 46.3 |
| 11/17/2024 14:30 | 6.4 | 68.8 | 0.0 | 6.7 | 11.7 | 48.8 |
| 11/17/2024 14:45 | 6.4 | 69.1 | 0.0 | 6.7 | 11.7 | 49.2 |
| 11/17/2024 15:00 | 6.4 | 68.3 | 0.0 | 6.7 | 11.7 | 49.3 |
| 11/17/2024 15:15 | 6.4 | 68.4 | 0.0 | 6.7 | 11.7 | 49.2 |
| 11/17/2024 15:30 | 6.4 | 68.6 | 0.0 | 6.7 | 11.7 | 49.3 |
| 11/17/2024 15:45 | 6.4 | 68.6 | 0.0 | 6.7 | 11.7 | 49.0 |
| 11/17/2024 16:00 | 6.4 | 68.8 | 0.0 | 6.7 | 11.7 | 46.2 |
| 11/17/2024 16:15 | 6.4 | 68.5 | 0.0 | 6.7 | 11.7 | 49.2 |
| 11/17/2024 16:30 | 6.4 | 68.7 | 0.0 | 6.7 | 11.7 | 49.8 |
| 11/17/2024 16:45 | 6.4 | 68.0 | 0.0 | 6.7 | 11.7 | 49.3 |
| 11/17/2024 17:00 | 6.4 | 67.9 | 0.0 | 6.8 | 11.7 | 49.3 |
| 11/17/2024 17:15 | 6.4 | 67.9 | 0.0 | 6.8 | 11.7 | 50.3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11/17/2024 17:30 | 5.2 | 35.9 | 0.0 | 7.4 | 11.3 | 3.7 |
| 11/17/2024 17:45 | 5.2 | 35.7 | 0.0 | 7.4 | 11.3 | 0.1 |
| 11/17/2024 18:00 | 5.2 | 37.0 | 0.0 | 7.3 | 11.3 | 0.0 |
| 11/17/2024 18:15 | 5.2 | 37.2 | 0.0 | 7.4 | 11.3 | 0.0 |
| 11/17/2024 18:30 | 5.2 | 36.7 | 0.0 | 7.4 | 11.3 | 0.0 |
| 11/17/2024 18:45 | 5.2 | 36.9 | 0.0 | 7.4 | 11.3 | 0.0 |
| 11/17/2024 19:00 | 5.2 | 37.5 | 0.0 | 7.4 | 11.3 | 0.0 |
| 11/17/2024 19:15 | 5.3 | 38.4 | 0.0 | 7.4 | 11.2 | 0.0 |
| 11/17/2024 19:30 | 5.3 | 38.3 | 0.0 | 7.4 | 11.2 | 0.0 |
| 11/17/2024 19:45 | 5.3 | 38.6 | 0.0 | 7.3 | 11.2 | 0.0 |
| 11/17/2024 20:00 | 5.3 | 38.8 | 0.0 | 7.3 | 11.2 | 0.0 |
| 11/17/2024 20:15 | 5.3 | 38.3 | 0.0 | 7.3 | 11.2 | 0.0 |
| 11/17/2024 20:30 | 5.3 | 37.9 | 0.0 | 7.3 | 11.2 | 0.0 |
| 11/17/2024 20:45 | 5.3 | 38.0 | 0.0 | 7.3 | 11.2 | 0.0 |
| 11/17/2024 21:00 | 5.3 | 37.9 | 0.0 | 7.2 | 11.1 | 0.0 |
| 11/17/2024 21:15 | 5.2 | 37.6 | 0.0 | 7.3 | 11.2 | 0.1 |
| 11/17/2024 21:30 | 5.2 | 37.9 | 0.0 | 7.3 | 11.1 | 0.2 |
| 11/17/2024 21:45 | 5.2 | 37.7 | 0.0 | 7.3 | 11.2 | 0.0 |
| 11/17/2024 22:00 | 5.2 | 37.2 | 0.0 | 7.3 | 11.2 | 0.0 |
| 11/17/2024 22:15 | 5.2 | 37.1 | 0.0 | 7.3 | 11.2 | 0.0 |
| 11/17/2024 22:30 | 5.2 | 37.3 | 0.0 | 7.3 | 11.2 | 0.0 |
| 11/17/2024 22:45 | 5.2 | 37.0 | 0.0 | 7.3 | 11.2 | 0.5 |
| 11/17/2024 23:00 | 5.1 | 37.0 | 0.0 | 7.3 | 11.2 | 0.5 |
| 11/17/2024 23:15 | 5.1 | 36.9 | 0.0 | 7.3 | 11.2 | 0.0 |
| 11/17/2024 23:30 | 5.1 | 36.8 | 0.0 | 7.3 | 11.2 | 0.0 |
| 11/17/2024 23:45 | 5.1 | 37.1 | 0.0 | 7.3 | 11.2 | 0.4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11/17/2024 17:30 | 6.4 | 67.9 | 0.0 | 6.8 | 11.8 | 48.9 |
| 11/17/2024 17:45 | 6.4 | 67.8 | 0.0 | 6.8 | 11.8 | 46.5 |
| 11/17/2024 18:00 | 6.4 | 68.9 | 0.0 | 6.8 | 11.7 | 49.2 |
| 11/17/2024 18:15 | 6.4 | 70.1 | 0.0 | 6.8 | 11.7 | 50.3 |
| 11/17/2024 18:30 | 6.4 | 70.2 | 0.0 | 6.8 | 11.7 | 50.5 |
| 11/17/2024 18:45 | 6.4 | 70.2 | 0.0 | 6.8 | 11.7 | 50.5 |
| 11/17/2024 19:00 | 6.5 | 72.1 | 0.0 | 6.7 | 11.6 | 50.2 |
| 11/17/2024 19:15 | 6.5 | 73.6 | 0.0 | 6.7 | 11.5 | 51.0 |
| 11/17/2024 19:30 | 6.5 | 74.2 | 0.0 | 6.7 | 11.5 | 50.5 |
| 11/17/2024 19:45 | 6.5 | 73.0 | 0.0 | 6.6 | 11.4 | 51.6 |
| 11/17/2024 20:00 | 6.5 | 73.2 | 0.0 | 6.6 | 11.5 | 49.5 |
| 11/17/2024 20:15 | 6.5 | 72.4 | 0.0 | 6.6 | 11.5 | 51.7 |
| 11/17/2024 20:30 | 6.5 | 71.9 | 0.0 | 6.7 | 11.5 | 51.3 |
| 11/17/2024 20:45 | 6.5 | 71.8 | 0.0 | 6.7 | 11.5 | 51.9 |
| 11/17/2024 21:00 | 6.4 | 71.6 | 0.0 | 6.7 | 11.5 | 51.7 |
| 11/17/2024 21:15 | 6.4 | 71.5 | 0.0 | 6.7 | 11.5 | 52.4 |
| 11/17/2024 21:30 | 6.4 | 70.8 | 0.0 | 6.7 | 11.5 | 51.5 |
| 11/17/2024 21:45 | 6.4 | 70.5 | 0.0 | 6.7 | 11.6 | 53.5 |
| 11/17/2024 22:00 | 6.4 | 70.2 | 0.0 | 6.7 | 11.6 | 53.2 |
| 11/17/2024 22:15 | 6.4 | 70.5 | 0.0 | 6.7 | 11.6 | 52.9 |
| 11/17/2024 22:30 | 6.4 | 70.2 | 0.0 | 6.7 | 11.6 | 53.3 |
| 11/17/2024 22:45 | 6.3 | 70.1 | 0.0 | 6.7 | 11.6 | 52.8 |
| 11/17/2024 23:00 | 6.3 | 70.7 | 0.0 | 6.7 | 11.6 | 53.2 |
| 11/17/2024 23:15 | 6.3 | 69.7 | 0.0 | 6.7 | 11.6 | 53.0 |
| 11/17/2024 23:30 | 6.3 | 70.4 | 0.0 | 6.7 | 11.6 | 53.1 |
| 11/17/2024 23:45 | 6.3 | 70.3 | 0.0 | 6.7 | 11.6 | 52.9 |

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

# Woodfibre Site Sample Analysis

| TRITON | Sample ID | | | | | WQAG EOP | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | LAB ID | Reviewed and signed off by: Fanchiel Shidlo Ph.D., R.P.Bio. | | | | VA24D0960-002 | | | | |
| | Date Sampled | | | | | 14-Nov-2024 | | | | |
| | Time Sampled | | | | | 10:35 | | | | |
| Analyte | Units | FAL-ST [1,2] | FAL-LT [1,2] | WAL-ST [1] | WAL-LT [1,2] | Water | Sample or value notes | BCMQ FAL - Short Term | BCMQ FAL - Long Term | BCMQ WAL - Short Term | BCMQ WAL - Long Term |
| | | | | | | N/A | | | Guideline notes | | |
| **In Situ Parameters** | | | | | | | | | | | |
| pH (field) | pH units | 6.5-9.0 | 6.5-9.0 | 7.0-8.7 | 7.0-8.7 | 7.66 | | If natural pH < 6.5, no statistically significant decrease from background. No restriction in increase except in areas with unique flora that are adapted to naturally low pH conditions. If natural pH > 9.0, no natural pH > 9.0, no statistically significant increase from background. Refer to BC Water Quality Guidelines for more information. | | Unrestricted change within this range (for protection of mollusc embryo development). | |
| Temperature (field) | °C | Multiple guidelines dependent on water use and species, see notes: Short-term daily temperature < 15°C, or Mean Weekly Max Temperature guideline range for most sensitive salmonid species present, or Short-term daily temperature is 19°C, or Max +/- from BAG 1°C | - | Max +/- from BAG 1°C | - | 10.1 | | Guideline is species-dependent. Short-term daily temperature is 15°C for streams with Bull Trout or Arctic Grayling Values. Max +/- 1°C from the upstream range as shown in Table 4(b) of the BCWQG for aquatic life for all other species. Short-term daily temperature is 19°C for streams with unknown fish distribution, or Max +/- 1°C from background. Refer to footnote 4 for background temperature range for East Creek. | | Guideline for marine waters are based on natural ambient conditions. Refer to footnote 4 for background temperature range for East Creek.<br>Calculation: US value +/- 1 = guideline range | |
| Conductivity (field) | µS/cm | - | - | - | - | 139 | | | | | |
| Turbidity (field) | NTU | Varies with background, see note US1 (background) guideline = 12.4 | Varies with background, see note US1 (background) guideline = 4.15<br>5-week discrete sampling average = 4.6 (EOP) | Varies with background, see note US1 (background) guideline = 12.4 | Varies with background, see note US1 (background) guideline = 4.15<br>5-week discrete sampling average = 4.6 (EOP) | 0.90 | | Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters.<br>Calculation: US value + 8 = DS guideline<br>Change from background of 8 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters.<br>Calculation: US value + 8 = DS guideline<br>Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters.<br>Calculation: US value + 10 = DS guideline | Change from background of 2 NTU at any one time for 30 days in clear flows.<br>Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling. | Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters.<br>Calculation: US value + 5 = DS guideline<br>Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters.<br>Calculation: US value + 10 = DS guideline | Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters.<br>Calculation: US value + 8 = DS guideline<br>Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters.<br>Calculation: US value + 10 = DS guideline<br>Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters.<br>Calculation: US value + 10% = DS guideline |
| Dissolved Oxygen (field) | mg/L | Varies with life stage, see note | Varies with life stage, see note | Varies with life stage, see note | Varies with life stage, see note | - | | Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information. | Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L. Refer to BC Water Quality Guidelines for more information. | Buried embryo/alevin minimum 9 mg/L, all other life stages 2 mg/L. Refer to BC Water Quality Guidelines for more information. | Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L. Refer to BC Water Quality Guidelines for more information. |
| **General Parameters** | | | | | | | | | | | |
| Hardness (as CaCO3 + Hyper) | mg/L | - | - | - | - | 54.8 | | | | | |
| Total Dissolved Solids | mg/L | - | - | - | - | 81 | | | | | |
| Total Suspended Solids | mg/L | Varies with background, see note US1 (background) guideline = 28 | Varies with background, see note US1 (background) guideline = 8.65<br>5-week discrete sampling average = 8.65 (EOP) | Varies with background, see note US1 (background) guideline = 28 | Varies with background, see note US1 (background) guideline = 8.65<br>5-week discrete sampling average = 8.65 (EOP) | < 3.0 | | Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters.<br>Calculation: US value + 25 = DS guideline<br>Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters.<br>Calculation: US value + 10 = DS guideline<br>Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters.<br>Calculation: US value + 10% = DS guideline | Change from background of 5 mg/L @ one time for a duration of 30 days in clear flow.<br>Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling. | Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters.<br>Calculation: US value + 25 = DS guideline<br>Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters.<br>Calculation: US value + 10 = DS guideline<br>Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters.<br>Calculation: US value + 10% = DS guideline | Change from background of 5 mg/L @ one time for a duration of 30 days in clear flow.<br>Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling. |
| Dissolved Organic Carbon (DOC) | mg/L | - | - | - | - | < 0.50 | | | Long-term US-dist median within 20% of backmeasured median ? | | |
| Total Alkalinity ($CaCO_3$) | mg/L | - | Categorical | - | - | 55.1 | | | Guideline is for alkalinity (as CaCO3) and categorizes the sensitivity of a water body to acid inputs. Alkalinity < 10 mg/L is considered highly sensitive to acid inputs; 10 - 20 mg/L is considered moderately sensitive to acid inputs; > 20 mg/L is considered low sensitivity. | | |
| Total Sulfide (as S) | mg/L | - | - | - | - | < 0.0015 | | | | | |
| Total Sulfide (unionized as $H_2S$) | mg/L | - | 0.002 | - | - | < 0.0015 | | | Working guideline | | |
| Total Sulfide (as H2S) | mg/L | - | - | - | - | < 0.0016 | | | | | |
| **Anions and Nutrients** | | | | | | | | | | | |
| Ammonia | mg/L ammonia-N | Varies with pH and temperature. See note.<br>Guideline = 16.2 | Varies with pH and temperature. See note.<br>Guideline = 1.84 | Varies with pH and temperature. See note.<br>Guideline = 52 | Varies with pH, temperature and salinity. See note.<br>Guideline = 12.0 | 0.0105 | | Guideline for ammonia as N and is pH and temperature-dependent. Refer to Table 27B in BC WQG for guideline values. | Guideline for ammonia as N and is pH and temperature-dependent. Refer to Table 27C in BC WQG for guideline values. | Guideline for ammonia as N. Guideline is pH, temperature and salinity-dependent. Refer to Table 27E in BC WQG for guideline values. | Guideline for ammonia as N. Guideline is pH, temperature and salinity-dependent. Refer to Table 27F in BC WQG for guideline values. |
| Bromide | mg/L | - | - | - | - | < 0.050 | | | | | |
| Chloride | mg/L | 600 | 150 | +/- 10% from BAG<br>US1 (background) = 0.75 mg/L | +/- 10% from BAG<br>US1 (background) 5-week average = 2.00<br>EOP 5-week average = 2.15 | 1.14 | | | | Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride expected at that time and depth. | Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride expected at that time and depth. |
| Fluoride | mg/L | Varies with hardness<br>US1 (background) guideline = 0.289 | - | 1.5 | - | 0.188 | | Guideline has interim status.<br>Guideline is calculated with the following equation: Guideline = [ -(3.31 * LN(hardness)) + 20.291 ] / 1000 | | | |
| Nitrate (as N) | mg/L | 32.8 | 3 | - | 3.7 | 0.0122 | | | | | |
| Nitrite (as N) | mg/L | Varies with chloride. Table 27B, see note<br>US1 (background) guideline = 0.06 | Varies with chloride. Table 27B, see note<br>US1 (background) guideline = 0.06 | - | - | < 0.0010 | | Varies with chloride. Refer to Table 27B in BC WQG for guideline values. | Varies with chloride. Refer to Table 27B in BC WQG for guideline values. | | |
| Sulfate (as $SO_4$) | mg/L | - | Varies with hardness. See note.<br>US1 (background) guideline = 128 | - | - | 4.33 | | | Guidelines for hardness ranges below:<br>Hardness 0 - 60 : 309<br>Hardness 31 - 75: 218<br>Hardness 76 - 180: 429<br>Hardness 181 - 250: 309 | | |
| **Total Metals** | | | | | | | | | | | |
| Aluminum (Al)-Total | mg/L | - | Varies, with pH, DOC, hardness<br>US1 (background) guideline = 0.107<br>5-week discrete sampling averages = 0.168 (EOP), 0.177 (US), 0.159 (DS) | - | - | 0.0175 | | | Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated with the following equation<br>Guideline = (EXP((0.046 * LN(DOC)) + 0.258 * LN(hardness) + 0.004 * pH) - 4.408) / 1000<br>If hardness or DOC is below the hardness range, the minimum hardness or DOC will be applied in the calculation. | | |
| Antimony (Sb)-Total | mg/L | 0.26 | 0.074 | - | - | 0.00026 | | | | | |
| Arsenic (As)-Total | mg/L | - | 0.085 | - | 0.0125 | 0.00177 | | | | | Interim guideline status |
| Barium (Ba)-Total | mg/L | - | 1 | - | - | 0.01162 | | | Working guideline status | | |
| Beryllium (Be)-Total | mg/L | - | 0.00013 | - | 0.100 | < 0.00010 | | | Working guideline status | | Working guideline status |
| Bismuth (Bi)-Total | mg/L | - | - | - | - | < 0.00005 | | | | | |
| Boron (B)-Total | mg/L | - | 1.2 | - | 1.2 | < 0.010 | | | | | |
| Cadmium (Cd)-Total | mg/L | - | - | - | 0.00012 | < 0.0000100 | | | | | Working guideline status |
| Calcium (Ca)-Total | mg/L | - | - | - | - | 20.4 | | | | | |
| Cesium (Cs)-Total | mg/L | - | - | - | - | < 0.00001 | | | | | |
| Chromium (Cr) - Total | mg/L | - | - | - | - | < 0.00050 | | | | | |
| Chromium (Cr(III)-Total | mg/L | - | 0.0089 | - | 0.056 | < 0.00050 | | | Working guideline status | | Working guideline status |
| Chromium (Cr(VI)-Total | mg/L | - | 0.0005 | - | 0.0015 | < 0.00050 | | | Working guideline status | | Working guideline status |
| Cobalt (Co)-Total | mg/L | 0.11 | 0.004 | - | - | < 0.00010 | | | | | |
| Copper (Cu)-Total | mg/L | - | - | 0.003 | 0.002<br>5-week discrete sampling averages = 0.00173 (EOP), 0.00216 (US), 0.00176 (DS) | < 0.00145 | | | | | |
| Iron (Fe)-Total | mg/L | 1 | - | - | - | 0.012 | | | | | |
| Lead (Pb)-Total | mg/L | - | - | 0.14 | 0.002<br>5-week discrete sampling averages = 0.00058 (EOP), 0.00070 (US), 0.00054 (DS) | 0.000372 | | | | | |
| Lithium (Li)-Total | mg/L | - | - | - | - | 0.005 | | | | | |
| Magnesium (Mg)-Total | mg/L | - | - | - | - | 5.948 | | | | | |
| Manganese (Mn)-Total | mg/L | Varies with hardness<br>US1 (background) guideline = 0.42 | Varies with hardness<br>US1 (background) guideline = 0.77<br>5-week discrete sampling averages = 0.0548 (EOP), 0.0541 (US), 0.0533 (DS) | - | - | 0.00092 | | Guideline varies with hardness. The guideline is calculated using the following equation:<br>Guideline = (0.0644 * hardness + 0.692)<br>Guideline applies to samples with hardness 25-250 mg/L. Lowest value for guideline is 0.81 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation. | Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. The guideline is calculated using the following equation:<br>Guideline = (EXP(0.336 * hardness + 0.655))<br>Guideline applies to samples with hardness 37-400 mg/L. Lowest value for guideline is 0.81 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation. | | |
| Mercury (Hg)-Total | mg/L | - | Varies with methyl mercury<br>US1 (background) guideline = NA | - | - | < 0.0000050 | | | When Methyl is 0.3% of total Hg, guideline is equal to 0.02 mg/L<br>Guideline = 0.1(Methylmercury); When Methyl is 0.3% of total Hg, guideline is equal to 0.02 mg/L | | |
| Molybdenum (Mo)-Total | mg/L | 46 | 7.6 | - | - | 0.0119 | | | | | |
| Nickel (Ni)-Total | mg/L | - | - | - | 0.098 | < 0.00050 | | | | | Working guideline status |
| Phosphorus (P)-Total | mg/L | - | 0.005 to 0.015 | - | - | < 0.003 | | | Guideline only applies to lakes with salmonid species being the dominant fish species. Guideline is for reference only and does not apply to this | | |
| Potassium (K)-Total | mg/L | - | - | - | - | 1.3 | | | | | |
| Rubidium (Rb)-Total | mg/L | - | - | - | - | 0.0027 | | | | | |
| Selenium (Se)-Total | mg/L | - | 0.002 | - | 0.002 | < 0.00005 | | | Guideline for freshwater aquatic life (water column). Alert concentration is 0.001 mg/L, with sequential sampling required to confirm exceedance of fish tissue. Refer to BC Water Quality Guidelines for more information on guidelines and sampling guidance. | | Guideline for marine aquatic life (water column). Alert concentration is 0.001 mg/L, with sequential sampling required to confirm exceedance of fish tissue. Refer to BC Water Quality Guidelines for more information on guidelines and sampling guidance. |
| Silicon (Si)-Total | mg/L | - | - | - | - | 5.46 | | | | | |
| Silver (Ag)-Total | mg/L | Varies with hardness, see note<br>US1 (background) guideline = 0.0001 | Varies with hardness, see note<br>US1 (background) guideline = 0.00005 | 0.003 | 0.0015 | < 0.000010 | | Varies with hardness<br>Guideline ranges:<br>Hardness < 100: 0.0001<br>Hardness > 100: 0.0003 | Varies with hardness<br>Guideline ranges:<br>Hardness < 100: 0.00005<br>Hardness > 100: 0.00015 | | Guideline applies to open coast and estuaries. Guideline is applicable to the EGP site. |
| Sodium (Na)-Total | mg/L | - | - | - | - | 3.16 | | | | | |
| Strontium (Sr)-Total | mg/L | - | - | - | - | 0.0366 | | | | | |
| Sulfur (S)-Total | mg/L | - | - | - | - | < 3 | | | | | |
| Tellurium (Te)-Total | mg/L | - | - | - | - | < 0.00020 | | | | | |
| Thallium (Tl)-Total | mg/L | - | 0.00003<br>5-week discrete sampling averages = 0.000013 (EOP), <0.000015 (US), <0.000041 (DS) | - | - | < 0.000010 | | | 30-day average, site-specific objective for the lower Columbia River, BC. Guideline is for reference only and does not apply to the EGP site. | | |
| Thorium (Th)-Total | mg/L | - | - | - | - | < 0.00010 | | | | | |
| Tin (Sn)-Total | mg/L | - | - | - | - | < 0.00005 | | | | | |
| Titanium (Ti)-Total | mg/L | - | - | - | - | < 0.00030 | | | | | |
| Tungsten (W)-Total | mg/L | - | - | - | - | < 0.00010 | | | | | |
| Uranium (U)-Total | mg/L | 0.0765 | 0.0075 | - | - | 0.00026 | | | Working guideline status | | |
| Vanadium (V)-Total | mg/L | - | 0.06 | - | 0.005 | < 0.00050 | | | | | Working guideline status |
| Zinc (Zn)-Total | mg/L | - | - | 0.055 | 0.010<br>5-week discrete sampling averages = 0.00564 (EOP), 0.00564 (US), 0.001 (DS) | < 0.0030 | | | | | |
| Zirconium (Zr)-Total | mg/L | - | - | - | - | < 0.00005 | | | | | |
| **Dissolved Metals** | | | | | | | | | | | |
| Aluminum (Al)-Dissolved | mg/L | - | - | - | - | 0.0064 | | | | | |
| Antimony (Sb)-Dissolved | mg/L | - | - | - | - | 0.00020 | | | | | |
| Arsenic (As)-Dissolved | mg/L | - | - | - | - | 0.00167 | | | | | |
| Barium (Ba)-Dissolved | mg/L | - | - | - | - | 0.01040 | | | | | |
| Beryllium (Be)-Dissolved | mg/L | - | - | - | - | < 0.00100 | | | | | |
| Bismuth (Bi)-Dissolved | mg/L | - | - | - | - | < 0.000050 | | | | | |
| Boron (B)-Dissolved | mg/L | - | - | - | - | < 0.010 | | | | | |
| Cadmium (Cd)-Dissolved | mg/L | Varies with hardness, see note<br>US1 (background) guideline = 0.00009 | Varies with hardness, see note<br>US1 (background) guideline = 0.000072<br>5-week discrete sampling averages = 0.000087 (EOP), 0.000091 (US), 0.000071 (DS) | - | - | < 0.0000030 | | Guideline is hardness dependent. Guideline is applicable to water hardness between 7.0 and 430 mg/L.<br>Guideline is calculated with the following formula:<br>Guideline = (EXP(1.017 * LN(hardness) - 3.031)) / 1000<br>Lowest value for guideline is 0.00003 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation | Guideline is hardness dependent. Guideline is applicable to hardness between 3.4 and 285 mg/L.<br>Guideline is calculated with the following formula:<br>Guideline = (EXP(0.734 * LN(hardness) - 3.543)) / 1000<br>Lowest value for guideline is 0.00003 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation | | |
| Calcium (Ca)-Dissolved | mg/L | - | Categorical, see note | - | - | 18.6 | | | Guideline categorizes the sensitivity of a water body to acid inputs (i.e buffering capacity). Standard is 4 mg/L dissolved Ca for the most sensitive waterbodies (< 3 mg/L for waterbodies with moderate sensitivity to acid inputs. Waterbodies with dissolved calcium > 8mg/L are considered to have low sensitivity to acid inputs. | | |
| Cesium (Cs)-Dissolved | mg/L | - | - | - | - | < 0.000010 | | | | | |
| Chromium (Cr)-Dissolved | mg/L | - | - | - | - | < 0.00050 | | | | | |
| Chromium (Cr(III)-Dissolved | mg/L | - | - | - | - | - | | | | | |
| Chromium (Cr(VI)-Dissolved | mg/L | - | - | - | - | - | | | | | |
| Cobalt (Co)-Dissolved | mg/L | - | - | - | - | < 0.00010 | | | | | |
| Copper (Cu)-Dissolved | mg/L | Guideline varies with other parameters, see note<br>US1 (background) guideline = 0.0039 | Guideline varies with other parameters, see note<br>US1 (background) guideline = 0.0008<br>5-week discrete sampling averages = 0.00167 (EOP), 0.00177 (US), 0.00125 (DS) | - | - | < 0.00108 | | Guideline varies with other parameters and is calculated using BC BLM software.<br>Simplified model: Temperature, pH, DOC and hardness<br>Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity<br>Guideline calculated using values for parameters above taken at the specific site on each sampling date. | Guideline varies with other parameters and is calculated using BC BLM software.<br>Simplified model: Temperature, pH, DOC and hardness<br>Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity<br>Guideline calculated using values for parameters above taken at the specific site on each sampling date. | | |
| Iron (Fe)-Dissolved | mg/L | 0.35 | - | - | - | < 0.010 | | | | | |
| Lead (Pb)-Dissolved | mg/L | - | Guideline varies with DOC and hardness<br>Guideline: 0.0033<br>5-week discrete sampling averages = 0.00064 (EOP), 0.00066 (US), <0.00050 (DS) | - | - | 0.000319 | | | Guideline varies with DOC and hardness, refer to BC Water Quality Guidelines for more information.<br>Guideline uses equation<br>(EXP(0.314 * LN(DOC)) + 0.214 * LN(hardness)) / 1 000 000 000<br>where DOC range is 0.5-23.5 mg/L, and hardness ranges is 47-201 mg/L | | |
| Lithium (Li)-Dissolved | mg/L | - | - | - | - | 0.005 | | | | | |
| Magnesium (Mg)-Dissolved | mg/L | - | - | - | - | 5.913 | | | | | |
| Manganese (Mn)-Dissolved | mg/L | - | - | - | - | 0.00581 | | | | | |
| Mercury (Hg)-Dissolved | mg/L | - | - | - | - | < 0.000005 | | | | | |
| Molybdenum (Mo)-Dissolved | mg/L | - | - | - | - | 0.0116 | | | | | |
| Nickel (Ni)-Dissolved | mg/L | Guideline varies with pH, temperature, DOC, and hardness<br>US1 (background) guideline: 0.0210 | Guideline varies with pH, temperature, DOC, and hardness<br>US1 (background) guideline: 0.00150<br>5-week discrete sampling averages = < 0.0055 (EOP), 0.0012 (US), 0.0057 (DS) | - | - | < 0.00050 | | Guideline varies with other parameters and is calculated using BC BLM software.<br>Simplified model: Temperature, pH, DOC and hardness<br>Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity<br>Guideline calculated using values for parameters above taken at the specific site on each sampling date. | Guideline varies with other parameters and is calculated using BC BLM software.<br>Simplified model: Temperature, pH, DOC and hardness<br>Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity<br>Guideline calculated using values for parameters above taken at the specific site on each sampling date. | | |
| Phosphorus (P)-Dissolved | mg/L | - | - | - | - | < 0.300 | | | | | |
| Potassium (K)-Dissolved | mg/L | - | - | - | - | 1.36 | | | | | |
| Rubidium (Rb)-Dissolved | mg/L | - | - | - | - | 0.00268 | | | | | |
| Selenium (Se)-Dissolved | mg/L | - | - | - | - | 0.000081 | | | | | |
| Silicon (Si)-Dissolved | mg/L | - | - | - | - | 5.23 | | | | | |
| Silver (Ag)-Dissolved | mg/L | - | - | - | - | < 0.000010 | | | | | |
| Sodium (Na)-Dissolved | mg/L | - | - | - | - | 3.10 | | | | | |
| Strontium (Sr)-Dissolved | mg/L | - | - | - | - | 0.0361 | | | | | |
| Sulfur (S)-Dissolved | mg/L | - | - | - | - | < 10 | | | | | |
| Tellurium (Te)-Dissolved | mg/L | - | - | - | - | < 0.00020 | | | | | |
| Thallium (Tl)-Dissolved | mg/L | - | - | - | - | < 0.000010 | | | | | |
| Thorium (Th)-Dissolved | mg/L | - | - | - | - | < 0.00010 | | | | | |
| Tin (Sn)-Dissolved | mg/L | - | - | - | - | < 0.00010 | | | | | |
| Titanium (Ti)-Dissolved | mg/L | - | - | - | - | < 0.00030 | | | | | |
| Tungsten (W)-Dissolved | mg/L | - | - | - | - | 0.00010 | | | | | |
| Uranium (U)-Dissolved | mg/L | - | - | - | - | 0.00176 | | | | | |
| Vanadium (V)-Dissolved | mg/L | - | - | - | - | < 0.00050 | | | | | |
| Zinc (Zn)-Dissolved | mg/L | Varies with DOC and hardness<br>US1 (background) guideline = 0.010 | Varies with pH, DOC, hardness<br>US1 (background) guideline = 0.0068<br>5-week discrete sampling average = 0.0109 (EOP), 0.0077 (US), 0.0024 (DS) | - | - | 0.0016 | | Guideline varies with DOC and hardness. Guideline is calculated using the following formula:<br>Guideline = (EXP(0.8526 * LN(hardness)) + 0.235 * LN(DOC)) + 0.0942) / 1000<br>If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation. | Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC).<br>Guideline is calculated using the following formula:<br>Guideline = (EXP(0.8526 * LN(hardness)) - (0.83 * pH) + (0.246 * LN(DOC)) + 5.755) / 1000<br>Guideline only applies to pH values between 6.5 and 8.15, DOC between 0.3 and 22.9 mg/L, and/or hardness between 23.4 and 366 mg/L. If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation. | | |
| Zirconium (Zr)-Dissolved | mg/L | - | - | - | - | < 0.00030 | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | |
| Chlorobenzene | ug/L | - | - | - | - | < 0.50 | | | | | |
| Chloromethane | ug/L | - | - | - | - | < 5.0 | | | | | |
| Dichlorobenzene, 1,2- | ug/L | - | 0.7 | - | 42 | < 0.50 | | | Working guideline status | | Working guideline status |
| Dichlorobenzene, 1,3- | ug/L | - | 150 | - | - | < 0.50 | | | Working guideline status | | |
| Dichlorobenzene, 1,4- | ug/L | - | 26 | - | - | < 0.50 | | | Working guideline status | | |
| Dichloropropane, 1,2- | ug/L | - | - | - | - | < 0.50 | | | | | |
| Dichloropropylene, cis-+trans-1,3- | ug/L | - | - | - | - | < 0.70 | | | | | |
| Dichloropropylene, cis-1,3- | ug/L | - | - | - | - | < 0.50 | | | | | |
| Tetrachloroethane, 1,1,1,2- | ug/L | - | - | - | - | < 0.50 | | | | | |
| Tetrachloroethane, 1,1,2,2- | ug/L | - | - | - | - | < 0.50 | | | | | |
| Trichloroethane, 1,1,2- | ug/L | - | - | - | - | < 0.50 | | | | | |
| Trichlorofluoromethane | ug/L | - | - | - | - | < 0.50 | | | | | |
| Dichlorobenzenes | ug/L | - | - | - | - | < 0.50 | | | | | |
| Chloroethane | ug/L | - | - | - | - | < 0.50 | | | | | |
| Dichloroethane, 1,1- | ug/L | - | - | - | - | < 0.50 | | | | | |
| Dichloroethylene, 1,1- | ug/L | - | 100 | - | - | < 0.50 | | | Working guideline status | | |
| Dichloroethylene, 1,2- | ug/L | - | - | - | - | < 0.50 | | | | | |
| Dichloroethylene, cis-1,2- | ug/L | - | - | - | - | < 0.50 | | | | | |
| Dichloroethylene, trans-1,2- | ug/L | - | - | - | - | < 0.50 | | | | | |
| Dichloromethane | ug/L | - | 98.1 | - | - | < 1.0 | | | Working guideline status | | |
| Dichloropropane, trans-1,3- | ug/L | - | - | - | - | < 0.50 | | | | | |
| Tetrachloroethylene | ug/L | - | 110 | - | - | < 0.50 | | | Working guideline status | | |
| Trichloroethane, 1,1,1- | ug/L | - | - | - | - | < 0.50 | | | Working guideline status | | |
| Trichloroethylene | ug/L | - | 21 | - | - | < 0.50 | | | Working guideline status | | |
| Vinyl chloride | ug/L | - | - | - | - | < 0.40 | | | | | |
| Benzene | ug/L | - | 82 | - | 110 | < 0.50 | | | interim guideline status | | interim guideline status |
| Ethylbenzene | ug/L | - | 200 | - | 200 | < 0.50 | | | interim guideline status | | interim guideline status |
| Methyl-tert-butyl ether (MTBE) | ug/L | 3430 | - | 440 | - | < 0.50 | | | | | |
| Styrene | ug/L | - | 72 | - | - | < 0.50 | | | Working guideline status | | |
| Toluene | ug/L | - | 0.5 | - | - | < 0.40 | | | | | |
| Xylene, m+p- | ug/L | - | - | - | - | < 0.40 | | | | | |
| Xylene, o- | ug/L | - | - | - | - | < 0.30 | | | | | |
| Xylenes, total | ug/L | - | 30 | - | - | < 0.50 | | | | | |
| Bromodichloromethane | ug/L | - | - | - | - | < 0.50 | | | | | |
| Bromoform | ug/L | - | - | - | - | < 0.50 | | | | | |
| Chloroform | ug/L | - | 1.8 | - | - | < 0.50 | | | Working guideline status | | |
| Dibromochloromethane | ug/L | - | - | - | - | < 0.50 | | | | | |
| **Hydrocarbons** | | | | | | | | | | | |
| EPH (C10-C19) | ug/L | - | - | - | - | < 250 | | | | | |
| EPH (C19-C32) | ug/L | - | - | - | - | < 250 | | | | | |
| HEM (O & G) | ug/L | - | - | - | - | < 1000 | | | | | |
| LEPHw | ug/L | - | - | - | - | < 200 | | | | | |
| VPHw | ug/L | - | - | - | - | < 100 | | | | | |
| HEPHw | ug/L | - | - | - | - | < 200 | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | | | | | |
| Acenaphthene | ug/L | - | 6 | - | 6 | < 0.010 | | | | | |
| Acenaphthylene | ug/L | - | - | - | - | < 0.010 | | | | | |
| Acridine | ug/L | - | - | - | - | < 0.010 | | | | | |
| Anthracene | ug/L | 0.1 | 4 | - | - | < 0.010 | | | | | |
| Benz(a)anthracene | ug/L | 0.1 | 0.1 | - | - | < 0.010 | | | | | |
| Benzo(a)pyrene | ug/L | - | 0.01 | - | 0.01 | < 0.0050 | | | | | |
| Benzo(b+j)fluoranthene | ug/L | - | - | - | - | < 0.010 | | | | | |
| Benzo(b+k)fluoranthene | ug/L | - | - | - | - | < 0.010 | | | | | |
| Benzo(ghi)perylene | ug/L | - | - | - | - | < 0.010 | | | | | |
| Benzo(j)fluoranthene | ug/L | - | - | - | - | < 0.010 | | | | | |
| Chrysene | ug/L | - | - | - | 0.1 | < 0.010 | | | | | |
| Dibenz(a,h)anthracene | ug/L | - | - | - | - | < 0.0050 | | | | | |
| Fluoranthene | ug/L | 0.2 | 4 | - | - | < 0.010 | | Guideline is for phototoxic effects | | | |
| Fluorene | ug/L | - | 12 | - | - | < 0.010 | | | | | |
| Indeno(1,2,3-c,d)pyrene | ug/L | - | - | - | - | < 0.010 | | | | | |
| Methylnaphthalene, 1- | ug/L | - | - | - | 1 | < 0.010 | | | | | Guideline is for total methylated naphalene and is a total value for all isomers |
| Methylnaphthalene, 2- | ug/L | - | - | - | 1 | < 0.010 | | | | | Guideline is for total methylated naphalene and is a total value for all isomers |
| Naphthalene | ug/L | - | 1 | - | 1 | < 0.050 | | | | | |
| Phenanthrene | ug/L | - | 0.3 | - | - | < 0.020 | | | | | |
| Pyrene | ug/L | 0.02 | 2 | - | - | < 0.010 | | | | | |
| Quinoline | ug/L | - | 3.4 | - | - | < 0.050 | | Working guideline status | | | |
| **Glycols** | | | | | | | | | | | |
| Diethylene glycol | mg/L | - | - | - | - | < 5.0 | | | | | |
| Ethylene glycol | mg/L | - | 192 | - | - | < 5.0 | | | | | |
| Propylene glycol, 1,2- | mg/L | - | 100 | - | - | < 5.0 | | | | | |
| Triethylene glycol | mg/L | - | - | - | - | < 5.0 | | | | | |
| Glycols, total (EG+DEG+PG) | mg/L | - | - | - | - | < 10 | | | | | |
| **Applied Guideline:** | | **British Columbia Approved and Working Water Quality Guidelines (NOV 2023) for Freshwater Aquatic Life (FAL) & Marine Aquatic Life (MAL) Short-Term (ST) & Long-Term (LT)** | | | | | | | | | |
| **Color Key** | | **Exceeds FAL Short term Guideline** | **Exceeds both ST and LTFAL guidelines** | **Exceeds WAL Short term Guideline** | | | | | | | |

"BC MOECCS. 2023. BC Water Quality Guidelines for the Protection of Aquatic Life. Wildlife & Agriculture. Accessed from: https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/water-quality-guidelines

"BC. MOECCS. 2021. BC Working Water Quality Guidelines for the Protection of Aquatic Life. Wildlife & Agriculture. Accessed from: bc_env_working_water_quality_guidelines.pdf (gov.bc.ca)

Note that long-term (LT) guidelines apply to averages also to account for chronic impacts to aquatic life. Ideally, five samples collected at evenly-spaced intervals over 30 days is considered to be the minimum number needed to calculate the long-term average of any parameter, though this may vary by parameter and site conditions. Long-term guidelines applied here are for reference only and may not indicate chronic impacts to aquatic life if exceedances occur in the short-term (ST).

Background temperature range: Dec-Feb: 0.3-8.5C, Mar-Apr: 2.9-15.2C, May-June: 8.8-16.1C, Jul-present: 12.9-19.2C

Background DO range: 10.2-13.2 mg/L from Onset Data Logger - Background water quality readings collected from Dec- present

For guidelines dependent on other parameters, when hardness, pH or DOC are below the range stated in the guideline, the lowest value in the range is used to calculate the guideline.

**Parameters Used to Calculate Guidelines**

| Analyte | Units | Measurement method | Value(s) EAS US1 (Upstream) |
|---|---|---|---|
| pH (field) | pH units | Field pH taken using handheld meters during sampling used in calculations | > 24 |
| Temperature (field) | °C | Field temperature taken using handheld meters during sampling used in calculations | n.a. |
| Turbidity (field) | NTU | Field turbidity taken using handheld meters during sampling used in calculations | 4.42 |
| Hardness (as CaCO3) (total) | mg/L | Laboratory tested total hardness reported in mg/L as CaCO3 of sampling used in guideline calculations | 7.27 |
| Dissolved Organic Carbon (DOC) | mg/L | Laboratory tested total dissolved organic carbon reported in mg/L as C of sample used in guideline calculations | 3.5 |
| Chloride ($Cl^-$) | mg/L | Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations | 0.75 |
| Total Recommended Nitrate | mg/L | Laboratory tested total suspended solids tested at the lab used in guideline calculations | < 1.0 |

# Woodfibre Site Sample Lab Documentation

# CERTIFICATE OF ANALYSIS

| | | | | |
|---|---|---|---|---|
| **Work Order** | : | **VA24D0990** | | |
| Client | : | **Triton Environmental Consultants Ltd.** | Laboratory | : ALS Environmental - Vancouver |
| Contact | : | | Account Manager | : |
| Address | : | | Address | : |
| Telephone | : | | Telephone | : |
| Project | : | | Date Samples Received | : 14-Nov-2024 17:00 |
| PO | : | | Date Analysis Commenced | : 15-Nov-2024 |
| C-O-C number | : | | Issue Date | : 22-Nov-2024 17:27 |
| Sampler | : | | | |
| Site | : | Water Analysis | | |
| Quote number | : | VA23-TRIT100-012 | | |
| 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
- Surrogate Control Limits

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

## *Signatories*

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

| *Signatories* | *Position* | *Laboratory Department* |
|---|---|---|

## General Comments

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

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

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

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

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

| *Unit* | *Description* |
|---|---|
| mg/L | milligrams per litre |
| µg/L | micrograms per litre |
| °C | degrees celsius |
| µS/cm | microsiemens per centimetre |
| pH units | pH units |
| - | no 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 |
|---|---|
| HTDC | Hold time exceeded for dilution or re-analysis. Reported results are consistent with initial results (tested within hold time), and are valid and defensible. |
| RRV | Reported result verified by repeat analysis. |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | Client sample ID | | WLNG EOP Field Blank | WLNG EOP | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|
| | | | Client sampling date / time | | 14-Nov-2024 10:45 | 14-Nov-2024 10:55 | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | VA24D0990-001 | VA24D0990-002 | ---- | ---- | ---- |
| | | | | | Result | Result | ---- | ---- | ---- |
| **Field Tests** | | | | | | | | | |
| Conductivity, field | ---- | EF001/VA | 0.10 | µS/cm | 1.0000 | 139.00 | ---- | ---- | ---- |
| pH, field | ---- | EF001/VA | 0.10 | pH units | 6.52 | 7.66 | ---- | ---- | ---- |
| Temperature, field | ---- | EF001/VA | 0.10 | °C | 18.3 | 10.1 | ---- | ---- | ---- |
| **Physical Tests** | | | | | | | | | |
| Hardness (as CaCO3), dissolved | ---- | EC100/VA | 0.60 | mg/L | 19.6 | 50.2 | ---- | ---- | ---- |
| Hardness (as CaCO3), from total Ca/Mg | ---- | EC100A/VA | 0.60 | mg/L | 20.1 | 54.8 | ---- | ---- | ---- |
| Solids, total dissolved [TDS] | ---- | E162/VA | 10 | mg/L | 33 | 61 | ---- | ---- | ---- |
| Solids, total suspended [TSS] | ---- | E160/VA | 3.0 | mg/L | <3.0 | <3.0 | ---- | ---- | ---- |
| Alkalinity, total (as CaCO3) | ---- | E290/VA | 2.0 | mg/L | 29.2 RRV | 55.1 | ---- | ---- | ---- |
| **Anions and Nutrients** | | | | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298/VA | 0.0050 | mg/L | 0.0106 RRV | 0.0105 | ---- | ---- | ---- |
| 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 | 3.75 RRV | 1.14 | ---- | ---- | ---- |
| Fluoride | 16984-48-8 | E235.F/VA | 0.020 | mg/L | 0.464 RRV | 0.186 | ---- | ---- | ---- |
| Nitrate (as N) | 14797-55-8 | E235.NO3-L/VA | 0.0050 | mg/L | 0.0566 HTDC, RRV | 0.0122 | ---- | ---- | ---- |
| Nitrite (as N) | 14797-65-0 | E235.NO2-L/VA | 0.0010 | mg/L | <0.0010 HTDC | <0.0010 | ---- | ---- | ---- |
| Sulfate (as SO4) | 14808-79-8 | E235.SO4/VA | 0.30 | mg/L | 0.76 RRV | 4.33 | ---- | ---- | ---- |
| **Organic / Inorganic Carbon** | | | | | | | | | |
| Carbon, dissolved organic [DOC] | ---- | E358-L/VA | 0.50 | mg/L | <0.50 | <0.50 | ---- | ---- | ---- |
| **Total Sulfides** | | | | | | | | | |
| Sulfide, total (as S) | 18496-25-8 | E395/VA | 0.0015 | mg/L | <0.0015 | <0.0015 | ---- | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | WLNG EOP Field Blank | WLNG EOP | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 14-Nov-2024 10:45 | 14-Nov-2024 10:55 | ---- | ---- | ---- |
| | | | | | | VA24D0990-001 | VA24D0990-002 | ---- | ---- | ---- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Total Sulfides** | | | | | | | | | | |
| **Sulfide, un-ionized (as H2S), from total** | 7783-06-4 | EC395/VA | 0.0015 | mg/L | | <0.0015 | <0.0015 | ---- | ---- | ---- |
| **Sulfide, total (as H2S)** | 7783-06-4 | E395/VA | 0.0016 | mg/L | | <0.0016 | <0.0016 | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **Aluminum, total** | 7429-90-5 | E420/VA | 0.0030 | mg/L | | 0.0790 | 0.0175 | ---- | ---- | ---- |
| **Antimony, total** | 7440-36-0 | E420/VA | 0.00010 | mg/L | | 0.00013 | 0.00036 | ---- | ---- | ---- |
| **Arsenic, total** | 7440-38-2 | E420/VA | 0.00010 | mg/L | | <0.00010 | 0.00177 | ---- | ---- | ---- |
| **Barium, total** | 7440-39-3 | E420/VA | 0.00010 | mg/L | | 0.00275 | 0.00182 | ---- | ---- | ---- |
| **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 | | 0.306 | <0.010 | ---- | ---- | ---- |
| **Cadmium, total** | 7440-43-9 | E420/VA | 0.0000050 | mg/L | | <0.0000050 | <0.0000050 | ---- | ---- | ---- |
| **Calcium, total** | 7440-70-2 | E420/VA | 0.050 | mg/L | | 7.08 | 20.4 | ---- | ---- | ---- |
| **Cesium, total** | 7440-46-2 | E420/VA | 0.000010 | mg/L | | 0.000131 | <0.000010 | ---- | ---- | ---- |
| **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 | | 0.0209 | 0.00145 | ---- | ---- | ---- |
| **Iron, total** | 7439-89-6 | E420/VA | 0.010 | mg/L | | 0.013 | 0.012 | ---- | ---- | ---- |
| **Lead, total** | 7439-92-1 | E420/VA | 0.000050 | mg/L | | 0.000312 | 0.000572 | ---- | ---- | ---- |
| **Lithium, total** | 7439-93-2 | E420/VA | 0.0010 | mg/L | | 0.0640 | 0.0026 | ---- | ---- | ---- |
| **Magnesium, total** | 7439-95-4 | E420/VA | 0.0050 | mg/L | | 0.584 | 0.946 | ---- | ---- | ---- |
| **Manganese, total** | 7439-96-5 | E420/VA | 0.00010 | mg/L | | 0.00231 | 0.00092 | ---- | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | WLNG EOP Field Blank | WLNG EOP | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 14-Nov-2024 10:45 | 14-Nov-2024 10:55 | ---- | ---- | ---- |
| | | | | | | VA24D0990-001 | VA24D0990-002 | ---- | ---- | ---- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **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 | | 0.000161 | 0.0119 | ---- | ---- | ---- |
| **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 | | 0.256 | 1.30 | ---- | ---- | ---- |
| **Rubidium, total** | 7440-17-7 | E420/VA | 0.00020 | mg/L | | 0.00068 | 0.00270 | ---- | ---- | ---- |
| **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 | | 3.37 | 5.45 | ---- | ---- | ---- |
| **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 | | 6.75 | 3.19 | ---- | ---- | ---- |
| **Strontium, total** | 7440-24-6 | E420/VA | 0.00020 | mg/L | | 0.0115 | 0.0386 | ---- | ---- | ---- |
| **Sulfur, total** | 7704-34-9 | E420/VA | 0.50 | mg/L | | <0.50 | 1.28 | ---- | ---- | ---- |
| **Tellurium, total** | 13494-80-9 | E420/VA | 0.00020 | mg/L | | <0.00020 | <0.00020 | ---- | ---- | ---- |
| **Thallium, total** | 7440-28-0 | E420/VA | 0.000010 | mg/L | | <0.000010 | <0.000010 | ---- | ---- | ---- |
| **Thorium, total** | 7440-29-1 | E420/VA | 0.00010 | mg/L | | <0.00010 | <0.00010 | ---- | ---- | ---- |
| **Tin, total** | 7440-31-5 | E420/VA | 0.00010 | mg/L | | <0.00010 | <0.00010 | ---- | ---- | ---- |
| **Titanium, total** | 7440-32-6 | E420/VA | 0.00030 | mg/L | | <0.00030 | <0.00030 | ---- | ---- | ---- |
| **Tungsten, total** | 7440-33-7 | E420/VA | 0.00010 | mg/L | | <0.00010 | 0.00038 | ---- | ---- | ---- |
| **Uranium, total** | 7440-61-1 | E420/VA | 0.000010 | mg/L | | 0.000067 | 0.00185 | ---- | ---- | ---- |
| **Vanadium, total** | 7440-62-2 | E420/VA | 0.00050 | mg/L | | <0.00050 | <0.00050 | ---- | ---- | ---- |
| **Zinc, total** | 7440-66-6 | E420/VA | 0.0030 | mg/L | | <0.0030 | <0.0030 | ---- | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | WLNG EOP Field Blank | WLNG EOP | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 14-Nov-2024 10:45 | 14-Nov-2024 10:55 | ---- | ---- | ---- |
| | | | | | | VA24D0990-001 | VA24D0990-002 | ---- | ---- | ---- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **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 | | 0.0797 RRV | 0.0059 | ---- | ---- | ---- |
| **Antimony, dissolved** | 7440-36-0 | E421/VA | 0.00010 | mg/L | | 0.00010 RRV | 0.00033 | ---- | ---- | ---- |
| **Arsenic, dissolved** | 7440-38-2 | E421/VA | 0.00010 | mg/L | | <0.00010 | 0.00167 | ---- | ---- | ---- |
| **Barium, dissolved** | 7440-39-3 | E421/VA | 0.00010 | mg/L | | 0.00280 RRV | 0.00168 | ---- | ---- | ---- |
| **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 | | 0.291 RRV | <0.010 | ---- | ---- | ---- |
| **Cadmium, dissolved** | 7440-43-9 | E421/VA | 0.0000050 | mg/L | | <0.0000050 | <0.0000050 | ---- | ---- | ---- |
| **Calcium, dissolved** | 7440-70-2 | E421/VA | 0.050 | mg/L | | 6.86 RRV | 18.6 | ---- | ---- | ---- |
| **Cesium, dissolved** | 7440-46-2 | E421/VA | 0.000010 | mg/L | | 0.000122 RRV | <0.000010 | ---- | ---- | ---- |
| **Chromium, dissolved** | 7440-47-3 | E421/VA | 0.00050 | mg/L | | <0.00050 | <0.00050 | ---- | ---- | ---- |
| **Cobalt, dissolved** | 7440-48-4 | E421/VA | 0.00010 | mg/L | | <0.00010 | <0.00010 | ---- | ---- | ---- |
| **Copper, dissolved** | 7440-50-8 | E421/VA | 0.00020 | mg/L | | 0.0174 RRV | 0.00108 | ---- | ---- | ---- |
| **Iron, dissolved** | 7439-89-6 | E421/VA | 0.010 | mg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Lead, dissolved** | 7439-92-1 | E421/VA | 0.000050 | mg/L | | 0.000110 RRV | 0.000519 | ---- | ---- | ---- |
| **Lithium, dissolved** | 7439-93-2 | E421/VA | 0.0010 | mg/L | | 0.0613 RRV | 0.0025 | ---- | ---- | ---- |
| **Magnesium, dissolved** | 7439-95-4 | E421/VA | 0.0050 | mg/L | | 0.594 RRV | 0.913 | ---- | ---- | ---- |
| **Manganese, dissolved** | 7439-96-5 | E421/VA | 0.00010 | mg/L | | 0.00112 RRV | 0.00081 | ---- | ---- | ---- |
| **Mercury, dissolved** | 7439-97-6 | E509/VA | 0.0000050 | mg/L | | <0.0000050 | <0.0000050 | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | Client sample ID | | WLNG EOP Field Blank | WLNG EOP | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|
| | | | Client sampling date / time | | 14-Nov-2024 10:45 | 14-Nov-2024 10:55 | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | VA24D0990-001 | VA24D0990-002 | ---- | ---- | ---- |
| | | | | | Result | Result | ---- | ---- | ---- |
| **Dissolved Metals** | | | | | | | | | |
| **Molybdenum, dissolved** | 7439-98-7 | E421/VA | 0.000050 | mg/L | 0.000145 RRV | 0.0116 | ---- | ---- | ---- |
| **Nickel, dissolved** | 7440-02-0 | E421/VA | 0.00050 | mg/L | <0.00050 | <0.00050 | ---- | ---- | ---- |
| **Phosphorus, dissolved** | 7723-14-0 | E421/VA | 0.050 | mg/L | <0.050 | <0.050 | ---- | ---- | ---- |
| **Potassium, dissolved** | 7440-09-7 | E421/VA | 0.050 | mg/L | 0.279 RRV | 1.33 | ---- | ---- | ---- |
| **Rubidium, dissolved** | 7440-17-7 | E421/VA | 0.00020 | mg/L | 0.00069 RRV | 0.00268 | ---- | ---- | ---- |
| **Selenium, dissolved** | 7782-49-2 | E421/VA | 0.000050 | mg/L | <0.000050 | 0.000063 | ---- | ---- | ---- |
| **Silicon, dissolved** | 7440-21-3 | E421/VA | 0.050 | mg/L | 3.44 RRV | 5.23 | ---- | ---- | ---- |
| **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 | 6.56 RRV | 3.15 | ---- | ---- | ---- |
| **Strontium, dissolved** | 7440-24-6 | E421/VA | 0.00020 | mg/L | 0.0112 RRV | 0.0397 | ---- | ---- | ---- |
| **Sulfur, dissolved** | 7704-34-9 | E421/VA | 0.50 | mg/L | <0.50 | 1.13 | ---- | ---- | ---- |
| **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 | <0.00030 | ---- | ---- | ---- |
| **Tungsten, dissolved** | 7440-33-7 | E421/VA | 0.00010 | mg/L | <0.00010 | 0.00033 | ---- | ---- | ---- |
| **Uranium, dissolved** | 7440-61-1 | E421/VA | 0.000010 | mg/L | 0.000064 RRV | 0.00176 | ---- | ---- | ---- |
| **Vanadium, dissolved** | 7440-62-2 | E421/VA | 0.00050 | mg/L | <0.00050 | <0.00050 | ---- | ---- | ---- |
| **Zinc, dissolved** | 7440-66-6 | E421/VA | 0.0010 | mg/L | 0.0010 RRV | 0.0016 | ---- | ---- | ---- |
| **Zirconium, dissolved** | 7440-67-7 | E421/VA | 0.00020 | mg/L | <0.00020 | <0.00020 | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | Client sample ID | | WLNG EOP Field Blank | WLNG EOP | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|
| | | | Client sampling date / time | | 14-Nov-2024 10:45 | 14-Nov-2024 10:55 | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | VA24D0990-001 | VA24D0990-002 | ---- | ---- | ---- |
| | | | | | Result | Result | ---- | ---- | ---- |
| **Dissolved Metals** | | | | | | | | | |
| 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/WT | 0.00050 | mg/L | <0.00050 | <0.00050 | ---- | ---- | ---- |
| Chromium, trivalent [Cr III], total | 16065-83-1 | EC535/WT | 0.00050 | mg/L | <0.00050 | <0.00050 | ---- | ---- | ---- |
| **Volatile Organic Compounds** | | | | | | | | | |
| Chlorobenzene | 108-90-7 | E611C/VA | 0.50 | µg/L | <0.50 | <0.50 | ---- | ---- | ---- |
| Chloromethane | 74-87-3 | E611C/VA | 5.0 | µg/L | <5.0 | <5.0 | ---- | ---- | ---- |
| Dichlorobenzene, 1,2- | 95-50-1 | E611C/VA | 0.50 | µg/L | <0.50 | <0.50 | ---- | ---- | ---- |
| Dichlorobenzene, 1,3- | 541-73-1 | E611C/VA | 0.50 | µg/L | <0.50 | <0.50 | ---- | ---- | ---- |
| Dichlorobenzene, 1,4- | 106-46-7 | E611C/VA | 0.50 | µg/L | <0.50 | <0.50 | ---- | ---- | ---- |
| Dichloropropane, 1,2- | 78-87-5 | E611C/VA | 0.50 | µg/L | <0.50 | <0.50 | ---- | ---- | ---- |
| Dichloropropylene, cis-1,3- | 10061-01-5 | E611C/VA | 0.50 | µg/L | <0.50 | <0.50 | ---- | ---- | ---- |
| Dichloropropylene, cis+trans-1,3- | 542-75-6 | E611C/VA | 0.75 | µg/L | <0.75 | <0.75 | ---- | ---- | ---- |
| Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611C/VA | 0.50 | µg/L | <0.50 | <0.50 | ---- | ---- | ---- |
| Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611C/VA | 0.20 | µg/L | <0.20 | <0.20 | ---- | ---- | ---- |
| Trichloroethane, 1,1,2- | 79-00-5 | E611C/VA | 0.50 | µg/L | <0.50 | <0.50 | ---- | ---- | ---- |
| Trichlorofluoromethane | 75-69-4 | E611C/VA | 0.50 | µg/L | <0.50 | <0.50 | ---- | ---- | ---- |
| **Volatile Organic Compounds [Drycleaning]** | | | | | | | | | |
| Carbon tetrachloride | 56-23-5 | E611C/VA | 0.50 | µg/L | <0.50 | <0.50 | ---- | ---- | ---- |
| Chloroethane | 75-00-3 | E611C/VA | 0.50 | µg/L | <0.50 | <0.50 | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | | | Client sample ID | WLNG EOP Field Blank | WLNG EOP | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 14-Nov-2024 10:45 | 14-Nov-2024 10:55 | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24D0990-001 | VA24D0990-002 | ---- | ---- | ---- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Volatile Organic Compounds [Drycleaning]** | | | | | | | | | | |
| **Dichloroethane, 1,1-** | 75-34-3 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |
| **Dichloroethane, 1,2-** | 107-06-2 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |
| **Dichloroethylene, 1,1-** | 75-35-4 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |
| **Dichloroethylene, cis-1,2-** | 156-59-2 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |
| **Dichloroethylene, trans-1,2-** | 156-60-5 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |
| **Dichloromethane** | 75-09-2 | E611C/VA | 1.0 | µg/L | | <1.0 | <1.0 | ---- | ---- | ---- |
| **Dichloropropylene, trans-1,3-** | 10061-02-6 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |
| **Tetrachloroethylene** | 127-18-4 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |
| **Trichloroethane, 1,1,1-** | 71-55-6 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |
| **Trichloroethylene** | 79-01-6 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |
| **Vinyl chloride** | 75-01-4 | E611C/VA | 0.40 | µg/L | | <0.40 | <0.40 | ---- | ---- | ---- |
| **Volatile Organic Compounds [Fuels]** | | | | | | | | | | |
| **Benzene** | 71-43-2 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |
| **Ethylbenzene** | 100-41-4 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |
| **Methyl-tert-butyl ether [MTBE]** | 1634-04-4 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |
| **Styrene** | 100-42-5 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |
| **Toluene** | 108-88-3 | E611C/VA | 0.40 | µg/L | | <0.40 | <0.40 | ---- | ---- | ---- |
| **Xylene, m+p-** | 179601-23-1 | E611C/VA | 0.40 | µg/L | | <0.40 | <0.40 | ---- | ---- | ---- |
| **Xylene, o-** | 95-47-6 | E611C/VA | 0.30 | µg/L | | <0.30 | <0.30 | ---- | ---- | ---- |
| **Xylenes, total** | 1330-20-7 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | WLNG EOP Field Blank | WLNG EOP | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 14-Nov-2024 10:45 | 14-Nov-2024 10:55 | ---- | ---- | ---- |
| | | | | | | VA24D0990-001 | VA24D0990-002 | ---- | ---- | ---- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Volatile Organic Compounds [THMs]** | | | | | | | | | | |
| **Bromodichloromethane** | 75-27-4 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |
| **Bromoform** | 75-25-2 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |
| **Chloroform** | 67-66-3 | E611C/VA | 0.50 | µg/L | | 17.0 RRV | <0.50 | ---- | ---- | ---- |
| **Dibromochloromethane** | 124-48-1 | E611C/VA | 0.50 | µg/L | | <0.50 | <0.50 | ---- | ---- | ---- |
| **Hydrocarbons** | | | | | | | | | | |
| **EPH (C10-C19)** | ---- | E601A/VA | 250 | µg/L | | <250 | <250 | ---- | ---- | ---- |
| **EPH (C19-C32)** | ---- | E601A/VA | 250 | µg/L | | <250 | <250 | ---- | ---- | ---- |
| **VHw (C6-C10)** | ---- | E581.VH+F1/VA | 100 | µg/L | | <100 | <100 | ---- | ---- | ---- |
| **HEPHw** | ---- | EC600A/VA | 250 | µg/L | | <250 | <250 | ---- | ---- | ---- |
| **LEPHw** | ---- | EC600A/VA | 250 | µg/L | | <250 | <250 | ---- | ---- | ---- |
| **VPHw** | ---- | EC580A/VA | 100 | µg/L | | <100 | <100 | ---- | ---- | ---- |
| **Hydrocarbons Surrogates** | | | | | | | | | | |
| **Bromobenzotrifluoride, 2- (EPH surrogate)** | 392-83-6 | E601A/VA | 1.0 | % | | 85.8 | 83.2 | ---- | ---- | ---- |
| **Dichlorotoluene, 3,4-** | 95-75-0 | E581.VH+F1/VA | 1.0 | % | | 76.9 | 74.8 | ---- | ---- | ---- |
| **Volatile Organic Compounds Surrogates** | | | | | | | | | | |
| **Bromofluorobenzene, 4-** | 460-00-4 | E611C/VA | 1.0 | % | | 93.6 | 93.5 | ---- | ---- | ---- |
| **Difluorobenzene, 1,4-** | 540-36-3 | E611C/VA | 1.0 | % | | 99.5 | 99.1 | ---- | ---- | ---- |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | | | | |
| **Acenaphthene** | 83-32-9 | E641A/VA | 0.010 | µg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Acenaphthylene** | 208-96-8 | E641A/VA | 0.010 | µg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Acridine** | 260-94-6 | E641A/VA | 0.010 | µg/L | | <0.010 | <0.010 | ---- | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | WLNG EOP Field Blank | WLNG EOP | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 14-Nov-2024 10:45 | 14-Nov-2024 10:55 | ---- | ---- | ---- |
| | | | | | | VA24D0990-001 | VA24D0990-002 | ---- | ---- | ---- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | | | | |
| **Anthracene** | 120-12-7 | E641A/VA | 0.010 | µg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Benz(a)anthracene** | 56-55-3 | E641A/VA | 0.010 | µg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Benzo(a)pyrene** | 50-32-8 | E641A/VA | 0.0050 | µg/L | | <0.0050 | <0.0050 | ---- | ---- | ---- |
| **Benzo(b+j)fluoranthene** | n/a | E641A/VA | 0.010 | µg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Benzo(b+j+k)fluoranthene** | n/a | E641A/VA | 0.015 | µg/L | | <0.015 | <0.015 | ---- | ---- | ---- |
| **Benzo(g,h,i)perylene** | 191-24-2 | E641A/VA | 0.010 | µg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Benzo(k)fluoranthene** | 207-08-9 | E641A/VA | 0.010 | µg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Chrysene** | 218-01-9 | E641A/VA | 0.010 | µg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Dibenz(a,h)anthracene** | 53-70-3 | E641A/VA | 0.0050 | µg/L | | <0.0050 | <0.0050 | ---- | ---- | ---- |
| **Fluoranthene** | 206-44-0 | E641A/VA | 0.010 | µg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Fluorene** | 86-73-7 | E641A/VA | 0.010 | µg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Indeno(1,2,3-c,d)pyrene** | 193-39-5 | E641A/VA | 0.010 | µg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Methylnaphthalene, 1-** | 90-12-0 | E641A/VA | 0.010 | µg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Methylnaphthalene, 2-** | 91-57-6 | E641A/VA | 0.010 | µg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Naphthalene** | 91-20-3 | E641A/VA | 0.050 | µg/L | | <0.050 | <0.050 | ---- | ---- | ---- |
| **Phenanthrene** | 85-01-8 | E641A/VA | 0.020 | µg/L | | <0.020 | <0.020 | ---- | ---- | ---- |
| **Pyrene** | 129-00-0 | E641A/VA | 0.010 | µg/L | | <0.010 | <0.010 | ---- | ---- | ---- |
| **Quinoline** | 91-22-5 | E641A/VA | 0.050 | µg/L | | <0.050 | <0.050 | ---- | ---- | ---- |
| **Polycyclic Aromatic Hydrocarbons Surrogates** | | | | | | | | | | |
| **Chrysene-d12** | 1719-03-5 | E641A/VA | 0.1 | % | | 92.3 | 75.9 | ---- | ---- | ---- |
| **Naphthalene-d8** | 1146-65-2 | E641A/VA | 0.1 | % | | 99.6 | 96.2 | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | | | Client sample ID | WLNG EOP Field Blank | WLNG EOP | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 14-Nov-2024 10:45 | 14-Nov-2024 10:55 | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24D0990-001 | VA24D0990-002 | ---- | ---- | ---- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Polycyclic Aromatic Hydrocarbons Surrogates** | | | | | | | | | | |
| **Phenanthrene-d10** | 1517-22-2 | E641A/VA | 0.1 | % | | 93.3 | 97.9 | ---- | ---- | ---- |
| **Glycols** | | | | | | | | | | |
| **Diethylene glycol** | 111-46-6 | E680E/VA | 5.0 | mg/L | | <5.0 | <5.0 | ---- | ---- | ---- |
| **Ethylene glycol** | 107-21-1 | E680E/VA | 5.0 | mg/L | | <5.0 | <5.0 | ---- | ---- | ---- |
| **Propylene glycol, 1,2-** | 57-55-6 | E680E/VA | 5.0 | mg/L | | <5.0 | <5.0 | ---- | ---- | ---- |
| **Triethylene glycol** | 112-27-6 | E680E/VA | 5.0 | mg/L | | <5.0 | <5.0 | ---- | ---- | ---- |
| **Glycols, total (EG+DEG+PG)** | ---- | E680E/VA | 10 | mg/L | | <10 | <10 | ---- | ---- | ---- |
| **Glycols Surrogates** | | | | | | | | | | |
| **Propanediol, 1,3-** | 504-63-2 | E680E/VA | 1.0 | % | | 102 | 110 | ---- | ---- | ---- |

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

ALS Canada Ltd.

# QUALITY CONTROL INTERPRETIVE REPORT

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24D0990** | Page | : 1 of 16 |
| Client | : **Triton Environmental Consultants Ltd.** | Laboratory | : ALS Environmental - Vancouver |
| Contact | | Account Manager | |
| Address | | Address | |
| Telephone | | Telephone | |
| Project | | Date Samples Received | : 14-Nov-2024 17:00 |
| PO | | Issue Date | : 22-Nov-2024 17:27 |
| C-O-C number | | | |
| Sampler | | | |
| Site | : Water Analysis | | |
| Quote number | : VA23-TRIT100-012 _V2 | | |
| 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)** WLNG EOP | E298 | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 19-Nov-2024 | 28 days | 5 days | ✓ |
| **Anions and Nutrients : Ammonia by Fluorescence** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** WLNG EOP Field Blank | E298 | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 19-Nov-2024 | 28 days | 5 days | ✓ |
| **Anions and Nutrients : Bromide in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** WLNG EOP | E235.Br-L | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Bromide in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** WLNG EOP Field Blank | E235.Br-L | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Chloride in Water by IC** | | | | | | | | | | |
| **HDPE** WLNG EOP | E235.Cl | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Chloride in Water by IC** | | | | | | | | | | |
| **HDPE** WLNG EOP Field Blank | E235.Cl | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Fluoride in Water by IC** | | | | | | | | | | |
| **HDPE** WLNG EOP | E235.F | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-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 |
| **Anions and Nutrients : Fluoride in Water by IC** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG EOP Field Blank | E235.F | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Nitrate in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG EOP | E235.NO3-L | 14-Nov-2024 | 16-Nov-2024 | 3 days | 2 days | ✓ | 17-Nov-2024 | 3 days | 3 days | ✓ |
| **Anions and Nutrients : Nitrate in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG EOP Field Blank | E235.NO3-L | 14-Nov-2024 | 16-Nov-2024 | 3 days | 2 days | ✓ | 17-Nov-2024 | 3 days | 3 days | ✓ |
| **Anions and Nutrients : Nitrite in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG EOP | E235.NO2-L | 14-Nov-2024 | 16-Nov-2024 | 3 days | 2 days | ✓ | 17-Nov-2024 | 3 days | 3 days | ✓ |
| **Anions and Nutrients : Nitrite in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG EOP Field Blank | E235.NO2-L | 14-Nov-2024 | 16-Nov-2024 | 3 days | 2 days | ✓ | 17-Nov-2024 | 3 days | 3 days | ✓ |
| **Anions and Nutrients : Sulfate in Water by IC** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG EOP | E235.SO4 | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Sulfate in Water by IC** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG EOP Field Blank | E235.SO4 | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Dissolved Metals : Dissolved Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial dissolved (hydrochloric acid)** | | | | | | | | | | |
| WLNG EOP | E509 | 14-Nov-2024 | 19-Nov-2024 | 28 days | 5 days | ✓ | 19-Nov-2024 | 28 days | 5 days | ✓ |
| **Dissolved Metals : Dissolved Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial dissolved (hydrochloric acid)** | | | | | | | | | | |
| WLNG EOP Field Blank | E509 | 14-Nov-2024 | 19-Nov-2024 | 28 days | 5 days | ✓ | 19-Nov-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 |
| **Dissolved Metals : Dissolved Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE dissolved (nitric acid)** | | | | | | | | | | |
| WLNG EOP | E421 | 14-Nov-2024 | 18-Nov-2024 | 180 days | 4 days | ✓ | 20-Nov-2024 | 180 days | 6 days | ✓ |
| **Dissolved Metals : Dissolved Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE dissolved (nitric acid)** | | | | | | | | | | |
| WLNG EOP Field Blank | E421 | 14-Nov-2024 | 18-Nov-2024 | 180 days | 4 days | ✓ | 20-Nov-2024 | 180 days | 6 days | ✓ |
| **Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine** | | | | | | | | | | |
| **Glass vial dissolved (hydrochloric acid)** | | | | | | | | | | |
| WLNG EOP | EF001 | 14-Nov-2024 | ---- | ---- | ---- | | 19-Nov-2024 | ---- | 5 days | |
| **Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine** | | | | | | | | | | |
| **Glass vial dissolved (hydrochloric acid)** | | | | | | | | | | |
| WLNG EOP Field Blank | EF001 | 14-Nov-2024 | ---- | ---- | ---- | | 19-Nov-2024 | ---- | 5 days | |
| **Glycols : Glycols (4 analytes) by GC-FID** | | | | | | | | | | |
| **Glass vial** | | | | | | | | | | |
| WLNG EOP | E680E | 14-Nov-2024 | 15-Nov-2024 | 7 days | 1 days | ✓ | 15-Nov-2024 | 40 days | 0 days | ✓ |
| **Glycols : Glycols (4 analytes) by GC-FID** | | | | | | | | | | |
| **Glass vial** | | | | | | | | | | |
| WLNG EOP Field Blank | E680E | 14-Nov-2024 | 15-Nov-2024 | 7 days | 1 days | ✓ | 15-Nov-2024 | 40 days | 0 days | ✓ |
| **Hydrocarbons : BC PHCs - EPH by GC-FID** | | | | | | | | | | |
| **Amber glass/Teflon lined cap (sodium bisulfate)** | | | | | | | | | | |
| WLNG EOP | E601A | 14-Nov-2024 | 16-Nov-2024 | 14 days | 2 days | ✓ | 16-Nov-2024 | 40 days | 0 days | ✓ |
| **Hydrocarbons : BC PHCs - EPH by GC-FID** | | | | | | | | | | |
| **Amber glass/Teflon lined cap (sodium bisulfate)** | | | | | | | | | | |
| WLNG EOP Field Blank | E601A | 14-Nov-2024 | 16-Nov-2024 | 14 days | 2 days | ✓ | 16-Nov-2024 | 40 days | 0 days | ✓ |
| **Hydrocarbons : VH and F1 by Headspace GC-FID** | | | | | | | | | | |
| **Glass vial (sodium bisulfate)** | | | | | | | | | | |
| WLNG EOP | E581.VH+F1 | 14-Nov-2024 | 20-Nov-2024 | 14 days | 6 days | ✓ | 20-Nov-2024 | 14 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 |
| **Hydrocarbons : VH and F1 by Headspace GC-FID** | | | | | | | | | | |
| **Glass vial (sodium bisulfate)** | | | | | | | | | | |
| WLNG EOP Field Blank | E581.VH+F1 | 14-Nov-2024 | 20-Nov-2024 | 14 days | 6 days | ✓ | 20-Nov-2024 | 14 days | 6 days | ✓ |
| **Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)** | | | | | | | | | | |
| **Amber glass dissolved (sulfuric acid)** | | | | | | | | | | |
| WLNG EOP | E358-L | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)** | | | | | | | | | | |
| **Amber glass dissolved (sulfuric acid)** | | | | | | | | | | |
| WLNG EOP Field Blank | E358-L | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Physical Tests : Alkalinity Species by Titration** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG EOP | E290 | 14-Nov-2024 | 16-Nov-2024 | 14 days | 2 days | ✓ | 17-Nov-2024 | 14 days | 3 days | ✓ |
| **Physical Tests : Alkalinity Species by Titration** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG EOP Field Blank | E290 | 14-Nov-2024 | 16-Nov-2024 | 14 days | 2 days | ✓ | 17-Nov-2024 | 14 days | 3 days | ✓ |
| **Physical Tests : TDS by Gravimetry** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG EOP | E162 | 14-Nov-2024 | ---- | ---- | ---- | | 20-Nov-2024 | 7 days | 7 days | ✓ |
| **Physical Tests : TDS by Gravimetry** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG EOP Field Blank | E162 | 14-Nov-2024 | ---- | ---- | ---- | | 20-Nov-2024 | 7 days | 7 days | ✓ |
| **Physical Tests : TSS by Gravimetry** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG EOP | E160 | 14-Nov-2024 | ---- | ---- | ---- | | 20-Nov-2024 | 7 days | 7 days | ✓ |
| **Physical Tests : TSS by Gravimetry** | | | | | | | | | | |
| **HDPE** | | | | | | | | | | |
| WLNG EOP Field Blank | E160 | 14-Nov-2024 | ---- | ---- | ---- | | 20-Nov-2024 | 7 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 |
| **Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS** | | | | | | | | | | |
| **Amber glass/Teflon lined cap (sodium bisulfate)** | | | | | | | | | | |
| WLNG EOP | E641A | 14-Nov-2024 | 16-Nov-2024 | 14 days | 2 days | ✓ | 16-Nov-2024 | 40 days | 0 days | ✓ |
| **Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS** | | | | | | | | | | |
| **Amber glass/Teflon lined cap (sodium bisulfate)** | | | | | | | | | | |
| WLNG EOP Field Blank | E641A | 14-Nov-2024 | 16-Nov-2024 | 14 days | 2 days | ✓ | 16-Nov-2024 | 40 days | 0 days | ✓ |
| **Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC** | | | | | | | | | | |
| **UV-inhibited HDPE - total (sodium hydroxide)** | | | | | | | | | | |
| WLNG EOP | E532 | 14-Nov-2024 | ---- | ---- | ---- | | 19-Nov-2024 | 28 days | 5 days | ✓ |
| **Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC** | | | | | | | | | | |
| **UV-inhibited HDPE - total (sodium hydroxide)** | | | | | | | | | | |
| WLNG EOP Field Blank | E532 | 14-Nov-2024 | ---- | ---- | ---- | | 19-Nov-2024 | 28 days | 5 days | ✓ |
| **Total Metals : Total Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial total (hydrochloric acid)** | | | | | | | | | | |
| WLNG EOP | E508 | 14-Nov-2024 | 20-Nov-2024 | 28 days | 6 days | ✓ | 20-Nov-2024 | 28 days | 6 days | ✓ |
| **Total Metals : Total Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial total (hydrochloric acid)** | | | | | | | | | | |
| WLNG EOP Field Blank | E508 | 14-Nov-2024 | 20-Nov-2024 | 28 days | 6 days | ✓ | 20-Nov-2024 | 28 days | 6 days | ✓ |
| **Total Metals : Total Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE total (nitric acid)** | | | | | | | | | | |
| WLNG EOP | E420 | 14-Nov-2024 | 18-Nov-2024 | 180 days | 4 days | ✓ | 20-Nov-2024 | 180 days | 6 days | ✓ |
| **Total Metals : Total Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE total (nitric acid)** | | | | | | | | | | |
| WLNG EOP Field Blank | E420 | 14-Nov-2024 | 18-Nov-2024 | 180 days | 4 days | ✓ | 20-Nov-2024 | 180 days | 6 days | ✓ |
| **Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)** | | | | | | | | | | |
| **HDPE total (zinc acetate+sodium hydroxide)** | | | | | | | | | | |
| WLNG EOP | E395 | 14-Nov-2024 | ---- | ---- | ---- | | 19-Nov-2024 | 7 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 | | Eval | Analysis Date | Holding Times | | Eval |
| | | | | Rec | Actual | | | Rec | Actual | |
| **Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)** | | | | | | | | | | |
| **HDPE total (zinc acetate+sodium hydroxide)** | | | | | | | | | | |
| WLNG EOP Field Blank | E395 | 14-Nov-2024 | ---- | ---- | ---- | | 19-Nov-2024 | 7 days | 5 days | ✓ |
| **Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS** | | | | | | | | | | |
| **Glass vial (sodium bisulfate)** | | | | | | | | | | |
| WLNG EOP | E611C | 14-Nov-2024 | 20-Nov-2024 | 14 days | 6 days | ✓ | 20-Nov-2024 | 14 days | 6 days | ✓ |
| **Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS** | | | | | | | | | | |
| **Glass vial (sodium bisulfate)** | | | | | | | | | | |
| WLNG EOP Field Blank | E611C | 14-Nov-2024 | 20-Nov-2024 | 14 days | 6 days | ✓ | 20-Nov-2024 | 14 days | 6 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 | 1770240 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1770123 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1770246 | 1 | 15 | 6.6 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1770245 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1773786 | 2 | 21 | 9.5 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1769152 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1770127 | 1 | 8 | 12.5 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1770244 | 1 | 15 | 6.6 | 5.0 | ✓ |
| Glycols (4 analytes) by GC-FID | E680E | 1769031 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1770247 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1770248 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1770249 | 1 | 20 | 5.0 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1776532 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1772939 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1775065 | 1 | 16 | 6.2 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1769134 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Sulfide by Colourimetry (Automated Flow) | E395 | 1773301 | 1 | 15 | 6.6 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1776523 | 1 | 20 | 5.0 | 5.0 | ✓ |
| VH and F1 by Headspace GC-FID | E581.VH+F1 | 1774574 | 1 | 9 | 11.1 | 5.0 | ✓ |
| VOCs (BC List) by Headspace GC-MS | E611C | 1774573 | 1 | 19 | 5.2 | 5.0 | ✓ |
| **Laboratory Control Samples (LCS)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1770240 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1770123 | 1 | 20 | 5.0 | 5.0 | ✓ |
| BC PHCs - EPH by GC-FID | E601A | 1769506 | 2 | 32 | 6.2 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1770246 | 1 | 15 | 6.6 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1770245 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1773786 | 2 | 21 | 9.5 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1769152 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1770127 | 1 | 8 | 12.5 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1770244 | 1 | 15 | 6.6 | 5.0 | ✓ |
| Glycols (4 analytes) by GC-FID | E680E | 1769031 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1770247 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1770248 | 1 | 20 | 5.0 | 5.0 | ✓ |
| PAHs in Water by Hexane LVI GC-MS | E641A | 1769507 | 2 | 37 | 5.4 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1770249 | 1 | 20 | 5.0 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1776532 | 1 | 20 | 5.0 | 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 Hexavalent Chromium (Cr VI) by IC | E532 | 1772939 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1775065 | 1 | 16 | 6.2 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1769134 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Sulfide by Colourimetry (Automated Flow) | E395 | 1773301 | 1 | 15 | 6.6 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1776523 | 1 | 20 | 5.0 | 5.0 | ✓ |
| VH and F1 by Headspace GC-FID | E581.VH+F1 | 1774574 | 1 | 9 | 11.1 | 5.0 | ✓ |
| VOCs (BC List) by Headspace GC-MS | E611C | 1774573 | 1 | 19 | 5.2 | 5.0 | ✓ |
| **Method Blanks (MB)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1770240 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1770123 | 1 | 20 | 5.0 | 5.0 | ✓ |
| BC PHCs - EPH by GC-FID | E601A | 1769506 | 2 | 32 | 6.2 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1770246 | 1 | 15 | 6.6 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1770245 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1773786 | 2 | 21 | 9.5 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1769152 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1770127 | 1 | 8 | 12.5 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1770244 | 1 | 15 | 6.6 | 5.0 | ✓ |
| Glycols (4 analytes) by GC-FID | E680E | 1769031 | 1 | 3 | 33.3 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1770247 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1770248 | 1 | 20 | 5.0 | 5.0 | ✓ |
| PAHs in Water by Hexane LVI GC-MS | E641A | 1769507 | 2 | 37 | 5.4 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1770249 | 1 | 20 | 5.0 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1776532 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1772939 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1775065 | 1 | 16 | 6.2 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1769134 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Sulfide by Colourimetry (Automated Flow) | E395 | 1773301 | 1 | 15 | 6.6 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1776523 | 1 | 20 | 5.0 | 5.0 | ✓ |
| VH and F1 by Headspace GC-FID | E581.VH+F1 | 1774574 | 1 | 9 | 11.1 | 5.0 | ✓ |
| VOCs (BC List) by Headspace GC-MS | E611C | 1774573 | 1 | 19 | 5.2 | 5.0 | ✓ |
| **Matrix Spikes (MS)** | | | | | | | |
| Ammonia by Fluorescence | E298 | 1770123 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1770246 | 1 | 15 | 6.6 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1770245 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1773786 | 1 | 21 | 4.7 | 5.0 | × |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1769152 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1770127 | 1 | 8 | 12.5 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1770244 | 1 | 15 | 6.6 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1770247 | 1 | 20 | 5.0 | 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 | | | | | | | |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1770248 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1770249 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1772939 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1775065 | 1 | 16 | 6.2 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1769134 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Sulfide by Colourimetry (Automated Flow) | E395 | 1773301 | 1 | 15 | 6.6 | 5.0 | ✓ |
| VH and F1 by Headspace GC-FID | E581.VH+F1 | 1774574 | 1 | 9 | 11.1 | 5.0 | ✓ |
| VOCs (BC List) by Headspace GC-MS | E611C | 1774573 | 1 | 19 | 5.2 | 5.0 | ✓ |

## Methodology References and Summaries

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

| Analytical Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|---|---|---|---|
| TSS by Gravimetry | E160<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 Sulfide by Colourimetry (Automated Flow) | E395<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. |
| Total Hexavalent Chromium (Cr VI) by IC | E532<br><br>ALS Environmental - Waterloo | Water | APHA 3500-Cr C (Ion Chromatography) | Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection.<br><br>Results are based on an un-filtered, field-preserved sample. |

| Analytical Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|---|---|---|---|
| VH and F1 by Headspace GC-FID | E581.VH+F1<br><br>ALS Environmental - Vancouver | Water | BC MOE Lab Manual / CCME PHC in Soil - Tier 1 (mod) | Volatile Hydrocarbons (VH and F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.<br><br>Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements. |
| BC PHCs - EPH by GC-FID | E601A<br><br>ALS Environmental - Vancouver | Water | BC MOE Lab Manual | Sample extracts are analyzed by GC-FID for BC hydrocarbon fractions. |
| VOCs (BC List) by Headspace GC-MS | E611C<br><br>ALS Environmental - Vancouver | Water | EPA 8260D (mod) | Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.<br><br>Total Xylenes is the sum of m,p-Xylene & o-Xylene. Total BTEX is the sum of Benzene, Toluene, Ethylbenzene, & Total Xylenes. Total BTEX+Styrene is the sum of Total BTEX & Styrene. Total Trihalomethanes [THMs] is the sum of Bromodichloromethane, Bromoform, Chloroform, & Dibromochloromethane. |
| PAHs in Water by Hexane LVI GC-MS | E641A<br><br>ALS Environmental - Vancouver | Water | EPA 8270E (mod) | Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by large volume injection (LVI) GC-MS. |
| Glycols (4 analytes) by GC-FID | E680E<br><br>ALS Environmental - Vancouver | Water | EPA 8015D (mod) | Derivatized glycols are analyzed by GC-FID. |
| Dissolved Hardness (Calculated) | EC100<br><br>ALS Environmental - Vancouver | Water | APHA 2340B | "Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in $CaCO_3$ 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><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 $CaCO_3$ 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. |

| Analytical Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|---|---|---|---|
| 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 - Waterloo | 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. |
| VPH: VH-BTEX-Styrene | EC580A<br>ALS Environmental - Vancouver | Water | BC MOE Lab Manual (VPH in Water and Solids) (mod) | Volatile Petroleum Hydrocarbons (VPH) is calculated as follows: VPHw = Volatile Hydrocarbons (VH C6-C10) minus benzene, toluene, ethylbenzene, xylenes (BTEX) and styrene. |
| LEPH and HEPH: EPH-PAH | EC600A<br>ALS Environmental - Vancouver | Water | BC MOE Lab Manual (LEPH and HEPH) | Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are calculated as follows: LEPH = Extractable Petroleum Hydrocarbons (EPH10-19) minus Acenaphthene, Acridine, Anthracene, Fluorene, Naphthalene and Phenanthrene; HEPH = Extractable Petroleum Hydrocarbons (EPH19-32) minus Benz(a)anthracene, Benzo(a)pyrene, Fluoranthene, and Pyrene. |
| Field pH,EC,Salinity, TDS, 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, TDS, 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 |
| Dissolved Metals Water Filtration | EP421<br>ALS Environmental - Vancouver | Water | APHA 3030B | Water samples are filtered (0.45 um), and preserved with HNO3. |
| Dissolved Mercury Water Filtration | EP509<br>ALS Environmental - Vancouver | Water | APHA 3030B | Water samples are filtered (0.45 um), and preserved with HCl. |
| VOCs Preparation for Headspace Analysis | EP581<br>ALS Environmental - Vancouver | Water | EPA 5021A (mod) | Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID. |

| Preparation Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|---|---|---|---|
| PHCs and PAHs Hexane Extraction | EP601<br><br>ALS Environmental - Vancouver | Water | EPA 3511 (mod) | Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction. |
| Glycols Extraction and Derivatization (BC Only) | EP680E<br><br>ALS Environmental - Vancouver | Water | EPA 8015D (mod) | Aqueous sample is derivatized and extracted with orgaic solvent. |

# QUALITY CONTROL REPORT

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24D0990** | Page | : 1 of 23 |
| Client | : Triton Environmental Consultants Ltd. | Laboratory | : ALS Environmental - Vancouver |
| Contact | | Account Manager | |
| Address | | Address | |
| Telephone | | Telephone | |
| Project | | Date Samples Received | : 14-Nov-2024 17:00 |
| PO | | Date Analysis Commenced | : 15-Nov-2024 |
| C-O-C number | | Issue Date | : 22-Nov-2024 17:27 |
| Sampler | | | |
| Site | : Water Analysis | | |
| Quote number | : VA23-TRIT100-012 _V2 | | |
| 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* |
|---|---|---|

## 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: 1770240)** | | | | | | | | | | | |
| VA24D1110-002 | Anonymous | Alkalinity, total (as CaCO3) | ---- | E290 | 1.0 | mg/L | 68.3 | 68.2 | 0.146% | 20% | ---- |
| **Physical Tests (QC Lot: 1776523)** | | | | | | | | | | | |
| VA24D0990-001 | WLNG EOP Field Blank | Solids, total suspended [TSS] | ---- | E160 | 3.0 | mg/L | <3.0 | <3.0 | 0 | Diff <2x LOR | ---- |
| **Physical Tests (QC Lot: 1776532)** | | | | | | | | | | | |
| VA24D0990-001 | WLNG EOP Field Blank | Solids, total dissolved [TDS] | ---- | E162 | 13 | mg/L | 33 | 40 | 8 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1770123)** | | | | | | | | | | | |
| KS2404784-001 | Anonymous | 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: 1770244)** | | | | | | | | | | | |
| VA24D0988-001 | Anonymous | Fluoride | 16984-48-8 | E235.F | 0.020 | mg/L | <0.020 | 0.022 | 0.002 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1770245)** | | | | | | | | | | | |
| VA24D0988-001 | Anonymous | Chloride | 16887-00-6 | E235.Cl | 0.50 | mg/L | 0.75 | 0.74 | 0.01 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1770246)** | | | | | | | | | | | |
| VA24D0988-001 | Anonymous | Bromide | 24959-67-9 | E235.Br-L | 0.050 | mg/L | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1770247)** | | | | | | | | | | | |
| VA24D0988-001 | Anonymous | Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.0050 | mg/L | 0.0589 | 0.0582 | 1.11% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1770248)** | | | | | | | | | | | |
| VA24D0988-001 | Anonymous | Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.0010 | mg/L | <0.0010 | <0.0010 | 0 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1770249)** | | | | | | | | | | | |
| VA24D0988-001 | Anonymous | Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.30 | mg/L | 2.61 | 2.58 | 0.03 | Diff <2x LOR | ---- |
| **Organic / Inorganic Carbon (QC Lot: 1770127)** | | | | | | | | | | | |
| KS2404784-001 | Anonymous | Carbon, dissolved organic [DOC] | ---- | E358-L | 0.50 | mg/L | 2.06 | 1.96 | 0.11 | Diff <2x LOR | ---- |
| **Total Sulfides (QC Lot: 1773301)** | | | | | | | | | | | |
| FJ2403496-001 | Anonymous | Sulfide, total (as S) | 18496-25-8 | E395 | 0.0015 | mg/L | <0.0015 | <0.0015 | 0 | Diff <2x LOR | ---- |
| **Total Metals (QC Lot: 1769134)** | | | | | | | | | | | |
| FJ2403473-001 | Anonymous | Aluminum, total | 7429-90-5 | E420 | 0.0030 | mg/L | 0.0443 | 0.0445 | 0.352% | 20% | ---- |
| | | Antimony, total | 7440-36-0 | E420 | 0.00010 | mg/L | 0.00018 | 0.00017 | 0.000006 | Diff <2x LOR | ---- |
| | | Arsenic, total | 7440-38-2 | E420 | 0.00010 | mg/L | 0.00023 | 0.00025 | 0.00001 | Diff <2x LOR | ---- |
| | | Barium, total | 7440-39-3 | E420 | 0.00010 | mg/L | 0.0356 | 0.0356 | 0.216% | 20% | ---- |
| | | Beryllium, total | 7440-41-7 | E420 | 0.000100 | mg/L | <0.000100 | <0.000100 | 0 | Diff <2x LOR | ---- |
| | | Bismuth, total | 7440-69-9 | E420 | 0.000050 | mg/L | <0.000050 | <0.000050 | 0 | Diff <2x LOR | ---- |

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: 1769134) - continued** | | | | | | | | | | | |
| FJ2403473-001 | Anonymous | Boron, total | 7440-42-8 | E420 | 0.010 | mg/L | 0.027 | 0.025 | 0.001 | Diff <2x LOR | ---- |
| | | Cadmium, total | 7440-43-9 | E420 | 0.0000050 | mg/L | 0.0000244 | 0.0000275 | 0.0000031 | Diff <2x LOR | ---- |
| | | Calcium, total | 7440-70-2 | E420 | 0.050 | mg/L | 136 | 130 | 3.96% | 20% | ---- |
| | | Cesium, total | 7440-46-2 | E420 | 0.000010 | mg/L | 0.000015 | 0.000014 | 0.0000008 | 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 | 0.00062 | 0.00063 | 0.000006 | Diff <2x LOR | ---- |
| | | Copper, total | 7440-50-8 | E420 | 0.00050 | mg/L | 0.00068 | 0.00068 | 0.000009 | Diff <2x LOR | ---- |
| | | Iron, total | 7439-89-6 | E420 | 0.010 | mg/L | 0.173 | 0.176 | 1.71% | 20% | ---- |
| | | Lead, total | 7439-92-1 | E420 | 0.000050 | mg/L | <0.000050 | <0.000050 | 0 | Diff <2x LOR | ---- |
| | | Lithium, total | 7439-93-2 | E420 | 0.0010 | mg/L | 0.0435 | 0.0404 | 7.24% | 20% | ---- |
| | | Magnesium, total | 7439-95-4 | E420 | 0.0050 | mg/L | 139 | 143 | 2.64% | 20% | ---- |
| | | Manganese, total | 7439-96-5 | E420 | 0.00010 | mg/L | 0.124 | 0.127 | 2.02% | 20% | ---- |
| | | Molybdenum, total | 7439-98-7 | E420 | 0.000050 | mg/L | 0.00100 | 0.000998 | 0.231% | 20% | ---- |
| | | Nickel, total | 7440-02-0 | E420 | 0.00050 | mg/L | 0.00456 | 0.00463 | 0.00007 | 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 | 4.42 | 4.45 | 0.618% | 20% | ---- |
| | | Rubidium, total | 7440-17-7 | E420 | 0.00020 | mg/L | 0.00245 | 0.00246 | 0.397% | 20% | ---- |
| | | Selenium, total | 7782-49-2 | E420 | 0.000050 | mg/L | 0.00722 | 0.00735 | 1.81% | 20% | ---- |
| | | Silicon, total | 7440-21-3 | E420 | 0.10 | mg/L | 1.61 | 1.58 | 1.97% | 20% | ---- |
| | | Silver, total | 7440-22-4 | E420 | 0.000010 | mg/L | <0.000010 | <0.000010 | 0 | Diff <2x LOR | ---- |
| | | Sodium, total | 7440-23-5 | E420 | 0.050 | mg/L | 44.0 | 44.0 | 0.102% | 20% | ---- |
| | | Strontium, total | 7440-24-6 | E420 | 0.00020 | mg/L | 0.653 | 0.631 | 3.53% | 20% | ---- |
| | | Sulfur, total | 7704-34-9 | E420 | 0.50 | mg/L | 221 | 220 | 0.155% | 20% | ---- |
| | | Tellurium, total | 13494-80-9 | E420 | 0.00020 | mg/L | <0.00020 | <0.00020 | 0 | Diff <2x LOR | ---- |
| | | Thallium, total | 7440-28-0 | E420 | 0.000010 | mg/L | <0.000010 | <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 | 0.00090 | mg/L | <0.00060 | <0.00090 | 0.00030 | 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 | 0.00753 | 0.00724 | 3.98% | 20% | ---- |
| | | Vanadium, total | 7440-62-2 | E420 | 0.00050 | mg/L | <0.00050 | <0.00050 | 0 | Diff <2x LOR | ---- |
| | | Zinc, total | 7440-66-6 | E420 | 0.0030 | mg/L | 0.0035 | 0.0037 | 0.0001 | Diff <2x LOR | ---- |
| | | Zirconium, total | 7440-67-7 | E420 | 0.00020 | mg/L | <0.00020 | <0.00020 | 0 | Diff <2x LOR | ---- |
| **Total Metals (QC Lot: 1775065)** | | | | | | | | | | | |

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: 1775065) - continued** | | | | | | | | | | | |
| VA24D0972-017 | Anonymous | Mercury, total | 7439-97-6 | E508 | 0.0000050 | mg/L | <0.0000050 | <0.0000050 | 0 | Diff <2x LOR | ---- |
| **Dissolved Metals (QC Lot: 1769152)** | | | | | | | | | | | |
| VA24D0839-001 | Anonymous | Aluminum, dissolved | 7429-90-5 | E421 | 0.0010 | mg/L | 0.0036 | 0.0039 | 0.0002 | Diff <2x LOR | ---- |
| | | Antimony, dissolved | 7440-36-0 | E421 | 0.00010 | mg/L | 0.00043 | 0.00043 | 0.0000004 | Diff <2x LOR | ---- |
| | | Arsenic, dissolved | 7440-38-2 | E421 | 0.00010 | mg/L | 0.00489 | 0.00481 | 1.74% | 20% | ---- |
| | | Barium, dissolved | 7440-39-3 | E421 | 0.00010 | mg/L | 0.0387 | 0.0397 | 2.45% | 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 | 0.0000152 | 0.0000125 | 0.0000027 | Diff <2x LOR | ---- |
| | | Calcium, dissolved | 7440-70-2 | E421 | 0.050 | mg/L | 42.6 | 42.9 | 0.804% | 20% | ---- |
| | | Cesium, dissolved | 7440-46-2 | E421 | 0.000010 | mg/L | 0.000011 | 0.000011 | 0.0000002 | Diff <2x LOR | ---- |
| | | Chromium, dissolved | 7440-47-3 | E421 | 0.00050 | mg/L | <0.00050 | <0.00050 | 0 | Diff <2x LOR | ---- |
| | | Cobalt, dissolved | 7440-48-4 | E421 | 0.00010 | mg/L | 0.00793 | 0.00796 | 0.448% | 20% | ---- |
| | | Copper, dissolved | 7440-50-8 | E421 | 0.00020 | mg/L | 0.00026 | 0.00027 | 0.000004 | Diff <2x LOR | ---- |
| | | Iron, dissolved | 7439-89-6 | E421 | 0.010 | mg/L | 0.020 | 0.021 | 0.0004 | 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 | 0.0068 | 0.0067 | 0.0002 | Diff <2x LOR | ---- |
| | | Magnesium, dissolved | 7439-95-4 | E421 | 0.0050 | mg/L | 17.0 | 16.6 | 2.19% | 20% | ---- |
| | | Manganese, dissolved | 7439-96-5 | E421 | 0.00010 | mg/L | 0.0612 | 0.0616 | 0.545% | 20% | ---- |
| | | Molybdenum, dissolved | 7439-98-7 | E421 | 0.000050 | mg/L | 0.000338 | 0.000355 | 0.000017 | Diff <2x LOR | ---- |
| | | Nickel, dissolved | 7440-02-0 | E421 | 0.00050 | mg/L | 0.00582 | 0.00572 | 1.76% | 20% | ---- |
| | | Phosphorus, dissolved | 7723-14-0 | E421 | 0.050 | mg/L | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Potassium, dissolved | 7440-09-7 | E421 | 0.050 | mg/L | 1.10 | 1.08 | 1.75% | 20% | ---- |
| | | Rubidium, dissolved | 7440-17-7 | E421 | 0.00020 | mg/L | 0.00099 | 0.00110 | 0.00010 | Diff <2x LOR | ---- |
| | | Selenium, dissolved | 7782-49-2 | E421 | 0.000050 | mg/L | 0.000255 | 0.000259 | 0.000004 | Diff <2x LOR | ---- |
| | | Silicon, dissolved | 7440-21-3 | E421 | 0.050 | mg/L | 4.40 | 4.54 | 3.20% | 20% | ---- |
| | | Silver, dissolved | 7440-22-4 | E421 | 0.000010 | mg/L | 0.000148 | 0.000149 | 0.489% | 20% | ---- |
| | | Sodium, dissolved | 7440-23-5 | E421 | 0.050 | mg/L | 2.19 | 2.11 | 3.52% | 20% | ---- |
| | | Strontium, dissolved | 7440-24-6 | E421 | 0.00020 | mg/L | 0.224 | 0.222 | 0.950% | 20% | ---- |
| | | Sulfur, dissolved | 7704-34-9 | E421 | 0.50 | mg/L | 24.3 | 24.6 | 1.33% | 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 | ---- |

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: 1769152) - continued** | | | | | | | | | | | |
| VA24D0839-001 | Anonymous | 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 | 0.00150 | 0.00150 | 0.00334% | 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 | 0.0019 | 0.0019 | 0.00003 | 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: 1773786)** | | | | | | | | | | | |
| VA24D0937-007 | Anonymous | Mercury, dissolved | 7439-97-6 | E509 | 0.0000050 | mg/L | 0.0000933 | 0.0000934 | 0.0857% | 20% | ---- |
| **Dissolved Metals (QC Lot: 1773787)** | | | | | | | | | | | |
| VA24D0990-002 | WLNG EOP | Mercury, dissolved | 7439-97-6 | E509 | 0.0000050 | mg/L | <0.0000050 | <0.0000050 | 0 | Diff <2x LOR | ---- |
| **Speciated Metals (QC Lot: 1772939)** | | | | | | | | | | | |
| VA24D0876-001 | Anonymous | Chromium, hexavalent [Cr VI], total | 18540-29-9 | E532 | 0.00050 | mg/L | <0.00050 | <0.00050 | 0 | Diff <2x LOR | ---- |
| **Volatile Organic Compounds (QC Lot: 1774573)** | | | | | | | | | | | |
| VA24D0921-005 | Anonymous | Benzene | 71-43-2 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Bromodichloromethane | 75-27-4 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Bromoform | 75-25-2 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Carbon tetrachloride | 56-23-5 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Chlorobenzene | 108-90-7 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Chloroethane | 75-00-3 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Chloroform | 67-66-3 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Chloromethane | 74-87-3 | E611C | 5.0 | µg/L | <5.0 | <5.0 | 0 | Diff <2x LOR | ---- |
| | | Dibromochloromethane | 124-48-1 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichlorobenzene, 1,2- | 95-50-1 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichlorobenzene, 1,3- | 541-73-1 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichlorobenzene, 1,4- | 106-46-7 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethane, 1,1- | 75-34-3 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethane, 1,2- | 107-06-2 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethylene, 1,1- | 75-35-4 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethylene, cis-1,2- | 156-59-2 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethylene, trans-1,2- | 156-60-5 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloromethane | 75-09-2 | E611C | 1.0 | µg/L | <1.0 | <1.0 | 0 | Diff <2x LOR | ---- |
| | | Dichloropropane, 1,2- | 78-87-5 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloropropylene, cis-1,3- | 10061-01-5 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 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* |
| **Volatile Organic Compounds (QC Lot: 1774573) - continued** | | | | | | | | | | | |
| VA24D0921-005 | Anonymous | Dichloropropylene, trans-1,3- | 10061-02-6 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Ethylbenzene | 100-41-4 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Styrene | 100-42-5 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611C | 0.20 | µg/L | <0.20 | <0.20 | 0 | Diff <2x LOR | ---- |
| | | Tetrachloroethylene | 127-18-4 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Toluene | 108-88-3 | E611C | 0.40 | µg/L | <0.40 | <0.40 | 0 | Diff <2x LOR | ---- |
| | | Trichloroethane, 1,1,1- | 71-55-6 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Trichloroethane, 1,1,2- | 79-00-5 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Trichloroethylene | 79-01-6 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Trichlorofluoromethane | 75-69-4 | E611C | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Vinyl chloride | 75-01-4 | E611C | 0.40 | µg/L | <0.40 | <0.40 | 0 | Diff <2x LOR | ---- |
| | | Xylene, m+p- | 179601-23-1 | E611C | 0.40 | µg/L | <0.40 | <0.40 | 0 | Diff <2x LOR | ---- |
| | | Xylene, o- | 95-47-6 | E611C | 0.30 | µg/L | <0.30 | <0.30 | 0 | Diff <2x LOR | ---- |
| **Hydrocarbons (QC Lot: 1774574)** | | | | | | | | | | | |
| VA24D0921-005 | Anonymous | VHw (C6-C10) | ---- | E581.VH+F1 | 100 | µg/L | <100 | <100 | 0.0% | 30% | ---- |
| **Glycols (QC Lot: 1769031)** | | | | | | | | | | | |
| VA24D1001-001 | Anonymous | Diethylene glycol | 111-46-6 | E680E | 5.0 | mg/L | <5.0 | <5.0 | 0 | Diff <2x LOR | ---- |
| | | Ethylene glycol | 107-21-1 | E680E | 5.0 | mg/L | <5.0 | <5.0 | 0 | Diff <2x LOR | ---- |
| | | Propylene glycol, 1,2- | 57-55-6 | E680E | 5.0 | mg/L | <5.0 | <5.0 | 0 | Diff <2x LOR | ---- |
| | | Triethylene glycol | 112-27-6 | E680E | 5.0 | mg/L | <5.0 | <5.0 | 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: 1770240)** | | | | | | |
| Alkalinity, total (as CaCO3) | ---- | E290 | 1 | mg/L | <1.0 | ---- |
| **Physical Tests (QCLot: 1776523)** | | | | | | |
| Solids, total suspended [TSS] | ---- | E160 | 3 | mg/L | <3.0 | ---- |
| **Physical Tests (QCLot: 1776532)** | | | | | | |
| Solids, total dissolved [TDS] | ---- | E162 | 10 | mg/L | <10 | ---- |
| **Anions and Nutrients (QCLot: 1770123)** | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298 | 0.005 | mg/L | <0.0050 | ---- |
| **Anions and Nutrients (QCLot: 1770244)** | | | | | | |
| Fluoride | 16984-48-8 | E235.F | 0.02 | mg/L | <0.020 | ---- |
| **Anions and Nutrients (QCLot: 1770245)** | | | | | | |
| Chloride | 16887-00-6 | E235.Cl | 0.5 | mg/L | <0.50 | ---- |
| **Anions and Nutrients (QCLot: 1770246)** | | | | | | |
| Bromide | 24959-67-9 | E235.Br-L | 0.05 | mg/L | <0.050 | ---- |
| **Anions and Nutrients (QCLot: 1770247)** | | | | | | |
| Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.005 | mg/L | <0.0050 | ---- |
| **Anions and Nutrients (QCLot: 1770248)** | | | | | | |
| Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.001 | mg/L | <0.0010 | ---- |
| **Anions and Nutrients (QCLot: 1770249)** | | | | | | |
| Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.3 | mg/L | <0.30 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1770127)** | | | | | | |
| Carbon, dissolved organic [DOC] | ---- | E358-L | 0.5 | mg/L | <0.50 | ---- |
| **Total Sulfides (QCLot: 1773301)** | | | | | | |
| Sulfide, total (as S) | 18496-25-8 | E395 | 0.0015 | mg/L | <0.0015 | ---- |
| **Total Metals (QCLot: 1769134)** | | | | | | |
| Aluminum, total | 7429-90-5 | E420 | 0.003 | mg/L | <0.0030 | ---- |
| Antimony, total | 7440-36-0 | E420 | 0.0001 | mg/L | <0.00010 | ---- |
| Arsenic, total | 7440-38-2 | E420 | 0.0001 | mg/L | <0.00010 | ---- |
| Barium, total | 7440-39-3 | E420 | 0.0001 | mg/L | <0.00010 | ---- |
| Beryllium, total | 7440-41-7 | E420 | 0.00002 | mg/L | <0.000020 | ---- |
| Bismuth, total | 7440-69-9 | E420 | 0.00005 | mg/L | <0.000050 | ---- |
| Boron, total | 7440-42-8 | E420 | 0.01 | mg/L | <0.010 | ---- |
| Cadmium, total | 7440-43-9 | E420 | 0.000005 | mg/L | <0.0000050 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|---|---|---|---|---|---|
| **Total Metals (QCLot: 1769134) - continued** | | | | | | |
| 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 | ---- |
| **Total Metals (QCLot: 1775065)** | | | | | | |
| Mercury, total | 7439-97-6 | E508 | 0.000005 | mg/L | <0.0000050 | ---- |
| **Dissolved Metals (QCLot: 1769152)** | | | | | | |
| Aluminum, dissolved | 7429-90-5 | E421 | 0.001 | mg/L | <0.0010 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|---|---|---|---|---|---|
| **Dissolved Metals (QCLot: 1769152) - continued** | | | | | | |
| 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 | ---- |
| 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 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|---|---|---|---|---|---|
| **Dissolved Metals (QCLot: 1769152) - continued** | | | | | | |
| 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: 1773786)** | | | | | | |
| Mercury, dissolved | 7439-97-6 | E509 | 0.000005 | mg/L | <0.0000050 | ---- |
| **Dissolved Metals (QCLot: 1773787)** | | | | | | |
| Mercury, dissolved | 7439-97-6 | E509 | 0.000005 | mg/L | <0.0000050 | ---- |
| **Speciated Metals (QCLot: 1772939)** | | | | | | |
| Chromium, hexavalent [Cr VI], total | 18540-29-9 | E532 | 0.0005 | mg/L | <0.00050 | ---- |
| **Volatile Organic Compounds (QCLot: 1774573)** | | | | | | |
| Benzene | 71-43-2 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Bromodichloromethane | 75-27-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Bromoform | 75-25-2 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Carbon tetrachloride | 56-23-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Chlorobenzene | 108-90-7 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Chloroethane | 75-00-3 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Chloroform | 67-66-3 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Chloromethane | 74-87-3 | E611C | 5 | µg/L | <5.0 | ---- |
| Dibromochloromethane | 124-48-1 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichlorobenzene, 1,2- | 95-50-1 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichlorobenzene, 1,3- | 541-73-1 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichlorobenzene, 1,4- | 106-46-7 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethane, 1,1- | 75-34-3 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethane, 1,2- | 107-06-2 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethylene, 1,1- | 75-35-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethylene, cis-1,2- | 156-59-2 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethylene, trans-1,2- | 156-60-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloromethane | 75-09-2 | E611C | 1 | µg/L | <1.0 | ---- |
| Dichloropropane, 1,2- | 78-87-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloropropylene, cis-1,3- | 10061-01-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Dichloropropylene, trans-1,3- | 10061-02-6 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Ethylbenzene | 100-41-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Styrene | 100-42-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611C | 0.5 | µg/L | <0.50 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|---|---|---|---|---|---|
| **Volatile Organic Compounds (QCLot: 1774573) - continued** | | | | | | |
| Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611C | 0.2 | µg/L | <0.20 | ---- |
| Tetrachloroethylene | 127-18-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Toluene | 108-88-3 | E611C | 0.4 | µg/L | <0.40 | ---- |
| Trichloroethane, 1,1,1- | 71-55-6 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Trichloroethane, 1,1,2- | 79-00-5 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Trichloroethylene | 79-01-6 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Trichlorofluoromethane | 75-69-4 | E611C | 0.5 | µg/L | <0.50 | ---- |
| Vinyl chloride | 75-01-4 | E611C | 0.4 | µg/L | <0.40 | ---- |
| Xylene, m+p- | 179601-23-1 | E611C | 0.4 | µg/L | <0.40 | ---- |
| Xylene, o- | 95-47-6 | E611C | 0.3 | µg/L | <0.30 | ---- |
| **Hydrocarbons (QCLot: 1769506)** | | | | | | |
| EPH (C10-C19) | ---- | E601A | 250 | µg/L | <250 | ---- |
| EPH (C19-C32) | ---- | E601A | 250 | µg/L | <250 | ---- |
| **Hydrocarbons (QCLot: 1769525)** | | | | | | |
| EPH (C10-C19) | ---- | E601A | 250 | µg/L | <250 | ---- |
| EPH (C19-C32) | ---- | E601A | 250 | µg/L | <250 | ---- |
| **Hydrocarbons (QCLot: 1774574)** | | | | | | |
| VHw (C6-C10) | ---- | E581.VH+F1 | 100 | µg/L | <100 | ---- |
| **Polycyclic Aromatic Hydrocarbons (QCLot: 1769507)** | | | | | | |
| Acenaphthene | 83-32-9 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Acenaphthylene | 208-96-8 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Acridine | 260-94-6 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Anthracene | 120-12-7 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Benz(a)anthracene | 56-55-3 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Benzo(a)pyrene | 50-32-8 | E641A | 0.005 | µg/L | <0.0050 | ---- |
| Benzo(b+j)fluoranthene | n/a | E641A | 0.01 | µg/L | <0.010 | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Benzo(k)fluoranthene | 207-08-9 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Chrysene | 218-01-9 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | E641A | 0.005 | µg/L | <0.0050 | ---- |
| Fluoranthene | 206-44-0 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Fluorene | 86-73-7 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Indeno(1,2,3-c,d)pyrene | 193-39-5 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Methylnaphthalene, 1- | 90-12-0 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Methylnaphthalene, 2- | 91-57-6 | E641A | 0.01 | µg/L | <0.010 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|---|---|---|---|---|---|
| **Polycyclic Aromatic Hydrocarbons (QCLot: 1769507) - continued** | | | | | | |
| Naphthalene | 91-20-3 | E641A | 0.05 | µg/L | <0.050 | ---- |
| Phenanthrene | 85-01-8 | E641A | 0.02 | µg/L | <0.020 | ---- |
| Pyrene | 129-00-0 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Quinoline | 91-22-5 | E641A | 0.05 | µg/L | <0.050 | ---- |
| **Polycyclic Aromatic Hydrocarbons (QCLot: 1769526)** | | | | | | |
| Acenaphthene | 83-32-9 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Acenaphthylene | 208-96-8 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Acridine | 260-94-6 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Anthracene | 120-12-7 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Benz(a)anthracene | 56-55-3 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Benzo(a)pyrene | 50-32-8 | E641A | 0.005 | µg/L | <0.0050 | ---- |
| Benzo(b+j)fluoranthene | n/a | E641A | 0.01 | µg/L | <0.010 | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Benzo(k)fluoranthene | 207-08-9 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Chrysene | 218-01-9 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | E641A | 0.005 | µg/L | <0.0050 | ---- |
| Fluoranthene | 206-44-0 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Fluorene | 86-73-7 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Indeno(1,2,3-c,d)pyrene | 193-39-5 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Methylnaphthalene, 1- | 90-12-0 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Methylnaphthalene, 2- | 91-57-6 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Naphthalene | 91-20-3 | E641A | 0.05 | µg/L | <0.050 | ---- |
| Phenanthrene | 85-01-8 | E641A | 0.02 | µg/L | <0.020 | ---- |
| Pyrene | 129-00-0 | E641A | 0.01 | µg/L | <0.010 | ---- |
| Quinoline | 91-22-5 | E641A | 0.05 | µg/L | <0.050 | ---- |
| **Glycols (QCLot: 1769031)** | | | | | | |
| Diethylene glycol | 111-46-6 | E680E | 5 | mg/L | <5.0 | ---- |
| Ethylene glycol | 107-21-1 | E680E | 5 | mg/L | <5.0 | ---- |
| Propylene glycol, 1,2- | 57-55-6 | E680E | 5 | mg/L | <5.0 | ---- |
| Triethylene glycol | 112-27-6 | E680E | 5 | mg/L | <5.0 | ---- |

## 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: 1770240)** | | | | | | | | | |
| Alkalinity, total (as CaCO3) | ---- | E290 | 1 | mg/L | 500 mg/L | 104 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1776523)** | | | | | | | | | |
| Solids, total suspended [TSS] | ---- | E160 | 3 | mg/L | 150 mg/L | 106 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1776532)** | | | | | | | | | |
| Solids, total dissolved [TDS] | ---- | E162 | 10 | mg/L | 1000 mg/L | 98.6 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1770123)** | | | | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298 | 0.005 | mg/L | 0.2 mg/L | 101 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1770244)** | | | | | | | | | |
| Fluoride | 16984-48-8 | E235.F | 0.02 | mg/L | 1 mg/L | 98.1 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1770245)** | | | | | | | | | |
| Chloride | 16887-00-6 | E235.Cl | 0.5 | mg/L | 100 mg/L | 99.1 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1770246)** | | | | | | | | | |
| Bromide | 24959-67-9 | E235.Br-L | 0.05 | mg/L | 0.5 mg/L | 102 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1770247)** | | | | | | | | | |
| Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.005 | mg/L | 2.5 mg/L | 98.5 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1770248)** | | | | | | | | | |
| Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.001 | mg/L | 0.5 mg/L | 97.7 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1770249)** | | | | | | | | | |
| Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.3 | mg/L | 100 mg/L | 99.8 | 90.0 | 110 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1770127)** | | | | | | | | | |
| Carbon, dissolved organic [DOC] | ---- | E358-L | 0.5 | mg/L | 8.57 mg/L | 101 | 80.0 | 120 | ---- |
| **Total Sulfides (QCLot: 1773301)** | | | | | | | | | |
| Sulfide, total (as S) | 18496-25-8 | E395 | 0.0015 | mg/L | 0.08 mg/L | 95.9 | 80.0 | 120 | ---- |
| **Total Metals (QCLot: 1769134)** | | | | | | | | | |
| Aluminum, total | 7429-90-5 | E420 | 0.003 | mg/L | 2 mg/L | 101 | 80.0 | 120 | ---- |
| Antimony, total | 7440-36-0 | E420 | 0.0001 | mg/L | 1 mg/L | 106 | 80.0 | 120 | ---- |
| Arsenic, total | 7440-38-2 | E420 | 0.0001 | mg/L | 1 mg/L | 103 | 80.0 | 120 | ---- |
| Barium, total | 7440-39-3 | E420 | 0.0001 | mg/L | 0.25 mg/L | 96.2 | 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: 1769134) - continued** | | | | | | | | | |
| Beryllium, total | 7440-41-7 | E420 | 0.00002 | mg/L | 0.1 mg/L | 100.0 | 80.0 | 120 | ---- |
| Bismuth, total | 7440-69-9 | E420 | 0.00005 | mg/L | 1 mg/L | 96.0 | 80.0 | 120 | ---- |
| Boron, total | 7440-42-8 | E420 | 0.01 | mg/L | 1 mg/L | 95.3 | 80.0 | 120 | ---- |
| Cadmium, total | 7440-43-9 | E420 | 0.000005 | mg/L | 0.1 mg/L | 97.8 | 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 | 103 | 80.0 | 120 | ---- |
| Chromium, total | 7440-47-3 | E420 | 0.0005 | mg/L | 0.25 mg/L | 99.4 | 80.0 | 120 | ---- |
| Cobalt, total | 7440-48-4 | E420 | 0.0001 | mg/L | 0.25 mg/L | 99.1 | 80.0 | 120 | ---- |
| Copper, total | 7440-50-8 | E420 | 0.0005 | mg/L | 0.25 mg/L | 97.8 | 80.0 | 120 | ---- |
| Iron, total | 7439-89-6 | E420 | 0.01 | mg/L | 1 mg/L | 93.9 | 80.0 | 120 | ---- |
| Lead, total | 7439-92-1 | E420 | 0.00005 | mg/L | 0.5 mg/L | 101 | 80.0 | 120 | ---- |
| Lithium, total | 7439-93-2 | E420 | 0.001 | mg/L | 0.25 mg/L | 99.6 | 80.0 | 120 | ---- |
| Magnesium, total | 7439-95-4 | E420 | 0.005 | mg/L | 50 mg/L | 110 | 80.0 | 120 | ---- |
| Manganese, total | 7439-96-5 | E420 | 0.0001 | mg/L | 0.25 mg/L | 101 | 80.0 | 120 | ---- |
| Molybdenum, total | 7439-98-7 | E420 | 0.00005 | mg/L | 0.25 mg/L | 102 | 80.0 | 120 | ---- |
| Nickel, total | 7440-02-0 | E420 | 0.0005 | mg/L | 0.5 mg/L | 97.5 | 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 | 103 | 80.0 | 120 | ---- |
| Rubidium, total | 7440-17-7 | E420 | 0.0002 | mg/L | 0.1 mg/L | 104 | 80.0 | 120 | ---- |
| Selenium, total | 7782-49-2 | E420 | 0.00005 | mg/L | 1 mg/L | 95.3 | 80.0 | 120 | ---- |
| Silicon, total | 7440-21-3 | E420 | 0.1 | mg/L | 10 mg/L | 102 | 80.0 | 120 | ---- |
| Silver, total | 7440-22-4 | E420 | 0.00001 | mg/L | 0.1 mg/L | 96.5 | 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 | 100 | 80.0 | 120 | ---- |
| Sulfur, total | 7704-34-9 | E420 | 0.5 | mg/L | 50 mg/L | 97.2 | 80.0 | 120 | ---- |
| Tellurium, total | 13494-80-9 | E420 | 0.0002 | mg/L | 0.1 mg/L | 97.6 | 80.0 | 120 | ---- |
| Thallium, total | 7440-28-0 | E420 | 0.00001 | mg/L | 1 mg/L | 100 | 80.0 | 120 | ---- |
| Thorium, total | 7440-29-1 | E420 | 0.0001 | mg/L | 0.1 mg/L | 99.4 | 80.0 | 120 | ---- |
| Tin, total | 7440-31-5 | E420 | 0.0001 | mg/L | 0.5 mg/L | 97.6 | 80.0 | 120 | ---- |
| Titanium, total | 7440-32-6 | E420 | 0.0003 | mg/L | 0.25 mg/L | 95.7 | 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 | 95.1 | 80.0 | 120 | ---- |
| Vanadium, total | 7440-62-2 | E420 | 0.0005 | mg/L | 0.5 mg/L | 102 | 80.0 | 120 | ---- |
| Zinc, total | 7440-66-6 | E420 | 0.003 | mg/L | 0.5 mg/L | 94.8 | 80.0 | 120 | ---- |
| Zirconium, total | 7440-67-7 | E420 | 0.0002 | mg/L | 0.1 mg/L | 96.8 | 80.0 | 120 | ---- |
| **Total Metals (QCLot: 1775065)** | | | | | | | | | |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| | | | | | Target Concentration | LCS | Low | High | Qualifier |
| **Total Metals (QCLot: 1775065) - continued** | | | | | | | | | |
| Mercury, total | 7439-97-6 | E508 | 0.000005 | mg/L | 0 mg/L | 96.6 | 80.0 | 120 | ---- |
| **Dissolved Metals (QCLot: 1769152)** | | | | | | | | | |
| Aluminum, dissolved | 7429-90-5 | E421 | 0.001 | mg/L | 2 mg/L | 98.5 | 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 | 103 | 80.0 | 120 | ---- |
| Barium, dissolved | 7440-39-3 | E421 | 0.0001 | mg/L | 0.25 mg/L | 96.8 | 80.0 | 120 | ---- |
| Beryllium, dissolved | 7440-41-7 | E421 | 0.00002 | mg/L | 0.1 mg/L | 105 | 80.0 | 120 | ---- |
| Bismuth, dissolved | 7440-69-9 | E421 | 0.00005 | mg/L | 1 mg/L | 97.6 | 80.0 | 120 | ---- |
| Boron, dissolved | 7440-42-8 | E421 | 0.01 | mg/L | 1 mg/L | 87.1 | 80.0 | 120 | ---- |
| Cadmium, dissolved | 7440-43-9 | E421 | 0.000005 | mg/L | 0.1 mg/L | 91.2 | 80.0 | 120 | ---- |
| Calcium, dissolved | 7440-70-2 | E421 | 0.05 | mg/L | 50 mg/L | 101 | 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 | 98.7 | 80.0 | 120 | ---- |
| Cobalt, dissolved | 7440-48-4 | E421 | 0.0001 | mg/L | 0.25 mg/L | 96.0 | 80.0 | 120 | ---- |
| Copper, dissolved | 7440-50-8 | E421 | 0.0002 | mg/L | 0.25 mg/L | 95.2 | 80.0 | 120 | ---- |
| Iron, dissolved | 7439-89-6 | E421 | 0.01 | mg/L | 1 mg/L | 91.2 | 80.0 | 120 | ---- |
| Lead, dissolved | 7439-92-1 | E421 | 0.00005 | mg/L | 0.5 mg/L | 100 | 80.0 | 120 | ---- |
| Lithium, dissolved | 7439-93-2 | E421 | 0.001 | mg/L | 0.25 mg/L | 103 | 80.0 | 120 | ---- |
| Magnesium, dissolved | 7439-95-4 | E421 | 0.005 | mg/L | 50 mg/L | 106 | 80.0 | 120 | ---- |
| Manganese, dissolved | 7439-96-5 | E421 | 0.0001 | mg/L | 0.25 mg/L | 99.7 | 80.0 | 120 | ---- |
| Molybdenum, dissolved | 7439-98-7 | E421 | 0.00005 | mg/L | 0.25 mg/L | 102 | 80.0 | 120 | ---- |
| Nickel, dissolved | 7440-02-0 | E421 | 0.0005 | mg/L | 0.5 mg/L | 97.8 | 80.0 | 120 | ---- |
| Phosphorus, dissolved | 7723-14-0 | E421 | 0.05 | mg/L | 10 mg/L | 104 | 80.0 | 120 | ---- |
| Potassium, dissolved | 7440-09-7 | E421 | 0.05 | mg/L | 50 mg/L | 98.6 | 80.0 | 120 | ---- |
| Rubidium, dissolved | 7440-17-7 | E421 | 0.0002 | mg/L | 0.1 mg/L | 105 | 80.0 | 120 | ---- |
| Selenium, dissolved | 7782-49-2 | E421 | 0.00005 | mg/L | 1 mg/L | 93.6 | 80.0 | 120 | ---- |
| Silicon, dissolved | 7440-21-3 | E421 | 0.05 | mg/L | 10 mg/L | 97.1 | 80.0 | 120 | ---- |
| Silver, dissolved | 7440-22-4 | E421 | 0.00001 | mg/L | 0.1 mg/L | 97.0 | 80.0 | 120 | ---- |
| Sodium, dissolved | 7440-23-5 | E421 | 0.05 | mg/L | 50 mg/L | 100 | 80.0 | 120 | ---- |
| Strontium, dissolved | 7440-24-6 | E421 | 0.0002 | mg/L | 0.25 mg/L | 102 | 80.0 | 120 | ---- |
| Sulfur, dissolved | 7704-34-9 | E421 | 0.5 | mg/L | 50 mg/L | 95.5 | 80.0 | 120 | ---- |
| 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 | 99.2 | 80.0 | 120 | ---- |
| Thorium, dissolved | 7440-29-1 | E421 | 0.0001 | mg/L | 0.1 mg/L | 97.8 | 80.0 | 120 | ---- |
| Tin, dissolved | 7440-31-5 | E421 | 0.0001 | mg/L | 0.5 mg/L | 95.3 | 80.0 | 120 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| | | | | | Target Concentration | LCS | Low | High | Qualifier |
| **Dissolved Metals (QCLot: 1769152) - continued** | | | | | | | | | |
| Titanium, dissolved | 7440-32-6 | E421 | 0.0003 | mg/L | 0.25 mg/L | 95.2 | 80.0 | 120 | ---- |
| Tungsten, dissolved | 7440-33-7 | E421 | 0.0001 | mg/L | 0.1 mg/L | 101 | 80.0 | 120 | ---- |
| Uranium, dissolved | 7440-61-1 | E421 | 0.00001 | mg/L | 0.005 mg/L | 98.5 | 80.0 | 120 | ---- |
| Vanadium, dissolved | 7440-62-2 | E421 | 0.0005 | mg/L | 0.5 mg/L | 101 | 80.0 | 120 | ---- |
| Zinc, dissolved | 7440-66-6 | E421 | 0.001 | mg/L | 0.5 mg/L | 96.5 | 80.0 | 120 | ---- |
| Zirconium, dissolved | 7440-67-7 | E421 | 0.0002 | mg/L | 0.1 mg/L | 98.9 | 80.0 | 120 | ---- |
| Mercury, dissolved | 7439-97-6 | E509 | 0.000005 | mg/L | 0 mg/L | 95.6 | 80.0 | 120 | ---- |
| Mercury, dissolved | 7439-97-6 | E509 | 0.000005 | mg/L | 0 mg/L | 96.1 | 80.0 | 120 | ---- |
| **Speciated Metals (QCLot: 1772939)** | | | | | | | | | |
| Chromium, hexavalent [Cr VI], total | 18540-29-9 | E532 | 0.0005 | mg/L | 0.025 mg/L | 98.2 | 80.0 | 120 | ---- |
| **Volatile Organic Compounds (QCLot: 1774573)** | | | | | | | | | |
| Benzene | 71-43-2 | E611C | 0.5 | µg/L | 100 µg/L | 93.0 | 70.0 | 130 | ---- |
| Bromodichloromethane | 75-27-4 | E611C | 0.5 | µg/L | 100 µg/L | 88.5 | 70.0 | 130 | ---- |
| Bromoform | 75-25-2 | E611C | 0.5 | µg/L | 100 µg/L | 93.4 | 70.0 | 130 | ---- |
| Carbon tetrachloride | 56-23-5 | E611C | 0.5 | µg/L | 100 µg/L | 99.2 | 70.0 | 130 | ---- |
| Chlorobenzene | 108-90-7 | E611C | 0.5 | µg/L | 100 µg/L | 95.5 | 70.0 | 130 | ---- |
| Chloroethane | 75-00-3 | E611C | 0.5 | µg/L | 100 µg/L | 108 | 60.0 | 140 | ---- |
| Chloroform | 67-66-3 | E611C | 0.5 | µg/L | 100 µg/L | 94.0 | 70.0 | 130 | ---- |
| Chloromethane | 74-87-3 | E611C | 5 | µg/L | 100 µg/L | 97.7 | 60.0 | 140 | ---- |
| Dibromochloromethane | 124-48-1 | E611C | 0.5 | µg/L | 100 µg/L | 90.0 | 70.0 | 130 | ---- |
| Dichlorobenzene, 1,2- | 95-50-1 | E611C | 0.5 | µg/L | 100 µg/L | 95.1 | 70.0 | 130 | ---- |
| Dichlorobenzene, 1,3- | 541-73-1 | E611C | 0.5 | µg/L | 100 µg/L | 98.0 | 70.0 | 130 | ---- |
| Dichlorobenzene, 1,4- | 106-46-7 | E611C | 0.5 | µg/L | 100 µg/L | 97.0 | 70.0 | 130 | ---- |
| Dichloroethane, 1,1- | 75-34-3 | E611C | 0.5 | µg/L | 100 µg/L | 95.5 | 70.0 | 130 | ---- |
| Dichloroethane, 1,2- | 107-06-2 | E611C | 0.5 | µg/L | 100 µg/L | 86.3 | 70.0 | 130 | ---- |
| Dichloroethylene, 1,1- | 75-35-4 | E611C | 0.5 | µg/L | 100 µg/L | 98.3 | 70.0 | 130 | ---- |
| Dichloroethylene, cis-1,2- | 156-59-2 | E611C | 0.5 | µg/L | 100 µg/L | 92.4 | 70.0 | 130 | ---- |
| Dichloroethylene, trans-1,2- | 156-60-5 | E611C | 0.5 | µg/L | 100 µg/L | 104 | 70.0 | 130 | ---- |
| Dichloromethane | 75-09-2 | E611C | 1 | µg/L | 100 µg/L | 89.4 | 70.0 | 130 | ---- |
| Dichloropropane, 1,2- | 78-87-5 | E611C | 0.5 | µg/L | 100 µg/L | 93.1 | 70.0 | 130 | ---- |
| Dichloropropylene, cis-1,3- | 10061-01-5 | E611C | 0.5 | µg/L | 100 µg/L | 82.4 | 70.0 | 130 | ---- |
| Dichloropropylene, trans-1,3- | 10061-02-6 | E611C | 0.5 | µg/L | 100 µg/L | 83.0 | 70.0 | 130 | ---- |
| Ethylbenzene | 100-41-4 | E611C | 0.5 | µg/L | 100 µg/L | 99.3 | 70.0 | 130 | ---- |
| Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611C | 0.5 | µg/L | 100 µg/L | 99.0 | 70.0 | 130 | ---- |

Sub-Matrix: **Water**

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Target Concentration | LCS | Low | High | Qualifier |
| **Volatile Organic Compounds (QCLot: 1774573) - continued** | | | | | | | | | |
| Styrene | 100-42-5 | E611C | 0.5 | µg/L | 100 µg/L | 94.7 | 70.0 | 130 | ---- |
| Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611C | 0.5 | µg/L | 100 µg/L | 96.7 | 70.0 | 130 | ---- |
| Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611C | 0.2 | µg/L | 100 µg/L | 85.0 | 70.0 | 130 | ---- |
| Tetrachloroethylene | 127-18-4 | E611C | 0.5 | µg/L | 100 µg/L | 98.5 | 70.0 | 130 | ---- |
| Toluene | 108-88-3 | E611C | 0.4 | µg/L | 100 µg/L | 98.6 | 70.0 | 130 | ---- |
| Trichloroethane, 1,1,1- | 71-55-6 | E611C | 0.5 | µg/L | 100 µg/L | 100 | 70.0 | 130 | ---- |
| Trichloroethane, 1,1,2- | 79-00-5 | E611C | 0.5 | µg/L | 100 µg/L | 88.1 | 70.0 | 130 | ---- |
| Trichloroethylene | 79-01-6 | E611C | 0.5 | µg/L | 100 µg/L | 94.0 | 70.0 | 130 | ---- |
| Trichlorofluoromethane | 75-69-4 | E611C | 0.5 | µg/L | 100 µg/L | 104 | 60.0 | 140 | ---- |
| Vinyl chloride | 75-01-4 | E611C | 0.4 | µg/L | 100 µg/L | 102 | 60.0 | 140 | ---- |
| Xylene, m+p- | 179601-23-1 | E611C | 0.4 | µg/L | 200 µg/L | 99.8 | 70.0 | 130 | ---- |
| Xylene, o- | 95-47-6 | E611C | 0.3 | µg/L | 100 µg/L | 97.1 | 70.0 | 130 | ---- |
| **Hydrocarbons (QCLot: 1769506)** | | | | | | | | | |
| EPH (C10-C19) | ---- | E601A | 250 | µg/L | 6490 µg/L | 108 | 70.0 | 130 | ---- |
| EPH (C19-C32) | ---- | E601A | 250 | µg/L | 3360 µg/L | 94.1 | 70.0 | 130 | ---- |
| **Hydrocarbons (QCLot: 1769525)** | | | | | | | | | |
| EPH (C10-C19) | ---- | E601A | 250 | µg/L | 6490 µg/L | 106 | 70.0 | 130 | ---- |
| EPH (C19-C32) | ---- | E601A | 250 | µg/L | 3360 µg/L | 92.9 | 70.0 | 130 | ---- |
| **Hydrocarbons (QCLot: 1774574)** | | | | | | | | | |
| VHw (C6-C10) | ---- | E581.VH+F1 | 100 | µg/L | 6310 µg/L | 70.2 | 70.0 | 130 | ---- |
| **Polycyclic Aromatic Hydrocarbons (QCLot: 1769507)** | | | | | | | | | |
| Acenaphthene | 83-32-9 | E641A | 0.01 | µg/L | 0.5 µg/L | 110 | 60.0 | 130 | ---- |
| Acenaphthylene | 208-96-8 | E641A | 0.01 | µg/L | 0.5 µg/L | 119 | 60.0 | 130 | ---- |
| Acridine | 260-94-6 | E641A | 0.01 | µg/L | 0.5 µg/L | 113 | 60.0 | 130 | ---- |
| Anthracene | 120-12-7 | E641A | 0.01 | µg/L | 0.5 µg/L | 113 | 60.0 | 130 | ---- |
| Benz(a)anthracene | 56-55-3 | E641A | 0.01 | µg/L | 0.5 µg/L | 94.8 | 60.0 | 130 | ---- |
| Benzo(a)pyrene | 50-32-8 | E641A | 0.005 | µg/L | 0.5 µg/L | 113 | 60.0 | 130 | ---- |
| Benzo(b+j)fluoranthene | n/a | E641A | 0.01 | µg/L | 0.5 µg/L | 111 | 60.0 | 130 | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | E641A | 0.01 | µg/L | 0.5 µg/L | 112 | 60.0 | 130 | ---- |
| Benzo(k)fluoranthene | 207-08-9 | E641A | 0.01 | µg/L | 0.5 µg/L | 112 | 60.0 | 130 | ---- |
| Chrysene | 218-01-9 | E641A | 0.01 | µg/L | 0.5 µg/L | 99.7 | 60.0 | 130 | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | E641A | 0.005 | µg/L | 0.5 µg/L | 117 | 60.0 | 130 | ---- |
| Fluoranthene | 206-44-0 | E641A | 0.01 | µg/L | 0.5 µg/L | 116 | 60.0 | 130 | ---- |
| Fluorene | 86-73-7 | E641A | 0.01 | µg/L | 0.5 µg/L | 110 | 60.0 | 130 | ---- |

Sub-Matrix: **Water**

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Target Concentration | LCS | Low | High | Qualifier |
| **Polycyclic Aromatic Hydrocarbons (QCLot: 1769507) - continued** | | | | | | | | | |
| Indeno(1,2,3-c,d)pyrene | 193-39-5 | E641A | 0.01 | µg/L | 0.5 µg/L | 107 | 60.0 | 130 | ---- |
| Methylnaphthalene, 1- | 90-12-0 | E641A | 0.01 | µg/L | 0.5 µg/L | 104 | 60.0 | 130 | ---- |
| Methylnaphthalene, 2- | 91-57-6 | E641A | 0.01 | µg/L | 0.5 µg/L | 114 | 60.0 | 130 | ---- |
| Naphthalene | 91-20-3 | E641A | 0.05 | µg/L | 0.5 µg/L | 110 | 50.0 | 130 | ---- |
| Phenanthrene | 85-01-8 | E641A | 0.02 | µg/L | 0.5 µg/L | 109 | 60.0 | 130 | ---- |
| Pyrene | 129-00-0 | E641A | 0.01 | µg/L | 0.5 µg/L | 112 | 60.0 | 130 | ---- |
| Quinoline | 91-22-5 | E641A | 0.05 | µg/L | 0.5 µg/L | 112 | 60.0 | 130 | ---- |
| **Polycyclic Aromatic Hydrocarbons (QCLot: 1769526)** | | | | | | | | | |
| Acenaphthene | 83-32-9 | E641A | 0.01 | µg/L | 0.5 µg/L | 113 | 60.0 | 130 | ---- |
| Acenaphthylene | 208-96-8 | E641A | 0.01 | µg/L | 0.5 µg/L | 118 | 60.0 | 130 | ---- |
| Acridine | 260-94-6 | E641A | 0.01 | µg/L | 0.5 µg/L | 116 | 60.0 | 130 | ---- |
| Anthracene | 120-12-7 | E641A | 0.01 | µg/L | 0.5 µg/L | 124 | 60.0 | 130 | ---- |
| Benz(a)anthracene | 56-55-3 | E641A | 0.01 | µg/L | 0.5 µg/L | 113 | 60.0 | 130 | ---- |
| Benzo(a)pyrene | 50-32-8 | E641A | 0.005 | µg/L | 0.5 µg/L | 116 | 60.0 | 130 | ---- |
| Benzo(b+j)fluoranthene | n/a | E641A | 0.01 | µg/L | 0.5 µg/L | 122 | 60.0 | 130 | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | E641A | 0.01 | µg/L | 0.5 µg/L | 108 | 60.0 | 130 | ---- |
| Benzo(k)fluoranthene | 207-08-9 | E641A | 0.01 | µg/L | 0.5 µg/L | 116 | 60.0 | 130 | ---- |
| Chrysene | 218-01-9 | E641A | 0.01 | µg/L | 0.5 µg/L | 112 | 60.0 | 130 | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | E641A | 0.005 | µg/L | 0.5 µg/L | 120 | 60.0 | 130 | ---- |
| Fluoranthene | 206-44-0 | E641A | 0.01 | µg/L | 0.5 µg/L | 113 | 60.0 | 130 | ---- |
| Fluorene | 86-73-7 | E641A | 0.01 | µg/L | 0.5 µg/L | 109 | 60.0 | 130 | ---- |
| Indeno(1,2,3-c,d)pyrene | 193-39-5 | E641A | 0.01 | µg/L | 0.5 µg/L | 113 | 60.0 | 130 | ---- |
| Methylnaphthalene, 1- | 90-12-0 | E641A | 0.01 | µg/L | 0.5 µg/L | 106 | 60.0 | 130 | ---- |
| Methylnaphthalene, 2- | 91-57-6 | E641A | 0.01 | µg/L | 0.5 µg/L | 118 | 60.0 | 130 | ---- |
| Naphthalene | 91-20-3 | E641A | 0.05 | µg/L | 0.5 µg/L | 108 | 50.0 | 130 | ---- |
| Phenanthrene | 85-01-8 | E641A | 0.02 | µg/L | 0.5 µg/L | 118 | 60.0 | 130 | ---- |
| Pyrene | 129-00-0 | E641A | 0.01 | µg/L | 0.5 µg/L | 114 | 60.0 | 130 | ---- |
| Quinoline | 91-22-5 | E641A | 0.05 | µg/L | 0.5 µg/L | 120 | 60.0 | 130 | ---- |
| **Glycols (QCLot: 1769031)** | | | | | | | | | |
| Diethylene glycol | 111-46-6 | E680E | 5 | mg/L | 25 mg/L | 88.6 | 70.0 | 130 | ---- |
| Ethylene glycol | 107-21-1 | E680E | 5 | mg/L | 25 mg/L | 89.0 | 70.0 | 130 | ---- |
| Propylene glycol, 1,2- | 57-55-6 | E680E | 5 | mg/L | 25 mg/L | 89.3 | 70.0 | 130 | ---- |
| Triethylene glycol | 112-27-6 | E680E | 5 | mg/L | 25 mg/L | 88.4 | 70.0 | 130 | ---- |

## 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: 1770123)** | | | | | | | | | | |
| KS2404795-001 | Anonymous | Ammonia, total (as N) | 7664-41-7 | E298 | 0.0982 mg/L | 0.1 mg/L | 98.2 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1770244)** | | | | | | | | | | |
| VA24D0988-002 | Anonymous | Fluoride | 16984-48-8 | E235.F | 1.02 mg/L | 1 mg/L | 102 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1770245)** | | | | | | | | | | |
| VA24D0988-002 | Anonymous | Chloride | 16887-00-6 | E235.Cl | 102 mg/L | 100 mg/L | 102 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1770246)** | | | | | | | | | | |
| VA24D0988-002 | Anonymous | Bromide | 24959-67-9 | E235.Br-L | 0.527 mg/L | 0.5 mg/L | 105 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1770247)** | | | | | | | | | | |
| VA24D0988-002 | Anonymous | Nitrate (as N) | 14797-55-8 | E235.NO3-L | 2.54 mg/L | 2.5 mg/L | 102 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1770248)** | | | | | | | | | | |
| VA24D0988-002 | Anonymous | Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.502 mg/L | 0.5 mg/L | 100 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1770249)** | | | | | | | | | | |
| VA24D0988-002 | Anonymous | Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 103 mg/L | 100 mg/L | 103 | 75.0 | 125 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1770127)** | | | | | | | | | | |
| KS2404795-001 | Anonymous | Carbon, dissolved organic [DOC] | ---- | E358-L | 5.11 mg/L | 5 mg/L | 102 | 70.0 | 130 | ---- |
| **Total Sulfides (QCLot: 1773301)** | | | | | | | | | | |
| FJ2403496-002 | Anonymous | Sulfide, total (as S) | 18496-25-8 | E395 | 0.207 mg/L | 0.2 mg/L | 104 | 75.0 | 125 | ---- |
| **Total Metals (QCLot: 1769134)** | | | | | | | | | | |
| FJ2403473-002 | Anonymous | Aluminum, total | 7429-90-5 | E420 | 0.396 mg/L | 0.4 mg/L | 99.0 | 70.0 | 130 | ---- |
| | | Antimony, total | 7440-36-0 | E420 | 0.0402 mg/L | 0.04 mg/L | 100 | 70.0 | 130 | ---- |
| | | Arsenic, total | 7440-38-2 | E420 | 0.0425 mg/L | 0.04 mg/L | 106 | 70.0 | 130 | ---- |
| | | Barium, total | 7440-39-3 | E420 | 0.0386 mg/L | 0.04 mg/L | 96.5 | 70.0 | 130 | ---- |
| | | Beryllium, total | 7440-41-7 | E420 | 0.0781 mg/L | 0.08 mg/L | 97.6 | 70.0 | 130 | ---- |
| | | Bismuth, total | 7440-69-9 | E420 | 0.0184 mg/L | 0.02 mg/L | 92.1 | 70.0 | 130 | ---- |
| | | Boron, total | 7440-42-8 | E420 | 0.192 mg/L | 0.2 mg/L | 96.2 | 70.0 | 130 | ---- |
| | | Cadmium, total | 7440-43-9 | E420 | 0.00783 mg/L | 0.008 mg/L | 97.8 | 70.0 | 130 | ---- |
| | | Calcium, total | 7440-70-2 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Cesium, total | 7440-46-2 | E420 | 0.0202 mg/L | 0.02 mg/L | 101 | 70.0 | 130 | ---- |
| | | Chromium, total | 7440-47-3 | E420 | 0.0801 mg/L | 0.08 mg/L | 100 | 70.0 | 130 | ---- |
| | | Cobalt, total | 7440-48-4 | E420 | 0.0384 mg/L | 0.04 mg/L | 96.1 | 70.0 | 130 | ---- |
| | | Copper, total | 7440-50-8 | E420 | 0.0368 mg/L | 0.04 mg/L | 92.0 | 70.0 | 130 | ---- |
| | | Iron, total | 7439-89-6 | E420 | 3.76 mg/L | 4 mg/L | 93.9 | 70.0 | 130 | ---- |
| | | Lead, total | 7439-92-1 | E420 | 0.0385 mg/L | 0.04 mg/L | 96.2 | 70.0 | 130 | ---- |

Sub-Matrix: **Water**

| | | | | | Matrix Spike (MS) Report | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | | Recovery (%) | Recovery Limits (%) | | |
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | Concentration | Target | MS | Low | High | Qualifier |
| **Total Metals (QCLot: 1769134) - continued** | | | | | | | | | | |
| FJ2403473-002 | Anonymous | Lithium, total | 7439-93-2 | E420 | 0.186 mg/L | 0.2 mg/L | 92.8 | 70.0 | 130 | ---- |
| | | Magnesium, total | 7439-95-4 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Manganese, total | 7439-96-5 | E420 | 0.0396 mg/L | 0.04 mg/L | 98.9 | 70.0 | 130 | ---- |
| | | Molybdenum, total | 7439-98-7 | E420 | 0.0422 mg/L | 0.04 mg/L | 105 | 70.0 | 130 | ---- |
| | | Nickel, total | 7440-02-0 | E420 | 0.0760 mg/L | 0.08 mg/L | 95.0 | 70.0 | 130 | ---- |
| | | Phosphorus, total | 7723-14-0 | E420 | 21.4 mg/L | 20 mg/L | 107 | 70.0 | 130 | ---- |
| | | Potassium, total | 7440-09-7 | E420 | 8.18 mg/L | 8 mg/L | 102 | 70.0 | 130 | ---- |
| | | Rubidium, total | 7440-17-7 | E420 | 0.0389 mg/L | 0.04 mg/L | 97.3 | 70.0 | 130 | ---- |
| | | Selenium, total | 7782-49-2 | E420 | 0.0849 mg/L | 0.08 mg/L | 106 | 70.0 | 130 | ---- |
| | | Silicon, total | 7440-21-3 | E420 | 18.3 mg/L | 20 mg/L | 91.3 | 70.0 | 130 | ---- |
| | | Silver, total | 7440-22-4 | E420 | 0.00781 mg/L | 0.008 mg/L | 97.6 | 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 | 0.0834 mg/L | 0.08 mg/L | 104 | 70.0 | 130 | ---- |
| | | Thallium, total | 7440-28-0 | E420 | 0.00740 mg/L | 0.008 mg/L | 92.5 | 70.0 | 130 | ---- |
| | | Thorium, total | 7440-29-1 | E420 | 0.0397 mg/L | 0.04 mg/L | 99.2 | 70.0 | 130 | ---- |
| | | Tin, total | 7440-31-5 | E420 | 0.0405 mg/L | 0.04 mg/L | 101 | 70.0 | 130 | ---- |
| | | Titanium, total | 7440-32-6 | E420 | 0.0787 mg/L | 0.08 mg/L | 98.4 | 70.0 | 130 | ---- |
| | | Tungsten, total | 7440-33-7 | E420 | 0.0409 mg/L | 0.04 mg/L | 102 | 70.0 | 130 | ---- |
| | | Uranium, total | 7440-61-1 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Vanadium, total | 7440-62-2 | E420 | 0.204 mg/L | 0.2 mg/L | 102 | 70.0 | 130 | ---- |
| | | Zinc, total | 7440-66-6 | E420 | 0.727 mg/L | 0.8 mg/L | 90.9 | 70.0 | 130 | ---- |
| | | Zirconium, total | 7440-67-7 | E420 | 0.0836 mg/L | 0.08 mg/L | 104 | 70.0 | 130 | ---- |
| **Total Metals (QCLot: 1775065)** | | | | | | | | | | |
| VA24D0972-018 | Anonymous | Mercury, total | 7439-97-6 | E508 | 0.0000908 mg/L | 0 mg/L | 90.8 | 70.0 | 130 | ---- |
| **Dissolved Metals (QCLot: 1769152)** | | | | | | | | | | |
| VA24D0848-001 | Anonymous | Aluminum, dissolved | 7429-90-5 | E421 | 0.191 mg/L | 0.2 mg/L | 95.5 | 70.0 | 130 | ---- |
| | | Antimony, dissolved | 7440-36-0 | E421 | 0.0192 mg/L | 0.02 mg/L | 96.0 | 70.0 | 130 | ---- |
| | | Arsenic, dissolved | 7440-38-2 | E421 | 0.0194 mg/L | 0.02 mg/L | 97.2 | 70.0 | 130 | ---- |
| | | Barium, dissolved | 7440-39-3 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Beryllium, dissolved | 7440-41-7 | E421 | 0.0418 mg/L | 0.04 mg/L | 104 | 70.0 | 130 | ---- |
| | | Bismuth, dissolved | 7440-69-9 | E421 | 0.00891 mg/L | 0.01 mg/L | 89.1 | 70.0 | 130 | ---- |
| | | Boron, dissolved | 7440-42-8 | E421 | 0.092 mg/L | 0.1 mg/L | 92.4 | 70.0 | 130 | ---- |
| | | Cadmium, dissolved | 7440-43-9 | E421 | 0.00360 mg/L | 0.004 mg/L | 90.1 | 70.0 | 130 | ---- |
| | | Calcium, dissolved | 7440-70-2 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Cesium, dissolved | 7440-46-2 | E421 | 0.00964 mg/L | 0.01 mg/L | 96.4 | 70.0 | 130 | ---- |
| | | Chromium, dissolved | 7440-47-3 | E421 | 0.0368 mg/L | 0.04 mg/L | 92.0 | 70.0 | 130 | ---- |
| | | Cobalt, dissolved | 7440-48-4 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Copper, dissolved | 7440-50-8 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Iron, dissolved | 7439-89-6 | E421 | 1.82 mg/L | 2 mg/L | 90.8 | 70.0 | 130 | ---- |
| | | Lead, dissolved | 7439-92-1 | E421 | 0.0188 mg/L | 0.02 mg/L | 94.2 | 70.0 | 130 | ---- |
| | | Lithium, dissolved | 7439-93-2 | E421 | 0.104 mg/L | 0.1 mg/L | 104 | 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: 1769152) - continued** | | | | | | | | | | |
| VA24D0848-001 | Anonymous | 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 | 0.0200 mg/L | 0.02 mg/L | 99.9 | 70.0 | 130 | ---- |
| | | Nickel, dissolved | 7440-02-0 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Phosphorus, dissolved | 7723-14-0 | E421 | 9.58 mg/L | 10 mg/L | 95.8 | 70.0 | 130 | ---- |
| | | Potassium, dissolved | 7440-09-7 | E421 | 3.85 mg/L | 4 mg/L | 96.2 | 70.0 | 130 | ---- |
| | | Rubidium, dissolved | 7440-17-7 | E421 | 0.0190 mg/L | 0.02 mg/L | 95.1 | 70.0 | 130 | ---- |
| | | Selenium, dissolved | 7782-49-2 | E421 | 0.0361 mg/L | 0.04 mg/L | 90.3 | 70.0 | 130 | ---- |
| | | Silicon, dissolved | 7440-21-3 | E421 | 9.15 mg/L | 10 mg/L | 91.5 | 70.0 | 130 | ---- |
| | | Silver, dissolved | 7440-22-4 | E421 | ND mg/L | ---- | ND | 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 | 0.0380 mg/L | 0.04 mg/L | 95.1 | 70.0 | 130 | ---- |
| | | Thallium, dissolved | 7440-28-0 | E421 | 0.00366 mg/L | 0.004 mg/L | 91.6 | 70.0 | 130 | ---- |
| | | Thorium, dissolved | 7440-29-1 | E421 | 0.0187 mg/L | 0.02 mg/L | 93.6 | 70.0 | 130 | ---- |
| | | Tin, dissolved | 7440-31-5 | E421 | 0.0186 mg/L | 0.02 mg/L | 93.0 | 70.0 | 130 | ---- |
| | | Titanium, dissolved | 7440-32-6 | E421 | 0.0363 mg/L | 0.04 mg/L | 90.7 | 70.0 | 130 | ---- |
| | | Tungsten, dissolved | 7440-33-7 | E421 | 0.0196 mg/L | 0.02 mg/L | 98.0 | 70.0 | 130 | ---- |
| | | Uranium, dissolved | 7440-61-1 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Vanadium, dissolved | 7440-62-2 | E421 | 0.0944 mg/L | 0.1 mg/L | 94.4 | 70.0 | 130 | ---- |
| | | Zinc, dissolved | 7440-66-6 | E421 | 0.352 mg/L | 0.4 mg/L | 88.1 | 70.0 | 130 | ---- |
| | | Zirconium, dissolved | 7440-67-7 | E421 | 0.0386 mg/L | 0.04 mg/L | 96.5 | 70.0 | 130 | ---- |
| **Dissolved Metals (QCLot: 1773786)** | | | | | | | | | | |
| VA24D0937-008 | Anonymous | Mercury, dissolved | 7439-97-6 | E509 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| **Speciated Metals (QCLot: 1772939)** | | | | | | | | | | |
| VA24D0876-001 | Anonymous | Chromium, hexavalent [Cr VI], total | 18540-29-9 | E532 | 0.0404 mg/L | 0.04 mg/L | 101 | 70.0 | 130 | ---- |
| **Volatile Organic Compounds (QCLot: 1774573)** | | | | | | | | | | |
| VA24D0921-007 | Anonymous | Benzene | 71-43-2 | E611C | 90.8 µg/L | 100 µg/L | 90.8 | 60.0 | 140 | ---- |
| | | Bromodichloromethane | 75-27-4 | E611C | 83.2 µg/L | 100 µg/L | 83.2 | 60.0 | 140 | ---- |
| | | Bromoform | 75-25-2 | E611C | 87.9 µg/L | 100 µg/L | 87.9 | 60.0 | 140 | ---- |
| | | Carbon tetrachloride | 56-23-5 | E611C | 87.0 µg/L | 100 µg/L | 87.0 | 60.0 | 140 | ---- |
| | | Chlorobenzene | 108-90-7 | E611C | 88.2 µg/L | 100 µg/L | 88.2 | 60.0 | 140 | ---- |
| | | Chloroethane | 75-00-3 | E611C | 94.4 µg/L | 100 µg/L | 94.4 | 50.0 | 150 | ---- |
| | | Chloroform | 67-66-3 | E611C | 87.6 µg/L | 100 µg/L | 87.6 | 60.0 | 140 | ---- |
| | | Chloromethane | 74-87-3 | E611C | 82.3 µg/L | 100 µg/L | 82.3 | 50.0 | 150 | ---- |
| | | Dibromochloromethane | 124-48-1 | E611C | 85.6 µg/L | 100 µg/L | 85.6 | 60.0 | 140 | ---- |
| | | Dichlorobenzene, 1,2- | 95-50-1 | E611C | 87.4 µg/L | 100 µg/L | 87.4 | 60.0 | 140 | ---- |
| | | Dichlorobenzene, 1,3- | 541-73-1 | E611C | 87.5 µg/L | 100 µg/L | 87.5 | 60.0 | 140 | ---- |
| | | Dichlorobenzene, 1,4- | 106-46-7 | E611C | 87.7 µg/L | 100 µg/L | 87.7 | 60.0 | 140 | ---- |
| | | Dichloroethane, 1,1- | 75-34-3 | E611C | 86.3 µg/L | 100 µg/L | 86.3 | 60.0 | 140 | ---- |
| | | Dichloroethane, 1,2- | 107-06-2 | E611C | 82.9 µg/L | 100 µg/L | 82.9 | 60.0 | 140 | ---- |
| | | Dichloroethylene, 1,1- | 75-35-4 | E611C | 85.3 µg/L | 100 µg/L | 85.3 | 60.0 | 140 | ---- |

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 |
| **Volatile Organic Compounds (QCLot: 1774573) - continued** | | | | | | | | | | |
| VA24D0921-007 | Anonymous | Dichloroethylene, cis-1,2- | 156-59-2 | E611C | 85.0 µg/L | 100 µg/L | 85.0 | 60.0 | 140 | ---- |
| | | Dichloroethylene, trans-1,2- | 156-60-5 | E611C | 85.5 µg/L | 100 µg/L | 85.5 | 60.0 | 140 | ---- |
| | | Dichloromethane | 75-09-2 | E611C | 84.9 µg/L | 100 µg/L | 84.9 | 60.0 | 140 | ---- |
| | | Dichloropropane, 1,2- | 78-87-5 | E611C | 86.8 µg/L | 100 µg/L | 86.8 | 60.0 | 140 | ---- |
| | | Dichloropropylene, cis-1,3- | 10061-01-5 | E611C | 78.6 µg/L | 100 µg/L | 78.6 | 60.0 | 140 | ---- |
| | | Dichloropropylene, trans-1,3- | 10061-02-6 | E611C | 79.1 µg/L | 100 µg/L | 79.1 | 60.0 | 140 | ---- |
| | | Ethylbenzene | 100-41-4 | E611C | 96.9 µg/L | 100 µg/L | 96.9 | 60.0 | 140 | ---- |
| | | Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611C | 91.5 µg/L | 100 µg/L | 91.5 | 60.0 | 140 | ---- |
| | | Styrene | 100-42-5 | E611C | 88.3 µg/L | 100 µg/L | 88.3 | 60.0 | 140 | ---- |
| | | Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611C | 89.4 µg/L | 100 µg/L | 89.4 | 60.0 | 140 | ---- |
| | | Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611C | 82.8 µg/L | 100 µg/L | 82.8 | 60.0 | 140 | ---- |
| | | Tetrachloroethylene | 127-18-4 | E611C | 86.1 µg/L | 100 µg/L | 86.1 | 60.0 | 140 | ---- |
| | | Toluene | 108-88-3 | E611C | 122 µg/L | 100 µg/L | 122 | 60.0 | 140 | ---- |
| | | Trichloroethane, 1,1,1- | 71-55-6 | E611C | 88.9 µg/L | 100 µg/L | 88.9 | 60.0 | 140 | ---- |
| | | Trichloroethane, 1,1,2- | 79-00-5 | E611C | 84.6 µg/L | 100 µg/L | 84.6 | 60.0 | 140 | ---- |
| | | Trichloroethylene | 79-01-6 | E611C | 84.3 µg/L | 100 µg/L | 84.3 | 60.0 | 140 | ---- |
| | | Trichlorofluoromethane | 75-69-4 | E611C | 88.4 µg/L | 100 µg/L | 88.4 | 50.0 | 150 | ---- |
| | | Vinyl chloride | 75-01-4 | E611C | 85.6 µg/L | 100 µg/L | 85.6 | 50.0 | 150 | ---- |
| | | Xylene, m+p- | 179601-23-1 | E611C | 208 µg/L | 200 µg/L | 104 | 60.0 | 140 | ---- |
| | | Xylene, o- | 95-47-6 | E611C | 99.2 µg/L | 100 µg/L | 99.2 | 60.0 | 140 | ---- |
| **Hydrocarbons (QCLot: 1774574)** | | | | | | | | | | |
| VA24D0921-006 | Anonymous | VHw (C6-C10) | ---- | E581.VH+F1 | 5500 µg/L | 6310 µg/L | 87.2 | 60.0 | 140 | ---- |

# Chain of Custody (COC) / Analytical Request Form

COC Number: 20 -

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Canada Toll Free: 1 800 668 9878

Environmental Division Vancouver
Work Order Reference
VA24D0990

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: | |
| Postal Code: | |
| **Invoice To** | |
| | |
| Company: | |
| Contact: | |
| | |
| **ALS Account #** | |
| Job #: | |
| PO / AFE: | |
| LSD: | |

**Reports / Recipients**

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

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

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

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Email 3

**Invoice Recipients**

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

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

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

**ALS Lab Work Order # (ALS use only):** DV99D

**ALS Contact:**

**Turnaround Time (TAT) Requested**

☑ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge mi
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge m
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge m
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge m
☐ Same day [E2] if received by 10am M-S - 200% rush surch

Additional fees may apply to rush requests on wee

Date and Time Required for all E&P TATs:

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

**Analysis Request**

| ALS Sample # (ALS use only) | Sample Identification and/or Coordinates (This description will appear on the report) | Date (dd-mmm-yy) | Time (hh:mm) | Sample Type | NUMBER OF CONTAINERS | Total metals + mercury | Dissolved metals + mercury | Total hexavalent chromium | Total trivalent chromium | TSS, TDS, T-Alkalinity,Anions scan (Br, Cl, F, NO2, NO3, SO4) | Total sulfide (low) (as H2S), Unionized Sulfide (low) | Nutrients (ammonia, ammonium, total | VOC/VPH | EPH, PAH, LEPH/HEPH | DOC | Glycols | General parameters (alkalinity) | | | SAMPLES ON HOLD | EXTENDED STORAGE REQUIRED | SUSPECTED HAZARD (see notes) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | F | | | | | P | P | P | P | F/P | | | | | | | |
| | ~~WLNG EOP Duplicate~~ | | | Water | ~~16~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | | | | | |
| | pH: 6.52 cond: 1.0 µs temp: 18.3 | 14-Nov-24 | 10:45 | | | | | | | | | | | | | | | | | | | |
| | WLNG EOP Field Blank | ↓ | ↓ | Water | 15 | R | R | R | R | R | R | R | R | R | R | R | R | | | | | |
| | ~~WLNG EOP Trip Blank~~ | | | Water | ~~15~~ | ~~R~~ | | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | | | | | |

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

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

Are samples for human consumption/ use?
☐ YES ☑ NO

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

ESDAT EDD to ESdat_CA+tritonenv@ESdatLabSync.net, reports also to stephanie.renkers@triton-env.com

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

Cooling Method: ☐ NONE ☐ ICE ☑ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

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

| INITIAL COOLER TEMPERATURES °C | | | | FINAL COOLER TEMPERATURES °C | | | |
|---|---|---|---|---|---|---|---|
| | | | | 7°C | 8 | | |

**SHIPMENT RELEASE (client use)**

Date: Nov 14 2024 Time: 16:55

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

Received by: Date: Time:

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

Received by: Date: 14/11/24 Time: 5PM

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT CO

AUG 2020 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.**

# Chain of Custody (COC) / Analytical Request Form

COC Number: 20 -

Page 3 of 3

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

| Report To | Contact and company name below will appear on the final report |
|---|---|
| Company: | Triton Environmental |
| Contact: | |
| Phone: | |
| Street: | |
| City/Province: | |
| Postal Code: | |
| **Invoice To** | |
| Company: | |
| Contact: | |
| **ALS Account #** | |
| Job #: | |
| PO / AFE: | |
| LSD: | |

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

**Reports / Recipients**

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

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

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

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Email 3

**Invoice Recipients**

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

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

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

**ALS Contact:**

**Turnaround Time (TAT) Requested**

☑ Routine [R] if received by 3pm M-F - no surcharges apply

☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum

☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum

☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum

☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum

☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

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

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

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

**Analysis Request**

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

| ALS Sample # (ALS use only) | Sample Identification and/or Coordinates (This description will appear on the report) | Date (dd-mmm-yy) | Time (hh:mm) | Sample Type | NUMBER OF CONTAINERS | Total metals + mercury | Dissolved metals + mercury | Total hexavalent chromium | Total trivalent chromium | TSS, TDS, T-Alkalinity,Anions scan (Br, Cl, F, NO2, NO3, SO4) | Total sulfide (low) (as H2S), Unionized Sulfide (low) | Nutrients (ammonia, ammonium, total | VOC/VPH | EPH, PAH, LEPH/HEPH | DOC | Glycols | General parameters (alkalinity) | | | SAMPLES ON HOLD | EXTENDED STORAGE REQUIRED | SUSPECTED HAZARD (see notes) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | F | | | | | P | P | P | P | F/P | | | | | | | |
| | WLNG EOP | 14-Nov-24 | 10:55 | Water | 15 | R | R | R | R | R | R | R | R | R | R | R | R | | | | | |
| | pH: 7.66 cond: 139 µs temp: 10.1°C | ↓ | ↓ | | | | | | | | | | | | | | | | | | | |
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**Drinking Water (DW) Samples[1] (client use)**

Are samples taken from a Regulated DW System?

☐ YES ☑ NO

Are samples for human consumption/ use?

☐ YES ☑ NO

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

ESDAT EDD to ESdat_CA+tritonenv@ESdatLabSync.net

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

Cooling Method: ☐ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

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

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

| SHIPMENT RELEASE (client use) | | | INITIAL SHIPMENT RECEPTION (ALS use only) | | | FINAL SHIPMENT RECEPTION (ALS use only) | | |
|---|---|---|---|---|---|---|---|---|
| | Date: Nov 14 2024 | Time: 16:55 | Received by: | Date: | Time: | Received by: | Date: | Time: |

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 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 WTP Discharge Field Notes and Logs

# FortisBC Eagle Mountain-Woodfibre Gas Pipeline

## Water Discharge Authorization Water Quality Monitoring

2024-11-14-Rysdale-819DC

| | | | |
|---|---|---|---|
| **Project Component:** | Tunnel | **Site Name:** | WLNG Treatment Discharge |
| **Inspection Date:** | 11/14/2024 | **Location:** | WLNG |
| **Triton QP:** | Aaron Rysdale | **Latitude/Longitude:** | 49.669399 -123.249856 |
| **Temperature(c):** | Low 8 High 14 | **Permit:** | PE 110136 |
| **Weather Conditions:** | Overcast | **Ground Conditions:** | Wet |

### Observations

**Time:** 10:55:00 **Flow Volume (visual):** N/A

**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:** | |
| **Dissolved Metals + Mercury** | Yes | **Total Sulfide, Unionized Sulfide** | Yes | | |
| **TSS** | Yes | **Anions** | Yes | | |
| **TDS** | Yes | **Total Trivalent Chromium** | Yes | **QA Samples:** | Yes |
| **Nutrients** | Yes | **VOC/VPH** | Yes | | |
| **DOC** | Yes | **EPH, PAH, LEPH/HEPH** | Yes | | |
| | | **Trout LC50** | No | | |

### Logger Maintenance

| | | | |
|---|---|---|---|
| **Logger Maintenance Performed?** | No | **Photo of COC with Lab Signature?** | Yes |

**Describe Logger Maintenance**

## Photos

**Photo:** 1

**Location:** WLNG EOP

**Description:** Sampling point

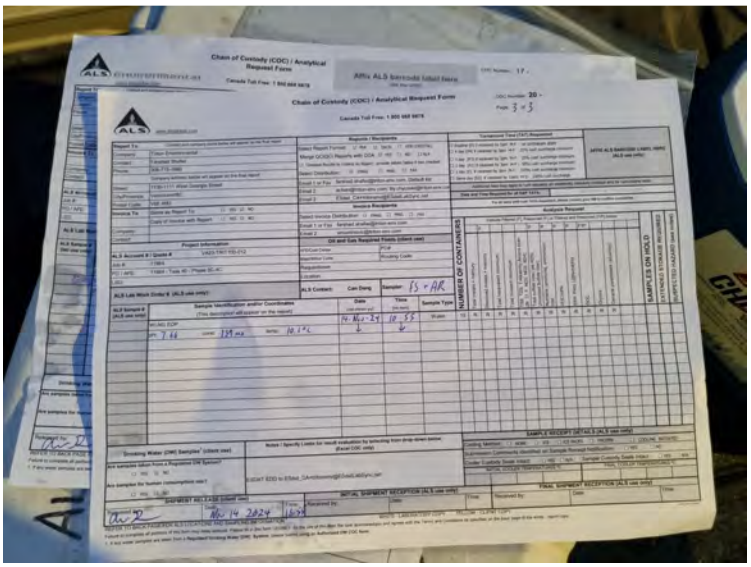


**Photo:** 2

**Location:**

**Description:** Lab COC

## Photos

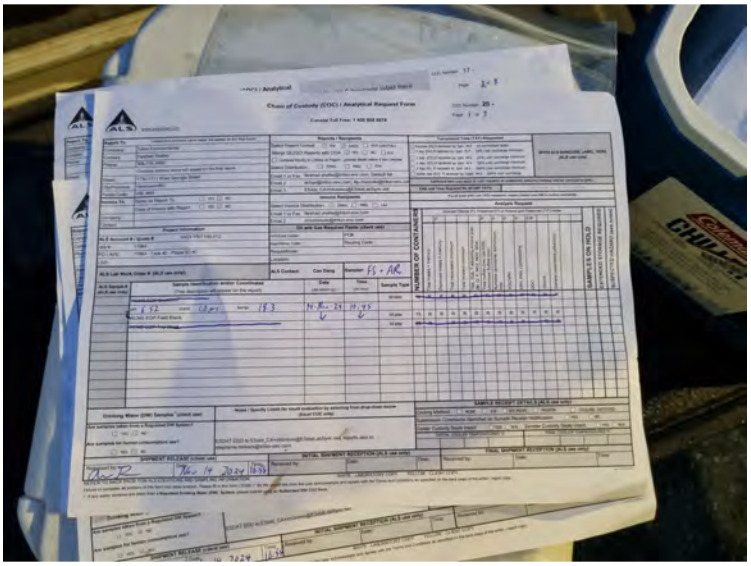

**Photo:** 3

**Location:**

**Description:** Field Blank COC

## Sign Off

| | | | |
|---|---|---|---|
| **Report Prepared By:** | Aaron Rysdale | **Report Reviewed:** | Yes |
| **Report Reviewer:** | | **Professional(s) of Record:** | |
| **Name:** | | | |
| **Designation:** | | | |
| **Designation Number:** | | | |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

**Table of Contents:**


1. Executive Summary and Notes
2. Discharge Parameter Summary
3. WTP Calibration Log

**Appendices:**

Appendix A- WTP Data Log
Appendix B- YSI Data Log
Appendix C- Photos


## 1. Executive Summary and Field Notes:

The discharged water consistently remained within regulatory guidelines. The key parameters, including temperature, pH, NTU, salinity, conductivity, and oxidation-reduction potential (ORP), were monitored throughout the discharge process and remained within the prescribed limits. No visible sheen observed on top of the WTP tanks and discharged water. All relevant parameters were measured using YSI instruments and WTP probes. The total discharge volume up to November 11th was 22,414 $m^3$.

**Daily Volume Summary:**

**Table 1: Discharge Volumes Daily Summary**

| Date | Location | Volume (m3) | Comments |
|---|---|---|---|
| November 11 | WoodFibre (WF) | 383 | None |
| November 12 | WF | 397 | None |
| November 13 | WF | 434 | None |
| November 14 | WF | 375 | None |
| November 15 | WF | 324 | None |
| November 16 | WF | 443 | None |
| November 17 | WF | 494 | None |
| | **Total** | 2,850 | None |

## 2. Discharge Parameter Summary:

**Table 2: Discharge Parameter Summary**

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|
| 11/11/2024 | 0:00:00 | 7.6 | 0.412 | 0 | 22,414 | 16.3 | 250 |
| 11/11/2024 | 0:15:00 | 7.6 | 0.404 | 0 | 22,420 | 16.5 | 249 |
| 11/11/2024 | 0:30:00 | 7.6 | 0.393 | 0 | 22,427 | 16.7 | 250 |
| 11/11/2024 | 0:45:00 | 7.6 | 0.416 | 0 | 22,433 | 16.9 | 250 |
| 11/11/2024 | 1:00:00 | 7.6 | 0.404 | 0 | 22,439 | 17.1 | 252 |
| 11/11/2024 | 1:15:00 | 7.5 | 0.389 | 0 | 22,445 | 17.3 | 252 |
| 11/11/2024 | 1:30:00 | 7.5 | 0.382 | 0 | 22,451 | 17.5 | 252 |
| 11/11/2024 | 1:45:00 | 7.5 | 0.386 | 0 | 22,457 | 17.6 | 251 |
| 11/11/2024 | 3:15:00 | 7.5 | 0.178 | 0 | 22,461 | 18.2 | 249 |
| 11/11/2024 | 3:45:00 | 7.4 | 0.416 | 0 | 22,462 | 18.3 | 250 |
| 11/11/2024 | 4:00:00 | 7.4 | 0.416 | 0 | 22,468 | 18.3 | 250 |
| 11/11/2024 | 4:15:00 | 7.4 | 0.412 | 0 | 22,474 | 18.3 | 250 |
| 11/11/2024 | 4:30:00 | 7.4 | 0.404 | 0 | 22,480 | 18.3 | 250 |
| 11/11/2024 | 4:45:00 | 7.5 | 0.397 | 0 | 22,486 | 18.4 | 250 |
| 11/11/2024 | 5:00:00 | 7.5 | 0.404 | 0 | 22,492 | 18.4 | 252 |
| 11/11/2024 | 5:15:00 | 7.5 | 0.401 | 0 | 22,498 | 18.5 | 251 |
| 11/11/2024 | 5:30:00 | 7.4 | 0.393 | 0 | 22,505 | 18.5 | 252 |
| 11/11/2024 | 5:45:00 | 7.4 | 0.408 | 0 | 22,511 | 18.6 | 252 |
| 11/11/2024 | 6:00:00 | 7.4 | 0.389 | 0 | 22,517 | 18.7 | 252 |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|
| 11/11/2024 | 6:15:00 | 7.4 | 0.155 | 0 | 22,523 | 18.7 | 252 |
| 11/11/2024 | 8:00:00 | 7.6 | 0.416 | 0 | 22,530 | 14.4 | 114 |
| 11/11/2024 | 8:15:00 | 7.6 | 0.408 | 0 | 22,536 | 14.7 | 114 |
| 11/11/2024 | 8:30:00 | 7.6 | 0.386 | 0 | 22,542 | 14.9 | 113 |
| 11/11/2024 | 8:45:00 | 7.6 | 0.389 | 0 | 22,548 | 15 | 113 |
| 11/11/2024 | 9:00:00 | 7.6 | 0.461 | 0 | 22,555 | 12.8 | 113 |
| 11/11/2024 | 9:15:00 | 7.6 | 0.476 | 0 | 22,562 | 11.7 | 112 |
| 11/11/2024 | 9:30:00 | 7.5 | 0.461 | 0 | 22,569 | 11.7 | 112 |
| 11/11/2024 | 9:45:00 | 7.6 | 0.469 | 0 | 22,576 | 11.7 | 113 |
| 11/11/2024 | 10:00:00 | 7.5 | 0.457 | 0 | 22,583 | 11.8 | 113 |
| 11/11/2024 | 12:00:00 | 7.6 | 0.473 | 2.7 | 22,590 | 11.3 | 112 |
| 11/11/2024 | 12:15:00 | 7.6 | 0.480 | 0 | 22,597 | 11.2 | 111 |
| 11/11/2024 | 12:30:00 | 7.6 | 0.454 | 0 | 22,604 | 11.1 | 111 |
| 11/11/2024 | 12:45:00 | 7.6 | 0.450 | 0 | 22,611 | 11.2 | 111 |
| 11/11/2024 | 13:00:00 | 7.6 | 0.457 | 0 | 22,618 | 11.2 | 111 |
| 11/11/2024 | 13:15:00 | 7.6 | 0.461 | 0 | 22,625 | 11.2 | 112 |
| 11/11/2024 | 13:30:00 | 7.6 | 0.465 | 0 | 22,632 | 11.3 | 112 |
| 11/11/2024 | 13:45:00 | 7.6 | 0.457 | 0 | 22,639 | 11.2 | 112 |
| 11/11/2024 | 14:00:00 | 7.6 | 0.457 | 0 | 22,645 | 11.3 | 112 |
| 11/11/2024 | 14:15:00 | 7.6 | 0.469 | 0 | 22,652 | 11.3 | 112 |
| 11/11/2024 | 14:30:00 | 7.6 | 0.450 | 0 | 22,659 | 11.4 | 113 |
| 11/11/2024 | 14:45:00 | 7.6 | 0.446 | 0 | 22,666 | 11.5 | 113 |
| 11/11/2024 | 17:00:00 | 7.6 | 0.469 | 0 | 22,672 | 12.7 | 111 |
| 11/11/2024 | 17:15:00 | 7.6 | 0.465 | 0 | 22,679 | 11.3 | 111 |
| 11/11/2024 | 17:30:00 | 7.6 | 0.442 | 0 | 22,686 | 11.4 | 112 |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|
| 11/11/2024 | 17:45:00 | 7.6 | 0.446 | 0 | 22,692 | 11.4 | 111 |
| 11/11/2024 | 18:00:00 | 7.6 | 0.427 | 0 | 22,699 | 11.4 | 112 |
| 11/11/2024 | 18:15:00 | 7.6 | 0.442 | 0 | 22,706 | 11.5 | 112 |
| 11/11/2024 | 18:30:00 | 7.6 | 0.442 | 0 | 22,713 | 11.4 | 112 |
| 11/11/2024 | 18:45:00 | 7.6 | 0.442 | 0.1 | 22,720 | 11.4 | 112 |
| 11/11/2024 | 19:00:00 | 7.6 | 0.431 | 0 | 22,726 | 11.4 | 111 |
| 11/11/2024 | 19:15:00 | 7.6 | 0.427 | 0.1 | 22,733 | 11.3 | 111 |
| 11/11/2024 | 19:30:00 | 7.6 | 0.431 | 0 | 22,739 | 11.3 | 111 |
| 11/11/2024 | 19:45:00 | 7.6 | 0.423 | 0 | 22,746 | 11.3 | 111 |
| 11/11/2024 | 20:00:00 | 7.6 | 0.435 | 0 | 22,752 | 11.3 | 111 |
| 11/11/2024 | 20:15:00 | 7.6 | 0.446 | 0 | 22,759 | 11.3 | 111 |
| 11/11/2024 | 22:30:00 | 7.6 | 0.488 | 0.9 | 22,763 | 11.8 | 114 |
| 11/11/2024 | 22:45:00 | 7.6 | 0.473 | 0.7 | 22,770 | 11.3 | 113 |
| 11/11/2024 | 23:00:00 | 7.6 | 0.465 | 0 | 22,777 | 11.4 | 113 |
| 11/11/2024 | 23:15:00 | 7.6 | 0.465 | 0 | 22,784 | 11.4 | 114 |
| 11/11/2024 | 23:30:00 | 7.6 | 0.457 | 0 | 22,791 | 11.4 | 114 |
| 11/11/2024 | 23:45:00 | 7.6 | 0.461 | 0 | 22,797 | 11.4 | 114 |
| 11/12/2024 | 0:00:00 | 7.6 | 0.446 | 0 | 22,804 | 11.4 | 113 |
| 11/12/2024 | 0:15:00 | 7.6 | 0.450 | 0 | 22,811 | 11.4 | 114 |
| 11/12/2024 | 0:30:00 | 7.6 | 0.454 | 0 | 22,818 | 11.4 | 113 |
| 11/12/2024 | 0:45:00 | 7.6 | 0.446 | 0 | 22,825 | 11.5 | 114 |
| 11/12/2024 | 1:00:00 | 7.6 | 0.446 | 0 | 22,831 | 11.5 | 114 |
| 11/12/2024 | 1:15:00 | 7.6 | 0.450 | 0 | 22,838 | 11.5 | 114 |
| 11/12/2024 | 3:00:00 | 7.6 | 0.461 | 0 | 22,840 | 13.2 | 114 |
| 11/12/2024 | 3:15:00 | 7.6 | 0.446 | 0 | 22,847 | 11.3 | 114 |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|
| 11/12/2024 | 3:30:00 | 7.6 | 0.457 | 0 | 22,854 | 11.4 | 114 |
| 11/12/2024 | 3:45:00 | 7.6 | 0.446 | 0 | 22,861 | 11.4 | 113 |
| 11/12/2024 | 4:00:00 | 7.6 | 0.446 | 0 | 22,868 | 11.4 | 114 |
| 11/12/2024 | 4:15:00 | 7.6 | 0.423 | 0 | 22,874 | 11.4 | 114 |
| 11/12/2024 | 4:30:00 | 7.7 | 0.431 | 0 | 22,881 | 11.4 | 114 |
| 11/12/2024 | 4:45:00 | 7.7 | 0.420 | 0 | 22,887 | 11.4 | 114 |
| 11/12/2024 | 5:00:00 | 7.7 | 0.442 | 0 | 22,894 | 11.4 | 114 |
| 11/12/2024 | 5:15:00 | 7.7 | 0.431 | 0 | 22,900 | 11.4 | 114 |
| 11/12/2024 | 5:30:00 | 7.7 | 0.408 | 0 | 22,907 | 11.4 | 114 |
| 11/12/2024 | 5:45:00 | 7.7 | 0.431 | 0 | 22,913 | 11.4 | 114 |
| 11/12/2024 | 8:15:00 | 7.6 | 0.431 | 0 | 22,923 | 11.5 | 114 |
| 11/12/2024 | 8:30:00 | 7.6 | 0.435 | 0 | 22,930 | 11.3 | 113 |
| 11/12/2024 | 8:45:00 | 7.6 | 0.427 | 0 | 22,936 | 11.2 | 112 |
| 11/12/2024 | 9:00:00 | 7.7 | 0.416 | 0 | 22,942 | 11.1 | 111 |
| 11/12/2024 | 9:15:00 | 7.7 | 0.431 | 0 | 22,949 | 11 | 111 |
| 11/12/2024 | 9:30:00 | 7.7 | 0.423 | 0 | 22,955 | 11 | 111 |
| 11/12/2024 | 9:45:00 | 7.7 | 0.404 | 0 | 22,961 | 11 | 111 |
| 11/12/2024 | 10:00:00 | 7.7 | 0.404 | 0 | 22,967 | 11 | 110 |
| 11/12/2024 | 10:15:00 | 7.7 | 0.420 | 0 | 22,973 | 11 | 111 |
| 11/12/2024 | 12:00:00 | 7.6 | 0.416 | 0 | 22,984 | 11 | 111 |
| 11/12/2024 | 12:15:00 | 7.6 | 0.423 | 0 | 22,990 | 11 | 111 |
| 11/12/2024 | 12:30:00 | 7.6 | 0.412 | 0 | 22,996 | 11 | 112 |
| 11/12/2024 | 12:45:00 | 7.6 | 0.427 | 0 | 23,003 | 11 | 111 |
| 11/12/2024 | 13:00:00 | 7.6 | 0.412 | 0 | 23,009 | 11.1 | 111 |
| 11/12/2024 | 13:15:00 | 7.6 | 0.416 | 0 | 23,015 | 11.1 | 112 |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|
| 11/12/2024 | 13:30:00 | 7.6 | 0.412 | 0 | 23,021 | 11.1 | 111 |
| 11/12/2024 | 13:45:00 | 7.6 | 0.420 | 0 | 23,027 | 11.2 | 111 |
| 11/12/2024 | 14:00:00 | 7.6 | 0.393 | 0 | 23,033 | 11.2 | 112 |
| 11/12/2024 | 14:15:00 | 7.6 | 0.420 | 0 | 23,039 | 11.2 | 111 |
| 11/12/2024 | 14:30:00 | 7.6 | 0.408 | 0 | 23,046 | 11.2 | 111 |
| 11/12/2024 | 14:45:00 | 7.6 | 0.412 | 0 | 23,052 | 11.2 | 111 |
| 11/12/2024 | 16:30:00 | 7.6 | 0.423 | 0 | 23,059 | 11.5 | 111 |
| 11/12/2024 | 16:45:00 | 7.6 | 0.404 | 0 | 23,065 | 11.3 | 111 |
| 11/12/2024 | 17:00:00 | 7.6 | 0.238 | 0 | 23,071 | 11.6 | 111 |
| 11/12/2024 | 17:15:00 | 7.6 | 0.427 | 0 | 23,076 | 11.3 | 111 |
| 11/12/2024 | 17:30:00 | 7.6 | 0.412 | 0 | 23,083 | 11.3 | 111 |
| 11/12/2024 | 17:45:00 | 7.6 | 0.420 | 0 | 23,089 | 11.3 | 111 |
| 11/12/2024 | 18:00:00 | 7.6 | 0.185 | 0 | 23,094 | 11.7 | 112 |
| 11/12/2024 | 18:15:00 | 7.6 | 0.404 | 0 | 23,100 | 11.4 | 112 |
| 11/12/2024 | 18:30:00 | 7.6 | 0.412 | 0 | 23,106 | 11.3 | 112 |
| 11/12/2024 | 18:45:00 | 7.6 | 0.401 | 0 | 23,112 | 11.4 | 112 |
| 11/12/2024 | 19:00:00 | 7.6 | 0.397 | 0 | 23,118 | 11.3 | 112 |
| 11/12/2024 | 19:15:00 | 7.6 | 0.389 | 0 | 23,124 | 11.3 | 111 |
| 11/12/2024 | 19:30:00 | 7.6 | 0.378 | 0 | 23,130 | 11.2 | 112 |
| 11/12/2024 | 19:45:00 | 7.6 | 0.408 | 0 | 23,136 | 11.3 | 112 |
| 11/12/2024 | 20:00:00 | 7.6 | 0.397 | 0 | 23,142 | 11.4 | 113 |
| 11/12/2024 | 22:00:00 | 7.7 | 0.253 | 1.4 | 23,146 | 11.7 | 113 |
| 11/12/2024 | 22:15:00 | 7.8 | 0.276 | 2 | 23,150 | 11.9 | 114 |
| 11/12/2024 | 22:30:00 | 7.8 | 0.484 | 3 | 23,156 | 12.6 | 113 |
| 11/12/2024 | 22:45:00 | 7.8 | 0.488 | 4 | 23,164 | 13 | 113 |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|
| 11/12/2024 | 23:00:00 | 7.8 | 0.491 | 4.3 | 23,171 | 13.4 | 113 |
| 11/12/2024 | 23:15:00 | 7.8 | 0.480 | 3.6 | 23,179 | 13.8 | 113 |
| 11/12/2024 | 23:30:00 | 7.8 | 0.488 | 3.3 | 23,186 | 14.1 | 113 |
| 11/12/2024 | 23:45:00 | 7.7 | 0.484 | 2.4 | 23,194 | 14.4 | 114 |
| 11/13/2024 | 0:00:00 | 7.7 | 0.476 | 1.9 | 23,201 | 14.7 | 114 |
| 11/13/2024 | 0:15:00 | 7.7 | 0.484 | 2.3 | 23,208 | 15 | 114 |
| 11/13/2024 | 0:30:00 | 7.7 | 0.484 | 1.5 | 23,216 | 15.2 | 114 |
| 11/13/2024 | 2:45:00 | 7.6 | 0.522 | 2 | 23,224 | 16.5 | 114 |
| 11/13/2024 | 3:00:00 | 7.7 | 0.533 | 1.8 | 23,232 | 16.5 | 114 |
| 11/13/2024 | 3:15:00 | 7.6 | 0.537 | 1.6 | 23,238 | 16.5 | 114 |
| 11/13/2024 | 3:30:00 | 7.6 | 0.525 | 1.7 | 23,246 | 16.4 | 114 |
| 11/13/2024 | 3:45:00 | 7.6 | 0.522 | 1.4 | 23,254 | 16.4 | 114 |
| 11/13/2024 | 4:00:00 | 7.6 | 0.522 | 1.5 | 23,261 | 16.8 | 114 |
| 11/13/2024 | 4:15:00 | 7.6 | 0.518 | 1.3 | 23,269 | 16.8 | 246 |
| 11/13/2024 | 4:30:00 | 7.6 | 0.507 | 1.4 | 23,277 | 16.8 | 246 |
| 11/13/2024 | 4:45:00 | 7.5 | 0.518 | 1.1 | 23,284 | 16.7 | 246 |
| 11/13/2024 | 5:00:00 | 7.5 | 0.514 | 1.1 | 23,292 | 16.7 | 246 |
| 11/13/2024 | 5:15:00 | 7.5 | 0.510 | 1.1 | 23,299 | 16.7 | 114 |
| 11/13/2024 | 5:30:00 | 7.5 | 0.507 | 1 | 23,307 | 16.6 | 114 |
| 11/13/2024 | 6:00:00 | 7.7 | 0.507 | 1.3 | 23,316 | 17.2 | 114 |
| 11/13/2024 | 6:15:00 | 7.7 | 0.507 | 1.3 | 23,323 | 17.2 | 114 |
| 11/13/2024 | 6:30:00 | 7.7 | 0.495 | 1.7 | 23,331 | 17.1 | 113 |
| 11/13/2024 | 8:45:00 | 7.7 | 0.514 | 1 | 23,338 | 16.6 | 113 |
| 11/13/2024 | 9:00:00 | 7.8 | 0.514 | 1.3 | 23,345 | 11.3 | 113 |
| 11/13/2024 | 9:15:00 | 7.8 | 0.499 | 1.2 | 23,353 | 11 | 113 |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|
| 11/13/2024 | 9:30:00 | 7.8 | 0.499 | 1.4 | 23,360 | 10.9 | 111 |
| 11/13/2024 | 9:45:00 | 7.8 | 0.510 | 1.2 | 23,368 | 10.9 | 112 |
| 11/13/2024 | 10:00:00 | 7.8 | 0.503 | 1.3 | 23,375 | 10.9 | 112 |
| 11/13/2024 | 10:15:00 | 7.8 | 0.499 | 1 | 23,383 | 10.9 | 112 |
| 11/13/2024 | 10:30:00 | 7.9 | 0.503 | 0.9 | 23,390 | 10.9 | 112 |
| 11/13/2024 | 12:45:00 | 7.8 | 0.495 | 0.8 | 23,400 | 11.1 | 113 |
| 11/13/2024 | 13:00:00 | 7.8 | 0.507 | 2.3 | 23,407 | 11 | 113 |
| 11/13/2024 | 13:15:00 | 7.8 | 0.495 | 4 | 23,415 | 10.9 | 113 |
| 11/13/2024 | 13:30:00 | 7.8 | 0.499 | 3.8 | 23,422 | 11.1 | 113 |
| 11/13/2024 | 13:45:00 | 7.8 | 0.514 | 3.6 | 23,430 | 11.4 | 114 |
| 11/13/2024 | 14:00:00 | 7.8 | 0.510 | 3 | 23,437 | 11.8 | 113 |
| 11/13/2024 | 14:15:00 | 7.8 | 0.507 | 2.3 | 23,445 | 12.2 | 114 |
| 11/13/2024 | 14:30:00 | 7.8 | 0.507 | 1.6 | 23,452 | 12.6 | 114 |
| 11/13/2024 | 14:45:00 | 7.8 | 0.503 | 2.5 | 23,460 | 12.9 | 114 |
| 11/13/2024 | 15:00:00 | 7.8 | 0.507 | 2.2 | 23,467 | 13.2 | 114 |
| 11/13/2024 | 17:00:00 | 7.8 | 0.503 | 5.4 | 23,476 | 15.1 | 114 |
| 11/13/2024 | 17:15:00 | 7.8 | 0.495 | 3.5 | 23,484 | 15.1 | 114 |
| 11/13/2024 | 17:30:00 | 7.8 | 0.491 | 4 | 23,491 | 15.4 | 114 |
| 11/13/2024 | 17:45:00 | 7.8 | 0.499 | 3.5 | 23,499 | 15.7 | 115 |
| 11/13/2024 | 18:00:00 | 7.8 | 0.503 | 10.4 | 23,506 | 14.5 | 114 |
| 11/13/2024 | 18:15:00 | 7.8 | 0.488 | 7.3 | 23,514 | 14.6 | 114 |
| 11/13/2024 | 18:30:00 | 7.8 | 0.503 | 7.2 | 23,521 | 14.7 | 114 |
| 11/13/2024 | 18:45:00 | 7.8 | 0.499 | 5.1 | 23,529 | 14.8 | 114 |
| 11/13/2024 | 19:00:00 | 7.8 | 0.503 | 5 | 23,536 | 14.9 | 114 |
| 11/13/2024 | 19:15:00 | 7.8 | 0.491 | 4 | 23,544 | 15 | 114 |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|
| 11/13/2024 | 19:30:00 | 7.8 | 0.495 | 2.9 | 23,551 | 15.1 | 114 |
| 11/13/2024 | 19:45:00 | 7.7 | 0.503 | 6.1 | 23,559 | 15.4 | 114 |
| 11/13/2024 | 20:00:00 | 7.7 | 0.499 | 6.1 | 23,566 | 15.7 | 116 |
| 11/13/2024 | 20:15:00 | 7.7 | 0.495 | 5.8 | 23,574 | 16 | 114 |
| 11/13/2024 | 22:00:00 | 7.7 | 0.484 | 6 | 23,580 | 17.3 | 116 |
| 11/13/2024 | 22:15:00 | 7.7 | 0.249 | 6 | 23,584 | 17 | 114 |
| 11/13/2024 | 22:30:00 | 7.7 | 0.499 | 6.5 | 23,590 | 16.8 | 114 |
| 11/13/2024 | 22:45:00 | 7.7 | 0.518 | 5.8 | 23,598 | 16.7 | 245 |
| 11/13/2024 | 23:00:00 | 7.7 | 0.510 | 5.4 | 23,605 | 16.7 | 114 |
| 11/13/2024 | 23:15:00 | 7.6 | 0.510 | 4.4 | 23,613 | 16.6 | 114 |
| 11/13/2024 | 23:30:00 | 7.6 | 0.510 | 4.4 | 23,620 | 16.5 | 243 |
| 11/13/2024 | 23:45:00 | 7.6 | 0.510 | 4.6 | 23,628 | 16.5 | 245 |
| 11/14/2024 | 0:00:00 | 7.6 | 0.510 | 4.6 | 23,635 | 16.4 | 245 |
| 11/14/2024 | 0:15:00 | 7.6 | 0.510 | 5.3 | 23,643 | 16.3 | 245 |
| 11/14/2024 | 0:30:00 | 7.6 | 0.510 | 4.8 | 23,650 | 16.3 | 245 |
| 11/14/2024 | 1:30:00 | 7.6 | 0.163 | 5.3 | 23,657 | 15.8 | 245 |
| 11/14/2024 | 1:45:00 | 7.5 | 0.499 | 4.9 | 23,664 | 15.8 | 246 |
| 11/14/2024 | 2:00:00 | 7.5 | 0.503 | 4.6 | 23,671 | 15.8 | 246 |
| 11/14/2024 | 3:30:00 | 7.5 | 0.473 | 3.8 | 23,674 | 15.5 | 114 |
| 11/14/2024 | 3:45:00 | 7.5 | 0.495 | 4.4 | 23,681 | 15.5 | 114 |
| 11/14/2024 | 4:00:00 | 7.5 | 0.499 | 3.7 | 23,689 | 15.6 | 114 |
| 11/14/2024 | 4:15:00 | 7.5 | 0.491 | 4.2 | 23,696 | 15.6 | 114 |
| 11/14/2024 | 4:30:00 | 7.5 | 0.518 | 4 | 23,704 | 15.7 | 246 |
| 11/14/2024 | 4:45:00 | 7.5 | 0.495 | 4.2 | 23,711 | 15.8 | 245 |
| 11/14/2024 | 5:00:00 | 7.5 | 0.510 | 4.1 | 23,719 | 15.8 | 246 |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|
| 11/14/2024 | 5:15:00 | 7.5 | 0.510 | 4.1 | 23,726 | 15.9 | 246 |
| 11/14/2024 | 5:30:00 | 7.5 | 0.507 | 4.1 | 23,734 | 16 | 246 |
| 11/14/2024 | 5:45:00 | 7.5 | 0.488 | 3.5 | 23,740 | 16 | 246 |
| 11/14/2024 | 6:00:00 | 7.5 | 0.495 | 3.5 | 23,747 | 16 | 246 |
| 11/14/2024 | 6:15:00 | 7.5 | 0.476 | 3 | 23,755 | 16 | 246 |
| 11/14/2024 | 8:00:00 | 7.5 | 0.491 | 3.1 | 23,761 | 15.8 | 247 |
| 11/14/2024 | 8:15:00 | 7.6 | 0.488 | 4.1 | 23,768 | 17.2 | 114 |
| 11/14/2024 | 8:30:00 | 7.8 | 0.473 | 4.7 | 23,776 | 11 | 115 |
| 11/14/2024 | 8:45:00 | 7.8 | 0.491 | 4.5 | 23,783 | 10.8 | 114 |
| 11/14/2024 | 9:00:00 | 7.8 | 0.480 | 4.9 | 23,791 | 10.8 | 114 |
| 11/14/2024 | 9:15:00 | 7.8 | 0.491 | 4.8 | 23,798 | 10.8 | 113 |
| 11/14/2024 | 9:30:00 | 7.8 | 0.454 | 25.9 | 23,802 | 10.8 | 113 |
| 11/14/2024 | 9:45:00 | 7.8 | 0.495 | 5.5 | 23,809 | 10.7 | 114 |
| 11/14/2024 | 10:00:00 | 7.8 | 0.291 | 4.6 | 23,816 | 10.8 | 113 |
| 11/14/2024 | 11:30:00 | 7.8 | 0.491 | 4.7 | 23,818 | 10.8 | 111 |
| 11/14/2024 | 11:45:00 | 7.8 | 0.491 | 3.4 | 23,825 | 10.7 | 111 |
| 11/14/2024 | 12:00:00 | 7.8 | 0.310 | 2.6 | 23,831 | 11 | 111 |
| 11/14/2024 | 12:15:00 | 7.8 | 0.321 | 2.8 | 23,836 | 11.4 | 112 |
| 11/14/2024 | 12:30:00 | 7.8 | 0.310 | 2.2 | 23,841 | 11.8 | 112 |
| 11/14/2024 | 12:45:00 | 7.8 | 0.318 | 1.9 | 23,845 | 12.3 | 112 |
| 11/14/2024 | 13:00:00 | 7.8 | 0.318 | 1.7 | 23,850 | 12.7 | 113 |
| 11/14/2024 | 13:15:00 | 7.8 | 0.314 | 1.4 | 23,855 | 13.2 | 113 |
| 11/14/2024 | 13:30:00 | 7.8 | 0.306 | 1.3 | 23,860 | 13.6 | 113 |
| 11/14/2024 | 13:45:00 | 7.8 | 0.310 | 1.7 | 23,864 | 13.8 | 113 |
| 11/14/2024 | 14:00:00 | 7.7 | 0.291 | 1.4 | 23,869 | 14.1 | 113 |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|
| 11/14/2024 | 14:15:00 | 7.7 | 0.306 | 1.5 | 23,874 | 14.3 | 113 |
| 11/14/2024 | 14:30:00 | 7.7 | 0.299 | 1 | 23,878 | 14.5 | 113 |
| 11/14/2024 | 14:45:00 | 7.7 | 0.302 | 0.8 | 23,883 | 14.7 | 114 |
| 11/14/2024 | 15:00:00 | 7.7 | 0.291 | 1 | 23,887 | 14.9 | 113 |
| 11/14/2024 | 15:15:00 | 7.7 | 0.284 | 1.4 | 23,891 | 15 | 113 |
| 11/14/2024 | 15:30:00 | 7.6 | 0.257 | 1.7 | 23,895 | 15.5 | 114 |
| 11/14/2024 | 15:45:00 | 7.5 | 0.249 | 1.7 | 23,899 | 15.5 | 113 |
| 11/14/2024 | 17:45:00 | 7.5 | 0.238 | 0 | 23,902 | 14.7 | 112 |
| 11/14/2024 | 18:00:00 | 7.5 | 0.431 | 6.9 | 23,905 | 13.8 | 113 |
| 11/14/2024 | 18:15:00 | 7.4 | 0.480 | 7.5 | 23,912 | 11.3 | 112 |
| 11/14/2024 | 18:30:00 | 7.3 | 0.465 | 7.8 | 23,919 | 11.2 | 111 |
| 11/14/2024 | 18:45:00 | 7.3 | 0.438 | 6 | 23,926 | 11.4 | 111 |
| 11/14/2024 | 19:00:00 | 7.3 | 0.408 | 6.9 | 23,932 | 11.7 | 111 |
| 11/14/2024 | 19:15:00 | 7.3 | 0.397 | 5.6 | 23,938 | 12.1 | 111 |
| 11/14/2024 | 19:30:00 | 7.3 | 0.370 | 5.1 | 23,944 | 12.4 | 112 |
| 11/14/2024 | 19:45:00 | 7.3 | 0.352 | 3.6 | 23,949 | 12.8 | 112 |
| 11/14/2024 | 20:00:00 | 7.3 | 0.325 | 3.6 | 23,954 | 13.2 | 113 |
| 11/14/2024 | 20:15:00 | 7.3 | 0.318 | 3.2 | 23,959 | 13.5 | 257 |
| 11/14/2024 | 20:30:00 | 7.3 | 0.299 | 4.7 | 23,964 | 13.9 | 254 |
| 11/14/2024 | 20:45:00 | 7.3 | 0.234 | 8.4 | 23,969 | 14.2 | 256 |
| 11/14/2024 | 21:00:00 | 7.3 | 0.132 | 5.4 | 23,971 | 14.4 | 257 |
| 11/14/2024 | 21:15:00 | 7.3 | 0.397 | 5.1 | 23,977 | 14.5 | 256 |
| 11/14/2024 | 21:30:00 | 7.3 | 0.401 | 4.9 | 23,983 | 14.6 | 256 |
| 11/14/2024 | 21:45:00 | 7.3 | 0.389 | 4.4 | 23,989 | 14.6 | 256 |
| 11/14/2024 | 22:00:00 | 7.2 | 0.404 | 5.8 | 23,995 | 14.6 | 255 |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|
| 11/14/2024 | 22:15:00 | 7.2 | 0.397 | 5.2 | 24,001 | 14.6 | 253 |
| 11/14/2024 | 22:30:00 | 7.2 | 0.370 | 5.2 | 24,003 | 14.6 | 255 |
| 11/15/2024 | 0:00:00 | 7.2 | 0.352 | 6.3 | 24,009 | 14.2 | 255 |
| 11/15/2024 | 0:15:00 | 7.2 | 0.340 | 4.8 | 24,014 | 14.2 | 255 |
| 11/15/2024 | 0:30:00 | 7.2 | 0.340 | 5.1 | 24,019 | 14.2 | 255 |
| 11/15/2024 | 0:45:00 | 7.2 | 0.333 | 4.9 | 24,024 | 14.2 | 255 |
| 11/15/2024 | 2:15:00 | 7.2 | 0.284 | 5.4 | 24,029 | 13.9 | 253 |
| 11/15/2024 | 2:30:00 | 7.2 | 0.393 | 5.2 | 24,032 | 13.9 | 255 |
| 11/15/2024 | 2:45:00 | 7.2 | 0.367 | 4.7 | 24,038 | 14 | 255 |
| 11/15/2024 | 3:00:00 | 7.2 | 0.370 | 4.9 | 24,043 | 14 | 255 |
| 11/15/2024 | 3:15:00 | 7.2 | 0.363 | 4.5 | 24,049 | 14.1 | 255 |
| 11/15/2024 | 3:30:00 | 7.2 | 0.367 | 4.4 | 24,054 | 14.1 | 257 |
| 11/15/2024 | 3:45:00 | 7.2 | 0.355 | 3 | 24,059 | 14.1 | 257 |
| 11/15/2024 | 4:45:00 | 7.1 | 0.374 | 1.9 | 24,065 | 14.1 | 256 |
| 11/15/2024 | 5:00:00 | 7.1 | 0.378 | 3 | 24,070 | 14.2 | 256 |
| 11/15/2024 | 5:15:00 | 7.1 | 0.389 | 2.4 | 24,076 | 14.2 | 256 |
| 11/15/2024 | 5:30:00 | 7.1 | 0.382 | 1.7 | 24,082 | 14.2 | 257 |
| 11/15/2024 | 5:45:00 | 7.1 | 0.359 | 1.9 | 24,087 | 14.2 | 257 |
| 11/15/2024 | 6:00:00 | 7.1 | 0.370 | 3.2 | 24,093 | 14.3 | 257 |
| 11/15/2024 | 6:15:00 | 7.1 | 0.382 | 1.7 | 24,098 | 14.2 | 256 |
| 11/15/2024 | 6:30:00 | 7.1 | 0.382 | 1.7 | 24,104 | 14.2 | 257 |
| 11/15/2024 | 6:45:00 | 7.1 | 0.378 | 1.3 | 24,110 | 14.2 | 257 |
| 11/15/2024 | 7:00:00 | 7.1 | 0.359 | 1.6 | 24,116 | 14.3 | 257 |
| 11/15/2024 | 7:15:00 | 7.1 | 0.193 | 1.5 | 24,121 | 14.4 | 257 |
| 11/15/2024 | 7:30:00 | 7.1 | 0.378 | 1.3 | 24,126 | 14.7 | 257 |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|
| 11/15/2024 | 10:45:00 | 7.9 | 0.915 | 8.7 | 24,139 | 10.7 | 113 |
| 11/15/2024 | 11:30:00 | 8 | 0.866 | 2.4 | 24,151 | 10.7 | 113 |
| 11/15/2024 | 11:45:00 | 8 | 0.862 | 2.3 | 24,164 | 10.7 | 113 |
| 11/15/2024 | 12:00:00 | 8 | 0.851 | 2.6 | 24,177 | 10.7 | 112 |
| 11/15/2024 | 12:15:00 | 8 | 0.885 | 6.4 | 24,188 | 10.7 | 113 |
| 11/15/2024 | 12:30:00 | 8 | 0.873 | 5.9 | 24,200 | 10.7 | 113 |
| 11/15/2024 | 14:45:00 | 7.7 | 0.219 | 5 | 24,216 | 12 | 112 |
| 11/15/2024 | 15:00:00 | 7.6 | 0.185 | 4.3 | 24,219 | 12.4 | 112 |
| 11/15/2024 | 15:15:00 | 7.6 | 0.170 | 2.4 | 24,222 | 12.8 | 113 |
| 11/15/2024 | 15:30:00 | 7.7 | 0.688 | 5.1 | 24,226 | 12.1 | 113 |
| 11/15/2024 | 17:15:00 | 7.8 | 0.654 | 0 | 24,233 | 11.3 | 112 |
| 11/15/2024 | 17:30:00 | 7.8 | 0.529 | 8.5 | 24,241 | 11.1 | 112 |
| 11/15/2024 | 17:45:00 | 7.6 | 0.627 | 6.3 | 24,247 | 10.9 | 114 |
| 11/15/2024 | 18:00:00 | 7.6 | 0.624 | 0.6 | 24,257 | 10.9 | 112 |
| 11/15/2024 | 18:15:00 | 7.6 | 0.624 | 0 | 24,266 | 10.9 | 112 |
| 11/15/2024 | 20:15:00 | 7.6 | 0.620 | 0 | 24,279 | 10.7 | 113 |
| 11/15/2024 | 20:30:00 | 7.6 | 0.609 | 0 | 24,289 | 10.9 | 114 |
| 11/15/2024 | 20:45:00 | 7.6 | 0.616 | 0 | 24,298 | 10.8 | 113 |
| 11/15/2024 | 21:00:00 | 7.6 | 0.616 | 0 | 24,307 | 10.9 | 113 |
| 11/15/2024 | 21:15:00 | 7.6 | 0.238 | 0 | 24,315 | 11 | 113 |
| 11/15/2024 | 23:45:00 | 7.6 | 0.571 | 0 | 24,327 | 10.5 | 112 |
| 11/16/2024 | 0:00:00 | 7.6 | 0.593 | 0 | 24,336 | 10.4 | 111 |
| 11/16/2024 | 0:45:00 | 7.6 | 0.605 | 0 | 24,342 | 10.5 | 113 |
| 11/16/2024 | 1:00:00 | 7.6 | 0.616 | 0.3 | 24,351 | 10.5 | 111 |
| 11/16/2024 | 1:15:00 | 7.7 | 0.586 | 29.2 | 24,360 | 10.4 | 111 |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|
| 11/16/2024 | 1:30:00 | 7.7 | 0.575 | 31.3 | 24,369 | 10.5 | 113 |
| 11/16/2024 | 1:45:00 | 7.7 | 0.612 | 33.8 | 24,378 | 10.5 | 112 |
| 11/16/2024 | 2:00:00 | 7.7 | 0.696 | 36 | 24,384 | 10.6 | 113 |
| 11/16/2024 | 2:15:00 | 7.7 | 0.548 | 0 | 24,387 | 10.6 | 114 |
| 11/16/2024 | 2:30:00 | 7.7 | 0.563 | 0 | 24,396 | 10.6 | 114 |
| 11/16/2024 | 4:15:00 | 7.6 | 0.208 | 0 | 24,396 | 12.2 | 112 |
| 11/16/2024 | 4:30:00 | 7.6 | 0.544 | 0 | 24,404 | 12.7 | 112 |
| 11/16/2024 | 4:45:00 | 7.6 | 0.544 | 0 | 24,410 | 12.8 | 112 |
| 11/16/2024 | 5:00:00 | 7.6 | 0.567 | 0 | 24,418 | 12.1 | 111 |
| 11/16/2024 | 5:15:00 | 7.6 | 0.563 | 0 | 24,426 | 11.8 | 112 |
| 11/16/2024 | 5:30:00 | 7.6 | 0.556 | 0 | 24,434 | 11.9 | 111 |
| 11/16/2024 | 5:45:00 | 7.6 | 0.533 | 0 | 24,443 | 12 | 111 |
| 11/16/2024 | 6:00:00 | 7.6 | 0.541 | 0 | 24,451 | 12.4 | 113 |
| 11/16/2024 | 7:45:00 | 7.5 | 0.556 | 0 | 24,460 | 14.2 | 114 |
| 11/16/2024 | 8:00:00 | 7.5 | 0.541 | 0 | 24,468 | 14.6 | 113 |
| 11/16/2024 | 8:15:00 | 7.5 | 0.533 | 0 | 24,476 | 14.9 | 248 |
| 11/16/2024 | 8:30:00 | 7.7 | 0.612 | 0 | 24,485 | 10.3 | 112 |
| 11/16/2024 | 8:45:00 | 7.7 | 0.578 | 0 | 24,493 | 10.1 | 111 |
| 11/16/2024 | 9:00:00 | 7.7 | 0.601 | 0 | 24,502 | 10.1 | 112 |
| 11/16/2024 | 11:15:00 | 7.6 | 0.541 | 0 | 24,510 | 11.5 | 112 |
| 11/16/2024 | 11:30:00 | 7.7 | 0.571 | 0 | 24,518 | 10 | 111 |
| 11/16/2024 | 11:45:00 | 7.7 | 0.552 | 0 | 24,527 | 10.1 | 111 |
| 11/16/2024 | 12:00:00 | 7.7 | 0.525 | 0 | 24,535 | 10.1 | 112 |
| 11/16/2024 | 12:15:00 | 7.7 | 0.556 | 0 | 24,543 | 10.3 | 111 |
| 11/16/2024 | 12:30:00 | 7.7 | 0.559 | 4.9 | 24,551 | 10.4 | 113 |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|
| 11/16/2024 | 12:45:00 | 7.7 | 0.518 | 0 | 24,560 | 10.2 | 111 |
| 11/16/2024 | 15:00:00 | 7.7 | 0.541 | 0 | 24,567 | 10 | 112 |
| 11/16/2024 | 15:15:00 | 7.7 | 0.559 | 0 | 24,575 | 10.2 | 111 |
| 11/16/2024 | 15:30:00 | 7.7 | 0.858 | 0.1 | 24,587 | 10.1 | 111 |
| 11/16/2024 | 15:45:00 | 7.8 | 0.816 | 0 | 24,600 | 10.2 | 112 |
| 11/16/2024 | 18:00:00 | 7.6 | 0.726 | 21.5 | 24,611 | 13.9 | 113 |
| 11/16/2024 | 18:15:00 | 7.7 | 0.786 | 0 | 24,624 | 10.1 | 111 |
| 11/16/2024 | 18:30:00 | 7.8 | 0.832 | 0 | 24,636 | 10 | 111 |
| 11/16/2024 | 18:45:00 | 7.8 | 0.786 | 0 | 24,649 | 10 | 111 |
| 11/16/2024 | 19:00:00 | 7.8 | 0.843 | 0 | 24,661 | 9.9 | 110 |
| 11/16/2024 | 20:30:00 | 7.7 | 0.336 | 0 | 24,675 | 9.8 | 111 |
| 11/16/2024 | 20:45:00 | 7.8 | 0.835 | 0 | 24,686 | 9.7 | 111 |
| 11/16/2024 | 21:00:00 | 7.8 | 0.828 | 0 | 24,698 | 9.6 | 111 |
| 11/16/2024 | 22:45:00 | 7.6 | 0.586 | 0 | 24,712 | 11.1 | 111 |
| 11/16/2024 | 23:00:00 | 7.7 | 1.040 | 0 | 24,724 | 12.5 | 112 |
| 11/16/2024 | 23:15:00 | 7.7 | 1.013 | 0 | 24,739 | 12.7 | 112 |
| 11/16/2024 | 23:30:00 | 7.6 | 1.024 | 0 | 24,754 | 12.8 | 111 |
| 11/16/2024 | 23:45:00 | 7.6 | 1.021 | 0 | 24,770 | 12.8 | 111 |
| 11/17/2024 | 0:15:00 | 7.7 | 0.612 | 0 | 24,781 | 13.2 | 111 |
| 11/17/2024 | 1:30:00 | 7.6 | 1.005 | 0 | 24,787 | 12.8 | 111 |
| 11/17/2024 | 1:45:00 | 7.6 | 0.971 | 0 | 24,802 | 12.9 | 111 |
| 11/17/2024 | 2:00:00 | 7.6 | 0.987 | 0 | 24,817 | 12.9 | 111 |
| 11/17/2024 | 2:45:00 | 7.7 | 0.975 | 0.6 | 24,830 | 13.1 | 112 |
| 11/17/2024 | 3:00:00 | 7.7 | 1.017 | 0 | 24,845 | 13.1 | 111 |
| 11/17/2024 | 3:15:00 | 7.6 | 0.998 | 0 | 24,860 | 13.1 | 112 |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|
| 11/17/2024 | 5:15:00 | 7.6 | 0.998 | 0 | 24,875 | 14.7 | 113 |
| 11/17/2024 | 6:45:00 | 7.5 | 0.994 | 0 | 24,892 | 15.6 | 114 |
| 11/17/2024 | 7:00:00 | 7.5 | 1.032 | 0 | 24,908 | 15.7 | 114 |
| 11/17/2024 | 7:15:00 | 7.5 | 1.017 | 0 | 24,923 | 15.9 | 114 |
| 11/17/2024 | 7:30:00 | 7.5 | 1.009 | 0 | 24,938 | 15.9 | 113 |
| 11/17/2024 | 9:30:00 | 7.7 | 0.968 | 2.3 | 24,957 | 10.6 | 111 |
| 11/17/2024 | 9:45:00 | 7.7 | 0.941 | 0 | 24,971 | 10.1 | 113 |
| 11/17/2024 | 10:00:00 | 7.8 | 0.941 | 0 | 24,986 | 10.1 | 113 |
| 11/17/2024 | 10:15:00 | 7.8 | 0.975 | 0 | 25,000 | 10.1 | 113 |
| 11/17/2024 | 12:45:00 | 7.7 | 0.956 | 0 | 25,026 | 10.3 | 113 |
| 11/17/2024 | 13:00:00 | 7.8 | 0.983 | 0 | 25,041 | 10.4 | 113 |
| 11/17/2024 | 13:15:00 | 7.8 | 0.971 | 0.2 | 25,055 | 10.5 | 112 |
| 11/17/2024 | 13:30:00 | 7.8 | 0.919 | 0.2 | 25,070 | 10.5 | 113 |
| 11/17/2024 | 15:45:00 | 7.7 | 0.968 | 0.3 | 25,081 | 10.7 | 113 |
| 11/17/2024 | 16:00:00 | 7.8 | 0.975 | 1 | 25,096 | 10.8 | 114 |
| 11/17/2024 | 16:15:00 | 7.8 | 0.968 | 1.3 | 25,110 | 10.8 | 114 |
| 11/17/2024 | 16:30:00 | 7.8 | 0.968 | 1.3 | 25,125 | 10.8 | 113 |
| 11/17/2024 | 19:00:00 | 7.6 | 0.476 | 24.9 | 25,138 | 11.2 | 113 |
| 11/17/2024 | 19:15:00 | 7.8 | 0.896 | 1.6 | 25,151 | 10.5 | 111 |
| 11/17/2024 | 19:30:00 | 7.8 | 0.828 | 1.8 | 25,164 | 10.5 | 112 |
| 11/17/2024 | 19:45:00 | 7.8 | 0.813 | 1.4 | 25,177 | 10.6 | 114 |
| 11/17/2024 | 20:00:00 | 7.8 | 0.816 | 0.9 | 25,189 | 10.6 | 113 |
| 11/17/2024 | 22:15:00 | 7.8 | 0.832 | 0.5 | 25,201 | 10.2 | 111 |
| 11/17/2024 | 22:30:00 | 7.8 | 0.378 | 3.2 | 25,209 | 10.3 | 111 |
| 11/17/2024 | 22:45:00 | 7.7 | 0.843 | 0.9 | 25,220 | 10.5 | 111 |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|
| 11/17/2024 | 23:00:00 | 7.7 | 0.828 | 0.7 | 25,233 | 10.9 | 111 |
| 11/17/2024 | 23:15:00 | 7.7 | 0.828 | 0.4 | 25,246 | 11.4 | 112 |
| 11/17/2024 | 23:30:00 | 7.7 | 0.851 | 0.2 | 25,258 | 12 | 114 |

**Table 3. In-Situ Parameters**

| Date | Time | Temperature °C | DO mg/L | Conductivity SPC-uS/cm | SAL-ppt | pH | ORP (mV) | NTU |
|---|---|---|---|---|---|---|---|---|
| 11/11/2024 | 04:40:01AM | 11.4 | 11.08 | 119.6 | 0.06 | 7.2 | 168.9 | 1.26 |
| 11/12/2024 | 05:53:54AM | 11.0 | 10.74 | 114.4 | 0.05 | 7.7 | 122.8 | 0.97 |
| 11/13/2024 | 09:54:40PM | 10.5 | 10.30 | 106.4 | 0.05 | 7.87 | 117.6 | 2.84 |
| 11/14/2024 | 08:16:38PM | 10.5 | 11.20 | 124.0 | 0.06 | 6.8 | 189.1 | 8.22 |
| 11/15/2024 | 08:09:19PM | 10.9 | 11.30 | 122.7 | 0.06 | 7.6 | 180.0 | 1.52 |
| 11/16/2024 | 02:10:12AM | 10.3 | 11.79 | 127.9 | 0.06 | 7.93 | 136.6 | 2.92 |
| 11/17/2024 | 01:25:20AM | 8.7 | 11.24 | 116.8 | 0.06 | 8.02 | 129.0 | 1.89 |

## 3. Calibration Log:

**Table 4. Calibration Log**

| Date | Unit | pH | Conductivity/Temp. | Salinity | NTU |
|---|---|---|---|---|---|
| 11/12/2024 | YSI | ✓ | ✓ | ✓ | ✓ |
| 11/11/2024 | WTP | ✓ | N/A | N/A | ✓ |

# APPENDIX A: WTP Log

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/11/2024 | 0:00:00 | 7.6 | 0.412 | 0 | 22,414 | Open | 09:42:07 PM Nov-09-2024 | 16.3 | 250 |
| 11/11/2024 | 0:15:00 | 7.6 | 0.404 | 0 | 22,420 | Open | 09:42:07 PM Nov-09-2024 | 16.5 | 249 |
| 11/11/2024 | 0:30:00 | 7.6 | 0.393 | 0 | 22,427 | Open | 09:42:07 PM Nov-09-2024 | 16.7 | 250 |
| 11/11/2024 | 0:45:00 | 7.6 | 0.416 | 0 | 22,433 | Open | 09:42:07 PM Nov-09-2024 | 16.9 | 250 |
| 11/11/2024 | 1:00:00 | 7.6 | 0.404 | 0 | 22,439 | Open | 09:42:07 PM Nov-09-2024 | 17.1 | 252 |
| 11/11/2024 | 1:15:00 | 7.5 | 0.389 | 0 | 22,445 | Open | 09:42:07 PM Nov-09-2024 | 17.3 | 252 |
| 11/11/2024 | 1:30:00 | 7.5 | 0.382 | 0 | 22,451 | Open | 09:42:07 PM Nov-09-2024 | 17.5 | 252 |
| 11/11/2024 | 1:45:00 | 7.5 | 0.386 | 0 | 22,457 | Open | 09:42:07 PM Nov-09-2024 | 17.6 | 251 |
| 11/11/2024 | 2:00:00 | 7.5 | 0.000 | 0 | 22,460 | Open | 09:42:07 PM Nov-09-2024 | 17.7 | 251 |
| 11/11/2024 | 2:15:00 | 7.5 | 0.000 | 0 | 22,460 | Open | 09:42:07 PM Nov-09-2024 | 17.9 | 251 |
| 11/11/2024 | 2:30:00 | 7.5 | 0.000 | 0 | 22,460 | Open | 09:42:07 PM Nov-09-2024 | 18 | 251 |
| 11/11/2024 | 2:45:00 | 7.5 | 0.000 | 0 | 22,460 | Open | 09:42:07 PM Nov-09-2024 | 18.1 | 252 |
| 11/11/2024 | 3:00:00 | 7.5 | 0.000 | 0 | 22,460 | Open | 09:42:07 PM Nov-09-2024 | 18.1 | 251 |
| 11/11/2024 | 3:15:00 | 7.5 | 0.178 | 0 | 22,461 | Open | 09:42:07 PM Nov-09-2024 | 18.2 | 249 |

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|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/11/2024 | 3:30:00 | 7.5 | 0.000 | 0 | 22,461 | Open | 09:42:07 PM Nov-09-2024 | 18.4 | 250 |
| 11/11/2024 | 3:45:00 | 7.4 | 0.416 | 0 | 22,462 | Open | 09:42:07 PM Nov-09-2024 | 18.3 | 250 |
| 11/11/2024 | 4:00:00 | 7.4 | 0.416 | 0 | 22,468 | Open | 09:42:07 PM Nov-09-2024 | 18.3 | 250 |
| 11/11/2024 | 4:15:00 | 7.4 | 0.412 | 0 | 22,474 | Open | 09:42:07 PM Nov-09-2024 | 18.3 | 250 |
| 11/11/2024 | 4:30:00 | 7.4 | 0.404 | 0 | 22,480 | Open | 09:42:07 PM Nov-09-2024 | 18.3 | 250 |
| 11/11/2024 | 4:45:00 | 7.5 | 0.397 | 0 | 22,486 | Open | 09:42:07 PM Nov-09-2024 | 18.4 | 250 |
| 11/11/2024 | 5:00:00 | 7.5 | 0.404 | 0 | 22,492 | Open | 09:42:07 PM Nov-09-2024 | 18.4 | 252 |
| 11/11/2024 | 5:15:00 | 7.5 | 0.401 | 0 | 22,498 | Open | 09:42:07 PM Nov-09-2024 | 18.5 | 251 |
| 11/11/2024 | 5:30:00 | 7.4 | 0.393 | 0 | 22,505 | Open | 09:42:07 PM Nov-09-2024 | 18.5 | 252 |
| 11/11/2024 | 5:45:00 | 7.4 | 0.408 | 0 | 22,511 | Open | 09:42:07 PM Nov-09-2024 | 18.6 | 252 |
| 11/11/2024 | 6:00:00 | 7.4 | 0.389 | 0 | 22,517 | Open | 09:42:07 PM Nov-09-2024 | 18.7 | 252 |
| 11/11/2024 | 6:15:00 | 7.4 | 0.155 | 0 | 22,523 | Open | 09:42:07 PM Nov-09-2024 | 18.7 | 252 |
| 11/11/2024 | 6:30:00 | 7.4 | 0.000 | 0 | 22,523 | Open | 09:42:07 PM Nov-09-2024 | 17.7 | 115 |
| 11/11/2024 | 6:45:00 | 7.4 | 0.000 | 0 | 22,523 | Open | 09:42:07 PM Nov-09-2024 | 17.8 | 114 |
| 11/11/2024 | 7:00:00 | 7.5 | 0.000 | 0 | 22,525 | Open | 09:42:07 PM Nov-09-2024 | 12.7 | 114 |

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|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/11/2024 | 7:15:00 | 7.6 | 0.000 | 0 | 22,525 | Open | 09:42:07 PM Nov-09-2024 | 13.1 | 114 |
| 11/11/2024 | 7:30:00 | 7.6 | 0.000 | 0 | 22,525 | Open | 09:42:07 PM Nov-09-2024 | 13.6 | 114 |
| 11/11/2024 | 7:45:00 | 7.6 | 0.000 | 0 | 22,525 | Open | 09:42:07 PM Nov-09-2024 | 14 | 114 |
| 11/11/2024 | 8:00:00 | 7.6 | 0.416 | 0 | 22,530 | Open | 09:42:07 PM Nov-09-2024 | 14.4 | 114 |
| 11/11/2024 | 8:15:00 | 7.6 | 0.408 | 0 | 22,536 | Open | 09:42:07 PM Nov-09-2024 | 14.7 | 114 |
| 11/11/2024 | 8:30:00 | 7.6 | 0.386 | 0 | 22,542 | Open | 09:42:07 PM Nov-09-2024 | 14.9 | 113 |
| 11/11/2024 | 8:45:00 | 7.6 | 0.389 | 0 | 22,548 | Open | 09:42:07 PM Nov-09-2024 | 15 | 113 |
| 11/11/2024 | 9:00:00 | 7.6 | 0.461 | 0 | 22,555 | Open | 09:42:07 PM Nov-09-2024 | 12.8 | 113 |
| 11/11/2024 | 9:15:00 | 7.6 | 0.476 | 0 | 22,562 | Open | 09:42:07 PM Nov-09-2024 | 11.7 | 112 |
| 11/11/2024 | 9:30:00 | 7.5 | 0.461 | 0 | 22,569 | Open | 09:42:07 PM Nov-09-2024 | 11.7 | 112 |
| 11/11/2024 | 9:45:00 | 7.6 | 0.469 | 0 | 22,576 | Open | 09:42:07 PM Nov-09-2024 | 11.7 | 113 |
| 11/11/2024 | 10:00:00 | 7.5 | 0.457 | 0 | 22,583 | Open | 09:42:07 PM Nov-09-2024 | 11.8 | 113 |
| 11/11/2024 | 10:15:00 | 7.6 | 0.000 | 0 | 22,587 | Open | 09:42:07 PM Nov-09-2024 | 11.8 | 111 |
| 11/11/2024 | 10:30:00 | 7.6 | 0.000 | 0 | 22,587 | Open | 09:42:07 PM Nov-09-2024 | 12.1 | 111 |
| 11/11/2024 | 10:45:00 | 7.6 | 0.000 | 0 | 22,587 | Open | 09:42:07 PM Nov-09-2024 | 12.4 | 112 |

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|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/11/2024 | 11:00:00 | 7.6 | 0.000 | 0 | 22,587 | Open | 09:42:07 PM Nov-09-2024 | 12.7 | 111 |
| 11/11/2024 | 11:15:00 | 7.6 | 0.000 | 0 | 22,587 | Open | 09:42:07 PM Nov-09-2024 | 12.9 | 111 |
| 11/11/2024 | 11:30:00 | 7.5 | 0.000 | 0 | 22,587 | Open | 09:42:07 PM Nov-09-2024 | 13.1 | 111 |
| 11/11/2024 | 11:45:00 | 7.5 | 0.000 | 0 | 22,587 | Open | 09:42:07 PM Nov-09-2024 | 13.3 | 111 |
| 11/11/2024 | 12:00:00 | 7.6 | 0.473 | 2.7 | 22,590 | Open | 11:53:10 AM Nov-11-2024 | 11.3 | 112 |
| 11/11/2024 | 12:15:00 | 7.6 | 0.480 | 0 | 22,597 | Open | 11:53:10 AM Nov-11-2024 | 11.2 | 111 |
| 11/11/2024 | 12:30:00 | 7.6 | 0.454 | 0 | 22,604 | Open | 11:53:10 AM Nov-11-2024 | 11.1 | 111 |
| 11/11/2024 | 12:45:00 | 7.6 | 0.450 | 0 | 22,611 | Open | 11:53:10 AM Nov-11-2024 | 11.2 | 111 |
| 11/11/2024 | 13:00:00 | 7.6 | 0.457 | 0 | 22,618 | Open | 11:53:10 AM Nov-11-2024 | 11.2 | 111 |
| 11/11/2024 | 13:15:00 | 7.6 | 0.461 | 0 | 22,625 | Open | 11:53:10 AM Nov-11-2024 | 11.2 | 112 |
| 11/11/2024 | 13:30:00 | 7.6 | 0.465 | 0 | 22,632 | Open | 11:53:10 AM Nov-11-2024 | 11.3 | 112 |
| 11/11/2024 | 13:45:00 | 7.6 | 0.457 | 0 | 22,639 | Open | 11:53:10 AM Nov-11-2024 | 11.2 | 112 |
| 11/11/2024 | 14:00:00 | 7.6 | 0.457 | 0 | 22,645 | Open | 11:53:10 AM Nov-11-2024 | 11.3 | 112 |
| 11/11/2024 | 14:15:00 | 7.6 | 0.469 | 0 | 22,652 | Open | 11:53:10 AM Nov-11-2024 | 11.3 | 112 |
| 11/11/2024 | 14:30:00 | 7.6 | 0.450 | 0 | 22,659 | Open | 11:53:10 AM Nov-11-2024 | 11.4 | 113 |

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|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/11/2024 | 14:45:00 | 7.6 | 0.446 | 0 | 22,666 | Open | 11:53:10 AM Nov-11-2024 | 11.5 | 113 |
| 11/11/2024 | 15:00:00 | 7.6 | 0.000 | 0 | 22,671 | Closed | 11:53:10 AM Nov-11-2024 | 11.6 | 113 |
| 11/11/2024 | 15:15:00 | 7.6 | 0.000 | 0 | 22,671 | Closed | 11:53:10 AM Nov-11-2024 | 11.8 | 112 |
| 11/11/2024 | 15:30:00 | 7.6 | 0.000 | 0 | 22,671 | Closed | 11:53:10 AM Nov-11-2024 | 12.1 | 111 |
| 11/11/2024 | 15:45:00 | 7.6 | 0.000 | 0 | 22,671 | Closed | 11:53:10 AM Nov-11-2024 | 12.4 | 112 |
| 11/11/2024 | 16:00:00 | 7.6 | 0.000 | 0 | 22,671 | Closed | 11:53:10 AM Nov-11-2024 | 12.7 | 111 |
| 11/11/2024 | 16:15:00 | 7.6 | 0.000 | 0 | 22,671 | Closed | 11:53:10 AM Nov-11-2024 | 12.9 | 112 |
| 11/11/2024 | 16:30:00 | 7.6 | 0.000 | 0 | 22,671 | Closed | 11:53:10 AM Nov-11-2024 | 13 | 111 |
| 11/11/2024 | 16:45:00 | 7.6 | 0.000 | 0 | 22,671 | Closed | 11:53:10 AM Nov-11-2024 | 13.2 | 111 |
| 11/11/2024 | 17:00:00 | 7.6 | 0.469 | 0 | 22,672 | Open | 04:58:44 PM Nov-11-2024 | 12.7 | 111 |
| 11/11/2024 | 17:15:00 | 7.6 | 0.465 | 0 | 22,679 | Open | 04:58:44 PM Nov-11-2024 | 11.3 | 111 |
| 11/11/2024 | 17:30:00 | 7.6 | 0.442 | 0 | 22,686 | Open | 04:58:44 PM Nov-11-2024 | 11.4 | 112 |
| 11/11/2024 | 17:45:00 | 7.6 | 0.446 | 0 | 22,692 | Open | 04:58:44 PM Nov-11-2024 | 11.4 | 111 |
| 11/11/2024 | 18:00:00 | 7.6 | 0.427 | 0 | 22,699 | Open | 04:58:44 PM Nov-11-2024 | 11.4 | 112 |
| 11/11/2024 | 18:15:00 | 7.6 | 0.442 | 0 | 22,706 | Open | 04:58:44 PM Nov-11-2024 | 11.5 | 112 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/11/2024 | 18:30:00 | 7.6 | 0.442 | 0 | 22,713 | Open | 04:58:44 PM Nov-11-2024 | 11.4 | 112 |
| 11/11/2024 | 18:45:00 | 7.6 | 0.442 | 0.1 | 22,720 | Open | 04:58:44 PM Nov-11-2024 | 11.4 | 112 |
| 11/11/2024 | 19:00:00 | 7.6 | 0.431 | 0 | 22,726 | Open | 04:58:44 PM Nov-11-2024 | 11.4 | 111 |
| 11/11/2024 | 19:15:00 | 7.6 | 0.427 | 0.1 | 22,733 | Open | 04:58:44 PM Nov-11-2024 | 11.3 | 111 |
| 11/11/2024 | 19:30:00 | 7.6 | 0.431 | 0 | 22,739 | Open | 04:58:44 PM Nov-11-2024 | 11.3 | 111 |
| 11/11/2024 | 19:45:00 | 7.6 | 0.423 | 0 | 22,746 | Open | 04:58:44 PM Nov-11-2024 | 11.3 | 111 |
| 11/11/2024 | 20:00:00 | 7.6 | 0.435 | 0 | 22,752 | Open | 04:58:44 PM Nov-11-2024 | 11.3 | 111 |
| 11/11/2024 | 20:15:00 | 7.6 | 0.446 | 0 | 22,759 | Open | 04:58:44 PM Nov-11-2024 | 11.3 | 111 |
| 11/11/2024 | 20:30:00 | 7.6 | 0.000 | 0 | 22,761 | Closed | 04:58:44 PM Nov-11-2024 | 11.5 | 112 |
| 11/11/2024 | 20:45:00 | 7.6 | 0.000 | 0 | 22,761 | Closed | 04:58:44 PM Nov-11-2024 | 11.9 | 112 |
| 11/11/2024 | 21:00:00 | 7.6 | 0.000 | 0 | 22,761 | Closed | 04:58:44 PM Nov-11-2024 | 12.4 | 113 |
| 11/11/2024 | 21:15:00 | 7.6 | 0.000 | 0 | 22,761 | Closed | 04:58:44 PM Nov-11-2024 | 12.9 | 113 |
| 11/11/2024 | 21:30:00 | 7.6 | 0.000 | 0 | 22,761 | Closed | 04:58:44 PM Nov-11-2024 | 13.3 | 113 |
| 11/11/2024 | 21:45:00 | 7.6 | 0.000 | 0 | 22,761 | Closed | 04:58:44 PM Nov-11-2024 | 13.7 | 113 |
| 11/11/2024 | 22:00:00 | 7.6 | 0.000 | 0 | 22,761 | Closed | 04:58:44 PM Nov-11-2024 | 14.1 | 113 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/11/2024 | 22:15:00 | 7.6 | 0.000 | 0 | 22,761 | Closed | 04:58:44 PM Nov-11-2024 | 14.4 | 114 |
| 11/11/2024 | 22:30:00 | 7.6 | 0.488 | 0.9 | 22,763 | Open | 10:27:19 PM Nov-11-2024 | 11.8 | 114 |
| 11/11/2024 | 22:45:00 | 7.6 | 0.473 | 0.7 | 22,770 | Open | 10:27:19 PM Nov-11-2024 | 11.3 | 113 |
| 11/11/2024 | 23:00:00 | 7.6 | 0.465 | 0 | 22,777 | Open | 10:27:19 PM Nov-11-2024 | 11.4 | 113 |
| 11/11/2024 | 23:15:00 | 7.6 | 0.465 | 0 | 22,784 | Open | 10:27:19 PM Nov-11-2024 | 11.4 | 114 |
| 11/11/2024 | 23:30:00 | 7.6 | 0.457 | 0 | 22,791 | Open | 10:27:19 PM Nov-11-2024 | 11.4 | 114 |
| 11/11/2024 | 23:45:00 | 7.6 | 0.461 | 0 | 22,797 | Open | 10:27:19 PM Nov-11-2024 | 11.4 | 114 |
| 11/12/2024 | 0:00:00 | 7.6 | 0.446 | 0 | 22,804 | Open | 10:27:19 PM Nov-11-2024 | 11.4 | 113 |
| 11/12/2024 | 0:15:00 | 7.6 | 0.450 | 0 | 22,811 | Open | 10:27:19 PM Nov-11-2024 | 11.4 | 114 |
| 11/12/2024 | 0:30:00 | 7.6 | 0.454 | 0 | 22,818 | Open | 10:27:19 PM Nov-11-2024 | 11.4 | 113 |
| 11/12/2024 | 0:45:00 | 7.6 | 0.446 | 0 | 22,825 | Open | 10:27:19 PM Nov-11-2024 | 11.5 | 114 |
| 11/12/2024 | 1:00:00 | 7.6 | 0.446 | 0 | 22,831 | Open | 10:27:19 PM Nov-11-2024 | 11.5 | 114 |
| 11/12/2024 | 1:15:00 | 7.6 | 0.450 | 0 | 22,838 | Open | 10:27:19 PM Nov-11-2024 | 11.5 | 114 |
| 11/12/2024 | 1:30:00 | 7.6 | 0.000 | 0 | 22,840 | Closed | 10:27:19 PM Nov-11-2024 | 11.8 | 114 |
| 11/12/2024 | 1:45:00 | 7.6 | 0.000 | 0 | 22,840 | Closed | 10:27:19 PM Nov-11-2024 | 12.4 | 114 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/12/2024 | 2:00:00 | 7.6 | 0.000 | 0 | 22,840 | Closed | 10:27:19 PM Nov-11-2024 | 13 | 114 |
| 11/12/2024 | 2:15:00 | 7.6 | 0.000 | 0 | 22,840 | Closed | 10:27:19 PM Nov-11-2024 | 13.5 | 114 |
| 11/12/2024 | 2:30:00 | 7.6 | 0.000 | 0 | 22,840 | Closed | 10:27:19 PM Nov-11-2024 | 14 | 114 |
| 11/12/2024 | 2:45:00 | 7.6 | 0.000 | 0 | 22,840 | Closed | 10:27:19 PM Nov-11-2024 | 14.4 | 114 |
| 11/12/2024 | 3:00:00 | 7.6 | 0.461 | 0 | 22,840 | Open | 02:58:47 AM Nov-12-2024 | 13.2 | 114 |
| 11/12/2024 | 3:15:00 | 7.6 | 0.446 | 0 | 22,847 | Open | 03:03:25 AM Nov-12-2024 | 11.3 | 114 |
| 11/12/2024 | 3:30:00 | 7.6 | 0.457 | 0 | 22,854 | Open | 03:03:25 AM Nov-12-2024 | 11.4 | 114 |
| 11/12/2024 | 3:45:00 | 7.6 | 0.446 | 0 | 22,861 | Open | 03:03:25 AM Nov-12-2024 | 11.4 | 113 |
| 11/12/2024 | 4:00:00 | 7.6 | 0.446 | 0 | 22,868 | Open | 03:03:25 AM Nov-12-2024 | 11.4 | 114 |
| 11/12/2024 | 4:15:00 | 7.6 | 0.423 | 0 | 22,874 | Open | 03:03:25 AM Nov-12-2024 | 11.4 | 114 |
| 11/12/2024 | 4:30:00 | 7.7 | 0.431 | 0 | 22,881 | Open | 03:03:25 AM Nov-12-2024 | 11.4 | 114 |
| 11/12/2024 | 4:45:00 | 7.7 | 0.420 | 0 | 22,887 | Open | 03:03:25 AM Nov-12-2024 | 11.4 | 114 |
| 11/12/2024 | 5:00:00 | 7.7 | 0.442 | 0 | 22,894 | Open | 03:03:25 AM Nov-12-2024 | 11.4 | 114 |
| 11/12/2024 | 5:15:00 | 7.7 | 0.431 | 0 | 22,900 | Open | 03:03:25 AM Nov-12-2024 | 11.4 | 114 |
| 11/12/2024 | 5:30:00 | 7.7 | 0.408 | 0 | 22,907 | Open | 03:03:25 AM Nov-12-2024 | 11.4 | 114 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/12/2024 | 5:45:00 | 7.7 | 0.431 | 0 | 22,913 | Open | 03:03:25 AM Nov-12-2024 | 11.4 | 114 |
| 11/12/2024 | 6:00:00 | 7.6 | 0.000 | 0 | 22,919 | Closed | 03:03:25 AM Nov-12-2024 | 11.4 | 114 |
| 11/12/2024 | 6:15:00 | 7.6 | 0.000 | 0 | 22,919 | Closed | 06:01:33 AM Nov-12-2024 | 11.9 | 114 |
| 11/12/2024 | 6:30:00 | 7.6 | 0.000 | 0 | 22,919 | Closed | 06:01:33 AM Nov-12-2024 | 12.5 | 114 |
| 11/12/2024 | 6:45:00 | 7.6 | 0.000 | 0 | 22,919 | Closed | 06:01:33 AM Nov-12-2024 | 13 | 114 |
| 11/12/2024 | 7:00:00 | 7.6 | 0.000 | 0 | 22,919 | Closed | 06:01:33 AM Nov-12-2024 | 13.5 | 114 |
| 11/12/2024 | 7:15:00 | 7.6 | 0.000 | 0 | 22,919 | Closed | 06:01:33 AM Nov-12-2024 | 14.1 | 114 |
| 11/12/2024 | 7:30:00 | 7.6 | 0.000 | 0 | 22,919 | Closed | 06:01:33 AM Nov-12-2024 | 14.5 | 114 |
| 11/12/2024 | 7:45:00 | 7.6 | 0.000 | 0 | 22,919 | Closed | 06:01:33 AM Nov-12-2024 | 14.8 | 114 |
| 11/12/2024 | 8:00:00 | 7.6 | 0.000 | 0 | 22,919 | Closed | 06:01:33 AM Nov-12-2024 | 15.2 | 114 |
| 11/12/2024 | 8:15:00 | 7.6 | 0.431 | 0 | 22,923 | Open | 08:06:22 AM Nov-12-2024 | 11.5 | 114 |
| 11/12/2024 | 8:30:00 | 7.6 | 0.435 | 0 | 22,930 | Open | 08:06:22 AM Nov-12-2024 | 11.3 | 113 |
| 11/12/2024 | 8:45:00 | 7.6 | 0.427 | 0 | 22,936 | Open | 08:06:22 AM Nov-12-2024 | 11.2 | 112 |
| 11/12/2024 | 9:00:00 | 7.7 | 0.416 | 0 | 22,942 | Open | 08:06:22 AM Nov-12-2024 | 11.1 | 111 |
| 11/12/2024 | 9:15:00 | 7.7 | 0.431 | 0 | 22,949 | Open | 08:06:22 AM Nov-12-2024 | 11 | 111 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/12/2024 | 9:30:00 | 7.7 | 0.423 | 0 | 22,955 | Open | 08:06:22 AM Nov-12-2024 | 11 | 111 |
| 11/12/2024 | 9:45:00 | 7.7 | 0.404 | 0 | 22,961 | Open | 08:06:22 AM Nov-12-2024 | 11 | 111 |
| 11/12/2024 | 10:00:00 | 7.7 | 0.404 | 0 | 22,967 | Open | 08:06:22 AM Nov-12-2024 | 11 | 110 |
| 11/12/2024 | 10:15:00 | 7.7 | 0.420 | 0 | 22,973 | Open | 08:06:22 AM Nov-12-2024 | 11 | 111 |
| 11/12/2024 | 10:30:00 | 7.7 | 0.000 | 0 | 22,979 | Closed | 08:06:22 AM Nov-12-2024 | 11.1 | 111 |
| 11/12/2024 | 10:45:00 | 7.7 | 0.000 | 0 | 22,979 | Closed | 08:06:22 AM Nov-12-2024 | 11.3 | 111 |
| 11/12/2024 | 11:00:00 | 7.7 | 0.000 | 0 | 22,979 | Closed | 08:06:22 AM Nov-12-2024 | 11.5 | 111 |
| 11/12/2024 | 11:15:00 | 7.6 | 0.000 | 0 | 22,979 | Closed | 08:06:22 AM Nov-12-2024 | 11.8 | 111 |
| 11/12/2024 | 11:30:00 | 7.6 | 0.000 | 0 | 22,979 | Closed | 08:06:22 AM Nov-12-2024 | 12 | 111 |
| 11/12/2024 | 11:45:00 | 7.6 | 0.000 | 0 | 22,979 | Closed | 08:06:22 AM Nov-12-2024 | 12.2 | 111 |
| 11/12/2024 | 12:00:00 | 7.6 | 0.416 | 0 | 22,984 | Open | 11:48:22 AM Nov-12-2024 | 11 | 111 |
| 11/12/2024 | 12:15:00 | 7.6 | 0.423 | 0 | 22,990 | Open | 11:48:22 AM Nov-12-2024 | 11 | 111 |
| 11/12/2024 | 12:30:00 | 7.6 | 0.412 | 0 | 22,996 | Open | 11:48:22 AM Nov-12-2024 | 11 | 112 |
| 11/12/2024 | 12:45:00 | 7.6 | 0.427 | 0 | 23,003 | Open | 11:48:22 AM Nov-12-2024 | 11 | 111 |
| 11/12/2024 | 13:00:00 | 7.6 | 0.412 | 0 | 23,009 | Open | 11:48:22 AM Nov-12-2024 | 11.1 | 111 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/12/2024 | 13:15:00 | 7.6 | 0.416 | 0 | 23,015 | Open | 11:48:22 AM Nov-12-2024 | 11.1 | 112 |
| 11/12/2024 | 13:30:00 | 7.6 | 0.412 | 0 | 23,021 | Open | 11:48:22 AM Nov-12-2024 | 11.1 | 111 |
| 11/12/2024 | 13:45:00 | 7.6 | 0.420 | 0 | 23,027 | Open | 11:48:22 AM Nov-12-2024 | 11.2 | 111 |
| 11/12/2024 | 14:00:00 | 7.6 | 0.393 | 0 | 23,033 | Open | 11:48:22 AM Nov-12-2024 | 11.2 | 112 |
| 11/12/2024 | 14:15:00 | 7.6 | 0.420 | 0 | 23,039 | Open | 11:48:22 AM Nov-12-2024 | 11.2 | 111 |
| 11/12/2024 | 14:30:00 | 7.6 | 0.408 | 0 | 23,046 | Open | 11:48:22 AM Nov-12-2024 | 11.2 | 111 |
| 11/12/2024 | 14:45:00 | 7.6 | 0.412 | 0 | 23,052 | Open | 11:48:22 AM Nov-12-2024 | 11.2 | 111 |
| 11/12/2024 | 15:00:00 | 7.6 | 0.000 | 0 | 23,057 | Closed | 11:48:22 AM Nov-12-2024 | 11.3 | 111 |
| 11/12/2024 | 15:15:00 | 7.6 | 0.000 | 0 | 23,057 | Closed | 11:48:22 AM Nov-12-2024 | 11.6 | 112 |
| 11/12/2024 | 15:30:00 | 7.6 | 0.000 | 0 | 23,057 | Closed | 11:48:22 AM Nov-12-2024 | 11.8 | 111 |
| 11/12/2024 | 15:45:00 | 7.6 | 0.000 | 0 | 23,057 | Closed | 11:48:22 AM Nov-12-2024 | 12.1 | 111 |
| 11/12/2024 | 16:00:00 | 7.6 | 0.000 | 0 | 23,057 | Closed | 11:48:22 AM Nov-12-2024 | 12.5 | 112 |
| 11/12/2024 | 16:15:00 | 7.6 | 0.000 | 0 | 23,057 | Closed | 11:48:22 AM Nov-12-2024 | 12.9 | 113 |
| 11/12/2024 | 16:30:00 | 7.6 | 0.423 | 0 | 23,059 | Open | 04:24:40 PM Nov-12-2024 | 11.5 | 111 |
| 11/12/2024 | 16:45:00 | 7.6 | 0.404 | 0 | 23,065 | Open | 04:24:40 PM Nov-12-2024 | 11.3 | 111 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/12/2024 | 17:00:00 | 7.6 | 0.238 | 0 | 23,071 | Open | 04:24:40 PM Nov-12-2024 | 11.6 | 111 |
| 11/12/2024 | 17:15:00 | 7.6 | 0.427 | 0 | 23,076 | Open | 04:24:40 PM Nov-12-2024 | 11.3 | 111 |
| 11/12/2024 | 17:30:00 | 7.6 | 0.412 | 0 | 23,083 | Open | 04:24:40 PM Nov-12-2024 | 11.3 | 111 |
| 11/12/2024 | 17:45:00 | 7.6 | 0.420 | 0 | 23,089 | Open | 04:24:40 PM Nov-12-2024 | 11.3 | 111 |
| 11/12/2024 | 18:00:00 | 7.6 | 0.185 | 0 | 23,094 | Open | 04:24:40 PM Nov-12-2024 | 11.7 | 112 |
| 11/12/2024 | 18:15:00 | 7.6 | 0.404 | 0 | 23,100 | Open | 04:24:40 PM Nov-12-2024 | 11.4 | 112 |
| 11/12/2024 | 18:30:00 | 7.6 | 0.412 | 0 | 23,106 | Open | 04:24:40 PM Nov-12-2024 | 11.3 | 112 |
| 11/12/2024 | 18:45:00 | 7.6 | 0.401 | 0 | 23,112 | Open | 04:24:40 PM Nov-12-2024 | 11.4 | 112 |
| 11/12/2024 | 19:00:00 | 7.6 | 0.397 | 0 | 23,118 | Open | 04:24:40 PM Nov-12-2024 | 11.3 | 112 |
| 11/12/2024 | 19:15:00 | 7.6 | 0.389 | 0 | 23,124 | Open | 04:24:40 PM Nov-12-2024 | 11.3 | 111 |
| 11/12/2024 | 19:30:00 | 7.6 | 0.378 | 0 | 23,130 | Open | 04:24:40 PM Nov-12-2024 | 11.2 | 112 |
| 11/12/2024 | 19:45:00 | 7.6 | 0.408 | 0 | 23,136 | Open | 04:24:40 PM Nov-12-2024 | 11.3 | 112 |
| 11/12/2024 | 20:00:00 | 7.6 | 0.397 | 0 | 23,142 | Open | 04:24:40 PM Nov-12-2024 | 11.4 | 113 |
| 11/12/2024 | 20:15:00 | 7.6 | 0.000 | 0 | 23,143 | Closed | 04:24:40 PM Nov-12-2024 | 11.7 | 113 |
| 11/12/2024 | 20:30:00 | 7.6 | 0.000 | 0 | 23,143 | Closed | 04:24:40 PM Nov-12-2024 | 12.1 | 112 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/12/2024 | 20:45:00 | 7.6 | 0.000 | 0 | 23,143 | Closed | 04:24:40 PM Nov-12-2024 | 12.4 | 111 |
| 11/12/2024 | 21:00:00 | 7.6 | 0.000 | 0 | 23,143 | Closed | 04:24:40 PM Nov-12-2024 | 12.6 | 111 |
| 11/12/2024 | 21:15:00 | 7.6 | 0.000 | 0 | 23,143 | Closed | 04:24:40 PM Nov-12-2024 | 12.7 | 111 |
| 11/12/2024 | 21:30:00 | 7.6 | 0.000 | 0 | 23,143 | Closed | 04:24:40 PM Nov-12-2024 | 13 | 112 |
| 11/12/2024 | 21:45:00 | 7.6 | 0.000 | 0 | 23,143 | Closed | 04:24:40 PM Nov-12-2024 | 13.3 | 112 |
| 11/12/2024 | 22:00:00 | 7.7 | 0.253 | 1.4 | 23,146 | Open | 09:52:21 PM Nov-12-2024 | 11.7 | 113 |
| 11/12/2024 | 22:15:00 | 7.8 | 0.276 | 2 | 23,150 | Open | 10:07:27 PM Nov-12-2024 | 11.9 | 114 |
| 11/12/2024 | 22:30:00 | 7.8 | 0.484 | 3 | 23,156 | Open | 10:07:27 PM Nov-12-2024 | 12.6 | 113 |
| 11/12/2024 | 22:45:00 | 7.8 | 0.488 | 4 | 23,164 | Open | 10:07:27 PM Nov-12-2024 | 13 | 113 |
| 11/12/2024 | 23:00:00 | 7.8 | 0.491 | 4.3 | 23,171 | Open | 10:07:27 PM Nov-12-2024 | 13.4 | 113 |
| 11/12/2024 | 23:15:00 | 7.8 | 0.480 | 3.6 | 23,179 | Open | 10:07:27 PM Nov-12-2024 | 13.8 | 113 |
| 11/12/2024 | 23:30:00 | 7.8 | 0.488 | 3.3 | 23,186 | Open | 10:07:27 PM Nov-12-2024 | 14.1 | 113 |
| 11/12/2024 | 23:45:00 | 7.7 | 0.484 | 2.4 | 23,194 | Open | 10:07:27 PM Nov-12-2024 | 14.4 | 114 |
| 11/13/2024 | 0:00:00 | 7.7 | 0.476 | 1.9 | 23,201 | Open | 10:07:27 PM Nov-12-2024 | 14.7 | 114 |
| 11/13/2024 | 0:15:00 | 7.7 | 0.484 | 2.3 | 23,208 | Open | 10:07:27 PM Nov-12-2024 | 15 | 114 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/13/2024 | 0:30:00 | 7.7 | 0.484 | 1.5 | 23,216 | Open | 10:07:27 PM Nov-12-2024 | 15.2 | 114 |
| 11/13/2024 | 0:45:00 | 7.7 | 0.000 | 0.5 | 23,222 | Closed | 10:07:27 PM Nov-12-2024 | 15.4 | 114 |
| 11/13/2024 | 1:00:00 | 7.7 | 0.000 | 1 | 23,222 | Closed | 10:07:27 PM Nov-12-2024 | 15.5 | 114 |
| 11/13/2024 | 1:15:00 | 7.7 | 0.000 | 0.9 | 23,222 | Closed | 10:07:27 PM Nov-12-2024 | 15.5 | 114 |
| 11/13/2024 | 1:30:00 | 7.6 | 0.000 | 1.9 | 23,222 | Closed | 10:07:27 PM Nov-12-2024 | 15.4 | 114 |
| 11/13/2024 | 1:45:00 | 7.6 | 0.000 | 1.8 | 23,222 | Closed | 10:07:27 PM Nov-12-2024 | 15.4 | 114 |
| 11/13/2024 | 2:00:00 | 7.6 | 0.000 | 1.2 | 23,222 | Closed | 10:07:27 PM Nov-12-2024 | 15.5 | 114 |
| 11/13/2024 | 2:15:00 | 7.6 | 0.000 | 1.7 | 23,222 | Closed | 10:07:27 PM Nov-12-2024 | 15.5 | 114 |
| 11/13/2024 | 2:30:00 | 7.6 | 0.000 | 2.1 | 23,222 | Closed | 10:07:27 PM Nov-12-2024 | 15.6 | 114 |
| 11/13/2024 | 2:45:00 | 7.6 | 0.522 | 2 | 23,224 | Open | 02:42:02 AM Nov-13-2024 | 16.5 | 114 |
| 11/13/2024 | 3:00:00 | 7.7 | 0.533 | 1.8 | 23,232 | Open | 02:42:02 AM Nov-13-2024 | 16.5 | 114 |
| 11/13/2024 | 3:15:00 | 7.6 | 0.537 | 1.6 | 23,238 | Open | 02:42:02 AM Nov-13-2024 | 16.5 | 114 |
| 11/13/2024 | 3:30:00 | 7.6 | 0.525 | 1.7 | 23,246 | Open | 02:42:02 AM Nov-13-2024 | 16.4 | 114 |
| 11/13/2024 | 3:45:00 | 7.6 | 0.522 | 1.4 | 23,254 | Open | 02:42:02 AM Nov-13-2024 | 16.4 | 114 |
| 11/13/2024 | 4:00:00 | 7.6 | 0.522 | 1.5 | 23,261 | Open | 02:42:02 AM Nov-13-2024 | 16.8 | 114 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/13/2024 | 4:15:00 | 7.6 | 0.518 | 1.3 | 23,269 | Open | 02:42:02 AM Nov-13-2024 | 16.8 | 246 |
| 11/13/2024 | 4:30:00 | 7.6 | 0.507 | 1.4 | 23,277 | Open | 02:42:02 AM Nov-13-2024 | 16.8 | 246 |
| 11/13/2024 | 4:45:00 | 7.5 | 0.518 | 1.1 | 23,284 | Open | 02:42:02 AM Nov-13-2024 | 16.7 | 246 |
| 11/13/2024 | 5:00:00 | 7.5 | 0.514 | 1.1 | 23,292 | Open | 02:42:02 AM Nov-13-2024 | 16.7 | 246 |
| 11/13/2024 | 5:15:00 | 7.5 | 0.510 | 1.1 | 23,299 | Open | 02:42:02 AM Nov-13-2024 | 16.7 | 114 |
| 11/13/2024 | 5:30:00 | 7.5 | 0.507 | 1 | 23,307 | Open | 02:42:02 AM Nov-13-2024 | 16.6 | 114 |
| 11/13/2024 | 5:45:00 | 7.5 | 0.000 | 1.1 | 23,312 | Closed | 02:42:02 AM Nov-13-2024 | 16.6 | 114 |
| 11/13/2024 | 6:00:00 | 7.7 | 0.507 | 1.3 | 23,316 | Open | 05:51:52 AM Nov-13-2024 | 17.2 | 114 |
| 11/13/2024 | 6:15:00 | 7.7 | 0.507 | 1.3 | 23,323 | Open | 05:51:52 AM Nov-13-2024 | 17.2 | 114 |
| 11/13/2024 | 6:30:00 | 7.7 | 0.495 | 1.7 | 23,331 | Open | 05:51:52 AM Nov-13-2024 | 17.1 | 113 |
| 11/13/2024 | 6:45:00 | 7.6 | 0.000 | 1.7 | 23,336 | Closed | 05:51:52 AM Nov-13-2024 | 17 | 114 |
| 11/13/2024 | 7:00:00 | 7.6 | 0.000 | 1.4 | 23,336 | Closed | 05:51:52 AM Nov-13-2024 | 16.8 | 114 |
| 11/13/2024 | 7:15:00 | 7.6 | 0.000 | 1.2 | 23,336 | Closed | 05:51:52 AM Nov-13-2024 | 16.7 | 114 |
| 11/13/2024 | 7:30:00 | 7.6 | 0.000 | 1 | 23,336 | Closed | 05:51:52 AM Nov-13-2024 | 16.5 | 114 |
| 11/13/2024 | 7:45:00 | 7.6 | 0.000 | 1 | 23,336 | Closed | 05:51:52 AM Nov-13-2024 | 16.5 | 114 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/13/2024 | 8:00:00 | 7.6 | 0.000 | 1.1 | 23,336 | Closed | 05:51:52 AM Nov-13-2024 | 16.5 | 114 |
| 11/13/2024 | 8:15:00 | 7.6 | 0.000 | 0.8 | 23,336 | Closed | 05:51:52 AM Nov-13-2024 | 16.6 | 114 |
| 11/13/2024 | 8:30:00 | 7.5 | 0.000 | 1 | 23,336 | Closed | 05:51:52 AM Nov-13-2024 | 16.6 | 114 |
| 11/13/2024 | 8:45:00 | 7.7 | 0.514 | 1 | 23,338 | Open | 08:40:59 AM Nov-13-2024 | 16.6 | 113 |
| 11/13/2024 | 9:00:00 | 7.8 | 0.514 | 1.3 | 23,345 | Open | 08:40:59 AM Nov-13-2024 | 11.3 | 113 |
| 11/13/2024 | 9:15:00 | 7.8 | 0.499 | 1.2 | 23,353 | Open | 08:40:59 AM Nov-13-2024 | 11 | 113 |
| 11/13/2024 | 9:30:00 | 7.8 | 0.499 | 1.4 | 23,360 | Open | 08:40:59 AM Nov-13-2024 | 10.9 | 111 |
| 11/13/2024 | 9:45:00 | 7.8 | 0.510 | 1.2 | 23,368 | Open | 08:40:59 AM Nov-13-2024 | 10.9 | 112 |
| 11/13/2024 | 10:00:00 | 7.8 | 0.503 | 1.3 | 23,375 | Open | 08:40:59 AM Nov-13-2024 | 10.9 | 112 |
| 11/13/2024 | 10:15:00 | 7.8 | 0.499 | 1 | 23,383 | Open | 08:40:59 AM Nov-13-2024 | 10.9 | 112 |
| 11/13/2024 | 10:30:00 | 7.9 | 0.503 | 0.9 | 23,390 | Open | 08:40:59 AM Nov-13-2024 | 10.9 | 112 |
| 11/13/2024 | 10:45:00 | 7.8 | 0.000 | 0.7 | 23,397 | Closed | 08:40:59 AM Nov-13-2024 | 11 | 112 |
| 11/13/2024 | 11:00:00 | 7.8 | 0.000 | 0.6 | 23,397 | Closed | 08:40:59 AM Nov-13-2024 | 11.3 | 112 |
| 11/13/2024 | 11:15:00 | 7.8 | 0.000 | 0.9 | 23,397 | Closed | 08:40:59 AM Nov-13-2024 | 11.6 | 112 |
| 11/13/2024 | 11:30:00 | 7.8 | 0.000 | 0.5 | 23,397 | Closed | 08:40:59 AM Nov-13-2024 | 11.9 | 112 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/13/2024 | 11:45:00 | 7.8 | 0.000 | 0.5 | 23,397 | Closed | 08:40:59 AM Nov-13-2024 | 12.3 | 112 |
| 11/13/2024 | 12:00:00 | 7.8 | 0.000 | 0.4 | 23,397 | Closed | 08:40:59 AM Nov-13-2024 | 12.5 | 112 |
| 11/13/2024 | 12:15:00 | 7.8 | 0.000 | 0.5 | 23,397 | Closed | 08:40:59 AM Nov-13-2024 | 12.8 | 112 |
| 11/13/2024 | 12:30:00 | 7.7 | 0.000 | 0.2 | 23,397 | Closed | 08:40:59 AM Nov-13-2024 | 13.1 | 113 |
| 11/13/2024 | 12:45:00 | 7.8 | 0.495 | 0.8 | 23,400 | Open | 12:39:25 PM Nov-13-2024 | 11.1 | 113 |
| 11/13/2024 | 13:00:00 | 7.8 | 0.507 | 2.3 | 23,407 | Open | 12:39:25 PM Nov-13-2024 | 11 | 113 |
| 11/13/2024 | 13:15:00 | 7.8 | 0.495 | 4 | 23,415 | Open | 12:39:25 PM Nov-13-2024 | 10.9 | 113 |
| 11/13/2024 | 13:30:00 | 7.8 | 0.499 | 3.8 | 23,422 | Open | 12:39:25 PM Nov-13-2024 | 11.1 | 113 |
| 11/13/2024 | 13:45:00 | 7.8 | 0.514 | 3.6 | 23,430 | Open | 12:39:25 PM Nov-13-2024 | 11.4 | 114 |
| 11/13/2024 | 14:00:00 | 7.8 | 0.510 | 3 | 23,437 | Open | 12:39:25 PM Nov-13-2024 | 11.8 | 113 |
| 11/13/2024 | 14:15:00 | 7.8 | 0.507 | 2.3 | 23,445 | Open | 12:39:25 PM Nov-13-2024 | 12.2 | 114 |
| 11/13/2024 | 14:30:00 | 7.8 | 0.507 | 1.6 | 23,452 | Open | 12:39:25 PM Nov-13-2024 | 12.6 | 114 |
| 11/13/2024 | 14:45:00 | 7.8 | 0.503 | 2.5 | 23,460 | Open | 12:39:25 PM Nov-13-2024 | 12.9 | 114 |
| 11/13/2024 | 15:00:00 | 7.8 | 0.507 | 2.2 | 23,467 | Open | 12:39:25 PM Nov-13-2024 | 13.2 | 114 |
| 11/13/2024 | 15:15:00 | 7.8 | 0.000 | 2.1 | 23,470 | Closed | 12:39:25 PM Nov-13-2024 | 13.4 | 114 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/13/2024 | 15:30:00 | 7.8 | 0.000 | 1.8 | 23,470 | Closed | 12:39:25 PM Nov-13-2024 | 13.7 | 114 |
| 11/13/2024 | 15:45:00 | 7.7 | 0.000 | 1.9 | 23,470 | Closed | 12:39:25 PM Nov-13-2024 | 14 | 114 |
| 11/13/2024 | 16:00:00 | 7.7 | 0.000 | 1.7 | 23,470 | Closed | 12:39:25 PM Nov-13-2024 | 14.2 | 114 |
| 11/13/2024 | 16:15:00 | 7.7 | 0.000 | 1.5 | 23,470 | Closed | 12:39:25 PM Nov-13-2024 | 14.3 | 114 |
| 11/13/2024 | 16:30:00 | 7.7 | 0.000 | 1.3 | 23,470 | Closed | 12:39:25 PM Nov-13-2024 | 14.4 | 114 |
| 11/13/2024 | 16:45:00 | 7.7 | 0.000 | 1.4 | 23,470 | Closed | 12:39:25 PM Nov-13-2024 | 14.4 | 114 |
| 11/13/2024 | 17:00:00 | 7.8 | 0.503 | 5.4 | 23,476 | Open | 04:47:42 PM Nov-13-2024 | 15.1 | 114 |
| 11/13/2024 | 17:15:00 | 7.8 | 0.495 | 3.5 | 23,484 | Open | 04:47:42 PM Nov-13-2024 | 15.1 | 114 |
| 11/13/2024 | 17:30:00 | 7.8 | 0.491 | 4 | 23,491 | Open | 04:47:42 PM Nov-13-2024 | 15.4 | 114 |
| 11/13/2024 | 17:45:00 | 7.8 | 0.499 | 3.5 | 23,499 | Open | 04:47:42 PM Nov-13-2024 | 15.7 | 115 |
| 11/13/2024 | 18:00:00 | 7.8 | 0.503 | 10.4 | 23,506 | Open | 04:47:42 PM Nov-13-2024 | 14.5 | 114 |
| 11/13/2024 | 18:15:00 | 7.8 | 0.488 | 7.3 | 23,514 | Open | 04:47:42 PM Nov-13-2024 | 14.6 | 114 |
| 11/13/2024 | 18:30:00 | 7.8 | 0.503 | 7.2 | 23,521 | Open | 04:47:42 PM Nov-13-2024 | 14.7 | 114 |
| 11/13/2024 | 18:45:00 | 7.8 | 0.499 | 5.1 | 23,529 | Open | 04:47:42 PM Nov-13-2024 | 14.8 | 114 |
| 11/13/2024 | 19:00:00 | 7.8 | 0.503 | 5 | 23,536 | Open | 04:47:42 PM Nov-13-2024 | 14.9 | 114 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/13/2024 | 19:15:00 | 7.8 | 0.491 | 4 | 23,544 | Open | 04:47:42 PM Nov-13-2024 | 15 | 114 |
| 11/13/2024 | 19:30:00 | 7.8 | 0.495 | 2.9 | 23,551 | Open | 04:47:42 PM Nov-13-2024 | 15.1 | 114 |
| 11/13/2024 | 19:45:00 | 7.7 | 0.503 | 6.1 | 23,559 | Open | 04:47:42 PM Nov-13-2024 | 15.4 | 114 |
| 11/13/2024 | 20:00:00 | 7.7 | 0.499 | 6.1 | 23,566 | Open | 04:47:42 PM Nov-13-2024 | 15.7 | 116 |
| 11/13/2024 | 20:15:00 | 7.7 | 0.495 | 5.8 | 23,574 | Open | 04:47:42 PM Nov-13-2024 | 16 | 114 |
| 11/13/2024 | 20:30:00 | 7.8 | 0.000 | 4.4 | 23,577 | Closed | 04:47:42 PM Nov-13-2024 | 16.2 | 114 |
| 11/13/2024 | 20:45:00 | 7.7 | 0.000 | 3.1 | 23,577 | Closed | 04:47:42 PM Nov-13-2024 | 16.1 | 114 |
| 11/13/2024 | 21:00:00 | 7.7 | 0.000 | 3.1 | 23,577 | Closed | 04:47:42 PM Nov-13-2024 | 16 | 114 |
| 11/13/2024 | 21:15:00 | 7.7 | 0.000 | 4 | 23,577 | Closed | 04:47:42 PM Nov-13-2024 | 15.9 | 114 |
| 11/13/2024 | 21:30:00 | 7.7 | 0.000 | 4.5 | 23,577 | Closed | 04:47:42 PM Nov-13-2024 | 15.8 | 114 |
| 11/13/2024 | 21:45:00 | 7.6 | 0.000 | 2.3 | 23,577 | Closed | 04:47:42 PM Nov-13-2024 | 15.8 | 245 |
| 11/13/2024 | 22:00:00 | 7.7 | 0.484 | 6 | 23,580 | Open | 09:54:38 PM Nov-13-2024 | 17.3 | 116 |
| 11/13/2024 | 22:15:00 | 7.7 | 0.249 | 6 | 23,584 | Open | 09:54:38 PM Nov-13-2024 | 17 | 114 |
| 11/13/2024 | 22:30:00 | 7.7 | 0.499 | 6.5 | 23,590 | Open | 09:54:38 PM Nov-13-2024 | 16.8 | 114 |
| 11/13/2024 | 22:45:00 | 7.7 | 0.518 | 5.8 | 23,598 | Open | 09:54:38 PM Nov-13-2024 | 16.7 | 245 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/13/2024 | 23:00:00 | 7.7 | 0.510 | 5.4 | 23,605 | Open | 09:54:38 PM Nov-13-2024 | 16.7 | 114 |
| 11/13/2024 | 23:15:00 | 7.6 | 0.510 | 4.4 | 23,613 | Open | 09:54:38 PM Nov-13-2024 | 16.6 | 114 |
| 11/13/2024 | 23:30:00 | 7.6 | 0.510 | 4.4 | 23,620 | Open | 09:54:38 PM Nov-13-2024 | 16.5 | 243 |
| 11/13/2024 | 23:45:00 | 7.6 | 0.510 | 4.6 | 23,628 | Open | 09:54:38 PM Nov-13-2024 | 16.5 | 245 |
| 11/14/2024 | 0:00:00 | 7.6 | 0.510 | 4.6 | 23,635 | Open | 09:54:38 PM Nov-13-2024 | 16.4 | 245 |
| 11/14/2024 | 0:15:00 | 7.6 | 0.510 | 5.3 | 23,643 | Open | 09:54:38 PM Nov-13-2024 | 16.3 | 245 |
| 11/14/2024 | 0:30:00 | 7.6 | 0.510 | 4.8 | 23,650 | Open | 09:54:38 PM Nov-13-2024 | 16.3 | 245 |
| 11/14/2024 | 0:45:00 | 7.6 | 0.000 | 4.6 | 23,653 | Open | 09:54:38 PM Nov-13-2024 | 16.2 | 245 |
| 11/14/2024 | 1:00:00 | 7.6 | 0.000 | 4.7 | 23,653 | Open | 09:54:38 PM Nov-13-2024 | 16 | 245 |
| 11/14/2024 | 1:15:00 | 7.6 | 0.000 | 5.2 | 23,653 | Open | 09:54:38 PM Nov-13-2024 | 15.9 | 245 |
| 11/14/2024 | 1:30:00 | 7.6 | 0.163 | 5.3 | 23,657 | Open | 09:54:38 PM Nov-13-2024 | 15.8 | 245 |
| 11/14/2024 | 1:45:00 | 7.5 | 0.499 | 4.9 | 23,664 | Open | 09:54:38 PM Nov-13-2024 | 15.8 | 246 |
| 11/14/2024 | 2:00:00 | 7.5 | 0.503 | 4.6 | 23,671 | Open | 09:54:38 PM Nov-13-2024 | 15.8 | 246 |
| 11/14/2024 | 2:15:00 | 7.5 | 0.000 | 4.1 | 23,673 | Open | 09:54:38 PM Nov-13-2024 | 15.8 | 246 |
| 11/14/2024 | 2:30:00 | 7.5 | 0.000 | 3.8 | 23,673 | Open | 09:54:38 PM Nov-13-2024 | 15.7 | 114 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/14/2024 | 2:45:00 | 7.5 | 0.000 | 4.1 | 23,673 | Open | 09:54:38 PM Nov-13-2024 | 15.5 | 246 |
| 11/14/2024 | 3:00:00 | 7.6 | 0.000 | 4.1 | 23,673 | Open | 09:54:38 PM Nov-13-2024 | 15.4 | 114 |
| 11/14/2024 | 3:15:00 | 7.5 | 0.000 | 4.2 | 23,673 | Open | 09:54:38 PM Nov-13-2024 | 15.4 | 114 |
| 11/14/2024 | 3:30:00 | 7.5 | 0.473 | 3.8 | 23,674 | Open | 09:54:38 PM Nov-13-2024 | 15.5 | 114 |
| 11/14/2024 | 3:45:00 | 7.5 | 0.495 | 4.4 | 23,681 | Open | 09:54:38 PM Nov-13-2024 | 15.5 | 114 |
| 11/14/2024 | 4:00:00 | 7.5 | 0.499 | 3.7 | 23,689 | Open | 09:54:38 PM Nov-13-2024 | 15.6 | 114 |
| 11/14/2024 | 4:15:00 | 7.5 | 0.491 | 4.2 | 23,696 | Open | 09:54:38 PM Nov-13-2024 | 15.6 | 114 |
| 11/14/2024 | 4:30:00 | 7.5 | 0.518 | 4 | 23,704 | Open | 09:54:38 PM Nov-13-2024 | 15.7 | 246 |
| 11/14/2024 | 4:45:00 | 7.5 | 0.495 | 4.2 | 23,711 | Open | 09:54:38 PM Nov-13-2024 | 15.8 | 245 |
| 11/14/2024 | 5:00:00 | 7.5 | 0.510 | 4.1 | 23,719 | Open | 09:54:38 PM Nov-13-2024 | 15.8 | 246 |
| 11/14/2024 | 5:15:00 | 7.5 | 0.510 | 4.1 | 23,726 | Open | 09:54:38 PM Nov-13-2024 | 15.9 | 246 |
| 11/14/2024 | 5:30:00 | 7.5 | 0.507 | 4.1 | 23,734 | Open | 09:54:38 PM Nov-13-2024 | 16 | 246 |
| 11/14/2024 | 5:45:00 | 7.5 | 0.488 | 3.5 | 23,740 | Open | 09:54:38 PM Nov-13-2024 | 16 | 246 |
| 11/14/2024 | 6:00:00 | 7.5 | 0.495 | 3.5 | 23,747 | Open | 09:54:38 PM Nov-13-2024 | 16 | 246 |
| 11/14/2024 | 6:15:00 | 7.5 | 0.476 | 3 | 23,755 | Open | 09:54:38 PM Nov-13-2024 | 16 | 246 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/14/2024 | 6:30:00 | 7.5 | 0.000 | 3.3 | 23,757 | Open | 09:54:38 PM Nov-13-2024 | 15.9 | 114 |
| 11/14/2024 | 6:45:00 | 7.5 | 0.000 | 3.2 | 23,757 | Open | 09:54:38 PM Nov-13-2024 | 15.9 | 114 |
| 11/14/2024 | 7:00:00 | 7.5 | 0.000 | 3.4 | 23,757 | Open | 09:54:38 PM Nov-13-2024 | 15.8 | 246 |
| 11/14/2024 | 7:15:00 | 7.5 | 0.000 | 3.4 | 23,757 | Open | 09:54:38 PM Nov-13-2024 | 15.7 | 246 |
| 11/14/2024 | 7:30:00 | 7.5 | 0.000 | 3.3 | 23,757 | Open | 09:54:38 PM Nov-13-2024 | 15.6 | 114 |
| 11/14/2024 | 7:45:00 | 7.5 | 0.000 | 3.1 | 23,757 | Open | 09:54:38 PM Nov-13-2024 | 15.7 | 246 |
| 11/14/2024 | 8:00:00 | 7.5 | 0.491 | 3.1 | 23,761 | Open | 09:54:38 PM Nov-13-2024 | 15.8 | 247 |
| 11/14/2024 | 8:15:00 | 7.6 | 0.488 | 4.1 | 23,768 | Open | 09:54:38 PM Nov-13-2024 | 17.2 | 114 |
| 11/14/2024 | 8:30:00 | 7.8 | 0.473 | 4.7 | 23,776 | Open | 09:54:38 PM Nov-13-2024 | 11 | 115 |
| 11/14/2024 | 8:45:00 | 7.8 | 0.491 | 4.5 | 23,783 | Open | 09:54:38 PM Nov-13-2024 | 10.8 | 114 |
| 11/14/2024 | 9:00:00 | 7.8 | 0.480 | 4.9 | 23,791 | Open | 09:54:38 PM Nov-13-2024 | 10.8 | 114 |
| 11/14/2024 | 9:15:00 | 7.8 | 0.491 | 4.8 | 23,798 | Open | 09:07:07 AM Nov-14-2024 | 10.8 | 113 |
| 11/14/2024 | 9:30:00 | 7.8 | 0.454 | 25.9 | 23,802 | Closed | 09:07:07 AM Nov-14-2024 | 10.8 | 113 |
| 11/14/2024 | 9:45:00 | 7.8 | 0.495 | 5.5 | 23,809 | Open | 09:32:15 AM Nov-14-2024 | 10.7 | 114 |
| 11/14/2024 | 10:00:00 | 7.8 | 0.291 | 4.6 | 23,816 | Open | 09:32:15 AM Nov-14-2024 | 10.8 | 113 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/14/2024 | 10:15:00 | 7.8 | 0.000 | 3.6 | 23,816 | Closed | 09:32:15 AM Nov-14-2024 | 11 | 113 |
| 11/14/2024 | 10:30:00 | 7.8 | 0.000 | 3.4 | 23,816 | Closed | 09:32:15 AM Nov-14-2024 | 11.3 | 113 |
| 11/14/2024 | 10:45:00 | 7.8 | 0.000 | 3.2 | 23,816 | Closed | 09:32:15 AM Nov-14-2024 | 11.6 | 111 |
| 11/14/2024 | 11:00:00 | 7.8 | 0.000 | 2.8 | 23,816 | Closed | 09:32:15 AM Nov-14-2024 | 11.8 | 111 |
| 11/14/2024 | 11:15:00 | 7.7 | 0.000 | 2.3 | 23,816 | Closed | 09:32:15 AM Nov-14-2024 | 12 | 111 |
| 11/14/2024 | 11:30:00 | 7.8 | 0.491 | 4.7 | 23,818 | Open | 11:26:18 AM Nov-14-2024 | 10.8 | 111 |
| 11/14/2024 | 11:45:00 | 7.8 | 0.491 | 3.4 | 23,825 | Open | 11:26:18 AM Nov-14-2024 | 10.7 | 111 |
| 11/14/2024 | 12:00:00 | 7.8 | 0.310 | 2.6 | 23,831 | Open | 11:26:18 AM Nov-14-2024 | 11 | 111 |
| 11/14/2024 | 12:15:00 | 7.8 | 0.321 | 2.8 | 23,836 | Open | 11:26:18 AM Nov-14-2024 | 11.4 | 112 |
| 11/14/2024 | 12:30:00 | 7.8 | 0.310 | 2.2 | 23,841 | Open | 11:26:18 AM Nov-14-2024 | 11.8 | 112 |
| 11/14/2024 | 12:45:00 | 7.8 | 0.318 | 1.9 | 23,845 | Open | 11:26:18 AM Nov-14-2024 | 12.3 | 112 |
| 11/14/2024 | 13:00:00 | 7.8 | 0.318 | 1.7 | 23,850 | Open | 11:26:18 AM Nov-14-2024 | 12.7 | 113 |
| 11/14/2024 | 13:15:00 | 7.8 | 0.314 | 1.4 | 23,855 | Open | 11:26:18 AM Nov-14-2024 | 13.2 | 113 |
| 11/14/2024 | 13:30:00 | 7.8 | 0.306 | 1.3 | 23,860 | Open | 11:26:18 AM Nov-14-2024 | 13.6 | 113 |
| 11/14/2024 | 13:45:00 | 7.8 | 0.310 | 1.7 | 23,864 | Open | 11:26:18 AM Nov-14-2024 | 13.8 | 113 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/14/2024 | 14:00:00 | 7.7 | 0.291 | 1.4 | 23,869 | Open | 11:26:18 AM Nov-14-2024 | 14.1 | 113 |
| 11/14/2024 | 14:15:00 | 7.7 | 0.306 | 1.5 | 23,874 | Open | 11:26:18 AM Nov-14-2024 | 14.3 | 113 |
| 11/14/2024 | 14:30:00 | 7.7 | 0.299 | 1 | 23,878 | Open | 11:26:18 AM Nov-14-2024 | 14.5 | 113 |
| 11/14/2024 | 14:45:00 | 7.7 | 0.302 | 0.8 | 23,883 | Open | 11:26:18 AM Nov-14-2024 | 14.7 | 114 |
| 11/14/2024 | 15:00:00 | 7.7 | 0.291 | 1 | 23,887 | Open | 11:26:18 AM Nov-14-2024 | 14.9 | 113 |
| 11/14/2024 | 15:15:00 | 7.7 | 0.284 | 1.4 | 23,891 | Open | 11:26:18 AM Nov-14-2024 | 15 | 113 |
| 11/14/2024 | 15:30:00 | 7.6 | 0.257 | 1.7 | 23,895 | Open | 11:26:18 AM Nov-14-2024 | 15.5 | 114 |
| 11/14/2024 | 15:45:00 | 7.5 | 0.249 | 1.7 | 23,899 | Open | 11:26:18 AM Nov-14-2024 | 15.5 | 113 |
| 11/14/2024 | 16:00:00 | 7.5 | 0.000 | 1.7 | 23,900 | Closed | 11:26:18 AM Nov-14-2024 | 15.5 | 113 |
| 11/14/2024 | 16:15:00 | 7.5 | 0.000 | 1.8 | 23,900 | Closed | 11:26:18 AM Nov-14-2024 | 15.5 | 111 |
| 11/14/2024 | 16:30:00 | 7.5 | 0.000 | 1.9 | 23,900 | Closed | 11:26:18 AM Nov-14-2024 | 15.4 | 111 |
| 11/14/2024 | 16:45:00 | 7.5 | 0.000 | 1.6 | 23,900 | Closed | 11:26:18 AM Nov-14-2024 | 15.4 | 112 |
| 11/14/2024 | 17:00:00 | 7.5 | 0.000 | 1.6 | 23,900 | Closed | 11:26:18 AM Nov-14-2024 | 15.4 | 112 |
| 11/14/2024 | 17:15:00 | 7.5 | 0.000 | 1.5 | 23,900 | Closed | 11:26:18 AM Nov-14-2024 | 15.2 | 111 |
| 11/14/2024 | 17:30:00 | 7.5 | 0.000 | 1.4 | 23,900 | Closed | 11:26:18 AM Nov-14-2024 | 15.2 | 111 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/14/2024 | 17:45:00 | 7.5 | 0.238 | 0 | 23,902 | Open | 05:38:10 PM Nov-14-2024 | 14.7 | 112 |
| 11/14/2024 | 18:00:00 | 7.5 | 0.431 | 6.9 | 23,905 | Open | 05:38:10 PM Nov-14-2024 | 13.8 | 113 |
| 11/14/2024 | 18:15:00 | 7.4 | 0.480 | 7.5 | 23,912 | Open | 06:06:48 PM Nov-14-2024 | 11.3 | 112 |
| 11/14/2024 | 18:30:00 | 7.3 | 0.465 | 7.8 | 23,919 | Open | 06:06:48 PM Nov-14-2024 | 11.2 | 111 |
| 11/14/2024 | 18:45:00 | 7.3 | 0.438 | 6 | 23,926 | Open | 06:06:48 PM Nov-14-2024 | 11.4 | 111 |
| 11/14/2024 | 19:00:00 | 7.3 | 0.408 | 6.9 | 23,932 | Open | 06:06:48 PM Nov-14-2024 | 11.7 | 111 |
| 11/14/2024 | 19:15:00 | 7.3 | 0.397 | 5.6 | 23,938 | Open | 06:06:48 PM Nov-14-2024 | 12.1 | 111 |
| 11/14/2024 | 19:30:00 | 7.3 | 0.370 | 5.1 | 23,944 | Open | 06:06:48 PM Nov-14-2024 | 12.4 | 112 |
| 11/14/2024 | 19:45:00 | 7.3 | 0.352 | 3.6 | 23,949 | Open | 06:06:48 PM Nov-14-2024 | 12.8 | 112 |
| 11/14/2024 | 20:00:00 | 7.3 | 0.325 | 3.6 | 23,954 | Open | 06:06:48 PM Nov-14-2024 | 13.2 | 113 |
| 11/14/2024 | 20:15:00 | 7.3 | 0.318 | 3.2 | 23,959 | Open | 06:06:48 PM Nov-14-2024 | 13.5 | 257 |
| 11/14/2024 | 20:30:00 | 7.3 | 0.299 | 4.7 | 23,964 | Open | 06:06:48 PM Nov-14-2024 | 13.9 | 254 |
| 11/14/2024 | 20:45:00 | 7.3 | 0.234 | 8.4 | 23,969 | Open | 06:06:48 PM Nov-14-2024 | 14.2 | 256 |
| 11/14/2024 | 21:00:00 | 7.3 | 0.132 | 5.4 | 23,971 | Open | 06:06:48 PM Nov-14-2024 | 14.4 | 257 |
| 11/14/2024 | 21:15:00 | 7.3 | 0.397 | 5.1 | 23,977 | Open | 06:06:48 PM Nov-14-2024 | 14.5 | 256 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/14/2024 | 21:30:00 | 7.3 | 0.401 | 4.9 | 23,983 | Open | 06:06:48 PM Nov-14-2024 | 14.6 | 256 |
| 11/14/2024 | 21:45:00 | 7.3 | 0.389 | 4.4 | 23,989 | Open | 06:06:48 PM Nov-14-2024 | 14.6 | 256 |
| 11/14/2024 | 22:00:00 | 7.2 | 0.404 | 5.8 | 23,995 | Open | 06:06:48 PM Nov-14-2024 | 14.6 | 255 |
| 11/14/2024 | 22:15:00 | 7.2 | 0.397 | 5.2 | 24,001 | Open | 06:06:48 PM Nov-14-2024 | 14.6 | 253 |
| 11/14/2024 | 22:30:00 | 7.2 | 0.370 | 5.2 | 24,003 | Open | 06:06:48 PM Nov-14-2024 | 14.6 | 255 |
| 11/14/2024 | 22:45:00 | 7.2 | 0.000 | 4.7 | 24,005 | Open | 06:06:48 PM Nov-14-2024 | 14.6 | 256 |
| 11/14/2024 | 23:00:00 | 7.2 | 0.000 | 5.4 | 24,005 | Open | 06:06:48 PM Nov-14-2024 | 14.5 | 253 |
| 11/14/2024 | 23:15:00 | 7.2 | 0.000 | 5.2 | 24,005 | Open | 06:06:48 PM Nov-14-2024 | 14.4 | 255 |
| 11/14/2024 | 23:30:00 | 7.2 | 0.000 | 5.8 | 24,005 | Open | 06:06:48 PM Nov-14-2024 | 14.3 | 253 |
| 11/14/2024 | 23:45:00 | 7.2 | 0.000 | 5.6 | 24,005 | Open | 06:06:48 PM Nov-14-2024 | 14.2 | 255 |
| 11/15/2024 | 0:00:00 | 7.2 | 0.352 | 6.3 | 24,009 | Open | 06:06:48 PM Nov-14-2024 | 14.2 | 255 |
| 11/15/2024 | 0:15:00 | 7.2 | 0.340 | 4.8 | 24,014 | Open | 06:06:48 PM Nov-14-2024 | 14.2 | 255 |
| 11/15/2024 | 0:30:00 | 7.2 | 0.340 | 5.1 | 24,019 | Open | 06:06:48 PM Nov-14-2024 | 14.2 | 255 |
| 11/15/2024 | 0:45:00 | 7.2 | 0.333 | 4.9 | 24,024 | Open | 06:06:48 PM Nov-14-2024 | 14.2 | 255 |
| 11/15/2024 | 1:00:00 | 7.2 | 0.000 | 4.9 | 24,029 | Open | 06:06:48 PM Nov-14-2024 | 14.3 | 255 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/15/2024 | 1:15:00 | 7.2 | 0.000 | 5.1 | 24,029 | Open | 06:06:48 PM Nov-14-2024 | 14.3 | 255 |
| 11/15/2024 | 1:30:00 | 7.2 | 0.000 | 5.7 | 24,029 | Open | 06:06:48 PM Nov-14-2024 | 14.2 | 256 |
| 11/15/2024 | 1:45:00 | 7.2 | 0.000 | 5.7 | 24,029 | Open | 06:06:48 PM Nov-14-2024 | 14.1 | 253 |
| 11/15/2024 | 2:00:00 | 7.2 | 0.000 | 5.5 | 24,029 | Open | 06:06:48 PM Nov-14-2024 | 14 | 255 |
| 11/15/2024 | 2:15:00 | 7.2 | 0.284 | 5.4 | 24,029 | Open | 06:06:48 PM Nov-14-2024 | 13.9 | 253 |
| 11/15/2024 | 2:30:00 | 7.2 | 0.393 | 5.2 | 24,032 | Open | 06:06:48 PM Nov-14-2024 | 13.9 | 255 |
| 11/15/2024 | 2:45:00 | 7.2 | 0.367 | 4.7 | 24,038 | Open | 06:06:48 PM Nov-14-2024 | 14 | 255 |
| 11/15/2024 | 3:00:00 | 7.2 | 0.370 | 4.9 | 24,043 | Open | 06:06:48 PM Nov-14-2024 | 14 | 255 |
| 11/15/2024 | 3:15:00 | 7.2 | 0.363 | 4.5 | 24,049 | Open | 06:06:48 PM Nov-14-2024 | 14.1 | 255 |
| 11/15/2024 | 3:30:00 | 7.2 | 0.367 | 4.4 | 24,054 | Open | 06:06:48 PM Nov-14-2024 | 14.1 | 257 |
| 11/15/2024 | 3:45:00 | 7.2 | 0.355 | 3 | 24,059 | Open | 06:06:48 PM Nov-14-2024 | 14.1 | 257 |
| 11/15/2024 | 4:00:00 | 7.2 | 0.000 | 2.2 | 24,060 | Open | 06:06:48 PM Nov-14-2024 | 14.2 | 257 |
| 11/15/2024 | 4:15:00 | 7.2 | 0.000 | 2 | 24,060 | Open | 06:06:48 PM Nov-14-2024 | 14.2 | 257 |
| 11/15/2024 | 4:30:00 | 7.1 | 0.000 | 1.8 | 24,060 | Open | 06:06:48 PM Nov-14-2024 | 14.1 | 257 |
| 11/15/2024 | 4:45:00 | 7.1 | 0.374 | 1.9 | 24,065 | Open | 06:06:48 PM Nov-14-2024 | 14.1 | 256 |

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|---|---|---|---|
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| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/15/2024 | 5:00:00 | 7.1 | 0.378 | 3 | 24,070 | Open | 06:06:48 PM Nov-14-2024 | 14.2 | 256 |
| 11/15/2024 | 5:15:00 | 7.1 | 0.389 | 2.4 | 24,076 | Open | 06:06:48 PM Nov-14-2024 | 14.2 | 256 |
| 11/15/2024 | 5:30:00 | 7.1 | 0.382 | 1.7 | 24,082 | Open | 06:06:48 PM Nov-14-2024 | 14.2 | 257 |
| 11/15/2024 | 5:45:00 | 7.1 | 0.359 | 1.9 | 24,087 | Open | 06:06:48 PM Nov-14-2024 | 14.2 | 257 |
| 11/15/2024 | 6:00:00 | 7.1 | 0.370 | 3.2 | 24,093 | Open | 06:06:48 PM Nov-14-2024 | 14.3 | 257 |
| 11/15/2024 | 6:15:00 | 7.1 | 0.382 | 1.7 | 24,098 | Open | 06:06:48 PM Nov-14-2024 | 14.2 | 256 |
| 11/15/2024 | 6:30:00 | 7.1 | 0.382 | 1.7 | 24,104 | Open | 06:06:48 PM Nov-14-2024 | 14.2 | 257 |
| 11/15/2024 | 6:45:00 | 7.1 | 0.378 | 1.3 | 24,110 | Open | 06:06:48 PM Nov-14-2024 | 14.2 | 257 |
| 11/15/2024 | 7:00:00 | 7.1 | 0.359 | 1.6 | 24,116 | Open | 06:06:48 PM Nov-14-2024 | 14.3 | 257 |
| 11/15/2024 | 7:15:00 | 7.1 | 0.193 | 1.5 | 24,121 | Open | 06:06:48 PM Nov-14-2024 | 14.4 | 257 |
| 11/15/2024 | 7:30:00 | 7.1 | 0.378 | 1.3 | 24,126 | Open | 06:06:48 PM Nov-14-2024 | 14.7 | 257 |
| 11/15/2024 | 7:45:00 | 7.1 | 0.000 | 1.3 | 24,127 | Open | 06:06:48 PM Nov-14-2024 | 14.9 | 256 |
| 11/15/2024 | 8:00:00 | 7.1 | 0.000 | 1.1 | 24,127 | Open | 06:06:48 PM Nov-14-2024 | 15.1 | 256 |
| 11/15/2024 | 8:15:00 | 7.1 | 0.000 | 0 | 24,127 | Open | 06:06:48 PM Nov-14-2024 | 15.2 | 258 |
| 11/15/2024 | 8:30:00 | 7.1 | 0.000 | 0 | 24,127 | Open | 06:06:48 PM Nov-14-2024 | 15.4 | 256 |

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|---|---|---|---|
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| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/15/2024 | 8:45:00 | 7.1 | 0.000 | 0 | 24,127 | Open | 06:06:48 PM Nov-14-2024 | 15.5 | 255 |
| 11/15/2024 | 9:00:00 | 7.1 | 0.000 | 0 | 24,127 | Open | 06:06:48 PM Nov-14-2024 | 15.4 | 253 |
| 11/15/2024 | 9:15:00 | 7.1 | 0.000 | 0 | 24,127 | Open | 06:06:48 PM Nov-14-2024 | 15.3 | 256 |
| 11/15/2024 | 9:30:00 | 7.1 | 0.000 | 0 | 24,127 | Open | 06:06:48 PM Nov-14-2024 | 15.3 | 255 |
| 11/15/2024 | 9:45:00 | 7.1 | 0.000 | 0 | 24,127 | Open | 06:06:48 PM Nov-14-2024 | 15.4 | 256 |
| 11/15/2024 | 10:00:00 | 7.1 | 0.000 | 0 | 24,127 | Open | 06:06:48 PM Nov-14-2024 | 15.5 | 256 |
| 11/15/2024 | 10:15:00 | 7.1 | 0.000 | 0 | 24,127 | Open | 06:06:48 PM Nov-14-2024 | 15.5 | 255 |
| 11/15/2024 | 10:30:00 | 7.1 | 0.000 | 0 | 24,127 | Open | 06:06:48 PM Nov-14-2024 | 15.4 | 256 |
| 11/15/2024 | 10:45:00 | 7.9 | 0.915 | 8.7 | 24,139 | Open | 06:06:48 PM Nov-14-2024 | 10.7 | 113 |
| 11/15/2024 | 11:00:00 | 7.9 | 0.000 | 3.8 | 24,147 | Open | 06:06:48 PM Nov-14-2024 | 11.2 | 112 |
| 11/15/2024 | 11:15:00 | 7.9 | 0.000 | 4.5 | 24,147 | Open | 06:06:48 PM Nov-14-2024 | 11.7 | 113 |
| 11/15/2024 | 11:30:00 | 8 | 0.866 | 2.4 | 24,151 | Open | 06:06:48 PM Nov-14-2024 | 10.7 | 113 |
| 11/15/2024 | 11:45:00 | 8 | 0.862 | 2.3 | 24,164 | Open | 06:06:48 PM Nov-14-2024 | 10.7 | 113 |
| 11/15/2024 | 12:00:00 | 8 | 0.851 | 2.6 | 24,177 | Open | 06:06:48 PM Nov-14-2024 | 10.7 | 112 |
| 11/15/2024 | 12:15:00 | 8 | 0.885 | 6.4 | 24,188 | Open | 06:06:48 PM Nov-14-2024 | 10.7 | 113 |

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|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/15/2024 | 12:30:00 | 8 | 0.873 | 5.9 | 24,200 | Open | 06:06:48 PM Nov-14-2024 | 10.7 | 113 |
| 11/15/2024 | 12:45:00 | 8 | 0.000 | 6.5 | 24,208 | Open | 06:06:48 PM Nov-14-2024 | 10.9 | 113 |
| 11/15/2024 | 13:00:00 | 8 | 0.000 | 7.4 | 24,211 | Open | 06:06:48 PM Nov-14-2024 | 10.9 | 111 |
| 11/15/2024 | 13:15:00 | 8 | 0.000 | 5.6 | 24,211 | Open | 06:06:48 PM Nov-14-2024 | 11.3 | 113 |
| 11/15/2024 | 13:30:00 | 7.9 | 0.000 | 5.4 | 24,211 | Open | 06:06:48 PM Nov-14-2024 | 11.7 | 114 |
| 11/15/2024 | 13:45:00 | 7.9 | 0.000 | 4.4 | 24,211 | Open | 06:06:48 PM Nov-14-2024 | 12.1 | 113 |
| 11/15/2024 | 14:00:00 | 7.9 | 0.265 | 18.6 | 24,211 | Open | 06:06:48 PM Nov-14-2024 | 12.5 | 114 |
| 11/15/2024 | 14:15:00 | 7.9 | 0.000 | 9.8 | 24,212 | Open | 06:06:48 PM Nov-14-2024 | 11.5 | 114 |
| 11/15/2024 | 14:30:00 | 7.9 | 0.287 | 21.6 | 24,212 | Open | 06:06:48 PM Nov-14-2024 | 12.1 | 113 |
| 11/15/2024 | 14:45:00 | 7.7 | 0.219 | 5 | 24,216 | Open | 06:06:48 PM Nov-14-2024 | 12 | 112 |
| 11/15/2024 | 15:00:00 | 7.6 | 0.185 | 4.3 | 24,219 | Open | 06:06:48 PM Nov-14-2024 | 12.4 | 112 |
| 11/15/2024 | 15:15:00 | 7.6 | 0.170 | 2.4 | 24,222 | Open | 06:06:48 PM Nov-14-2024 | 12.8 | 113 |
| 11/15/2024 | 15:30:00 | 7.7 | 0.688 | 5.1 | 24,226 | Open | 06:06:48 PM Nov-14-2024 | 12.1 | 113 |
| 11/15/2024 | 15:45:00 | 7.8 | 0.000 | 1.6 | 24,227 | Open | 06:06:48 PM Nov-14-2024 | 11.7 | 113 |
| 11/15/2024 | 16:00:00 | 7.8 | 0.000 | 1.3 | 24,227 | Open | 06:06:48 PM Nov-14-2024 | 12.1 | 113 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/15/2024 | 16:15:00 | 7.8 | 0.000 | 1.4 | 24,227 | Open | 06:06:48 PM Nov-14-2024 | 12.3 | 113 |
| 11/15/2024 | 16:30:00 | 7.7 | 0.000 | 1 | 24,227 | Open | 06:06:48 PM Nov-14-2024 | 12.5 | 113 |
| 11/15/2024 | 16:45:00 | 7.7 | 0.000 | 1 | 24,227 | Open | 06:06:48 PM Nov-14-2024 | 12.7 | 113 |
| 11/15/2024 | 17:00:00 | 7.7 | 0.000 | 0.9 | 24,227 | Open | 06:06:48 PM Nov-14-2024 | 12.8 | 113 |
| 11/15/2024 | 17:15:00 | 7.8 | 0.654 | 0 | 24,233 | Open | 06:06:48 PM Nov-14-2024 | 11.3 | 112 |
| 11/15/2024 | 17:30:00 | 7.8 | 0.529 | 8.5 | 24,241 | Open | 06:06:48 PM Nov-14-2024 | 11.1 | 112 |
| 11/15/2024 | 17:45:00 | 7.6 | 0.627 | 6.3 | 24,247 | Open | 06:06:48 PM Nov-14-2024 | 10.9 | 114 |
| 11/15/2024 | 18:00:00 | 7.6 | 0.624 | 0.6 | 24,257 | Open | 06:06:48 PM Nov-14-2024 | 10.9 | 112 |
| 11/15/2024 | 18:15:00 | 7.6 | 0.624 | 0 | 24,266 | Open | 06:06:48 PM Nov-14-2024 | 10.9 | 112 |
| 11/15/2024 | 18:30:00 | 7.6 | 0.000 | 0 | 24,273 | Open | 06:06:48 PM Nov-14-2024 | 11.1 | 113 |
| 11/15/2024 | 18:45:00 | 7.6 | 0.000 | 0.5 | 24,273 | Open | 06:06:48 PM Nov-14-2024 | 11.3 | 110 |
| 11/15/2024 | 19:00:00 | 7.6 | 0.000 | 0.4 | 24,273 | Open | 06:06:48 PM Nov-14-2024 | 11.5 | 111 |
| 11/15/2024 | 19:15:00 | 7.5 | 0.000 | 0.7 | 24,273 | Open | 06:06:48 PM Nov-14-2024 | 11.6 | 111 |
| 11/15/2024 | 19:30:00 | 7.5 | 0.000 | 0.7 | 24,273 | Open | 06:06:48 PM Nov-14-2024 | 11.7 | 112 |
| 11/15/2024 | 19:45:00 | 7.5 | 0.000 | 1.1 | 24,273 | Open | 06:06:48 PM Nov-14-2024 | 12.1 | 112 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/15/2024 | 20:00:00 | 7.5 | 0.000 | 1.2 | 24,273 | Open | 06:06:48 PM Nov-14-2024 | 12.4 | 113 |
| 11/15/2024 | 20:15:00 | 7.6 | 0.620 | 0 | 24,279 | Open | 06:06:48 PM Nov-14-2024 | 10.7 | 113 |
| 11/15/2024 | 20:30:00 | 7.6 | 0.609 | 0 | 24,289 | Open | 06:06:48 PM Nov-14-2024 | 10.9 | 114 |
| 11/15/2024 | 20:45:00 | 7.6 | 0.616 | 0 | 24,298 | Open | 06:06:48 PM Nov-14-2024 | 10.8 | 113 |
| 11/15/2024 | 21:00:00 | 7.6 | 0.616 | 0 | 24,307 | Open | 06:06:48 PM Nov-14-2024 | 10.9 | 113 |
| 11/15/2024 | 21:15:00 | 7.6 | 0.238 | 0 | 24,315 | Open | 06:06:48 PM Nov-14-2024 | 11 | 113 |
| 11/15/2024 | 21:30:00 | 7.6 | 0.000 | 0 | 24,322 | Open | 06:06:48 PM Nov-14-2024 | 10.7 | 112 |
| 11/15/2024 | 21:45:00 | 7.6 | 0.000 | 0 | 24,322 | Open | 06:06:48 PM Nov-14-2024 | 11 | 112 |
| 11/15/2024 | 22:00:00 | 7.6 | 0.000 | 0 | 24,322 | Open | 06:06:48 PM Nov-14-2024 | 11.1 | 111 |
| 11/15/2024 | 22:15:00 | 7.6 | 0.000 | 0.1 | 24,322 | Open | 06:06:48 PM Nov-14-2024 | 11.3 | 111 |
| 11/15/2024 | 22:30:00 | 7.6 | 0.000 | 0.1 | 24,322 | Open | 06:06:48 PM Nov-14-2024 | 11.4 | 111 |
| 11/15/2024 | 22:45:00 | 7.5 | 0.000 | 0.2 | 24,322 | Open | 06:06:48 PM Nov-14-2024 | 11.6 | 111 |
| 11/15/2024 | 23:00:00 | 7.5 | 0.000 | 0.1 | 24,322 | Open | 06:06:48 PM Nov-14-2024 | 11.8 | 113 |
| 11/15/2024 | 23:15:00 | 7.5 | 0.000 | 0.3 | 24,322 | Open | 06:06:48 PM Nov-14-2024 | 12 | 111 |
| 11/15/2024 | 23:30:00 | 7.5 | 0.000 | 0.4 | 24,322 | Open | 06:06:48 PM Nov-14-2024 | 12.2 | 112 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/15/2024 | 23:45:00 | 7.6 | 0.571 | 0 | 24,327 | Open | 06:06:48 PM Nov-14-2024 | 10.5 | 112 |
| 11/16/2024 | 0:00:00 | 7.6 | 0.593 | 0 | 24,336 | Open | 06:06:48 PM Nov-14-2024 | 10.4 | 111 |
| 11/16/2024 | 0:15:00 | 7.6 | 0.000 | 0 | 24,336 | Open | 06:06:48 PM Nov-14-2024 | 10.6 | 111 |
| 11/16/2024 | 0:30:00 | 7.6 | 0.000 | 0 | 24,336 | Open | 06:06:48 PM Nov-14-2024 | 10.9 | 111 |
| 11/16/2024 | 0:45:00 | 7.6 | 0.605 | 0 | 24,342 | Open | 06:06:48 PM Nov-14-2024 | 10.5 | 113 |
| 11/16/2024 | 1:00:00 | 7.6 | 0.616 | 0.3 | 24,351 | Open | 06:06:48 PM Nov-14-2024 | 10.5 | 111 |
| 11/16/2024 | 1:15:00 | 7.7 | 0.586 | 29.2 | 24,360 | Open | 06:06:48 PM Nov-14-2024 | 10.4 | 111 |
| 11/16/2024 | 1:30:00 | 7.7 | 0.575 | 31.3 | 24,369 | Open | 06:06:48 PM Nov-14-2024 | 10.5 | 113 |
| 11/16/2024 | 1:45:00 | 7.7 | 0.612 | 33.8 | 24,378 | Open | 06:06:48 PM Nov-14-2024 | 10.5 | 112 |
| 11/16/2024 | 2:00:00 | 7.7 | 0.696 | 36 | 24,384 | Closed | 06:06:48 PM Nov-14-2024 | 10.6 | 113 |
| 11/16/2024 | 2:15:00 | 7.7 | 0.548 | 0 | 24,387 | Open | 09:47:21 PM Nov-14-2024 | 10.6 | 114 |
| 11/16/2024 | 2:30:00 | 7.7 | 0.563 | 0 | 24,396 | Open | 09:47:21 PM Nov-14-2024 | 10.6 | 114 |
| 11/16/2024 | 2:45:00 | 7.7 | 0.000 | 0 | 24,396 | Open | 09:47:21 PM Nov-14-2024 | 10.9 | 113 |
| 11/16/2024 | 3:00:00 | 7.7 | 0.000 | 0 | 24,396 | Open | 09:47:21 PM Nov-14-2024 | 11 | 112 |
| 11/16/2024 | 3:15:00 | 7.6 | 0.000 | 0 | 24,396 | Open | 09:47:21 PM Nov-14-2024 | 11.1 | 111 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/16/2024 | 3:30:00 | 7.6 | 0.000 | 0 | 24,396 | Open | 09:47:21 PM Nov-14-2024 | 11.4 | 111 |
| 11/16/2024 | 3:45:00 | 7.6 | 0.000 | 0 | 24,396 | Open | 09:47:21 PM Nov-14-2024 | 11.7 | 112 |
| 11/16/2024 | 4:00:00 | 7.6 | 0.000 | 0 | 24,396 | Open | 09:47:21 PM Nov-14-2024 | 12.1 | 113 |
| 11/16/2024 | 4:15:00 | 7.6 | 0.208 | 0 | 24,396 | Open | 09:47:21 PM Nov-14-2024 | 12.2 | 112 |
| 11/16/2024 | 4:30:00 | 7.6 | 0.544 | 0 | 24,404 | Open | 09:47:21 PM Nov-14-2024 | 12.7 | 112 |
| 11/16/2024 | 4:45:00 | 7.6 | 0.544 | 0 | 24,410 | Open | 09:47:21 PM Nov-14-2024 | 12.8 | 112 |
| 11/16/2024 | 5:00:00 | 7.6 | 0.567 | 0 | 24,418 | Open | 09:47:21 PM Nov-14-2024 | 12.1 | 111 |
| 11/16/2024 | 5:15:00 | 7.6 | 0.563 | 0 | 24,426 | Open | 09:47:21 PM Nov-14-2024 | 11.8 | 112 |
| 11/16/2024 | 5:30:00 | 7.6 | 0.556 | 0 | 24,434 | Open | 09:47:21 PM Nov-14-2024 | 11.9 | 111 |
| 11/16/2024 | 5:45:00 | 7.6 | 0.533 | 0 | 24,443 | Open | 09:47:21 PM Nov-14-2024 | 12 | 111 |
| 11/16/2024 | 6:00:00 | 7.6 | 0.541 | 0 | 24,451 | Open | 09:47:21 PM Nov-14-2024 | 12.4 | 113 |
| 11/16/2024 | 6:15:00 | 7.6 | 0.000 | 0 | 24,455 | Open | 09:47:21 PM Nov-14-2024 | 12.8 | 113 |
| 11/16/2024 | 6:30:00 | 7.6 | 0.000 | 0 | 24,455 | Open | 09:47:21 PM Nov-14-2024 | 13.1 | 113 |
| 11/16/2024 | 6:45:00 | 7.6 | 0.000 | 0 | 24,455 | Open | 09:47:21 PM Nov-14-2024 | 13.2 | 113 |
| 11/16/2024 | 7:00:00 | 7.6 | 0.000 | 0 | 24,455 | Open | 09:47:21 PM Nov-14-2024 | 13.5 | 113 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/16/2024 | 7:15:00 | 7.6 | 0.000 | 0 | 24,455 | Open | 09:47:21 PM Nov-14-2024 | 13.8 | 113 |
| 11/16/2024 | 7:30:00 | 7.6 | 0.000 | 0 | 24,456 | Open | 09:47:21 PM Nov-14-2024 | 14 | 113 |
| 11/16/2024 | 7:45:00 | 7.5 | 0.556 | 0 | 24,460 | Open | 09:47:21 PM Nov-14-2024 | 14.2 | 114 |
| 11/16/2024 | 8:00:00 | 7.5 | 0.541 | 0 | 24,468 | Open | 09:47:21 PM Nov-14-2024 | 14.6 | 113 |
| 11/16/2024 | 8:15:00 | 7.5 | 0.533 | 0 | 24,476 | Open | 09:47:21 PM Nov-14-2024 | 14.9 | 248 |
| 11/16/2024 | 8:30:00 | 7.7 | 0.612 | 0 | 24,485 | Open | 09:47:21 PM Nov-14-2024 | 10.3 | 112 |
| 11/16/2024 | 8:45:00 | 7.7 | 0.578 | 0 | 24,493 | Open | 09:47:21 PM Nov-14-2024 | 10.1 | 111 |
| 11/16/2024 | 9:00:00 | 7.7 | 0.601 | 0 | 24,502 | Open | 09:47:21 PM Nov-14-2024 | 10.1 | 112 |
| 11/16/2024 | 9:15:00 | 7.7 | 0.000 | 0 | 24,509 | Open | 09:47:21 PM Nov-14-2024 | 10.2 | 111 |
| 11/16/2024 | 9:30:00 | 7.7 | 0.000 | 0 | 24,509 | Open | 09:47:21 PM Nov-14-2024 | 10.4 | 111 |
| 11/16/2024 | 9:45:00 | 7.7 | 0.000 | 0 | 24,509 | Open | 09:47:21 PM Nov-14-2024 | 10.6 | 111 |
| 11/16/2024 | 10:00:00 | 7.6 | 0.000 | 0 | 24,509 | Open | 09:47:21 PM Nov-14-2024 | 10.9 | 111 |
| 11/16/2024 | 10:15:00 | 7.6 | 0.000 | 0 | 24,509 | Open | 09:47:21 PM Nov-14-2024 | 11.1 | 112 |
| 11/16/2024 | 10:30:00 | 7.6 | 0.000 | 0 | 24,509 | Open | 09:47:21 PM Nov-14-2024 | 11.3 | 111 |
| 11/16/2024 | 10:45:00 | 7.6 | 0.000 | 0 | 24,509 | Open | 09:47:21 PM Nov-14-2024 | 11.4 | 111 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/16/2024 | 11:00:00 | 7.6 | 0.000 | 0 | 24,509 | Open | 09:47:21 PM Nov-14-2024 | 11.6 | 111 |
| 11/16/2024 | 11:15:00 | 7.6 | 0.541 | 0 | 24,510 | Open | 09:47:21 PM Nov-14-2024 | 11.5 | 112 |
| 11/16/2024 | 11:30:00 | 7.7 | 0.571 | 0 | 24,518 | Open | 09:47:21 PM Nov-14-2024 | 10 | 111 |
| 11/16/2024 | 11:45:00 | 7.7 | 0.552 | 0 | 24,527 | Open | 09:47:21 PM Nov-14-2024 | 10.1 | 111 |
| 11/16/2024 | 12:00:00 | 7.7 | 0.525 | 0 | 24,535 | Open | 09:47:21 PM Nov-14-2024 | 10.1 | 112 |
| 11/16/2024 | 12:15:00 | 7.7 | 0.556 | 0 | 24,543 | Open | 09:47:21 PM Nov-14-2024 | 10.3 | 111 |
| 11/16/2024 | 12:30:00 | 7.7 | 0.559 | 4.9 | 24,551 | Open | 09:47:21 PM Nov-14-2024 | 10.4 | 113 |
| 11/16/2024 | 12:45:00 | 7.7 | 0.518 | 0 | 24,560 | Open | 09:47:21 PM Nov-14-2024 | 10.2 | 111 |
| 11/16/2024 | 13:00:00 | 7.7 | 0.000 | 0 | 24,560 | Open | 09:47:21 PM Nov-14-2024 | 10.6 | 111 |
| 11/16/2024 | 13:15:00 | 7.7 | 0.000 | 0 | 24,560 | Open | 09:47:21 PM Nov-14-2024 | 10.9 | 112 |
| 11/16/2024 | 13:30:00 | 7.7 | 0.000 | 0 | 24,560 | Open | 09:47:21 PM Nov-14-2024 | 11.3 | 112 |
| 11/16/2024 | 13:45:00 | 7.6 | 0.000 | 0 | 24,560 | Open | 09:47:21 PM Nov-14-2024 | 11.5 | 111 |
| 11/16/2024 | 14:00:00 | 7.6 | 0.000 | 0 | 24,560 | Open | 09:47:21 PM Nov-14-2024 | 11.7 | 111 |
| 11/16/2024 | 14:15:00 | 7.6 | 0.000 | 0 | 24,560 | Open | 09:47:21 PM Nov-14-2024 | 12.1 | 112 |
| 11/16/2024 | 14:30:00 | 7.6 | 0.000 | 0 | 24,560 | Open | 09:47:21 PM Nov-14-2024 | 12.6 | 113 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/16/2024 | 14:45:00 | 7.6 | 0.000 | 0 | 24,560 | Open | 09:47:21 PM Nov-14-2024 | 12.9 | 113 |
| 11/16/2024 | 15:00:00 | 7.7 | 0.541 | 0 | 24,567 | Open | 09:47:21 PM Nov-14-2024 | 10 | 112 |
| 11/16/2024 | 15:15:00 | 7.7 | 0.559 | 0 | 24,575 | Open | 09:47:21 PM Nov-14-2024 | 10.2 | 111 |
| 11/16/2024 | 15:30:00 | 7.7 | 0.858 | 0.1 | 24,587 | Open | 09:47:21 PM Nov-14-2024 | 10.1 | 111 |
| 11/16/2024 | 15:45:00 | 7.8 | 0.816 | 0 | 24,600 | Open | 09:47:21 PM Nov-14-2024 | 10.2 | 112 |
| 11/16/2024 | 16:00:00 | 7.8 | 0.000 | 0.1 | 24,611 | Open | 09:47:21 PM Nov-14-2024 | 10.3 | 113 |
| 11/16/2024 | 16:15:00 | 7.7 | 0.000 | 0 | 24,611 | Open | 09:47:21 PM Nov-14-2024 | 10.9 | 113 |
| 11/16/2024 | 16:30:00 | 7.7 | 0.000 | 0 | 24,611 | Open | 09:47:21 PM Nov-14-2024 | 11.2 | 111 |
| 11/16/2024 | 16:45:00 | 7.7 | 0.000 | 0 | 24,611 | Open | 09:47:21 PM Nov-14-2024 | 11.5 | 111 |
| 11/16/2024 | 17:00:00 | 7.7 | 0.000 | 0 | 24,611 | Open | 09:47:21 PM Nov-14-2024 | 12.4 | 111 |
| 11/16/2024 | 17:15:00 | 7.6 | 0.000 | 0 | 24,611 | Open | 09:47:21 PM Nov-14-2024 | 12.7 | 113 |
| 11/16/2024 | 17:30:00 | 7.6 | 0.000 | 0 | 24,611 | Open | 09:47:21 PM Nov-14-2024 | 13 | 113 |
| 11/16/2024 | 17:45:00 | 7.6 | 0.000 | 0 | 24,611 | Open | 09:47:21 PM Nov-14-2024 | 13.5 | 252 |
| 11/16/2024 | 18:00:00 | 7.6 | 0.726 | 21.5 | 24,611 | Open | 09:47:21 PM Nov-14-2024 | 13.9 | 113 |
| 11/16/2024 | 18:15:00 | 7.7 | 0.786 | 0 | 24,624 | Open | 09:47:21 PM Nov-14-2024 | 10.1 | 111 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/16/2024 | 18:30:00 | 7.8 | 0.832 | 0 | 24,636 | Open | 09:47:21 PM Nov-14-2024 | 10 | 111 |
| 11/16/2024 | 18:45:00 | 7.8 | 0.786 | 0 | 24,649 | Open | 09:47:21 PM Nov-14-2024 | 10 | 111 |
| 11/16/2024 | 19:00:00 | 7.8 | 0.843 | 0 | 24,661 | Open | 09:47:21 PM Nov-14-2024 | 9.9 | 110 |
| 11/16/2024 | 19:15:00 | 7.8 | 0.000 | 0 | 24,665 | Open | 09:47:21 PM Nov-14-2024 | 10.1 | 110 |
| 11/16/2024 | 19:30:00 | 7.7 | 0.000 | 0 | 24,665 | Open | 09:47:21 PM Nov-14-2024 | 10.3 | 110 |
| 11/16/2024 | 19:45:00 | 7.7 | 0.000 | 0 | 24,665 | Open | 09:47:21 PM Nov-14-2024 | 10.8 | 111 |
| 11/16/2024 | 20:00:00 | 7.7 | 0.000 | 0 | 24,665 | Open | 09:47:21 PM Nov-14-2024 | 11.2 | 112 |
| 11/16/2024 | 20:15:00 | 7.7 | 0.000 | 0 | 24,665 | Open | 09:47:21 PM Nov-14-2024 | 11.7 | 111 |
| 11/16/2024 | 20:30:00 | 7.7 | 0.336 | 0 | 24,675 | Open | 09:47:21 PM Nov-14-2024 | 9.8 | 111 |
| 11/16/2024 | 20:45:00 | 7.8 | 0.835 | 0 | 24,686 | Open | 09:47:21 PM Nov-14-2024 | 9.7 | 111 |
| 11/16/2024 | 21:00:00 | 7.8 | 0.828 | 0 | 24,698 | Open | 09:47:21 PM Nov-14-2024 | 9.6 | 111 |
| 11/16/2024 | 21:15:00 | 7.8 | 0.000 | 0 | 24,706 | Open | 09:47:21 PM Nov-14-2024 | 9.7 | 110 |
| 11/16/2024 | 21:30:00 | 7.7 | 0.000 | 0 | 24,706 | Open | 09:47:21 PM Nov-14-2024 | 9.9 | 110 |
| 11/16/2024 | 21:45:00 | 7.7 | 0.000 | 0 | 24,706 | Open | 09:47:21 PM Nov-14-2024 | 10.1 | 110 |
| 11/16/2024 | 22:00:00 | 7.7 | 0.000 | 0 | 24,706 | Open | 09:47:21 PM Nov-14-2024 | 10.4 | 111 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/16/2024 | 22:15:00 | 7.7 | 0.000 | 0 | 24,706 | Open | 09:47:21 PM Nov-14-2024 | 10.5 | 110 |
| 11/16/2024 | 22:30:00 | 7.6 | 0.000 | 0 | 24,706 | Open | 09:47:21 PM Nov-14-2024 | 10.7 | 110 |
| 11/16/2024 | 22:45:00 | 7.6 | 0.586 | 0 | 24,712 | Open | 09:47:21 PM Nov-14-2024 | 11.1 | 111 |
| 11/16/2024 | 23:00:00 | 7.7 | 1.040 | 0 | 24,724 | Open | 09:47:21 PM Nov-14-2024 | 12.5 | 112 |
| 11/16/2024 | 23:15:00 | 7.7 | 1.013 | 0 | 24,739 | Open | 09:47:21 PM Nov-14-2024 | 12.7 | 112 |
| 11/16/2024 | 23:30:00 | 7.6 | 1.024 | 0 | 24,754 | Open | 09:47:21 PM Nov-14-2024 | 12.8 | 111 |
| 11/16/2024 | 23:45:00 | 7.6 | 1.021 | 0 | 24,770 | Open | 09:47:21 PM Nov-14-2024 | 12.8 | 111 |
| 11/17/2024 | 0:00:00 | 7.6 | 0.000 | 0 | 24,773 | Open | 09:47:21 PM Nov-14-2024 | 12.9 | 112 |
| 11/17/2024 | 0:15:00 | 7.7 | 0.612 | 0 | 24,781 | Open | 09:47:21 PM Nov-14-2024 | 13.2 | 111 |
| 11/17/2024 | 0:30:00 | 7.7 | 0.000 | 0 | 24,782 | Open | 09:47:21 PM Nov-14-2024 | 13.1 | 111 |
| 11/17/2024 | 0:45:00 | 7.6 | 0.000 | 0 | 24,782 | Open | 09:47:21 PM Nov-14-2024 | 13 | 111 |
| 11/17/2024 | 1:00:00 | 7.6 | 0.000 | 0 | 24,782 | Open | 09:47:21 PM Nov-14-2024 | 12.9 | 111 |
| 11/17/2024 | 1:15:00 | 7.6 | 0.000 | 0 | 24,782 | Open | 09:47:21 PM Nov-14-2024 | 12.9 | 111 |
| 11/17/2024 | 1:30:00 | 7.6 | 1.005 | 0 | 24,787 | Open | 09:47:21 PM Nov-14-2024 | 12.8 | 111 |
| 11/17/2024 | 1:45:00 | 7.6 | 0.971 | 0 | 24,802 | Open | 09:47:21 PM Nov-14-2024 | 12.9 | 111 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/17/2024 | 2:00:00 | 7.6 | 0.987 | 0 | 24,817 | Open | 09:47:21 PM Nov-14-2024 | 12.9 | 111 |
| 11/17/2024 | 2:15:00 | 7.6 | 0.000 | 0 | 24,823 | Open | 09:47:21 PM Nov-14-2024 | 12.9 | 111 |
| 11/17/2024 | 2:30:00 | 7.6 | 0.000 | 0 | 24,824 | Open | 09:47:21 PM Nov-14-2024 | 12.8 | 111 |
| 11/17/2024 | 2:45:00 | 7.7 | 0.975 | 0.6 | 24,830 | Open | 09:47:21 PM Nov-14-2024 | 13.1 | 112 |
| 11/17/2024 | 3:00:00 | 7.7 | 1.017 | 0 | 24,845 | Open | 09:47:21 PM Nov-14-2024 | 13.1 | 111 |
| 11/17/2024 | 3:15:00 | 7.6 | 0.998 | 0 | 24,860 | Open | 09:47:21 PM Nov-14-2024 | 13.1 | 112 |
| 11/17/2024 | 3:30:00 | 7.6 | 0.000 | 0 | 24,866 | Open | 09:47:21 PM Nov-14-2024 | 13.3 | 113 |
| 11/17/2024 | 3:45:00 | 7.6 | 0.000 | 0 | 24,866 | Open | 09:47:21 PM Nov-14-2024 | 13.5 | 113 |
| 11/17/2024 | 4:00:00 | 7.6 | 0.000 | 0 | 24,866 | Open | 09:47:21 PM Nov-14-2024 | 13.7 | 112 |
| 11/17/2024 | 4:15:00 | 7.6 | 0.000 | 0 | 24,866 | Open | 09:47:21 PM Nov-14-2024 | 13.9 | 113 |
| 11/17/2024 | 4:30:00 | 7.6 | 0.000 | 0 | 24,866 | Open | 09:47:21 PM Nov-14-2024 | 14.1 | 113 |
| 11/17/2024 | 4:45:00 | 7.6 | 0.000 | 0 | 24,866 | Open | 09:47:21 PM Nov-14-2024 | 14.3 | 113 |
| 11/17/2024 | 5:00:00 | 7.6 | 0.000 | 0 | 24,866 | Open | 09:47:21 PM Nov-14-2024 | 14.5 | 113 |
| 11/17/2024 | 5:15:00 | 7.6 | 0.998 | 0 | 24,875 | Open | 09:47:21 PM Nov-14-2024 | 14.7 | 113 |
| 11/17/2024 | 5:30:00 | 7.6 | 0.000 | 0 | 24,889 | Open | 09:47:21 PM Nov-14-2024 | 14.7 | 113 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/17/2024 | 5:45:00 | 7.6 | 0.000 | 0 | 24,889 | Open | 09:47:21 PM Nov-14-2024 | 14.9 | 113 |
| 11/17/2024 | 6:00:00 | 7.6 | 0.000 | 0 | 24,889 | Open | 09:47:21 PM Nov-14-2024 | 15.1 | 114 |
| 11/17/2024 | 6:15:00 | 7.5 | 0.000 | 0 | 24,889 | Open | 09:47:21 PM Nov-14-2024 | 15.2 | 113 |
| 11/17/2024 | 6:30:00 | 7.5 | 0.000 | 0 | 24,889 | Open | 09:47:21 PM Nov-14-2024 | 15.4 | 114 |
| 11/17/2024 | 6:45:00 | 7.5 | 0.994 | 0 | 24,892 | Open | 09:47:21 PM Nov-14-2024 | 15.6 | 114 |
| 11/17/2024 | 7:00:00 | 7.5 | 1.032 | 0 | 24,908 | Open | 09:47:21 PM Nov-14-2024 | 15.7 | 114 |
| 11/17/2024 | 7:15:00 | 7.5 | 1.017 | 0 | 24,923 | Open | 09:47:21 PM Nov-14-2024 | 15.9 | 114 |
| 11/17/2024 | 7:30:00 | 7.5 | 1.009 | 0 | 24,938 | Open | 09:47:21 PM Nov-14-2024 | 15.9 | 113 |
| 11/17/2024 | 7:45:00 | 7.5 | 0.000 | 0 | 24,952 | Open | 09:47:21 PM Nov-14-2024 | 16.1 | 247 |
| 11/17/2024 | 8:00:00 | 7.5 | 0.000 | 0 | 24,952 | Open | 09:47:21 PM Nov-14-2024 | 16.3 | 245 |
| 11/17/2024 | 8:15:00 | 7.5 | 0.000 | 0 | 24,952 | Open | 09:47:21 PM Nov-14-2024 | 16.3 | 245 |
| 11/17/2024 | 8:30:00 | 7.5 | 0.000 | 0 | 24,952 | Open | 09:47:21 PM Nov-14-2024 | 16.4 | 245 |
| 11/17/2024 | 8:45:00 | 7.5 | 0.000 | 0 | 24,952 | Open | 09:47:21 PM Nov-14-2024 | 16.3 | 246 |
| 11/17/2024 | 9:00:00 | 7.7 | 0.000 | 0.2 | 24,955 | Open | 09:47:21 PM Nov-14-2024 | 10.8 | 113 |
| 11/17/2024 | 9:15:00 | 7.7 | 0.000 | 0.4 | 24,955 | Open | 09:47:21 PM Nov-14-2024 | 11.2 | 111 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/17/2024 | 9:30:00 | 7.7 | 0.968 | 2.3 | 24,957 | Open | 09:47:21 PM Nov-14-2024 | 10.6 | 111 |
| 11/17/2024 | 9:45:00 | 7.7 | 0.941 | 0 | 24,971 | Open | 09:47:21 PM Nov-14-2024 | 10.1 | 113 |
| 11/17/2024 | 10:00:00 | 7.8 | 0.941 | 0 | 24,986 | Open | 09:47:21 PM Nov-14-2024 | 10.1 | 113 |
| 11/17/2024 | 10:15:00 | 7.8 | 0.975 | 0 | 25,000 | Open | 09:47:21 PM Nov-14-2024 | 10.1 | 113 |
| 11/17/2024 | 10:30:00 | 7.8 | 0.000 | 0 | 25,014 | Open | 09:47:21 PM Nov-14-2024 | 10.1 | 112 |
| 11/17/2024 | 10:45:00 | 7.7 | 0.000 | 0 | 25,014 | Open | 09:47:21 PM Nov-14-2024 | 10.5 | 112 |
| 11/17/2024 | 11:00:00 | 7.7 | 0.000 | 0 | 25,014 | Open | 09:47:21 PM Nov-14-2024 | 10.9 | 111 |
| 11/17/2024 | 11:15:00 | 7.7 | 0.000 | 0 | 25,014 | Open | 09:47:21 PM Nov-14-2024 | 11.3 | 112 |
| 11/17/2024 | 11:30:00 | 7.7 | 0.000 | 0 | 25,014 | Open | 09:47:21 PM Nov-14-2024 | 11.7 | 112 |
| 11/17/2024 | 11:45:00 | 7.7 | 0.000 | 0 | 25,014 | Open | 09:47:21 PM Nov-14-2024 | 12.1 | 112 |
| 11/17/2024 | 12:00:00 | 7.7 | 0.000 | 0 | 25,014 | Open | 09:47:21 PM Nov-14-2024 | 12.4 | 112 |
| 11/17/2024 | 12:15:00 | 7.7 | 0.000 | 0 | 25,014 | Open | 09:47:21 PM Nov-14-2024 | 12.7 | 112 |
| 11/17/2024 | 12:30:00 | 7.6 | 0.000 | 0 | 25,014 | Open | 09:47:21 PM Nov-14-2024 | 13.1 | 113 |
| 11/17/2024 | 12:45:00 | 7.7 | 0.956 | 0 | 25,026 | Open | 09:47:21 PM Nov-14-2024 | 10.3 | 113 |
| 11/17/2024 | 13:00:00 | 7.8 | 0.983 | 0 | 25,041 | Open | 09:47:21 PM Nov-14-2024 | 10.4 | 113 |

| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/17/2024 | 13:15:00 | 7.8 | 0.971 | 0.2 | 25,055 | Open | 09:47:21 PM Nov-14-2024 | 10.5 | 112 |
| 11/17/2024 | 13:30:00 | 7.8 | 0.919 | 0.2 | 25,070 | Open | 09:47:21 PM Nov-14-2024 | 10.5 | 113 |
| 11/17/2024 | 13:45:00 | 7.8 | 0.000 | 0 | 25,074 | Open | 09:47:21 PM Nov-14-2024 | 11 | 114 |
| 11/17/2024 | 14:00:00 | 7.7 | 0.000 | 0 | 25,074 | Open | 09:47:21 PM Nov-14-2024 | 11.5 | 113 |
| 11/17/2024 | 14:15:00 | 7.7 | 0.000 | 0 | 25,074 | Open | 09:47:21 PM Nov-14-2024 | 12 | 113 |
| 11/17/2024 | 14:30:00 | 7.7 | 0.000 | 0 | 25,074 | Open | 09:47:21 PM Nov-14-2024 | 12.3 | 113 |
| 11/17/2024 | 14:45:00 | 7.7 | 0.000 | 0 | 25,074 | Open | 09:47:21 PM Nov-14-2024 | 12.7 | 113 |
| 11/17/2024 | 15:00:00 | 7.7 | 0.000 | 0 | 25,074 | Open | 09:47:21 PM Nov-14-2024 | 13 | 113 |
| 11/17/2024 | 15:15:00 | 7.7 | 0.000 | 0 | 25,074 | Open | 09:47:21 PM Nov-14-2024 | 13.2 | 112 |
| 11/17/2024 | 15:30:00 | 7.7 | 0.000 | 0 | 25,074 | Open | 09:47:21 PM Nov-14-2024 | 13.6 | 113 |
| 11/17/2024 | 15:45:00 | 7.7 | 0.968 | 0.3 | 25,081 | Open | 09:47:21 PM Nov-14-2024 | 10.7 | 113 |
| 11/17/2024 | 16:00:00 | 7.8 | 0.975 | 1 | 25,096 | Open | 09:47:21 PM Nov-14-2024 | 10.8 | 114 |
| 11/17/2024 | 16:15:00 | 7.8 | 0.968 | 1.3 | 25,110 | Open | 09:47:21 PM Nov-14-2024 | 10.8 | 114 |
| 11/17/2024 | 16:30:00 | 7.8 | 0.968 | 1.3 | 25,125 | Open | 09:47:21 PM Nov-14-2024 | 10.8 | 113 |
| 11/17/2024 | 16:45:00 | 7.8 | 0.000 | 1.1 | 25,133 | Open | 09:47:21 PM Nov-14-2024 | 11.1 | 114 |

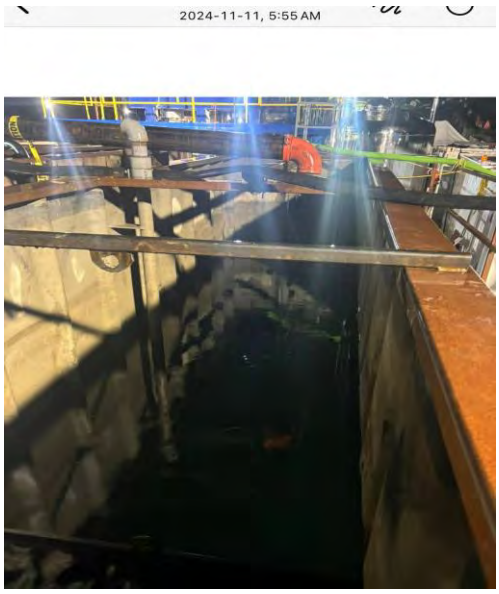
| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

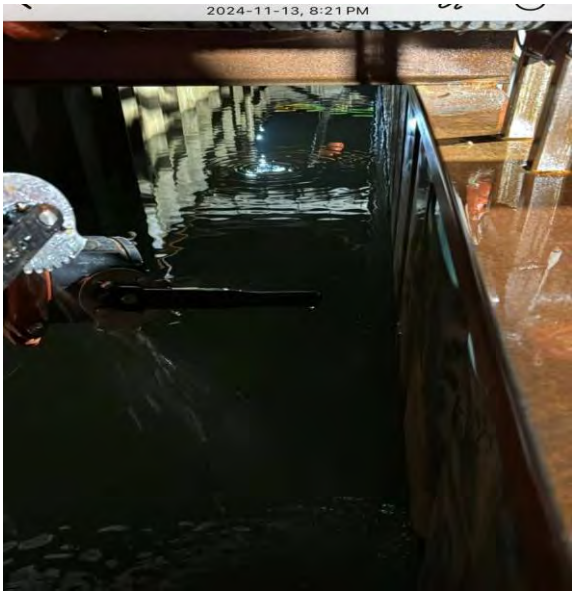
| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/17/2024 | 17:00:00 | 7.7 | 0.000 | 1 | 25,133 | Open | 09:47:21 PM Nov-14-2024 | 11.5 | 113 |
| 11/17/2024 | 17:15:00 | 7.7 | 0.000 | 1 | 25,133 | Open | 09:47:21 PM Nov-14-2024 | 11.9 | 112 |
| 11/17/2024 | 17:30:00 | 7.7 | 0.000 | 0.7 | 25,133 | Open | 09:47:21 PM Nov-14-2024 | 12.2 | 112 |
| 11/17/2024 | 17:45:00 | 7.7 | 0.000 | 0.7 | 25,133 | Open | 09:47:21 PM Nov-14-2024 | 12.6 | 112 |
| 11/17/2024 | 18:00:00 | 7.7 | 0.000 | 0.6 | 25,133 | Open | 09:47:21 PM Nov-14-2024 | 12.8 | 112 |
| 11/17/2024 | 18:15:00 | 7.7 | 0.000 | 0.4 | 25,133 | Open | 09:47:21 PM Nov-14-2024 | 13 | 112 |
| 11/17/2024 | 18:30:00 | 7.7 | 0.000 | 0.9 | 25,133 | Open | 09:47:21 PM Nov-14-2024 | 13.3 | 113 |
| 11/17/2024 | 18:45:00 | 7.7 | 0.000 | 1 | 25,138 | Open | 09:47:21 PM Nov-14-2024 | 10.8 | 113 |
| 11/17/2024 | 19:00:00 | 7.6 | 0.476 | 24.9 | 25,138 | Open | 09:47:21 PM Nov-14-2024 | 11.2 | 113 |
| 11/17/2024 | 19:15:00 | 7.8 | 0.896 | 1.6 | 25,151 | Open | 09:47:21 PM Nov-14-2024 | 10.5 | 111 |
| 11/17/2024 | 19:30:00 | 7.8 | 0.828 | 1.8 | 25,164 | Open | 09:47:21 PM Nov-14-2024 | 10.5 | 112 |
| 11/17/2024 | 19:45:00 | 7.8 | 0.813 | 1.4 | 25,177 | Open | 09:47:21 PM Nov-14-2024 | 10.6 | 114 |
| 11/17/2024 | 20:00:00 | 7.8 | 0.816 | 0.9 | 25,189 | Open | 09:47:21 PM Nov-14-2024 | 10.6 | 113 |
| 11/17/2024 | 20:15:00 | 7.8 | 0.000 | 0.5 | 25,190 | Open | 09:47:21 PM Nov-14-2024 | 11 | 113 |
| 11/17/2024 | 20:30:00 | 7.7 | 0.000 | 0.5 | 25,190 | Open | 09:47:21 PM Nov-14-2024 | 11.4 | 112 |

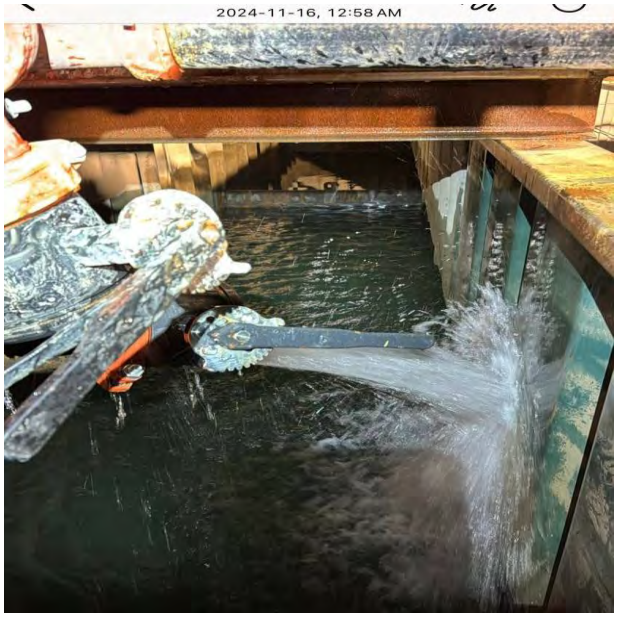
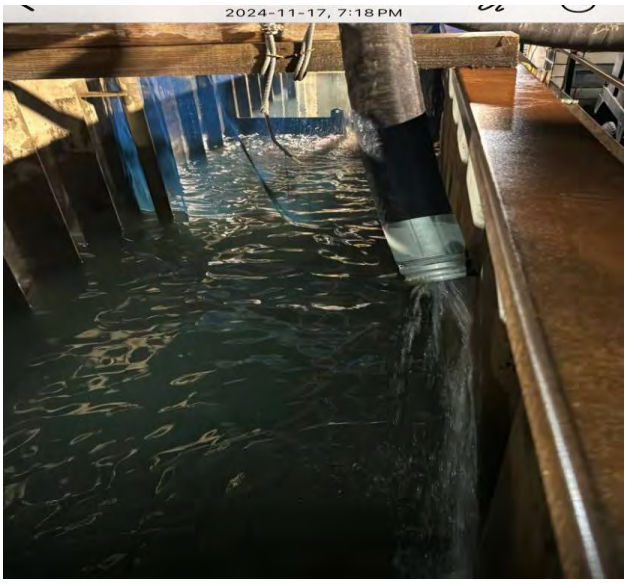
| FRONTIER-KEMPER MICHELS® joint venture | | Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope | |
|---|---|---|---|
| **Title** | **WoodFibre Weekly Water Discharge Report** | **Revision:** | **0** |
| **Data Date Range** | **November 11th to November 17th, 2024** | **Prepared by:**<br>**Approved by:**<br>**Date:** | **SD**<br>**BC2**<br>**November 20th** |

| Date | Time | Discharge pH | Flow Rate (m3) | Discharge NTU | Flow Total (m3) | Discharge Valve Status | Last Discharge Start Time | Discharge Temperature (°C) | Discharge Conductivity (uS/cm) |
|---|---|---|---|---|---|---|---|---|---|
| 11/17/2024 | 20:45:00 | 7.7 | 0.000 | 0.3 | 25,190 | Open | 09:47:21 PM Nov-14-2024 | 11.8 | 113 |
| 11/17/2024 | 21:00:00 | 7.7 | 0.000 | 0.3 | 25,190 | Open | 09:47:21 PM Nov-14-2024 | 12.2 | 113 |
| 11/17/2024 | 21:15:00 | 7.7 | 0.000 | 0.2 | 25,190 | Open | 09:47:21 PM Nov-14-2024 | 12.6 | 113 |
| 11/17/2024 | 21:30:00 | 7.7 | 0.000 | 0.2 | 25,190 | Open | 09:47:21 PM Nov-14-2024 | 12.8 | 112 |
| 11/17/2024 | 21:45:00 | 7.7 | 0.000 | 0.2 | 25,190 | Open | 09:47:21 PM Nov-14-2024 | 12.9 | 112 |
| 11/17/2024 | 22:00:00 | 7.6 | 0.000 | 0.3 | 25,190 | Open | 09:47:21 PM Nov-14-2024 | 13 | 112 |
| 11/17/2024 | 22:15:00 | 7.8 | 0.832 | 0.5 | 25,201 | Open | 09:47:21 PM Nov-14-2024 | 10.2 | 111 |
| 11/17/2024 | 22:30:00 | 7.8 | 0.378 | 3.2 | 25,209 | Open | 09:47:21 PM Nov-14-2024 | 10.3 | 111 |
| 11/17/2024 | 22:45:00 | 7.7 | 0.843 | 0.9 | 25,220 | Open | 09:47:21 PM Nov-14-2024 | 10.5 | 111 |
| 11/17/2024 | 23:00:00 | 7.7 | 0.828 | 0.7 | 25,233 | Open | 09:47:21 PM Nov-14-2024 | 10.9 | 111 |
| 11/17/2024 | 23:15:00 | 7.7 | 0.828 | 0.4 | 25,246 | Open | 09:47:21 PM Nov-14-2024 | 11.4 | 112 |
| 11/17/2024 | 23:30:00 | 7.7 | 0.851 | 0.2 | 25,258 | Open | 09:47:21 PM Nov-14-2024 | 12 | 114 |
| 11/17/2024 | 23:45:00 | 7.7 | 0.000 | 0.3 | 25,264 | Open | 09:47:21 PM Nov-14-2024 | 12.5 | 113 |

## Photos:

| Photo 1: No visible sheen observed in the WTP water, November 11th |
|---|
|  |
| **Photo 2: No visible sheen observed in the WTP water, November 12th** |
| |

| **Photo 3: No visible sheen observed in the WTP water, November 13th** |
|---|
|  |
| **Photo 4: No visible sheen observed in the WTP water, November 14th** |
| |

| **Photo 5: No visible sheen observed in the WTP water, November 16th** |
|---|
|  |
| **Photo 6: No visible sheen observed in the WTP water, November 17th** |
|  |

# Appendix D: Woodfibre Site Receiving Environment Documentation

# Woodfibre Site Receiving Environment Sample Analysis

| TRITON | Sample ID | | | | | EAS US1 (Upstream) | EAS DS 1 (Downstream) | Sample or value notes | BCWQ FAL - Short Term | BCWQ FAL - Long Term | BCWQ MAL - Short Term | BCWQ MAL - Long Term |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LAB ID | Reviewed and signed off by: | | | Farshad Shafiei Ph.D., R.P.Bio. | VA24009589-001 | VA24009589-002 | | | | | |
| | Date Sampled | | | | | 14-Nov-2024 | 14-Nov-2024 | | | | | |
| | Time Sampled | | | | | 11:55 | 11:20 | | | | | |
| Analyte | Units | FAL-ST [1,2] | FAL-LT [1,2] | MAL-ST [1] | MAL-LT [1,2] | Water | Water | | Guideline notes | | | |
| | | | | | | N/A | N/A | | | | | |
| **In Situ Parameters** | | | | | | | | | | | | |
| pH (field) | pH units | 6.5-9.0 | 6.5-9.0 | 7.0-8.7 | 7.0-8.7 | 7.34 | 7.38 | | If natural pH < 6.5, no statistically significant decrease from background. No restriction in increase except in areas with unique flora or fauna. Unrestricted change permitted within range of 6.5 to 9.0. If natural pH > 9.0, no statistically significant increase from background. Refer to BC Water Quality Guidelines for more information. | | Unrestricted change within this range (for protection of mollusc embryo development). | |
| Temperature (field) | °C | Short-term daily temperature guideline is 19°C for streams with unknown fish distribution Max +/- from BKG 1°C [3] | - | Short-term daily temperature guideline is 19°C for streams with unknown fish distribution Max +/- from BKG 1°C [3] | - | 8.9 | 9.1 | | Guideline is species-dependent. Short-term daily temperature guideline is 19°C for streams with unknown fish distribution. Refer to footnote 4 for background temperature range for East Creek. Refer to BC Water Quality Guidelines for more information Hourly rate of change not to exceed 1°C. Calculation: US value +/- 1 = guideline range | | Guideline for marine waters are based on natural ambient conditions. Max and min. 1°C change from natural condition. Natural temperature cycle characteristic of the site should not be altered in amplitude or frequency by human activities. Max rate of any human induced change not to exceed 0.5 degrees C/hour. Insane with unknown fish species in box. Refer to footnote 4 for background temperature range for East Creek. Calculation: US value +/- 1 = guideline range | |
| Conductivity (field) | uS/cm | - | - | - | - | 27 | 30 | | | | | |
| Turbidity (field) | NTU | Varies with background, see note Guideline = 12.4 | Varies with background, see note Guideline = 4.15 5-week discrete sampling average = 1.30 (DS) | Varies with background, see note Guideline = 12.4 | Varies with background, see note Guideline = 4.15 5-week discrete sampling average = 1.30 (DS) | 4.42 | 0.78 | | Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline | Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling. | Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline | Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling. |
| Dissolved Oxygen (field) | mg/L | Varies with life stage, see note | Varies with life stage, see note | Varies with life stage, see note | Varies with life stage, see note | - | - | | Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L Refer to BC Water Quality Guidelines for more information. | Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L Refer to BC Water Quality Guidelines for more information. | Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L Refer to BC Water Quality Guidelines for more information. | Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L Refer to BC Water Quality Guidelines for more information. |
| **General Parameters** | | | | | | | | | | | | |
| Hardness (as $CaCO_3$) (total) | mg/L | - | - | - | - | 7.07 | 7.61 | | | | | |
| Total Dissolved Solids | mg/L | - | - | - | - | 29 | 28 | | | | | |
| Total Suspended Solids | mg/L | Varies with background, see note Guideline = 28 | Varies with background, see note Guideline = 8.00 5-week discrete sampling average = 3.2 (DS) | Varies with background, see note Guideline = 28 | Varies with background, see note Guideline = 8.00 5-week discrete sampling average = 3.2 (DS) | < 3.0 | 3.50 | | Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 25 = DS guideline Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters. Calculation: US value + 10 = DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: US value + (US value*0.1) = DS guideline | Change from background of 5 mg/L @ one time for a duration of 30 days in clear flow. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling. | Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 25 = DS guideline Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters. Calculation: US value + 10 = DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: US value + (US value*0.1) = DS guideline | Change from background of 5 mg/L @ one time for a duration of 30 days in clear flow. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling. |
| Dissolved Organic Carbon (DOC) | mg/L | - | - | - | - | 3.4 | 3.4 | | | Long-term (30-day) median within 20% of background median [3] | | |
| Total Alkalinity ($CaCO_3$) | mg/L | - | Categorical | - | - | 5.2 | 6.5 | | | Guideline is for alkalinity (as CaCO3) and categorizes the sensitivity of a water body to acid inputs. Alkalinity < 10 mg/L is considered highly sensitive to acid inputs; 10 - 20 mg/L is considered moderately sensitive to acid inputs; > 20 mg/L is considered low sensitivity. | | |
| Total Sulfide (as S) | mg/L | - | - | - | - | < 0.0015 | < 0.0015 | | | | | |
| Total Sulfide (un-ionized as $H_2S$) | mg/L | - | 0.002 | - | - | < 0.0015 | < 0.0015 | | | Working guideline | | |
| Total Sulfide (as $H_2S$) | mg/L | - | - | - | - | < 0.0016 | < 0.0016 | | | | | |
| **Anions and Nutrients** | | | | | | | | | | | | |
| Ammonia | mg/L ammonia-N | Varies with pH and temperature. See note. Guideline = 16.2 | Varies with pH and temperature. See note. Guideline = 1.84 | Varies with pH and temperature. See note. Guideline = 52 | Varies with pH, temperature and salinity. See note. Guideline = 12.0 | 0.0068 | < 0.0050 | | Guideline for ammonia as N and is pH and temperature dependent. Refer to Table 27D in BC WQG for guideline values. | Guideline for ammonia as N and is pH and temperature dependent. Refer to Table 27C in BC WQG for guideline values. | Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent. Refer to Table 27F in BC WQG for guideline values. | Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent. Refer to Table 27E in BC WQG for guideline values. |
| Bromide | mg/L | - | - | - | - | < 0.050 | < 0.050 | | | | | |
| Chloride | mg/L | 600 | 150 | < 110% of background | < 90% of background | 0.75 | 0.73 | | | | Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride concentration at the time and depth | Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride concentration at the time and depth |
| Fluoride | mg/L | Varies with hardness Guideline =0.269 | - | 1.5 | - | < 0.020 | 0.024 | | Guideline has interim status. Guideline is calculated with the following equation: Guideline = [-4.913 * LN(T) + 27.122] * [-0.193 * LN(pH) + 1.274] | | | |
| Nitrate (as N) | mg/L | 32.8 | 3 | - | 3.7 | 0.0589 | 0.0362 | | | | | |
| Nitrite (as N) | mg/L | Varies with chloride. Table 27B, see note. Guideline = 0.06 | Varies with chloride. Table 27B, see note. Guideline = 0.04 | - | - | < 0.0010 | < 0.0010 | | Varies with chloride. Refer to Table 27B in BC WQG for guideline values. | Varies with chloride. Refer to Table 27B in BC WQG for guideline values. | | |
| Total Nitrogen | mg/L | - | - | - | - | 0.134 | 0.1 | | | | | |
| Total Phosphorous | mg/L | - | 0.005 to 0.015 | - | - | 0.0543 | 0.0352 | | | Guideline is for lakes, refer to BCWQ guideline for nutrients and algae for more information. Guideline does not apply to site. | | |
| Sulfate (as $SO_4$) | mg/L | - | Varies with hardness. See note. Guideline = 128 | - | - | 2.61 | 2.45 | | | Guidelines for hardness ranges below: Hardness 0 - 30: 128 Hardness 31 - 75: 218 Hardness 76 - 180: 309 Hardness 181 - 250: 429 | | |
| **Total Metals** | | | | | | | | | | | | |
| Aluminum (Al)-Total | mg/L | - | Varies with pH, DOC, hardness Guideline = 0.137 5-week field average = 0.177 (US), 0.159 (DS) | - | - | 0.362 | 0.23 | | | Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated with the following equation: Guideline = (EXP(0.845 * LN(DOC)) + (2.235 * LN(Hardness)) + (1.95 * pH) + (-0.284 * (LN(Hardness)^2) + pH)) - 0.898)/3^1000. If hardness or DOC is below the hardness range, the minimum hardness or DOC will be applied in the calculation. | | |
| Antimony (Sb)-Total | mg/L | 0.25 | 0.074 | - | - | < 0.0001 | < 0.0001 | | | | | |
| Arsenic (As)-Total | mg/L | - | 0.005 | - | 0.0125 | 0.00025 | 0.00024 | | | | | Interim guideline status |
| Barium (Ba)-Total | mg/L | - | 1 | - | - | 0.00457 | 0.00378 | | | Working guideline status | | |
| Beryllium (Be)-Total | mg/L | - | 0.00013 | - | 0.130 | < 0.0001 | < 0.0001 | | | Working guideline status | | Working guideline status |
| Bismuth (Bi)-Total | mg/L | - | - | - | - | < 0.00005 | < 0.00005 | | | | | |
| Boron (B)-Total | mg/L | - | 1.2 | - | 2 | < 0.010 | < 0.010 | | | | | |
| Cadmium (Cd)-Total | mg/L | - | - | - | 0.00012 | 0.0000078 | 0.0000104 | | | | | Working guideline status |
| Calcium (Ca)-Total | mg/L | - | - | - | - | 2.23 | 2.56 | | | | | |
| Cesium (Cs)-Total | mg/L | - | - | - | - | 0.000018 | 0.00001 | | | | | |
| Chromium (Cr) - Total | mg/L | - | - | - | - | < 0.0005 | < 0.0005 | | | | | |
| Chromium (Cr(III))-Total | mg/L | - | 0.0089 | - | 0.056 | - | - | | | Working guideline status | | Working guideline status |
| Chromium (Cr(VI))-Total | mg/L | - | 0.0026 | - | 0.0015 | - | - | | | Working guideline status | | Working guideline status |
| Cobalt (Co)-Total | mg/L | 0.11 | 0.004 | - | - | 0.00012 | < 0.0001 | | | | | |
| Copper (Cu)-Total | mg/L | - | - | 0.003 | 0.002 5-week field averages = 0.0022 (US), 0.0013 (DS) | 0.00254 | 0.00162 | | | | | |
| Iron (Fe)-Total | mg/L | 1 | - | - | - | 0.2 | 0.097 | | | | | |
| Lead (Pb)-Total | mg/L | - | - | 0.14 | 0.002 5-week field averages = 0.000010 (US), 0.00009 (DS) | 0.000257 | 0.000133 | | Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline is 0.003 where hardness ≤8mg/L Guideline uses equation EXP(1.273*ln(hardness)-1.460) where hardness is 8-360 mg/L. Lowest value for guideline is 0.003 mg/L | Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline equation EXP(1.273*ln(hardness)-4.704) applies to samples with hardness 8-360 mg/L | | |
| Lithium (Li)-Total | mg/L | - | - | - | - | < 0.0010 | < 0.0010 | | | | | |
| Magnesium (Mg)-Total | mg/L | - | - | - | - | 0.364 | 0.296 | | | | | |
| Manganese (Mn)-Total | mg/L | Varies with hardness Guideline = 0.82 | Varies with hardness Guideline = 0.77 | - | - | 0.00619 | 0.00385 | | Guideline varies with hardness. The guideline is calculated using the following equation: Guideline = (0.0004 * hardness + 0.803) Guideline applies to samples with hardness 25-250 mg/L. Lowest value for guideline is 0.77 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation. | Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. The guideline is calculated using the following formula: Guideline = (0.01102 * hardness + 0.54) Guideline applies to samples with hardness 37-450 mg/L. Lowest value for guideline is 0.81 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation. | | |
| Mercury (Hg)-Total | mg/L | - | Varies with methyl-mercury Guideline = N/A | - | - | < 0.0000050 | < 0.0000050 | | | When MeHg ≤ 0.5% of total Hg, guideline is equal to 0.02 mg/L Guideline = 0.1(MeHg/totalHg). When MeHg ≥ 0.5% of total Hg, guideline is equal to 0.02 mg/L | | |
| Molybdenum (Mo)-Total | mg/L | 46 | 7.6 | - | - | 0.000598 | 0.000629 | | | | | |
| Nickel (Ni)-Total | mg/L | - | - | - | 0.0083 | < 0.0005 | < 0.0005 | | | Working guideline status. Guideline varies with hardness. Refer to BC Water Quality Guidelines for more information. Hardness ≤ 60: 0.025 Hardness > 60 ≤ 180: Guideline = (EXP(0.76 * (LN(Hardness)) + 1.06)) / 1000 Hardness > 180: 0.15 | | Working guideline status |
| Phosphorus (P)-Total | mg/L | - | 0.005 to 0.015 | - | - | 0.059 | < 0.050 | | | Guideline only applies to lakes with salmonid species being the dominant fish species. Guideline is for reference only and does not apply to site | | |
| Potassium (K)-Total | mg/L | - | - | - | - | 0.328 | 0.265 | | | | | |
| Rubidium (Rb)-Total | mg/L | - | - | - | - | 0.00048 | 0.00042 | | | | | |
| Selenium (Se)-Total | mg/L | - | 0.002 | - | 0.002 | < 0.000050 | < 0.000050 | | | Guideline for freshwater aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidelines for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guidelines and sampling guidance. | | Guideline for marine aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidelines for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guidelines and sampling guidance. |
| Silicon (Si)-Total | mg/L | - | - | - | - | 3.49 | 3.33 | | | | | |
| Silver (Ag)-Total | mg/L | Varies with hardness, see note Guideline = 0.0001 | Varies with hardness, see note Guideline = 0.00005 | 0.003 | 0.0015 | 0.000013 | < 0.000010 | | Varies with hardness Guideline ranges: Hardness ≤ 100: 0.0001 Hardness > 100: 0.005 | Varies with hardness Guideline ranges: Hardness ≤ 100: 0.00005 Hardness > 100: 0.0015 | | Guideline applies to open coast and estuaries. Guideline is applicable to the EGP site. |
| Sodium (Na)-Total | mg/L | - | - | - | - | 1.31 | 1.21 | | | | | |
| Strontium (Sr)-Total | mg/L | - | - | - | - | 0.0116 | 0.0106 | | | | | |
| Sulfur (S)-Total | mg/L | - | - | - | - | 0.71 | 0.54 | | | | | |
| Tellurium (Te)-Total | mg/L | - | - | - | - | < 0.00020 | < 0.00020 | | | | | |
| Thallium (Tl)-Total | mg/L | - | 0.00003 5-week field average = <0.000010 (US), <0.000012 (DS) | - | - | < 0.000010 | < 0.000010 | | | 30-day average, site-specific objective for the lower Columbia River, BC. Guideline is for reference only and does not apply to the EGP site. | | |
| Thorium (Th)-Total | mg/L | - | - | - | - | < 0.00010 | < 0.00010 | | | | | |
| Tin (Sn)-Total | mg/L | - | - | - | - | < 0.00010 | < 0.00010 | | | | | |
| Titanium (Ti)-Total | mg/L | - | - | - | - | 0.0114 | 0.00564 | | | | | |
| Tungsten (W)-Total | mg/L | - | - | - | - | < 0.00010 | < 0.00010 | | | | | |
| Uranium (U)-Total | mg/L | 0.0165 | 0.0075 | - | - | 0.000041 | 0.000383 | | | Working guideline status | | |
| Vanadium (V)-Total | mg/L | - | 0.06 | - | 0.005 | 0.0006 | < 0.00050 | | | | | Working guideline status |
| Zinc (Zn)-Total | mg/L | - | - | 0.055 | 0.010 5-week field average = < 0.003 (US), < 0.003 (DS) | < 0.0030 | < 0.0030 | | | | | |
| Zirconium (Zr)-Total | mg/L | - | - | - | - | < 0.00005 | < 0.00005 | | | | | |
| **Dissolved Metals** | | | | | | | | | | | | |
| Aluminum (Al)-Dissolved | mg/L | - | - | - | - | 0.13 | 0.116 | | | | | |
| Antimony (Sb)-Dissolved | mg/L | - | - | - | - | < 0.0001 | < 0.0001 | | | | | |
| Arsenic (As)-Dissolved | mg/L | - | - | - | - | 0.00023 | < 0.00024 | | | | | |
| Barium (Ba)-Dissolved | mg/L | - | - | - | - | 0.00264 | 0.0029 | | | | | |
| Beryllium (Be)-Dissolved | mg/L | - | - | - | - | < 0.00010 | < 0.00010 | | | | | |
| Bismuth (Bi)-Dissolved | mg/L | - | - | - | - | < 0.00005 | < 0.00005 | | | | | |
| Boron (B)-Dissolved | mg/L | - | - | - | - | < 0.010 | < 0.010 | | | | | |
| Cadmium (Cd)-Dissolved | mg/L | Varies with hardness, see note Guideline = 0.000038 | Varies with hardness, see note Guideline = 0.000070 | - | - | 0.0000084 | 0.0000057 | | Guideline is hardness dependent. Guideline is applicable to water hardness between 7.5 and 450 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(1.03 * LN(Hardness) - 5.274))/1000) Lowest value for guideline is 0.000018 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation. | Guideline is hardness dependent. Guideline is applicable to hardness between 3.4 and 285 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(0.736 * (LN(Hardness)) - 4.943))/1000) Lowest value for guideline is 0.00004. If hardness is below the hardness range, the minimum hardness will be applied in the calculation. | | |
| Calcium (Ca)-Dissolved | mg/L | - | Categorical, see note | - | - | 2.33 | 2.57 | | | Guideline categorizes the sensitivity of a water body to acid inputs (i.e. buffering capacity). Standard is 4 mg/L dissolved Ca for the most sensitive waterbodies, 5 - 8 mg/L for waterbodies with moderate sensitivity to acid inputs. Waterbodies with dissolved calcium > 8mg/L are considered to have low sensitivity to acid inputs. | | |
| Cesium (Cs)-Dissolved | mg/L | - | - | - | - | < 0.00001 | < 0.00001 | | | | | |
| Chromium (Cr)-Dissolved | mg/L | - | - | - | - | < 0.0005 | < 0.0005 | | | | | |
| Cobalt (Co)-Dissolved | mg/L | - | - | - | - | < 0.0001 | < 0.0001 | | | | | |
| Copper (Cu)-Dissolved | mg/L | Guideline varies with other parameters, see note Guideline = 0.0039 | Guideline varies with other parameters, see note Guideline = 0.0008 5-week field average = < 0.00177 (US), 0.00120 (DS) | - | - | 0.0013 | 0.00095 | | Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date | Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date | | |
| Iron (Fe)-Dissolved | mg/L | 0.35 | - | - | - | 0.026 | 0.02 | | | | | |
| Lead (Pb)-Dissolved | mg/L | - | Guideline varies with DOC and hardness Guideline: 0.0033 5-week field average = <0.00005 (US), <0.00005 (DS) | - | - | < 0.000050 | < 0.000050 | | | Guideline varies with DOC and hardness, refer to BC Water Quality Guidelines for more information. Guideline uses equation (EXP((0.5147*LN(DOC))+(0.2147*LN(Hardness))+0.4384))/1000 where DOC range is 0.5-31.5 mg/L and hardness range is 4.7-511 mg/L. | | |
| Lithium (Li)-Dissolved | mg/L | - | - | - | - | < 0.0010 | < 0.0010 | | | | | |
| Magnesium (Mg)-Dissolved | mg/L | - | - | - | - | 0.317 | 0.281 | | | | | |
| Manganese (Mn)-Dissolved | mg/L | - | - | - | - | 0.00172 | 0.00127 | | | | | |
| Mercury (Hg)-Dissolved | mg/L | - | - | - | - | < 0.000005 | < 0.000005 | | | | | |
| Molybdenum (Mo)-Dissolved | mg/L | - | - | - | - | 0.000383 | 0.000614 | | | | | |
| Nickel (Ni)-Dissolved | mg/L | Guideline varies with pH, temperature, DOC, and hardness Guideline: 0.0213 | Guideline varies with pH, temperature, DOC, and hardness Guideline: 0.00150 5-week field average = 0.00112 (US), 0.00087 (DS) | - | - | < 0.0005 | < 0.0005 | | Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date | Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date | | |
| Phosphorus (P)-Dissolved | mg/L | - | - | - | - | < 0.050 | < 0.050 | | | | | |
| Potassium (K)-Dissolved | mg/L | - | - | - | - | 0.311 | 0.258 | | | | | |
| Rubidium (Rb)-Dissolved | mg/L | - | - | - | - | 0.00042 | 0.00038 | | | | | |
| Selenium (Se)-Dissolved | mg/L | - | - | - | - | < 0.00005 | < 0.00005 | | | | | |
| Silicon (Si)-Dissolved | mg/L | - | - | - | - | 3.49 | 3.33 | | | | | |
| Silver (Ag)-Dissolved | mg/L | - | - | - | - | < 0.000010 | < 0.000010 | | | | | |
| Sodium (Na)-Dissolved | mg/L | - | - | - | - | 1.34 | 1.21 | | | | | |
| Strontium (Sr)-Dissolved | mg/L | - | - | - | - | 0.0113 | 0.011 | | | | | |
| Sulfur (S)-Dissolved | mg/L | - | - | - | - | 0.75 | 0.54 | | | | | |
| Tellurium (Te)-Dissolved | mg/L | - | - | - | - | < 0.00020 | < 0.00020 | | | | | |
| Thallium (Tl)-Dissolved | mg/L | - | - | - | - | < 0.000010 | < 0.000010 | | | | | |
| Thorium (Th)-Dissolved | mg/L | - | - | - | - | < 0.00010 | < 0.00010 | | | | | |
| Tin (Sn)-Dissolved | mg/L | - | - | - | - | < 0.00010 | < 0.00010 | | | | | |
| Titanium (Ti)-Dissolved | mg/L | - | - | - | - | 0.00073 | 0.00057 | | | | | |
| Tungsten (W)-Dissolved | mg/L | - | - | - | - | < 0.00010 | < 0.00010 | | | | | |
| Uranium (U)-Dissolved | mg/L | - | - | - | - | 0.000298 | 0.000299 | | | | | |
| Vanadium (V)-Dissolved | mg/L | - | - | - | - | < 0.00050 | < 0.00050 | | | | | |
| Zinc (Zn)-Dissolved | mg/L | Varies with DOC and hardness Guideline = 0.010 | Varies with pH, DOC, hardness Guideline = 0.0056 5-week field average = 0.0017 (US), 0.0024 (DS) | - | - | 0.0015 | 0.0021 | | Guideline varies with DOC and hardness. Guideline is calculated using the following formula: Guideline = (EXP((0.833 * (LN(Hardness))) + (0.24 * (LN(DOC))) + 0.526))/1000) If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation. | Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated using the following formula: Guideline = (EXP((0.974 * (LN(Hardness))) - (0.815 * pH)) + (0.398 * LN(DOC)) + 4.625))/1000) Guideline only applies to water with pH between 6.5 and 8.13, DOC between 0.3 and 22.8 mg/L, annd hardness between 23.4 and 399 mg/L. If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation. | | |
| Zirconium (Zr)-Dissolved | mg/L | - | - | - | - | < 0.00020 | < 0.00020 | | | | | |
| **Applied Guideline:** | | **British Columbia Approved and Working Water Quality Guidelines (NOV 2023) for Freshwater Aquatic Life (FAL) & Marine Aquatic Life (MAL) Short-Term (ST) & Long-Term (LT)** | | | | | | | | | | |
| **Color Key:** | | **Exceeds FAL Short term Guideline** | **Exceeds both FAL and MAL Guidelines** | **Exceeds MAL Short term Guideline** | | | | | | | | |

[1]BC MOECCS. 2023. BC Water Quality Guidelines for the Protection of Aquatic Life. Wildlife & Aquiculture. Accessed from:
www.summary_aquatichlife_wildlife_agst.pdf (gov.bc.ca)
[2]BC MOECCS. 2021. BC Working Water Quality Guidelines for the Protection of Aquatic Life. Wildlife & Aquiculture. Accessed from:
bc_env_working_water_quality_guidelines.pdf (gov.bc.ca)
[3]Note that long-term guidelines apply to averaged data to account for chronic impacts to aquatic life. Ideally, five samples collected at evenly spaced intervals over 30 days is considered to be the minimum number needed to calculate the long-term average of any parameter, though this may vary by parameter and site conditions. Long-term guidelines applied here are for reference only and may not indicate chronic impacts to aquatic life if exceedances occur in the short term.
[4]Background temperature ranges: Dec-Feb: 0.3-6.0C; Mar-Apr: 3.0-10.2C; May-June: 6.8-15.1C; Jul-present: 12.9-18.2C
Reference: AquaTROLL In-Situ Data Logger - Background water quality readings collected from Dec.-present.
For guidelines dependent on other parameters, when hardness, pH or DOC are below the range stated in the guideline, the lowest value in the range is used to calculate the

**Parameters Used to Calculate Guidelines**

| Analyte | Units | Measurement method | Values | |
|---|---|---|---|---|
| | | | EAS US1 (Upstream) | EAS DS 1 (Downstream) |
| pH (field) | pH units | Field pH taken using handheld meters during sampling used in calculations | 7.34 | 7.38 |
| Temperature (field) | °C | Field temperature taken using handheld meters during sampling used in calculations | 8.9 | 9.1 |
| Turbidity (field) | NTU | Field turbidity taken using handheld meters during sampling used in calculations | 4.42 | 0.78 |
| Hardness (as $CaCO_3$) (total) | mg/L | Laboratory tested total hardness taken at each respective sample site on the day of sampling used in guideline calculations | 7.07 | 7.61 |
| Dissolved Organic Carbon (DOC) | mg/L | Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations | 3.4 | 3.4 |
| Total Alkalinity ($CaCO_3$) | mg/L | Laboratory tested total alkalinity used in calculations | 5.2 | 6.5 |
| Chloride | mg/L | Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations | 0.75 | 0.73 |

# Woodfibre Site Receiving Environment Lab Documentation

# CERTIFICATE OF ANALYSIS

| | | | | |
|---|---|---|---|---|
| **Work Order** | : | **VA24D0988** | | |
| Client | : | **Triton Environmental Consultants Ltd.** | Laboratory | : ALS Environmental - Vancouver |
| Contact | : | | Account Manager | : |
| Address | : | | Address | : |
| Telephone | : | | Telephone | : |
| Project | : | | Date Samples Received | : 14-Nov-2024 17:00 |
| PO | : | | Date Analysis Commenced | : 16-Nov-2024 |
| C-O-C number | : | | Issue Date | : 22-Nov-2024 14:26 |
| Sampler | : | FS+AR | | |
| Site | : | Water Analysis | | |
| Quote number | : | VA23-TRIT100-012 | | |
| 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* |
|---|---|---|

## General Comments

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

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

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

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

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

| *Unit* | *Description* |
|---|---|
| mg/L | milligrams per litre |
| pH units | pH units |
| °C | degrees celsius |
| µS/cm | microsiemens per centimetre |
| - | no 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 | EAS US 1 | EAS DS 1 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 14-Nov-2024 11:55 | 14-Nov-2024 11:20 | ---- | ---- | ---- |
| | | | | | | VA24D0988-001 | VA24D0988-002 | ---- | ---- | ---- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Field Tests** | | | | | | | | | | |
| **Conductivity, field** | ---- | EF001/VA | 0.10 | µS/cm | | 27.000 | 30.000 | ---- | ---- | ---- |
| **pH, field** | ---- | EF001/VA | 0.10 | pH units | | 7.34 | 7.38 | ---- | ---- | ---- |
| **Temperature, field** | ---- | EF001/VA | 0.10 | °C | | 8.90 | 9.10 | ---- | ---- | ---- |
| **Physical Tests** | | | | | | | | | | |
| **Hardness (as CaCO3), dissolved** | ---- | EC100/VA | 0.60 | mg/L | | 7.12 | 7.57 | ---- | ---- | ---- |
| **Hardness (as CaCO3), from total Ca/Mg** | ---- | EC100A/VA | 0.60 | mg/L | | 7.07 | 7.61 | ---- | ---- | ---- |
| **Solids, total dissolved [TDS]** | ---- | E162/VA | 10 | mg/L | | 23 | 24 | ---- | ---- | ---- |
| **Solids, total suspended [TSS]** | ---- | E160/VA | 3.0 | mg/L | | <3.0 | <3.0 | ---- | ---- | ---- |
| **Alkalinity, total (as CaCO3)** | ---- | E290/VA | 2.0 | mg/L | | 5.2 | 6.5 | ---- | ---- | ---- |
| **Anions and Nutrients** | | | | | | | | | | |
| **Ammonia, total (as N)** | 7664-41-7 | E298/VA | 0.0050 | mg/L | | 0.0068 | <0.0050 | ---- | ---- | ---- |
| **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 | | 0.75 | 0.73 | ---- | ---- | ---- |
| **Fluoride** | 16984-48-8 | E235.F/VA | 0.020 | mg/L | | <0.020 | 0.024 | ---- | ---- | ---- |
| **Nitrate (as N)** | 14797-55-8 | E235.NO3-L/VA | 0.0050 | mg/L | | 0.0589 | 0.0362 | ---- | ---- | ---- |
| **Nitrite (as N)** | 14797-65-0 | E235.NO2-L/VA | 0.0010 | mg/L | | <0.0010 | <0.0010 | ---- | ---- | ---- |
| **Nitrogen, total** | 7727-37-9 | E366/VA | 0.030 | mg/L | | 0.134 | 0.100 | ---- | ---- | ---- |
| **Phosphorus, total** | 7723-14-0 | E372-U/VA | 0.0020 | mg/L | | 0.0543 | 0.0352 | ---- | ---- | ---- |
| **Sulfate (as SO4)** | 14808-79-8 | E235.SO4/VA | 0.30 | mg/L | | 2.61 | 2.45 | ---- | ---- | ---- |
| **Organic / Inorganic Carbon** | | | | | | | | | | |
| **Carbon, dissolved organic [DOC]** | ---- | E358-L/VA | 0.50 | mg/L | | 3.40 | 3.40 | ---- | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | EAS US 1 | EAS DS 1 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 14-Nov-2024 11:55 | 14-Nov-2024 11:20 | ---- | ---- | ---- |
| | | | | | | VA24D0988-001 | VA24D0988-002 | ---- | ---- | ---- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Total Sulfides** | | | | | | | | | | |
| **Sulfide, total (as S)** | 18496-25-8 | E395/VA | 0.0015 | mg/L | | <0.0015 | <0.0015 | ---- | ---- | ---- |
| **Sulfide, un-ionized (as H2S), from total** | 7783-06-4 | EC395/VA | 0.0015 | mg/L | | <0.0015 | <0.0015 | ---- | ---- | ---- |
| **Sulfide, total (as H2S)** | 7783-06-4 | E395/VA | 0.0016 | mg/L | | <0.0016 | <0.0016 | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **Aluminum, total** | 7429-90-5 | E420/VA | 0.0030 | mg/L | | 0.362 | 0.230 | ---- | ---- | ---- |
| **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 | | 0.00025 | 0.00024 | ---- | ---- | ---- |
| **Barium, total** | 7440-39-3 | E420/VA | 0.00010 | mg/L | | 0.00487 | 0.00376 | ---- | ---- | ---- |
| **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 | | 0.0000078 | 0.0000104 | ---- | ---- | ---- |
| **Calcium, total** | 7440-70-2 | E420/VA | 0.050 | mg/L | | 2.23 | 2.56 | ---- | ---- | ---- |
| **Cesium, total** | 7440-46-2 | E420/VA | 0.000010 | mg/L | | 0.000018 | 0.000010 | ---- | ---- | ---- |
| **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 | | 0.00012 | <0.00010 | ---- | ---- | ---- |
| **Copper, total** | 7440-50-8 | E420/VA | 0.00050 | mg/L | | 0.00254 | 0.00162 | ---- | ---- | ---- |
| **Iron, total** | 7439-89-6 | E420/VA | 0.010 | mg/L | | 0.200 | 0.097 | ---- | ---- | ---- |
| **Lead, total** | 7439-92-1 | E420/VA | 0.000050 | mg/L | | 0.000257 | 0.000133 | ---- | ---- | ---- |
| **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 | | 0.364 | 0.296 | ---- | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | EAS US 1 | EAS DS 1 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 14-Nov-2024 11:55 | 14-Nov-2024 11:20 | ---- | ---- | ---- |
| | | | | | | VA24D0988-001 | VA24D0988-002 | ---- | ---- | ---- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **Manganese, total** | 7439-96-5 | E420/VA | 0.00010 | mg/L | | 0.00619 | 0.00385 | ---- | ---- | ---- |
| **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 | | 0.000396 | 0.000829 | ---- | ---- | ---- |
| **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 | | 0.059 | <0.050 | ---- | ---- | ---- |
| **Potassium, total** | 7440-09-7 | E420/VA | 0.050 | mg/L | | 0.326 | 0.265 | ---- | ---- | ---- |
| **Rubidium, total** | 7440-17-7 | E420/VA | 0.00020 | mg/L | | 0.00048 | 0.00046 | ---- | ---- | ---- |
| **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 | | 3.49 | 3.33 | ---- | ---- | ---- |
| **Silver, total** | 7440-22-4 | E420/VA | 0.000010 | mg/L | | 0.000013 | <0.000010 | ---- | ---- | ---- |
| **Sodium, total** | 7440-23-5 | E420/VA | 0.050 | mg/L | | 1.31 | 1.21 | ---- | ---- | ---- |
| **Strontium, total** | 7440-24-6 | E420/VA | 0.00020 | mg/L | | 0.0119 | 0.0109 | ---- | ---- | ---- |
| **Sulfur, total** | 7704-34-9 | E420/VA | 0.50 | mg/L | | 0.71 | 0.54 | ---- | ---- | ---- |
| **Tellurium, total** | 13494-80-9 | E420/VA | 0.00020 | mg/L | | <0.00020 | <0.00020 | ---- | ---- | ---- |
| **Thallium, total** | 7440-28-0 | E420/VA | 0.000010 | mg/L | | <0.000010 | <0.000010 | ---- | ---- | ---- |
| **Thorium, total** | 7440-29-1 | E420/VA | 0.00010 | mg/L | | <0.00010 | <0.00010 | ---- | ---- | ---- |
| **Tin, total** | 7440-31-5 | E420/VA | 0.00010 | mg/L | | <0.00010 | <0.00010 | ---- | ---- | ---- |
| **Titanium, total** | 7440-32-6 | E420/VA | 0.00030 | mg/L | | 0.0114 | 0.00554 | ---- | ---- | ---- |
| **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 | | 0.000241 | 0.000283 | ---- | ---- | ---- |
| **Vanadium, total** | 7440-62-2 | E420/VA | 0.00050 | mg/L | | 0.00060 | <0.00050 | ---- | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | EAS US 1 | EAS DS 1 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 14-Nov-2024 11:55 | 14-Nov-2024 11:20 | ---- | ---- | ---- |
| | | | | | | VA24D0988-001 | VA24D0988-002 | ---- | ---- | ---- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Total Metals** | | | | | | | | | | |
| **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 | | 0.130 | 0.116 | ---- | ---- | ---- |
| **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 | | 0.00023 | 0.00024 | ---- | ---- | ---- |
| **Barium, dissolved** | 7440-39-3 | E421/VA | 0.00010 | mg/L | | 0.00264 | 0.00290 | ---- | ---- | ---- |
| **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 | | 0.0000064 | 0.0000057 | ---- | ---- | ---- |
| **Calcium, dissolved** | 7440-70-2 | E421/VA | 0.050 | mg/L | | 2.33 | 2.57 | ---- | ---- | ---- |
| **Cesium, dissolved** | 7440-46-2 | E421/VA | 0.000010 | mg/L | | <0.000010 | <0.000010 | ---- | ---- | ---- |
| **Chromium, dissolved** | 7440-47-3 | E421/VA | 0.00050 | mg/L | | <0.00050 | <0.00050 | ---- | ---- | ---- |
| **Cobalt, dissolved** | 7440-48-4 | E421/VA | 0.00010 | mg/L | | <0.00010 | <0.00010 | ---- | ---- | ---- |
| **Copper, dissolved** | 7440-50-8 | E421/VA | 0.00020 | mg/L | | 0.00130 | 0.00095 | ---- | ---- | ---- |
| **Iron, dissolved** | 7439-89-6 | E421/VA | 0.010 | mg/L | | 0.026 | 0.020 | ---- | ---- | ---- |
| **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 | | 0.317 | 0.281 | ---- | ---- | ---- |
| **Manganese, dissolved** | 7439-96-5 | E421/VA | 0.00010 | mg/L | | 0.00172 | 0.00127 | ---- | ---- | ---- |

## Analytical Results

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

| Analyte | CAS Number | Method/Lab | LOR | Unit | Client sample ID | EAS US 1 | EAS DS 1 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 14-Nov-2024 11:55 | 14-Nov-2024 11:20 | ---- | ---- | ---- |
| | | | | | | VA24D0988-001 | VA24D0988-002 | ---- | ---- | ---- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Dissolved Metals** | | | | | | | | | | |
| **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 | | 0.000383 | 0.000814 | ---- | ---- | ---- |
| **Nickel, dissolved** | 7440-02-0 | E421/VA | 0.00050 | mg/L | | <0.00050 | <0.00050 | ---- | ---- | ---- |
| **Phosphorus, dissolved** | 7723-14-0 | E421/VA | 0.050 | mg/L | | <0.050 | <0.050 | ---- | ---- | ---- |
| **Potassium, dissolved** | 7440-09-7 | E421/VA | 0.050 | mg/L | | 0.311 | 0.258 | ---- | ---- | ---- |
| **Rubidium, dissolved** | 7440-17-7 | E421/VA | 0.00020 | mg/L | | 0.00042 | 0.00036 | ---- | ---- | ---- |
| **Selenium, dissolved** | 7782-49-2 | E421/VA | 0.000050 | mg/L | | <0.000050 | <0.000050 | ---- | ---- | ---- |
| **Silicon, dissolved** | 7440-21-3 | E421/VA | 0.050 | mg/L | | 3.10 | 3.06 | ---- | ---- | ---- |
| **Silver, dissolved** | 7440-22-4 | E421/VA | 0.000010 | mg/L | | <0.000010 | <0.000010 | ---- | ---- | ---- |
| **Sodium, dissolved** | 7440-23-5 | E421/VA | 0.050 | mg/L | | 1.34 | 1.20 | ---- | ---- | ---- |
| **Strontium, dissolved** | 7440-24-6 | E421/VA | 0.00020 | mg/L | | 0.0113 | 0.0110 | ---- | ---- | ---- |
| **Sulfur, dissolved** | 7704-34-9 | E421/VA | 0.50 | mg/L | | 0.75 | 0.54 | ---- | ---- | ---- |
| **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 | | 0.00073 | 0.00057 | ---- | ---- | ---- |
| **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 | | 0.000206 | 0.000250 | ---- | ---- | ---- |
| **Vanadium, dissolved** | 7440-62-2 | E421/VA | 0.00050 | mg/L | | <0.00050 | <0.00050 | ---- | ---- | ---- |
| **Zinc, dissolved** | 7440-66-6 | E421/VA | 0.0010 | mg/L | | 0.0015 | 0.0021 | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: Water (Matrix: Water) | | | | | Client sample ID | EAS US 1 | EAS DS 1 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Client sampling date / time | 14-Nov-2024 11:55 | 14-Nov-2024 11:20 | ---- | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | | VA24D0988-001 | VA24D0988-002 | ---- | ---- | ---- |
| | | | | | | Result | Result | ---- | ---- | ---- |
| **Dissolved Metals** | | | | | | | | | | |
| **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/WT | 0.00050 | mg/L | | <0.00050 | <0.00050 | ---- | ---- | ---- |
| **Chromium, trivalent [Cr III], total** | 16065-83-1 | EC535/WT | 0.00050 | mg/L | | <0.00050 | <0.00050 | ---- | ---- | ---- |

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

ALS Canada Ltd.

# QUALITY CONTROL INTERPRETIVE REPORT

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24D0988** | Page | : 1 of 14 |
| Client | | Laboratory | |
| Contact | | Account Manager | |
| Address | | Address | |
| Telephone | | Telephone | |
| Project | : 11964 | Date Samples Received | : 14-Nov-2024 17:00 |
| PO | : 11964-Task20-Phase3C-4C | Issue Date | : 22-Nov-2024 14:26 |
| C-O-C number | : ---- | | |
| Sampler | : FS+AR | | |
| Site | : Water Analysis | | |
| Quote number | : VA23-TRIT100-012 _V2 | | |
| 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*

- No Quality Control Sample Frequency Outliers occur.

# Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

| Analyte Group : Analytical Method / Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preparation Date | Holding Times 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)** EAS DS 1 | E298 | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 19-Nov-2024 | 28 days | 5 days | ✓ |
| **Anions and Nutrients : Ammonia by Fluorescence** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** EAS US 1 | E298 | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 19-Nov-2024 | 28 days | 5 days | ✓ |
| **Anions and Nutrients : Bromide in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** EAS DS 1 | E235.Br-L | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Bromide in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** EAS US 1 | E235.Br-L | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Chloride in Water by IC** | | | | | | | | | | |
| **HDPE** EAS DS 1 | E235.Cl | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Chloride in Water by IC** | | | | | | | | | | |
| **HDPE** EAS US 1 | E235.Cl | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Fluoride in Water by IC** | | | | | | | | | | |
| **HDPE** EAS DS 1 | E235.F | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-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 |
| **Anions and Nutrients : Fluoride in Water by IC** | | | | | | | | | | |
| **HDPE** EAS US 1 | E235.F | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Nitrate in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** EAS DS 1 | E235.NO3-L | 14-Nov-2024 | 16-Nov-2024 | 3 days | 2 days | ✓ | 17-Nov-2024 | 3 days | 3 days | ✓ |
| **Anions and Nutrients : Nitrate in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** EAS US 1 | E235.NO3-L | 14-Nov-2024 | 16-Nov-2024 | 3 days | 2 days | ✓ | 17-Nov-2024 | 3 days | 3 days | ✓ |
| **Anions and Nutrients : Nitrite in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** EAS DS 1 | E235.NO2-L | 14-Nov-2024 | 16-Nov-2024 | 3 days | 2 days | ✓ | 17-Nov-2024 | 3 days | 3 days | ✓ |
| **Anions and Nutrients : Nitrite in Water by IC (Low Level)** | | | | | | | | | | |
| **HDPE** EAS US 1 | E235.NO2-L | 14-Nov-2024 | 16-Nov-2024 | 3 days | 2 days | ✓ | 17-Nov-2024 | 3 days | 3 days | ✓ |
| **Anions and Nutrients : Sulfate in Water by IC** | | | | | | | | | | |
| **HDPE** EAS DS 1 | E235.SO4 | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Sulfate in Water by IC** | | | | | | | | | | |
| **HDPE** EAS US 1 | E235.SO4 | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Anions and Nutrients : Total Nitrogen by Colourimetry** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** EAS DS 1 | E366 | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 19-Nov-2024 | 28 days | 5 days | ✓ |
| **Anions and Nutrients : Total Nitrogen by Colourimetry** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** EAS US 1 | E366 | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 19-Nov-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 |
| **Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** | | | | | | | | | | |
| EAS DS 1 | E372-U | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 18-Nov-2024 | 28 days | 4 days | ✓ |
| **Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)** | | | | | | | | | | |
| **Amber glass total (sulfuric acid)** | | | | | | | | | | |
| EAS US 1 | E372-U | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 18-Nov-2024 | 28 days | 4 days | ✓ |
| **Dissolved Metals : Dissolved Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial dissolved (hydrochloric acid)** | | | | | | | | | | |
| EAS DS 1 | E509 | 14-Nov-2024 | 19-Nov-2024 | 28 days | 5 days | ✓ | 19-Nov-2024 | 28 days | 5 days | ✓ |
| **Dissolved Metals : Dissolved Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial dissolved (hydrochloric acid)** | | | | | | | | | | |
| EAS US 1 | E509 | 14-Nov-2024 | 19-Nov-2024 | 28 days | 5 days | ✓ | 19-Nov-2024 | 28 days | 5 days | ✓ |
| **Dissolved Metals : Dissolved Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE dissolved (nitric acid)** | | | | | | | | | | |
| EAS DS 1 | E421 | 14-Nov-2024 | 18-Nov-2024 | 180 days | 4 days | ✓ | 20-Nov-2024 | 180 days | 6 days | ✓ |
| **Dissolved Metals : Dissolved Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE dissolved (nitric acid)** | | | | | | | | | | |
| EAS US 1 | E421 | 14-Nov-2024 | 18-Nov-2024 | 180 days | 4 days | ✓ | 20-Nov-2024 | 180 days | 6 days | ✓ |
| **Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine** | | | | | | | | | | |
| **Glass vial dissolved (hydrochloric acid)** | | | | | | | | | | |
| EAS DS 1 | EF001 | 14-Nov-2024 | ---- | ---- | ---- | | 19-Nov-2024 | ---- | 5 days | |
| **Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine** | | | | | | | | | | |
| **Glass vial dissolved (hydrochloric acid)** | | | | | | | | | | |
| EAS US 1 | EF001 | 14-Nov-2024 | ---- | ---- | ---- | | 19-Nov-2024 | ---- | 5 days | |
| **Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)** | | | | | | | | | | |
| **Amber glass dissolved (sulfuric acid)** | | | | | | | | | | |
| EAS DS 1 | E358-L | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-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 |
| **Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)** | | | | | | | | | | |
| **Amber glass dissolved (sulfuric acid)** EAS US 1 | E358-L | 14-Nov-2024 | 16-Nov-2024 | 28 days | 2 days | ✓ | 17-Nov-2024 | 28 days | 3 days | ✓ |
| **Physical Tests : Alkalinity Species by Titration** | | | | | | | | | | |
| **HDPE** EAS DS 1 | E290 | 14-Nov-2024 | 16-Nov-2024 | 14 days | 2 days | ✓ | 17-Nov-2024 | 14 days | 3 days | ✓ |
| **Physical Tests : Alkalinity Species by Titration** | | | | | | | | | | |
| **HDPE** EAS US 1 | E290 | 14-Nov-2024 | 16-Nov-2024 | 14 days | 2 days | ✓ | 17-Nov-2024 | 14 days | 3 days | ✓ |
| **Physical Tests : TDS by Gravimetry** | | | | | | | | | | |
| **HDPE** EAS US 1 | E162 | 14-Nov-2024 | ---- | ---- | ---- | | 20-Nov-2024 | 7 days | 6 days | ✓ |
| **Physical Tests : TDS by Gravimetry** | | | | | | | | | | |
| **HDPE** EAS DS 1 | E162 | 14-Nov-2024 | ---- | ---- | ---- | | 20-Nov-2024 | 7 days | 7 days | ✓ |
| **Physical Tests : TSS by Gravimetry** | | | | | | | | | | |
| **HDPE** EAS DS 1 | E160 | 14-Nov-2024 | ---- | ---- | ---- | | 20-Nov-2024 | 7 days | 6 days | ✓ |
| **Physical Tests : TSS by Gravimetry** | | | | | | | | | | |
| **HDPE** EAS US 1 | E160 | 14-Nov-2024 | ---- | ---- | ---- | | 20-Nov-2024 | 7 days | 6 days | ✓ |
| **Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC** | | | | | | | | | | |
| **UV-inhibited HDPE - total (sodium hydroxide)** EAS DS 1 | E532 | 14-Nov-2024 | ---- | ---- | ---- | | 19-Nov-2024 | 28 days | 5 days | ✓ |
| **Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC** | | | | | | | | | | |
| **UV-inhibited HDPE - total (sodium hydroxide)** EAS US 1 | E532 | 14-Nov-2024 | ---- | ---- | ---- | | 19-Nov-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* | | *Eval* | *Analysis Date* | *Holding Times* | | *Eval* |
| | | | | *Rec* | *Actual* | | | *Rec* | *Actual* | |
| **Total Metals : Total Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial total (hydrochloric acid)** EAS DS 1 | E508 | 14-Nov-2024 | 20-Nov-2024 | 28 days | 6 days | ✓ | 20-Nov-2024 | 28 days | 6 days | ✓ |
| **Total Metals : Total Mercury in Water by CVAAS** | | | | | | | | | | |
| **Glass vial total (hydrochloric acid)** EAS US 1 | E508 | 14-Nov-2024 | 20-Nov-2024 | 28 days | 6 days | ✓ | 20-Nov-2024 | 28 days | 6 days | ✓ |
| **Total Metals : Total Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE total (nitric acid)** EAS DS 1 | E420 | 14-Nov-2024 | 20-Nov-2024 | 180 days | 6 days | ✓ | 22-Nov-2024 | 180 days | 8 days | ✓ |
| **Total Metals : Total Metals in Water by CRC ICPMS** | | | | | | | | | | |
| **HDPE total (nitric acid)** EAS US 1 | E420 | 14-Nov-2024 | 20-Nov-2024 | 180 days | 6 days | ✓ | 22-Nov-2024 | 180 days | 8 days | ✓ |
| **Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)** | | | | | | | | | | |
| **HDPE total (zinc acetate+sodium hydroxide)** EAS DS 1 | E395 | 14-Nov-2024 | ---- | ---- | ---- | | 19-Nov-2024 | 7 days | 5 days | ✓ |
| **Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)** | | | | | | | | | | |
| **HDPE total (zinc acetate+sodium hydroxide)** EAS US 1 | E395 | 14-Nov-2024 | ---- | ---- | ---- | | 19-Nov-2024 | 7 days | 5 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 | 1770240 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1770123 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1770246 | 1 | 15 | 6.6 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1770245 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1773786 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1769152 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1770127 | 1 | 8 | 12.5 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1770244 | 1 | 15 | 6.6 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1770247 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1770248 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1770249 | 1 | 20 | 5.0 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1776531 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1772939 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1775065 | 1 | 16 | 6.2 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1769136 | 1 | 19 | 5.2 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1770122 | 1 | 9 | 11.1 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1770128 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Total Sulfide by Colourimetry (Automated Flow) | E395 | 1773301 | 1 | 15 | 6.6 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1776522 | 1 | 20 | 5.0 | 5.0 | ✓ |
| **Laboratory Control Samples (LCS)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1770240 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1770123 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1770246 | 1 | 15 | 6.6 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1770245 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1773786 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1769152 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1770127 | 1 | 8 | 12.5 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1770244 | 1 | 15 | 6.6 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1770247 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1770248 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1770249 | 1 | 20 | 5.0 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1776531 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1772939 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1775065 | 1 | 16 | 6.2 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1769136 | 1 | 19 | 5.2 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1770122 | 1 | 9 | 11.1 | 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 | 1770128 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Total Sulfide by Colourimetry (Automated Flow) | E395 | 1773301 | 1 | 15 | 6.6 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1776522 | 1 | 20 | 5.0 | 5.0 | ✓ |
| **Method Blanks (MB)** | | | | | | | |
| Alkalinity Species by Titration | E290 | 1770240 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Ammonia by Fluorescence | E298 | 1770123 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1770246 | 1 | 15 | 6.6 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1770245 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1773786 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1769152 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1770127 | 1 | 8 | 12.5 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1770244 | 1 | 15 | 6.6 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1770247 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1770248 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1770249 | 1 | 20 | 5.0 | 5.0 | ✓ |
| TDS by Gravimetry | E162 | 1776531 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1772939 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1775065 | 1 | 16 | 6.2 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1769136 | 1 | 19 | 5.2 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1770122 | 1 | 9 | 11.1 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1770128 | 1 | 2 | 50.0 | 5.0 | ✓ |
| Total Sulfide by Colourimetry (Automated Flow) | E395 | 1773301 | 1 | 15 | 6.6 | 5.0 | ✓ |
| TSS by Gravimetry | E160 | 1776522 | 1 | 20 | 5.0 | 5.0 | ✓ |
| **Matrix Spikes (MS)** | | | | | | | |
| Ammonia by Fluorescence | E298 | 1770123 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Bromide in Water by IC (Low Level) | E235.Br-L | 1770246 | 1 | 15 | 6.6 | 5.0 | ✓ |
| Chloride in Water by IC | E235.Cl | 1770245 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Mercury in Water by CVAAS | E509 | 1773786 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Dissolved Metals in Water by CRC ICPMS | E421 | 1769152 | 1 | 17 | 5.8 | 5.0 | ✓ |
| Dissolved Organic Carbon by Combustion (Low Level) | E358-L | 1770127 | 1 | 8 | 12.5 | 5.0 | ✓ |
| Fluoride in Water by IC | E235.F | 1770244 | 1 | 15 | 6.6 | 5.0 | ✓ |
| Nitrate in Water by IC (Low Level) | E235.NO3-L | 1770247 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Nitrite in Water by IC (Low Level) | E235.NO2-L | 1770248 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Sulfate in Water by IC | E235.SO4 | 1770249 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Hexavalent Chromium (Cr VI) by IC | E532 | 1772939 | 1 | 20 | 5.0 | 5.0 | ✓ |
| Total Mercury in Water by CVAAS | E508 | 1775065 | 1 | 16 | 6.2 | 5.0 | ✓ |
| Total Metals in Water by CRC ICPMS | E420 | 1769136 | 1 | 19 | 5.2 | 5.0 | ✓ |
| Total Nitrogen by Colourimetry | E366 | 1770122 | 1 | 9 | 11.1 | 5.0 | ✓ |
| Total Phosphorus by Colourimetry (0.002 mg/L) | E372-U | 1770128 | 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 | 1773301 | 1 | 15 | 6.6 | 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<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 - Waterloo | 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 - Waterloo | 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, TDS, 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, TDS, 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. |

ALS Canada Ltd.

# QUALITY CONTROL REPORT

| | | | |
|---|---|---|---|
| **Work Order** | : **VA24D0988** | Page | : 1 of 17 |
| Client | : | Laboratory | |
| Contact | : | Account Manager | |
| Address | : | Address | |
| Telephone | : ---- | Telephone | |
| Project | : 11964 | Date Samples Received | : 14-Nov-2024 17:00 |
| PO | : 11964-Task20-Phase3C-4C | Date Analysis Commenced | : 16-Nov-2024 |
| C-O-C number | : ---- | Issue Date | : 22-Nov-2024 14:26 |
| Sampler | : FS+AR | | |
| Site | : Water Analysis | | |
| Quote number | : VA23-TRIT100-012 _V2 | | |
| 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* |
|---|---|---|
| Dan Gebert | Laboratory Analyst | Vancouver Metals, Burnaby, British Columbia |
| Ghazaleh Khanmirzaei | Analyst | Vancouver Metals, Burnaby, British Columbia |
| Greg Pokocky | Manager - Inorganics | Waterloo Inorganics, Waterloo, Ontario |
| Greg Pokocky | Manager - Inorganics | Waterloo Metals, Waterloo, Ontario |
| Kim Jensen | Department Manager - Metals | Vancouver Metals, Burnaby, British Columbia |
| Maya Urquhart | Lab Analyst | Vancouver Metals, Burnaby, British Columbia |
| Monica Ko | Lab Assistant | Vancouver Inorganics, Burnaby, British Columbia |
| Paolo Obillo | Account Manager Assistant | Vancouver Administration, 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: 1770240)** | | | | | | | | | | | |
| VA24D1110-002 | Anonymous | Alkalinity, total (as CaCO3) | ---- | E290 | 1.0 | mg/L | 68.3 | 68.2 | 0.146% | 20% | ---- |
| **Physical Tests (QC Lot: 1776522)** | | | | | | | | | | | |
| FJ2403488-001 | Anonymous | Solids, total suspended [TSS] | ---- | E160 | 3.0 | mg/L | 5.3 | 3.1 | 2.2 | Diff <2x LOR | ---- |
| **Physical Tests (QC Lot: 1776531)** | | | | | | | | | | | |
| FJ2403488-001 | Anonymous | Solids, total dissolved [TDS] | ---- | E162 | 20 | mg/L | 334 | 358 | 6.95% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1770122)** | | | | | | | | | | | |
| KS2404784-001 | Anonymous | Nitrogen, total | 7727-37-9 | E366 | 0.030 | mg/L | 0.162 | 0.160 | 0.003 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1770123)** | | | | | | | | | | | |
| KS2404784-001 | Anonymous | 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: 1770128)** | | | | | | | | | | | |
| VA24D0988-001 | EAS US 1 | Phosphorus, total | 7723-14-0 | E372-U | 0.0020 | mg/L | 0.0543 | 0.0537 | 1.17% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1770244)** | | | | | | | | | | | |
| VA24D0988-001 | EAS US 1 | Fluoride | 16984-48-8 | E235.F | 0.020 | mg/L | <0.020 | 0.022 | 0.002 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1770245)** | | | | | | | | | | | |
| VA24D0988-001 | EAS US 1 | Chloride | 16887-00-6 | E235.Cl | 0.50 | mg/L | 0.75 | 0.74 | 0.01 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1770246)** | | | | | | | | | | | |
| VA24D0988-001 | EAS US 1 | Bromide | 24959-67-9 | E235.Br-L | 0.050 | mg/L | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1770247)** | | | | | | | | | | | |
| VA24D0988-001 | EAS US 1 | Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.0050 | mg/L | 0.0589 | 0.0582 | 1.11% | 20% | ---- |
| **Anions and Nutrients (QC Lot: 1770248)** | | | | | | | | | | | |
| VA24D0988-001 | EAS US 1 | Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.0010 | mg/L | <0.0010 | <0.0010 | 0 | Diff <2x LOR | ---- |
| **Anions and Nutrients (QC Lot: 1770249)** | | | | | | | | | | | |
| VA24D0988-001 | EAS US 1 | Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.30 | mg/L | 2.61 | 2.58 | 0.03 | Diff <2x LOR | ---- |
| **Organic / Inorganic Carbon (QC Lot: 1770127)** | | | | | | | | | | | |
| KS2404784-001 | Anonymous | Carbon, dissolved organic [DOC] | ---- | E358-L | 0.50 | mg/L | 2.06 | 1.96 | 0.11 | Diff <2x LOR | ---- |
| **Total Sulfides (QC Lot: 1773301)** | | | | | | | | | | | |
| FJ2403496-001 | Anonymous | Sulfide, total (as S) | 18496-25-8 | E395 | 0.0015 | mg/L | <0.0015 | <0.0015 | 0 | Diff <2x LOR | ---- |
| **Total Metals (QC Lot: 1769136)** | | | | | | | | | | | |
| VA24D0831-001 | Anonymous | Aluminum, total | 7429-90-5 | E420 | 0.0030 | mg/L | 0.750 | 0.766 | 2.13% | 20% | ---- |
| | | Antimony, total | 7440-36-0 | E420 | 0.00010 | mg/L | 0.00037 | 0.00036 | 0.000009 | 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: 1769136) - continued** | | | | | | | | | | | |
| VA24D0831-001 | Anonymous | Arsenic, total | 7440-38-2 | E420 | 0.00010 | mg/L | 0.00040 | 0.00035 | 0.00005 | Diff <2x LOR | ---- |
| | | Barium, total | 7440-39-3 | E420 | 0.00010 | mg/L | 0.0616 | 0.0628 | 1.99% | 20% | ---- |
| | | Beryllium, total | 7440-41-7 | E420 | 0.000020 | mg/L | <0.000020 | <0.000020 | 0 | Diff <2x LOR | ---- |
| | | Bismuth, total | 7440-69-9 | E420 | 0.000050 | mg/L | <0.000050 | <0.000050 | 0 | Diff <2x LOR | ---- |
| | | Boron, total | 7440-42-8 | E420 | 0.010 | mg/L | <0.010 | <0.010 | 0 | Diff <2x LOR | ---- |
| | | Cadmium, total | 7440-43-9 | E420 | 0.0000050 | mg/L | 0.0000095 | 0.0000099 | 0.0000004 | Diff <2x LOR | ---- |
| | | Calcium, total | 7440-70-2 | E420 | 0.050 | mg/L | 12.7 | 12.6 | 0.874% | 20% | ---- |
| | | Cesium, total | 7440-46-2 | E420 | 0.000010 | mg/L | 0.000148 | 0.000156 | 5.37% | 20% | ---- |
| | | Chromium, total | 7440-47-3 | E420 | 0.00050 | mg/L | 0.00103 | 0.00107 | 0.00004 | Diff <2x LOR | ---- |
| | | Cobalt, total | 7440-48-4 | E420 | 0.00010 | mg/L | 0.00050 | 0.00050 | 0.000002 | Diff <2x LOR | ---- |
| | | Copper, total | 7440-50-8 | E420 | 0.00050 | mg/L | 0.00435 | 0.00436 | 0.00001 | Diff <2x LOR | ---- |
| | | Iron, total | 7439-89-6 | E420 | 0.010 | mg/L | 0.806 | 0.829 | 2.86% | 20% | ---- |
| | | Lead, total | 7439-92-1 | E420 | 0.000050 | mg/L | 0.000265 | 0.000277 | 0.000012 | 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 | 0.100 | mg/L | 5.03 | 5.14 | 2.07% | 20% | ---- |
| | | Manganese, total | 7439-96-5 | E420 | 0.00010 | mg/L | 0.0511 | 0.0528 | 3.23% | 20% | ---- |
| | | Molybdenum, total | 7439-98-7 | E420 | 0.000050 | mg/L | 0.00475 | 0.00487 | 2.48% | 20% | ---- |
| | | Nickel, total | 7440-02-0 | E420 | 0.00050 | mg/L | 0.00094 | 0.00110 | 0.00015 | 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 | 0.100 | mg/L | 0.849 | 0.875 | 0.026 | Diff <2x LOR | ---- |
| | | Rubidium, total | 7440-17-7 | E420 | 0.00020 | mg/L | 0.00090 | 0.00104 | 0.00014 | Diff <2x LOR | ---- |
| | | Selenium, total | 7782-49-2 | E420 | 0.000050 | mg/L | <0.000050 | 0.000057 | 0.000007 | Diff <2x LOR | ---- |
| | | Silicon, total | 7440-21-3 | E420 | 0.10 | mg/L | 3.54 | 3.60 | 1.68% | 20% | ---- |
| | | Silver, total | 7440-22-4 | E420 | 0.000010 | mg/L | 0.000013 | 0.000011 | 0.000001 | Diff <2x LOR | ---- |
| | | Sodium, total | 7440-23-5 | E420 | 0.050 | mg/L | 7.03 | 7.22 | 2.71% | 20% | ---- |
| | | Strontium, total | 7440-24-6 | E420 | 0.00020 | mg/L | 0.0662 | 0.0667 | 0.740% | 20% | ---- |
| | | Sulfur, total | 7704-34-9 | E420 | 0.50 | mg/L | 4.30 | 4.31 | 0.005 | 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 | 0.0188 | 0.0182 | 3.28% | 20% | ---- |
| | | 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 | 0.000032 | 0.000033 | 0.0000010 | 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: 1769136) - continued** | | | | | | | | | | | |
| VA24D0831-001 | Anonymous | Vanadium, total | 7440-62-2 | E420 | 0.00050 | mg/L | 0.00177 | 0.00179 | 0.00002 | Diff <2x LOR | ---- |
| | | Zinc, total | 7440-66-6 | E420 | 0.0030 | mg/L | 0.0034 | 0.0037 | 0.0003 | Diff <2x LOR | ---- |
| | | Zirconium, total | 7440-67-7 | E420 | 0.00020 | mg/L | <0.00020 | <0.00020 | 0 | Diff <2x LOR | ---- |
| **Total Metals (QC Lot: 1775065)** | | | | | | | | | | | |
| VA24D0972-017 | Anonymous | Mercury, total | 7439-97-6 | E508 | 0.0000050 | mg/L | <0.0000050 | <0.0000050 | 0 | Diff <2x LOR | ---- |
| **Dissolved Metals (QC Lot: 1769152)** | | | | | | | | | | | |
| VA24D0839-001 | Anonymous | Aluminum, dissolved | 7429-90-5 | E421 | 0.0010 | mg/L | 0.0036 | 0.0039 | 0.0002 | Diff <2x LOR | ---- |
| | | Antimony, dissolved | 7440-36-0 | E421 | 0.00010 | mg/L | 0.00043 | 0.00043 | 0.0000004 | Diff <2x LOR | ---- |
| | | Arsenic, dissolved | 7440-38-2 | E421 | 0.00010 | mg/L | 0.00489 | 0.00481 | 1.74% | 20% | ---- |
| | | Barium, dissolved | 7440-39-3 | E421 | 0.00010 | mg/L | 0.0387 | 0.0397 | 2.45% | 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 | 0.0000152 | 0.0000125 | 0.0000027 | Diff <2x LOR | ---- |
| | | Calcium, dissolved | 7440-70-2 | E421 | 0.050 | mg/L | 42.6 | 42.9 | 0.804% | 20% | ---- |
| | | Cesium, dissolved | 7440-46-2 | E421 | 0.000010 | mg/L | 0.000011 | 0.000011 | 0.0000002 | Diff <2x LOR | ---- |
| | | Chromium, dissolved | 7440-47-3 | E421 | 0.00050 | mg/L | <0.00050 | <0.00050 | 0 | Diff <2x LOR | ---- |
| | | Cobalt, dissolved | 7440-48-4 | E421 | 0.00010 | mg/L | 0.00793 | 0.00796 | 0.448% | 20% | ---- |
| | | Copper, dissolved | 7440-50-8 | E421 | 0.00020 | mg/L | 0.00026 | 0.00027 | 0.000004 | Diff <2x LOR | ---- |
| | | Iron, dissolved | 7439-89-6 | E421 | 0.010 | mg/L | 0.020 | 0.021 | 0.0004 | 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 | 0.0068 | 0.0067 | 0.0002 | Diff <2x LOR | ---- |
| | | Magnesium, dissolved | 7439-95-4 | E421 | 0.0050 | mg/L | 17.0 | 16.6 | 2.19% | 20% | ---- |
| | | Manganese, dissolved | 7439-96-5 | E421 | 0.00010 | mg/L | 0.0612 | 0.0616 | 0.545% | 20% | ---- |
| | | Molybdenum, dissolved | 7439-98-7 | E421 | 0.000050 | mg/L | 0.000338 | 0.000355 | 0.000017 | Diff <2x LOR | ---- |
| | | Nickel, dissolved | 7440-02-0 | E421 | 0.00050 | mg/L | 0.00582 | 0.00572 | 1.76% | 20% | ---- |
| | | Phosphorus, dissolved | 7723-14-0 | E421 | 0.050 | mg/L | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Potassium, dissolved | 7440-09-7 | E421 | 0.050 | mg/L | 1.10 | 1.08 | 1.75% | 20% | ---- |
| | | Rubidium, dissolved | 7440-17-7 | E421 | 0.00020 | mg/L | 0.00099 | 0.00110 | 0.00010 | Diff <2x LOR | ---- |
| | | Selenium, dissolved | 7782-49-2 | E421 | 0.000050 | mg/L | 0.000255 | 0.000259 | 0.000004 | Diff <2x LOR | ---- |
| | | Silicon, dissolved | 7440-21-3 | E421 | 0.050 | mg/L | 4.40 | 4.54 | 3.20% | 20% | ---- |
| | | Silver, dissolved | 7440-22-4 | E421 | 0.000010 | mg/L | 0.000148 | 0.000149 | 0.489% | 20% | ---- |
| | | Sodium, dissolved | 7440-23-5 | E421 | 0.050 | mg/L | 2.19 | 2.11 | 3.52% | 20% | ---- |
| | | Strontium, dissolved | 7440-24-6 | E421 | 0.00020 | mg/L | 0.224 | 0.222 | 0.950% | 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: 1769152) - continued** | | | | | | | | | | | |
| VA24D0839-001 | Anonymous | Sulfur, dissolved | 7704-34-9 | E421 | 0.50 | mg/L | 24.3 | 24.6 | 1.33% | 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 | 0.00150 | 0.00150 | 0.00334% | 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 | 0.0019 | 0.0019 | 0.00003 | 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: 1773786)** | | | | | | | | | | | |
| VA24D0937-007 | Anonymous | Mercury, dissolved | 7439-97-6 | E509 | 0.0000050 | mg/L | 0.0000933 | 0.0000934 | 0.0857% | 20% | ---- |
| **Speciated Metals (QC Lot: 1772939)** | | | | | | | | | | | |
| VA24D0876-001 | 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: 1770240)** | | | | | | |
| Alkalinity, total (as CaCO3) | ---- | E290 | 1 | mg/L | <1.0 | ---- |
| **Physical Tests (QCLot: 1776522)** | | | | | | |
| Solids, total suspended [TSS] | ---- | E160 | 3 | mg/L | <3.0 | ---- |
| **Physical Tests (QCLot: 1776531)** | | | | | | |
| Solids, total dissolved [TDS] | ---- | E162 | 10 | mg/L | <10 | ---- |
| **Anions and Nutrients (QCLot: 1770122)** | | | | | | |
| Nitrogen, total | 7727-37-9 | E366 | 0.03 | mg/L | <0.030 | ---- |
| **Anions and Nutrients (QCLot: 1770123)** | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298 | 0.005 | mg/L | <0.0050 | ---- |
| **Anions and Nutrients (QCLot: 1770128)** | | | | | | |
| Phosphorus, total | 7723-14-0 | E372-U | 0.002 | mg/L | <0.0020 | ---- |
| **Anions and Nutrients (QCLot: 1770244)** | | | | | | |
| Fluoride | 16984-48-8 | E235.F | 0.02 | mg/L | <0.020 | ---- |
| **Anions and Nutrients (QCLot: 1770245)** | | | | | | |
| Chloride | 16887-00-6 | E235.Cl | 0.5 | mg/L | <0.50 | ---- |
| **Anions and Nutrients (QCLot: 1770246)** | | | | | | |
| Bromide | 24959-67-9 | E235.Br-L | 0.05 | mg/L | <0.050 | ---- |
| **Anions and Nutrients (QCLot: 1770247)** | | | | | | |
| Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.005 | mg/L | <0.0050 | ---- |
| **Anions and Nutrients (QCLot: 1770248)** | | | | | | |
| Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.001 | mg/L | <0.0010 | ---- |
| **Anions and Nutrients (QCLot: 1770249)** | | | | | | |
| Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.3 | mg/L | <0.30 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1770127)** | | | | | | |
| Carbon, dissolved organic [DOC] | ---- | E358-L | 0.5 | mg/L | <0.50 | ---- |
| **Total Sulfides (QCLot: 1773301)** | | | | | | |
| Sulfide, total (as S) | 18496-25-8 | E395 | 0.0015 | mg/L | <0.0015 | ---- |
| **Total Metals (QCLot: 1769136)** | | | | | | |
| 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: 1769136) - 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: 1775065)** | | | | | | |
| Mercury, total | 7439-97-6 | E508 | 0.000005 | mg/L | <0.0000050 | ---- |
| **Dissolved Metals (QCLot: 1769152)** | | | | | | |
| 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: 1769152) - 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: 1773786)** | | | | | | |
| Mercury, dissolved | 7439-97-6 | E509 | 0.000005 | mg/L | <0.0000050 | ---- |
| **Speciated Metals (QCLot: 1772939)** | | | | | | |
| 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: 1770240)** | | | | | | | | | |
| Alkalinity, total (as CaCO3) | ---- | E290 | 1 | mg/L | 500 mg/L | 104 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1776522)** | | | | | | | | | |
| Solids, total suspended [TSS] | ---- | E160 | 3 | mg/L | 150 mg/L | 106 | 85.0 | 115 | ---- |
| **Physical Tests (QCLot: 1776531)** | | | | | | | | | |
| Solids, total dissolved [TDS] | ---- | E162 | 10 | mg/L | 1000 mg/L | 105 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1770122)** | | | | | | | | | |
| Nitrogen, total | 7727-37-9 | E366 | 0.03 | mg/L | 0.5 mg/L | 99.2 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1770123)** | | | | | | | | | |
| Ammonia, total (as N) | 7664-41-7 | E298 | 0.005 | mg/L | 0.2 mg/L | 101 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1770128)** | | | | | | | | | |
| Phosphorus, total | 7723-14-0 | E372-U | 0.002 | mg/L | 0.05 mg/L | 93.2 | 80.0 | 120 | ---- |
| **Anions and Nutrients (QCLot: 1770244)** | | | | | | | | | |
| Fluoride | 16984-48-8 | E235.F | 0.02 | mg/L | 1 mg/L | 98.1 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1770245)** | | | | | | | | | |
| Chloride | 16887-00-6 | E235.Cl | 0.5 | mg/L | 100 mg/L | 99.1 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1770246)** | | | | | | | | | |
| Bromide | 24959-67-9 | E235.Br-L | 0.05 | mg/L | 0.5 mg/L | 102 | 85.0 | 115 | ---- |
| **Anions and Nutrients (QCLot: 1770247)** | | | | | | | | | |
| Nitrate (as N) | 14797-55-8 | E235.NO3-L | 0.005 | mg/L | 2.5 mg/L | 98.5 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1770248)** | | | | | | | | | |
| Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.001 | mg/L | 0.5 mg/L | 97.7 | 90.0 | 110 | ---- |
| **Anions and Nutrients (QCLot: 1770249)** | | | | | | | | | |
| Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 0.3 | mg/L | 100 mg/L | 99.8 | 90.0 | 110 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1770127)** | | | | | | | | | |
| Carbon, dissolved organic [DOC] | ---- | E358-L | 0.5 | mg/L | 8.57 mg/L | 101 | 80.0 | 120 | ---- |
| **Total Sulfides (QCLot: 1773301)** | | | | | | | | | |
| Sulfide, total (as S) | 18496-25-8 | E395 | 0.0015 | mg/L | 0.08 mg/L | 95.9 | 80.0 | 120 | ---- |
| **Total Metals (QCLot: 1769136)** | | | | | | | | | |

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: 1769136) - continued** | | | | | | | | | |
| Aluminum, total | 7429-90-5 | E420 | 0.003 | mg/L | 2 mg/L | 101 | 80.0 | 120 | ---- |
| Antimony, total | 7440-36-0 | E420 | 0.0001 | mg/L | 1 mg/L | 107 | 80.0 | 120 | ---- |
| Arsenic, total | 7440-38-2 | E420 | 0.0001 | mg/L | 1 mg/L | 108 | 80.0 | 120 | ---- |
| Barium, total | 7440-39-3 | E420 | 0.0001 | mg/L | 0.25 mg/L | 99.4 | 80.0 | 120 | ---- |
| Beryllium, total | 7440-41-7 | E420 | 0.00002 | mg/L | 0.1 mg/L | 97.4 | 80.0 | 120 | ---- |
| Bismuth, total | 7440-69-9 | E420 | 0.00005 | mg/L | 1 mg/L | 97.2 | 80.0 | 120 | ---- |
| Boron, total | 7440-42-8 | E420 | 0.01 | mg/L | 1 mg/L | 93.7 | 80.0 | 120 | ---- |
| Cadmium, total | 7440-43-9 | E420 | 0.000005 | mg/L | 0.1 mg/L | 104 | 80.0 | 120 | ---- |
| Calcium, total | 7440-70-2 | E420 | 0.05 | mg/L | 50 mg/L | 96.5 | 80.0 | 120 | ---- |
| Cesium, total | 7440-46-2 | E420 | 0.00001 | mg/L | 0.05 mg/L | 104 | 80.0 | 120 | ---- |
| Chromium, total | 7440-47-3 | E420 | 0.0005 | mg/L | 0.25 mg/L | 103 | 80.0 | 120 | ---- |
| Cobalt, total | 7440-48-4 | E420 | 0.0001 | mg/L | 0.25 mg/L | 100 | 80.0 | 120 | ---- |
| Copper, total | 7440-50-8 | E420 | 0.0005 | mg/L | 0.25 mg/L | 99.0 | 80.0 | 120 | ---- |
| Iron, total | 7439-89-6 | E420 | 0.01 | mg/L | 1 mg/L | 100 | 80.0 | 120 | ---- |
| Lead, total | 7439-92-1 | E420 | 0.00005 | mg/L | 0.5 mg/L | 102 | 80.0 | 120 | ---- |
| Lithium, total | 7439-93-2 | E420 | 0.001 | mg/L | 0.25 mg/L | 96.9 | 80.0 | 120 | ---- |
| Magnesium, total | 7439-95-4 | E420 | 0.005 | mg/L | 50 mg/L | 96.7 | 80.0 | 120 | ---- |
| Manganese, total | 7439-96-5 | E420 | 0.0001 | mg/L | 0.25 mg/L | 104 | 80.0 | 120 | ---- |
| Molybdenum, total | 7439-98-7 | E420 | 0.00005 | mg/L | 0.25 mg/L | 103 | 80.0 | 120 | ---- |
| Nickel, total | 7440-02-0 | E420 | 0.0005 | mg/L | 0.5 mg/L | 102 | 80.0 | 120 | ---- |
| Phosphorus, total | 7723-14-0 | E420 | 0.05 | mg/L | 10 mg/L | 111 | 80.0 | 120 | ---- |
| Potassium, total | 7440-09-7 | E420 | 0.05 | mg/L | 50 mg/L | 107 | 80.0 | 120 | ---- |
| Rubidium, total | 7440-17-7 | E420 | 0.0002 | mg/L | 0.1 mg/L | 105 | 80.0 | 120 | ---- |
| Selenium, total | 7782-49-2 | E420 | 0.00005 | mg/L | 1 mg/L | 105 | 80.0 | 120 | ---- |
| Silicon, total | 7440-21-3 | E420 | 0.1 | mg/L | 10 mg/L | 103 | 80.0 | 120 | ---- |
| Silver, total | 7440-22-4 | E420 | 0.00001 | mg/L | 0.1 mg/L | 99.0 | 80.0 | 120 | ---- |
| Sodium, total | 7440-23-5 | E420 | 0.05 | mg/L | 50 mg/L | 106 | 80.0 | 120 | ---- |
| Strontium, total | 7440-24-6 | E420 | 0.0002 | mg/L | 0.25 mg/L | 104 | 80.0 | 120 | ---- |
| Sulfur, total | 7704-34-9 | E420 | 0.5 | mg/L | 50 mg/L | 96.8 | 80.0 | 120 | ---- |
| Tellurium, total | 13494-80-9 | E420 | 0.0002 | mg/L | 0.1 mg/L | 100 | 80.0 | 120 | ---- |
| Thallium, total | 7440-28-0 | E420 | 0.00001 | mg/L | 1 mg/L | 101 | 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 | 97.1 | 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 | 104 | 80.0 | 120 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| | | | | | Target Concentration | LCS | Low | High | Qualifier |
| **Total Metals (QCLot: 1769136) - 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 | 103 | 80.0 | 120 | ---- |
| Zirconium, total | 7440-67-7 | E420 | 0.0002 | mg/L | 0.1 mg/L | 102 | 80.0 | 120 | ---- |
| **Total Metals (QCLot: 1775065)** | | | | | | | | | |
| Mercury, total | 7439-97-6 | E508 | 0.000005 | mg/L | 0 mg/L | 96.6 | 80.0 | 120 | ---- |
| **Dissolved Metals (QCLot: 1769152)** | | | | | | | | | |
| Aluminum, dissolved | 7429-90-5 | E421 | 0.001 | mg/L | 2 mg/L | 98.5 | 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 | 103 | 80.0 | 120 | ---- |
| Barium, dissolved | 7440-39-3 | E421 | 0.0001 | mg/L | 0.25 mg/L | 96.8 | 80.0 | 120 | ---- |
| Beryllium, dissolved | 7440-41-7 | E421 | 0.00002 | mg/L | 0.1 mg/L | 105 | 80.0 | 120 | ---- |
| Bismuth, dissolved | 7440-69-9 | E421 | 0.00005 | mg/L | 1 mg/L | 97.6 | 80.0 | 120 | ---- |
| Boron, dissolved | 7440-42-8 | E421 | 0.01 | mg/L | 1 mg/L | 87.1 | 80.0 | 120 | ---- |
| Cadmium, dissolved | 7440-43-9 | E421 | 0.000005 | mg/L | 0.1 mg/L | 91.2 | 80.0 | 120 | ---- |
| Calcium, dissolved | 7440-70-2 | E421 | 0.05 | mg/L | 50 mg/L | 101 | 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 | 98.7 | 80.0 | 120 | ---- |
| Cobalt, dissolved | 7440-48-4 | E421 | 0.0001 | mg/L | 0.25 mg/L | 96.0 | 80.0 | 120 | ---- |
| Copper, dissolved | 7440-50-8 | E421 | 0.0002 | mg/L | 0.25 mg/L | 95.2 | 80.0 | 120 | ---- |
| Iron, dissolved | 7439-89-6 | E421 | 0.01 | mg/L | 1 mg/L | 91.2 | 80.0 | 120 | ---- |
| Lead, dissolved | 7439-92-1 | E421 | 0.00005 | mg/L | 0.5 mg/L | 100 | 80.0 | 120 | ---- |
| Lithium, dissolved | 7439-93-2 | E421 | 0.001 | mg/L | 0.25 mg/L | 103 | 80.0 | 120 | ---- |
| Magnesium, dissolved | 7439-95-4 | E421 | 0.005 | mg/L | 50 mg/L | 106 | 80.0 | 120 | ---- |
| Manganese, dissolved | 7439-96-5 | E421 | 0.0001 | mg/L | 0.25 mg/L | 99.7 | 80.0 | 120 | ---- |
| Molybdenum, dissolved | 7439-98-7 | E421 | 0.00005 | mg/L | 0.25 mg/L | 102 | 80.0 | 120 | ---- |
| Nickel, dissolved | 7440-02-0 | E421 | 0.0005 | mg/L | 0.5 mg/L | 97.8 | 80.0 | 120 | ---- |
| Phosphorus, dissolved | 7723-14-0 | E421 | 0.05 | mg/L | 10 mg/L | 104 | 80.0 | 120 | ---- |
| Potassium, dissolved | 7440-09-7 | E421 | 0.05 | mg/L | 50 mg/L | 98.6 | 80.0 | 120 | ---- |
| Rubidium, dissolved | 7440-17-7 | E421 | 0.0002 | mg/L | 0.1 mg/L | 105 | 80.0 | 120 | ---- |
| Selenium, dissolved | 7782-49-2 | E421 | 0.00005 | mg/L | 1 mg/L | 93.6 | 80.0 | 120 | ---- |
| Silicon, dissolved | 7440-21-3 | E421 | 0.05 | mg/L | 10 mg/L | 97.1 | 80.0 | 120 | ---- |
| Silver, dissolved | 7440-22-4 | E421 | 0.00001 | mg/L | 0.1 mg/L | 97.0 | 80.0 | 120 | ---- |
| Sodium, dissolved | 7440-23-5 | E421 | 0.05 | mg/L | 50 mg/L | 100 | 80.0 | 120 | ---- |
| Strontium, dissolved | 7440-24-6 | E421 | 0.0002 | mg/L | 0.25 mg/L | 102 | 80.0 | 120 | ---- |
| Sulfur, dissolved | 7704-34-9 | E421 | 0.5 | mg/L | 50 mg/L | 95.5 | 80.0 | 120 | ---- |

Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Laboratory Control Sample (LCS) Report | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| | | | | | Target Concentration | LCS | Low | High | Qualifier |
| **Dissolved Metals (QCLot: 1769152) - 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 | 99.2 | 80.0 | 120 | ---- |
| Thorium, dissolved | 7440-29-1 | E421 | 0.0001 | mg/L | 0.1 mg/L | 97.8 | 80.0 | 120 | ---- |
| Tin, dissolved | 7440-31-5 | E421 | 0.0001 | mg/L | 0.5 mg/L | 95.3 | 80.0 | 120 | ---- |
| Titanium, dissolved | 7440-32-6 | E421 | 0.0003 | mg/L | 0.25 mg/L | 95.2 | 80.0 | 120 | ---- |
| Tungsten, dissolved | 7440-33-7 | E421 | 0.0001 | mg/L | 0.1 mg/L | 101 | 80.0 | 120 | ---- |
| Uranium, dissolved | 7440-61-1 | E421 | 0.00001 | mg/L | 0.005 mg/L | 98.5 | 80.0 | 120 | ---- |
| Vanadium, dissolved | 7440-62-2 | E421 | 0.0005 | mg/L | 0.5 mg/L | 101 | 80.0 | 120 | ---- |
| Zinc, dissolved | 7440-66-6 | E421 | 0.001 | mg/L | 0.5 mg/L | 96.5 | 80.0 | 120 | ---- |
| Zirconium, dissolved | 7440-67-7 | E421 | 0.0002 | mg/L | 0.1 mg/L | 98.9 | 80.0 | 120 | ---- |
| Mercury, dissolved | 7439-97-6 | E509 | 0.000005 | mg/L | 0 mg/L | 95.6 | 80.0 | 120 | ---- |
| **Speciated Metals (QCLot: 1772939)** | | | | | | | | | |
| Chromium, hexavalent [Cr VI], total | 18540-29-9 | E532 | 0.0005 | mg/L | 0.025 mg/L | 98.2 | 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: 1770122)** | | | | | | | | | | |
| KS2404795-001 | Anonymous | Nitrogen, total | 7727-37-9 | E366 | 0.424 mg/L | 0.4 mg/L | 106 | 70.0 | 130 | ---- |
| **Anions and Nutrients (QCLot: 1770123)** | | | | | | | | | | |
| KS2404795-001 | Anonymous | Ammonia, total (as N) | 7664-41-7 | E298 | 0.0982 mg/L | 0.1 mg/L | 98.2 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1770128)** | | | | | | | | | | |
| VA24D0988-002 | EAS DS 1 | Phosphorus, total | 7723-14-0 | E372-U | 0.0472 mg/L | 0.05 mg/L | 94.3 | 70.0 | 130 | ---- |
| **Anions and Nutrients (QCLot: 1770244)** | | | | | | | | | | |
| VA24D0988-002 | EAS DS 1 | Fluoride | 16984-48-8 | E235.F | 1.02 mg/L | 1 mg/L | 102 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1770245)** | | | | | | | | | | |
| VA24D0988-002 | EAS DS 1 | Chloride | 16887-00-6 | E235.Cl | 102 mg/L | 100 mg/L | 102 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1770246)** | | | | | | | | | | |
| VA24D0988-002 | EAS DS 1 | Bromide | 24959-67-9 | E235.Br-L | 0.527 mg/L | 0.5 mg/L | 105 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1770247)** | | | | | | | | | | |
| VA24D0988-002 | EAS DS 1 | Nitrate (as N) | 14797-55-8 | E235.NO3-L | 2.54 mg/L | 2.5 mg/L | 102 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1770248)** | | | | | | | | | | |
| VA24D0988-002 | EAS DS 1 | Nitrite (as N) | 14797-65-0 | E235.NO2-L | 0.502 mg/L | 0.5 mg/L | 100 | 75.0 | 125 | ---- |
| **Anions and Nutrients (QCLot: 1770249)** | | | | | | | | | | |
| VA24D0988-002 | EAS DS 1 | Sulfate (as SO4) | 14808-79-8 | E235.SO4 | 103 mg/L | 100 mg/L | 103 | 75.0 | 125 | ---- |
| **Organic / Inorganic Carbon (QCLot: 1770127)** | | | | | | | | | | |
| KS2404795-001 | Anonymous | Carbon, dissolved organic [DOC] | ---- | E358-L | 5.11 mg/L | 5 mg/L | 102 | 70.0 | 130 | ---- |
| **Total Sulfides (QCLot: 1773301)** | | | | | | | | | | |
| FJ2403496-002 | Anonymous | Sulfide, total (as S) | 18496-25-8 | E395 | 0.207 mg/L | 0.2 mg/L | 104 | 75.0 | 125 | ---- |
| **Total Metals (QCLot: 1769136)** | | | | | | | | | | |
| VA24D0831-002 | Anonymous | Aluminum, total | 7429-90-5 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Antimony, total | 7440-36-0 | E420 | 0.0197 mg/L | 0.02 mg/L | 98.3 | 70.0 | 130 | ---- |
| | | Arsenic, total | 7440-38-2 | E420 | 0.0203 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 | 0.0378 mg/L | 0.04 mg/L | 94.6 | 70.0 | 130 | ---- |
| | | Bismuth, total | 7440-69-9 | E420 | 0.00946 mg/L | 0.01 mg/L | 94.6 | 70.0 | 130 | ---- |
| | | Boron, total | 7440-42-8 | E420 | 0.095 mg/L | 0.1 mg/L | 94.9 | 70.0 | 130 | ---- |
| | | Cadmium, total | 7440-43-9 | E420 | 0.00389 mg/L | 0.004 mg/L | 97.2 | 70.0 | 130 | ---- |
| | | Calcium, total | 7440-70-2 | E420 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Cesium, total | 7440-46-2 | E420 | 0.0101 mg/L | 0.01 mg/L | 101 | 70.0 | 130 | ---- |
| | | Chromium, total | 7440-47-3 | E420 | 0.0394 mg/L | 0.04 mg/L | 98.5 | 70.0 | 130 | ---- |

Sub-Matrix: **Water**

| | | | | | Matrix Spike (MS) Report | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Spike | | Recovery (%) | Recovery Limits (%) | | |
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | Concentration | Target | MS | Low | High | Qualifier |
| **Total Metals (QCLot: 1769136) - continued** | | | | | | | | | | |
| VA24D0831-002 | Anonymous | Cobalt, total | 7440-48-4 | E420 | 0.0194 mg/L | 0.02 mg/L | 97.2 | 70.0 | 130 | ---- |
| | | Copper, total | 7440-50-8 | E420 | 0.0187 mg/L | 0.02 mg/L | 93.6 | 70.0 | 130 | ---- |
| | | Iron, total | 7439-89-6 | E420 | 1.74 mg/L | 2 mg/L | 87.3 | 70.0 | 130 | ---- |
| | | Lead, total | 7439-92-1 | E420 | 0.0191 mg/L | 0.02 mg/L | 95.6 | 70.0 | 130 | ---- |
| | | Lithium, total | 7439-93-2 | E420 | 0.0960 mg/L | 0.1 mg/L | 96.0 | 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 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Nickel, total | 7440-02-0 | E420 | 0.0388 mg/L | 0.04 mg/L | 97.0 | 70.0 | 130 | ---- |
| | | Phosphorus, total | 7723-14-0 | E420 | 10.8 mg/L | 10 mg/L | 108 | 70.0 | 130 | ---- |
| | | Potassium, total | 7440-09-7 | E420 | 4.04 mg/L | 4 mg/L | 101 | 70.0 | 130 | ---- |
| | | Rubidium, total | 7440-17-7 | E420 | 0.0200 mg/L | 0.02 mg/L | 99.9 | 70.0 | 130 | ---- |
| | | Selenium, total | 7782-49-2 | E420 | 0.0377 mg/L | 0.04 mg/L | 94.3 | 70.0 | 130 | ---- |
| | | Silicon, total | 7440-21-3 | E420 | 9.22 mg/L | 10 mg/L | 92.2 | 70.0 | 130 | ---- |
| | | Silver, total | 7440-22-4 | E420 | 0.00397 mg/L | 0.004 mg/L | 99.3 | 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 | 0.0386 mg/L | 0.04 mg/L | 96.6 | 70.0 | 130 | ---- |
| | | Thallium, total | 7440-28-0 | E420 | 0.00383 mg/L | 0.004 mg/L | 95.7 | 70.0 | 130 | ---- |
| | | Thorium, total | 7440-29-1 | E420 | 0.0193 mg/L | 0.02 mg/L | 96.7 | 70.0 | 130 | ---- |
| | | Tin, total | 7440-31-5 | E420 | 0.0202 mg/L | 0.02 mg/L | 101 | 70.0 | 130 | ---- |
| | | Titanium, total | 7440-32-6 | E420 | 0.0390 mg/L | 0.04 mg/L | 97.4 | 70.0 | 130 | ---- |
| | | Tungsten, total | 7440-33-7 | E420 | 0.0192 mg/L | 0.02 mg/L | 95.9 | 70.0 | 130 | ---- |
| | | Uranium, total | 7440-61-1 | E420 | 0.00396 mg/L | 0.004 mg/L | 99.0 | 70.0 | 130 | ---- |
| | | Vanadium, total | 7440-62-2 | E420 | 0.0987 mg/L | 0.1 mg/L | 98.7 | 70.0 | 130 | ---- |
| | | Zinc, total | 7440-66-6 | E420 | 0.380 mg/L | 0.4 mg/L | 94.9 | 70.0 | 130 | ---- |
| | | Zirconium, total | 7440-67-7 | E420 | 0.0413 mg/L | 0.04 mg/L | 103 | 70.0 | 130 | ---- |
| **Total Metals (QCLot: 1775065)** | | | | | | | | | | |
| VA24D0972-018 | Anonymous | Mercury, total | 7439-97-6 | E508 | 0.0000908 mg/L | 0 mg/L | 90.8 | 70.0 | 130 | ---- |
| **Dissolved Metals (QCLot: 1769152)** | | | | | | | | | | |
| VA24D0848-001 | Anonymous | Aluminum, dissolved | 7429-90-5 | E421 | 0.191 mg/L | 0.2 mg/L | 95.5 | 70.0 | 130 | ---- |
| | | Antimony, dissolved | 7440-36-0 | E421 | 0.0192 mg/L | 0.02 mg/L | 96.0 | 70.0 | 130 | ---- |
| | | Arsenic, dissolved | 7440-38-2 | E421 | 0.0194 mg/L | 0.02 mg/L | 97.2 | 70.0 | 130 | ---- |
| | | Barium, dissolved | 7440-39-3 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Beryllium, dissolved | 7440-41-7 | E421 | 0.0418 mg/L | 0.04 mg/L | 104 | 70.0 | 130 | ---- |
| | | Bismuth, dissolved | 7440-69-9 | E421 | 0.00891 mg/L | 0.01 mg/L | 89.1 | 70.0 | 130 | ---- |
| | | Boron, dissolved | 7440-42-8 | E421 | 0.092 mg/L | 0.1 mg/L | 92.4 | 70.0 | 130 | ---- |
| | | Cadmium, dissolved | 7440-43-9 | E421 | 0.00360 mg/L | 0.004 mg/L | 90.1 | 70.0 | 130 | ---- |
| | | Calcium, dissolved | 7440-70-2 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Cesium, dissolved | 7440-46-2 | E421 | 0.00964 mg/L | 0.01 mg/L | 96.4 | 70.0 | 130 | ---- |
| | | Chromium, dissolved | 7440-47-3 | E421 | 0.0368 mg/L | 0.04 mg/L | 92.0 | 70.0 | 130 | ---- |
| | | Cobalt, dissolved | 7440-48-4 | E421 | 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 |
| **Dissolved Metals (QCLot: 1769152) - continued** | | | | | | | | | | |
| VA24D0848-001 | Anonymous | Copper, dissolved | 7440-50-8 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Iron, dissolved | 7439-89-6 | E421 | 1.82 mg/L | 2 mg/L | 90.8 | 70.0 | 130 | ---- |
| | | Lead, dissolved | 7439-92-1 | E421 | 0.0188 mg/L | 0.02 mg/L | 94.2 | 70.0 | 130 | ---- |
| | | Lithium, dissolved | 7439-93-2 | E421 | 0.104 mg/L | 0.1 mg/L | 104 | 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 | 0.0200 mg/L | 0.02 mg/L | 99.9 | 70.0 | 130 | ---- |
| | | Nickel, dissolved | 7440-02-0 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Phosphorus, dissolved | 7723-14-0 | E421 | 9.58 mg/L | 10 mg/L | 95.8 | 70.0 | 130 | ---- |
| | | Potassium, dissolved | 7440-09-7 | E421 | 3.85 mg/L | 4 mg/L | 96.2 | 70.0 | 130 | ---- |
| | | Rubidium, dissolved | 7440-17-7 | E421 | 0.0190 mg/L | 0.02 mg/L | 95.1 | 70.0 | 130 | ---- |
| | | Selenium, dissolved | 7782-49-2 | E421 | 0.0361 mg/L | 0.04 mg/L | 90.3 | 70.0 | 130 | ---- |
| | | Silicon, dissolved | 7440-21-3 | E421 | 9.15 mg/L | 10 mg/L | 91.5 | 70.0 | 130 | ---- |
| | | Silver, dissolved | 7440-22-4 | E421 | ND mg/L | ---- | ND | 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 | 0.0380 mg/L | 0.04 mg/L | 95.1 | 70.0 | 130 | ---- |
| | | Thallium, dissolved | 7440-28-0 | E421 | 0.00366 mg/L | 0.004 mg/L | 91.6 | 70.0 | 130 | ---- |
| | | Thorium, dissolved | 7440-29-1 | E421 | 0.0187 mg/L | 0.02 mg/L | 93.6 | 70.0 | 130 | ---- |
| | | Tin, dissolved | 7440-31-5 | E421 | 0.0186 mg/L | 0.02 mg/L | 93.0 | 70.0 | 130 | ---- |
| | | Titanium, dissolved | 7440-32-6 | E421 | 0.0363 mg/L | 0.04 mg/L | 90.7 | 70.0 | 130 | ---- |
| | | Tungsten, dissolved | 7440-33-7 | E421 | 0.0196 mg/L | 0.02 mg/L | 98.0 | 70.0 | 130 | ---- |
| | | Uranium, dissolved | 7440-61-1 | E421 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| | | Vanadium, dissolved | 7440-62-2 | E421 | 0.0944 mg/L | 0.1 mg/L | 94.4 | 70.0 | 130 | ---- |
| | | Zinc, dissolved | 7440-66-6 | E421 | 0.352 mg/L | 0.4 mg/L | 88.1 | 70.0 | 130 | ---- |
| | | Zirconium, dissolved | 7440-67-7 | E421 | 0.0386 mg/L | 0.04 mg/L | 96.5 | 70.0 | 130 | ---- |
| **Dissolved Metals (QCLot: 1773786)** | | | | | | | | | | |
| VA24D0937-008 | Anonymous | Mercury, dissolved | 7439-97-6 | E509 | ND mg/L | ---- | ND | 70.0 | 130 | ---- |
| **Speciated Metals (QCLot: 1772939)** | | | | | | | | | | |
| VA24D0876-001 | Anonymous | Chromium, hexavalent [Cr VI], total | 18540-29-9 | E532 | 0.0404 mg/L | 0.04 mg/L | 101 | 70.0 | 130 | ---- |

# Chain of Custody (COC) / Analytical Request Form

ALS Environmental
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**Affix ALS barcode label here** (lab use only)

COC Number: 17
Page

Environmental Division Vancouver
Work Order Reference
VA24D0988

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

**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 env.com
Email 3

**Invoice Distribution**

Select Invoice Distribution: ☑ EMAIL ☑ MAIL ☑ FAX
Email 1 or
Email 2

**Project Information**

| | |
|---|---|
| ALS Account # / Quote #: | VA23-TRIT100-012 |
| Job #: | 11964 |
| PO / AFE: | 11964 - Task 20 - Phase 3C-4C |
| LSD: | |

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

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

ALS Lab Work Order # (lab use only): D0988
ALS Contact: Sampler: FS + AR

**Select Service Level Below - Contact your AM to c**

Regular [R] ☑ Standard TAT if received by 3 pr

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

Date and Time Required for all E&P TATs:
For tests that can not be performed according to the service level sel

**Analysis**

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 (low) (as H2S), Unionized Sulfide (low) | Anions scan (Br, Cl, F, NO2, NO3, SO4) | General parameters (alkalinity) | DOC | | | | | SAMPLES ON HOLD | Sample is hazardous (please provide further de | NUMBER OF CONTAINERS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | F | | | | | P | P | | | F/P | | | | | | | |
| | ~~WEMS~~ US 1 | 14-Nov-24 | 11:55 | Water | R | R | R | R | R | R | R | R | R | R | R | | | | | - | N | 9 |
| | pH: 7.34 cond: 27 ms temp: 8.9°C | | ↓ | | | | | | | | | | | | | | | | | | | |
| EAS | ~~WEMS~~ DS 1 | | 11:20 | Water | R | R | R | R | R | R | R | R | R | R | R | | | | | | N | 9 |
| | pH: 7.38 cond: 30 ms temp: 9.1°C | ↓ | ↓ | | | | | | | | | | | | | | | | | | | |

**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 | | | |
|---|---|---|---|---|---|---|---|
| | | | | 7.8°C | | | |

**SHIPMENT RELEASE (client use)**

| Released by: | | Time: |
|---|---|---|
| | Nov 14 2024 | 16:55 |

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

| Received by: | Date: | Time: |
|---|---|---|
| | | |

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

| Received by: | Date: | Time: |
|---|---|---|
| SM | 14/11/24 | 5PM |

REFER TO BACK PAGE FOR ALS LOCATIONS 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

2024-11-14-Rysdale-07A5C

| | | | |
|---|---|---|---|
| **Project Component:** | Tunnel | **Site Name:** | Receiving Environment - Downstream of Discharge |
| **Inspection Date:** | 11/14/2024 | **Location:** | WLNG |
| **Triton QP:** | Aaron Rysdale | **Latitude/Longitude:** | 49.669221 -129.249163 |
| **Temperature(c):** | Low 8 High 14 | **Permit:** | PE 110136 |
| **Weather Conditions:** | Overcast | **Ground Conditions:** | Wet |

### Observations

**Time:** 11:20:00 **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:** | |
| **Dissolved Metals + Mercury** | Yes | **Total Sulfide, Unionized Sulfide** | Yes | | |
| **TSS** | Yes | **Anions** | Yes | | |
| **TDS** | Yes | **Total Trivalent Chromium** | Yes | **QA Samples:** | Yes |
| **Nutrients** | Yes | **VOC/VPH** | No | | |
| **DOC** | Yes | **EPH, PAH, LEPH/HEPH** | No | | |
| | | **Trout LC50** | No | | |

### Logger Maintenance

| | | | |
|---|---|---|---|
| **Logger Maintenance Performed?** | No | **Photo of COC with Lab Signature?** | Yes |

**Describe Logger Maintenance**

## Photos

**Photo:** 1

**Location:** EAS DS1

**Description:** Facing downstream

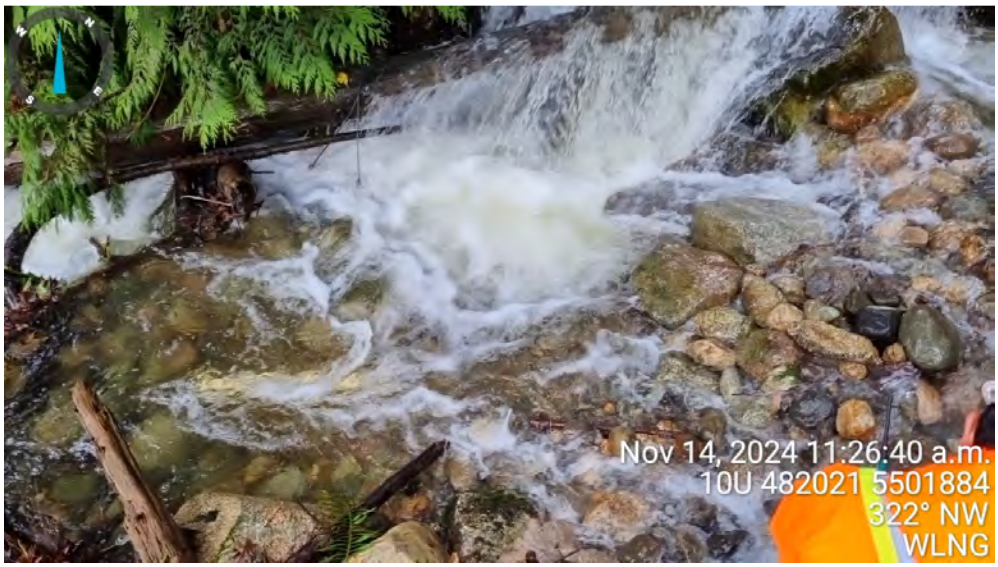


**Photo:** 2

**Location:** EAS DS1

**Description:** Sampling point

## Photos

**Photo:** 3

**Location:** EAS DS1

**Description:** Facing upstream

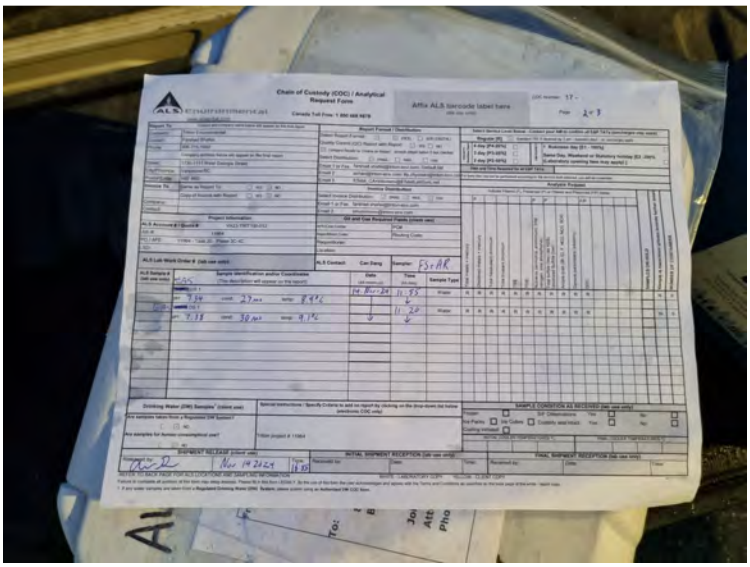

**Photo:** 4

**Location:**

**Description:** Lab COC

## Sign Off

| | | | |
|---|---|---|---|
| **Report Prepared By:** | Aaron Rysdale | **Report Reviewed:** | Yes |
| **Report Reviewer:** | | **Professional(s) of Record:** | |
| **Name:** | | | |
| **Designation:** | | | |
| **Designation Number:** | | | |

# FortisBC Eagle Mountain-Woodfibre Gas Pipeline

## Water Discharge Authorization Water Quality Monitoring

2024-11-14-Rysdale-825C5

| | | | |
|---|---|---|---|
| **Project Component:** | Tunnel | **Site Name:** | Receiving Environment - Upstream of Discharge |
| **Inspection Date:** | 11/14/2024 | **Location:** | WLNG |
| **Triton QP:** | Aaron Rysdale | **Latitude/Longitude:** | 49.669455 -123.25087 |
| **Temperature(c):** | Low 8 High 14 | **Permit:** | PE 110136 |
| **Weather Conditions:** | Overcast | **Ground Conditions:** | Wet |

### Observations

**Time:** 11:55:00 **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:** | |
| **Dissolved Metals + Mercury** | Yes | **Total Sulfide, Unionized Sulfide** | Yes | | |
| **TSS** | Yes | **Anions** | Yes | | |
| **TDS** | Yes | **Total Trivalent Chromium** | Yes | **QA Samples:** | Yes |
| **Nutrients** | Yes | **VOC/VPH** | No | | |
| **DOC** | | **EPH, PAH, LEPH/HEPH** | No | | |
| | | **Trout LC50** | No | | |

### Logger Maintenance

| | | | |
|---|---|---|---|
| **Logger Maintenance Performed?** | No | **Photo of COC with Lab Signature?** | Yes |

**Describe Logger Maintenance**

## Photos

**Photo:** 1

**Location:** EAS US1

**Description:** Facing upstream

**Photo:** 2

**Location:** EAS US1

**Description:** Sampling location

## Photos

**Photo:** 3

**Location:** EAS US1

**Description:** Facing downstream

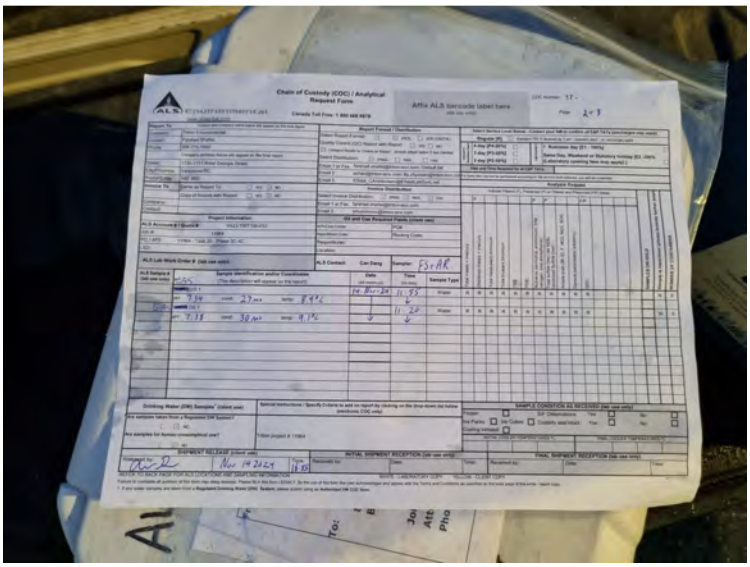

**Photo:** 4

**Location:**

**Description:** Lab COC

## Sign Off

| | | | |
|---|---|---|---|
| **Report Prepared By:** | Aaron Rysdale | **Report Reviewed:** | Yes |
| **Report Reviewer:** | | **Professional(s) of Record:** | |
| **Name:** | | | |
| **Designation:** | | | |
| **Designation Number:** | | | |

| Woodfibre Plant site<br>East Creek (WC 309-R2) | EAS DS1 | | | | | | | EAS US1 (Background) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Temperature (c) | Specific Conductivity (µS/cm) | Salinity PSU | pH | Dissolved Oxygen (mg/L) | Turbidity (NTU) | Date | Temperature (c) | Specific Conductivity (µS/cm) | Salinity PSU | pH | Dissolved Oxygen (mg/L) | Turbidity (NTU) |
| 11/11/2024 0:00 | 9.3 | 83.0 | 0.0 | 7.4 | 10.4 | 10.9 | 11/11/2024 0:00 | 9.2 | 75.7 | | 7.6 | 10.3 | 7.3 |
| 11/11/2024 0:15 | 9.3 | 81.2 | 0.0 | 7.4 | 10.4 | 275.3 | 11/11/2024 0:15 | 9.2 | 74.2 | | 7.6 | 10.3 | 5.1 |
| 11/11/2024 0:30 | 9.3 | 78.7 | 0.0 | 7.4 | 10.4 | 12.2 | 11/11/2024 0:30 | 9.2 | 70.2 | | 7.6 | 10.3 | 12.1 |
| 11/11/2024 0:45 | 9.3 | 75.4 | 0.0 | 7.4 | 10.4 | 12.6 | 11/11/2024 0:45 | 9.2 | 68.3 | | 7.6 | 10.3 | 4.8 |
| 11/11/2024 1:00 | 9.2 | 67.5 | 0.0 | 7.3 | 10.5 | 10.8 | 11/11/2024 1:00 | 9.2 | 66.0 | | 7.6 | 10.3 | 7.3 |
| 11/11/2024 1:15 | 9.2 | 65.1 | 0.0 | 7.2 | 10.4 | 11.4 | 11/11/2024 1:15 | 9.2 | 65.0 | | 7.5 | 10.3 | 5.8 |
| 11/11/2024 1:30 | 9.2 | 62.7 | 0.0 | 7.2 | 10.4 | 11.2 | 11/11/2024 1:30 | 9.2 | 61.5 | | 7.5 | 10.3 | 7.0 |
| 11/11/2024 1:45 | 9.2 | 61.0 | 0.0 | 7.2 | 10.4 | 11.9 | 11/11/2024 1:45 | 9.2 | 61.3 | | 7.5 | 10.3 | 6.0 |
| 11/11/2024 2:00 | 9.2 | 59.3 | 0.0 | 7.2 | 10.4 | 10.4 | 11/11/2024 2:00 | 9.2 | 57.6 | | 7.5 | 10.3 | 9.0 |
| 11/11/2024 2:15 | 9.2 | 58.9 | 0.0 | 7.2 | 10.4 | 13.2 | 11/11/2024 2:15 | 9.2 | 56.9 | | 7.4 | 10.3 | 8.1 |
| 11/11/2024 2:30 | 9.2 | 55.1 | 0.0 | 7.2 | 10.4 | 11.9 | 11/11/2024 2:30 | 9.3 | 53.1 | | 7.4 | 10.3 | 8.7 |
| 11/11/2024 2:45 | 9.3 | 52.3 | 0.0 | 7.1 | 10.4 | 12.5 | 11/11/2024 2:45 | 9.3 | 51.0 | | 7.4 | 10.2 | 6.3 |
| 11/11/2024 3:00 | 9.3 | 54.6 | 0.0 | 7.2 | 10.4 | 12.1 | 11/11/2024 3:00 | 9.3 | 48.2 | | 7.3 | 10.3 | 7.1 |
| 11/11/2024 3:15 | 9.3 | 52.6 | 0.0 | 7.2 | 10.4 | 12.0 | 11/11/2024 3:15 | 9.3 | 47.2 | | 7.4 | 10.2 | 7.7 |
| 11/11/2024 3:30 | 9.3 | 51.1 | 0.0 | 7.2 | 10.4 | 15.5 | 11/11/2024 3:30 | 9.3 | 45.1 | | 7.4 | 10.3 | 6.5 |
| 11/11/2024 3:45 | 9.3 | 49.5 | 0.0 | 7.2 | 10.4 | 16.8 | 11/11/2024 3:45 | 9.3 | 43.6 | | 7.3 | 10.2 | 6.8 |
| 11/11/2024 4:00 | 9.3 | 47.4 | 0.0 | 7.2 | 10.4 | 11.5 | 11/11/2024 4:00 | 9.3 | 40.4 | | 7.2 | 10.2 | 5.6 |
| 11/11/2024 4:15 | 9.4 | 45.2 | 0.0 | 7.2 | 10.4 | 11.8 | 11/11/2024 4:15 | 9.3 | 38.8 | | 7.2 | 10.2 | 4.1 |
| 11/11/2024 4:30 | 9.4 | 43.2 | 0.0 | 7.2 | 10.4 | 8.2 | 11/11/2024 4:30 | 9.3 | 37.0 | | 7.2 | 10.3 | 6.2 |
| 11/11/2024 4:45 | 9.4 | 42.5 | 0.0 | 7.1 | 10.4 | 9.4 | 11/11/2024 4:45 | 9.3 | 37.0 | | 7.2 | 10.2 | 5.1 |
| 11/11/2024 5:00 | 9.4 | 41.8 | 0.0 | 7.1 | 10.4 | 7.2 | 11/11/2024 5:00 | 9.3 | 35.9 | | 7.2 | 10.2 | 4.8 |
| 11/11/2024 5:15 | 9.4 | 41.3 | 0.0 | 7.1 | 10.4 | 9.8 | 11/11/2024 5:15 | 9.3 | 35.9 | | 7.3 | 10.2 | 2.7 |
| 11/11/2024 5:30 | 9.3 | 36.3 | 0.0 | 7.0 | 10.4 | 7.8 | 11/11/2024 5:30 | 9.3 | 34.7 | | 7.2 | 10.2 | 4.4 |
| 11/11/2024 5:45 | 9.3 | 35.5 | 0.0 | 7.0 | 10.4 | 7.4 | 11/11/2024 5:45 | 9.3 | 34.0 | | 7.2 | 10.2 | 3.6 |
| 11/11/2024 6:00 | 9.3 | 34.6 | 0.0 | 7.0 | 10.4 | 7.8 | 11/11/2024 6:00 | 9.3 | 32.6 | | 7.2 | 10.2 | 6.0 |
| 11/11/2024 6:15 | 9.3 | 33.2 | 0.0 | 7.0 | 10.4 | 6.7 | 11/11/2024 6:15 | 9.3 | 31.9 | | 7.1 | 10.2 | 2.0 |
| 11/11/2024 6:30 | 9.3 | 33.1 | 0.0 | 7.0 | 10.4 | 6.6 | 11/11/2024 6:30 | 9.3 | 32.3 | | 7.2 | 10.2 | 2.7 |
| 11/11/2024 6:45 | 9.3 | 33.6 | 0.0 | 7.0 | 10.4 | 6.0 | 11/11/2024 6:45 | 9.3 | 32.5 | | 7.2 | 10.2 | 2.4 |
| 11/11/2024 7:00 | 9.3 | 38.1 | 0.0 | 7.1 | 10.4 | 7.8 | 11/11/2024 7:00 | 9.3 | 31.4 | | 7.2 | 10.3 | 1.2 |
| 11/11/2024 7:15 | 9.3 | 36.9 | 0.0 | 7.1 | 10.4 | 6.0 | 11/11/2024 7:15 | 9.3 | 33.4 | | 7.0 | 10.2 | 5.8 |
| 11/11/2024 7:30 | 9.3 | 38.3 | 0.0 | 7.1 | 10.4 | 12.3 | 11/11/2024 7:30 | 9.3 | 36.0 | | 7.3 | 10.2 | 6.4 |
| 11/11/2024 7:45 | 9.3 | 40.3 | 0.0 | 7.1 | 10.4 | 14.2 | 11/11/2024 7:45 | 9.3 | 38.8 | | 7.3 | 10.2 | 9.7 |
| 11/11/2024 8:00 | 9.3 | 41.6 | 0.0 | 7.1 | 10.4 | 15.2 | 11/11/2024 8:00 | 9.3 | 37.8 | | 7.3 | 10.3 | 12.1 |
| 11/11/2024 8:15 | 9.3 | 41.5 | 0.0 | 7.1 | 10.4 | 18.0 | 11/11/2024 8:15 | 9.3 | 38.2 | | 7.2 | 10.2 | 11.2 |
| 11/11/2024 8:30 | 9.4 | 40.5 | 0.0 | 7.1 | 10.4 | 32.7 | 11/11/2024 8:30 | 9.4 | 35.0 | | 7.2 | 10.2 | 15.8 |
| 11/11/2024 8:45 | 9.4 | 38.2 | 0.0 | 7.1 | 10.4 | 14.7 | 11/11/2024 8:45 | 9.4 | 32.8 | | 7.2 | 10.2 | 13.2 |
| 11/11/2024 9:00 | 9.5 | 36.1 | 0.0 | 7.1 | 10.4 | 17.9 | 11/11/2024 9:00 | 9.4 | 30.0 | | 7.1 | 10.3 | 7.5 |
| 11/11/2024 9:15 | 9.5 | 30.5 | 0.0 | 6.9 | 10.4 | 12.3 | 11/11/2024 9:15 | 9.5 | 28.3 | | 7.0 | 10.2 | 6.3 |
| 11/11/2024 9:30 | 9.5 | 28.9 | 0.0 | 6.9 | 10.4 | 10.5 | 11/11/2024 9:30 | 9.5 | 26.5 | | 7.0 | 10.3 | 5.0 |
| 11/11/2024 9:45 | 9.5 | 27.7 | 0.0 | 6.9 | 10.4 | 11.3 | 11/11/2024 9:45 | 9.5 | 25.4 | | 6.9 | 10.2 | 6.3 |
| 11/11/2024 10:00 | 9.5 | 26.9 | 0.0 | 6.9 | 10.4 | 12.1 | 11/11/2024 10:00 | 9.5 | 24.1 | | 7.0 | 10.2 | 3.6 |
| 11/11/2024 10:15 | 9.6 | 26.3 | 0.0 | 6.8 | 10.4 | 8.0 | 11/11/2024 10:15 | 9.5 | 23.9 | | 7.0 | 10.2 | 3.1 |
| 11/11/2024 10:30 | 9.6 | 25.8 | 0.0 | 6.9 | 10.4 | 6.4 | 11/11/2024 10:30 | 9.6 | 23.0 | | 7.1 | 10.2 | 2.2 |
| 11/11/2024 10:45 | 9.6 | 25.3 | 0.0 | 6.8 | 10.4 | 5.8 | 11/11/2024 10:45 | 9.6 | 22.8 | | 7.1 | 10.2 | 1.6 |
| 11/11/2024 11:00 | 9.6 | 30.3 | 0.0 | 7.0 | 10.4 | 5.4 | 11/11/2024 11:00 | 9.6 | 21.8 | | 7.0 | 10.2 | 1.2 |
| 11/11/2024 11:15 | 9.6 | 30.3 | 0.0 | 7.0 | 10.4 | 5.2 | 11/11/2024 11:15 | 9.6 | 22.1 | | 7.0 | 10.2 | 0.6 |
| 11/11/2024 11:30 | 9.6 | 30.1 | 0.0 | 7.0 | 10.4 | 5.3 | 11/11/2024 11:30 | 9.6 | 21.8 | | 7.0 | 10.2 | 1.1 |
| 11/11/2024 11:45 | 9.7 | 30.1 | 0.0 | 7.0 | 10.4 | 4.6 | 11/11/2024 11:45 | 9.6 | 21.5 | | 7.0 | 10.2 | 1.2 |
| 11/11/2024 12:00 | 9.7 | 30.1 | 0.0 | 7.0 | 10.4 | 4.2 | 11/11/2024 12:00 | 9.6 | 20.9 | | 7.1 | 10.2 | 0.4 |
| 11/11/2024 12:15 | 9.7 | 30.0 | 0.0 | 7.1 | 10.4 | 3.8 | 11/11/2024 12:15 | 9.6 | 21.3 | | 7.1 | 10.2 | 0.7 |
| 11/11/2024 12:30 | 9.7 | 30.0 | 0.0 | 7.1 | 10.4 | 4.0 | 11/11/2024 12:30 | 9.6 | 20.9 | | 7.0 | 10.2 | 0.4 |
| 11/11/2024 12:45 | 9.7 | 29.9 | 0.0 | 7.0 | 10.4 | 4.1 | 11/11/2024 12:45 | 9.6 | 21.0 | | 7.1 | 10.2 | 1.6 |
| 11/11/2024 13:00 | 9.7 | 29.8 | 0.0 | 7.1 | 10.4 | 4.7 | 11/11/2024 13:00 | 9.6 | 20.9 | | 7.0 | 10.2 | 7.2 |
| 11/11/2024 13:15 | 9.8 | 29.8 | 0.0 | 7.1 | 10.4 | 3.6 | 11/11/2024 13:15 | 9.6 | 21.1 | | 7.1 | 10.2 | 0.9 |
| 11/11/2024 13:30 | 9.8 | 29.9 | 0.0 | 7.1 | 10.3 | 3.7 | 11/11/2024 13:30 | 9.7 | 20.8 | | 7.1 | 10.2 | 0.9 |
| 11/11/2024 13:45 | 9.7 | 30.0 | 0.0 | 7.1 | 10.3 | 3.5 | 11/11/2024 13:45 | 9.6 | 20.8 | | 7.1 | 10.2 | 2.0 |
| 11/11/2024 14:00 | 9.7 | 27.0 | 0.0 | 7.0 | 10.4 | 4.0 | 11/11/2024 14:00 | 9.6 | 20.4 | | 7.1 | 10.2 | 1.5 |
| 11/11/2024 14:15 | 9.7 | 23.5 | 0.0 | 6.9 | 10.4 | 4.8 | 11/11/2024 14:15 | 9.6 | 20.7 | | 7.1 | 10.2 | 0.4 |
| 11/11/2024 14:30 | 9.7 | 23.5 | 0.0 | 6.9 | 10.4 | 3.6 | 11/11/2024 14:30 | 9.6 | 20.3 | | 7.1 | 10.2 | 0.8 |
| 11/11/2024 14:45 | 9.7 | 23.5 | 0.0 | 6.9 | 10.4 | 4.4 | 11/11/2024 14:45 | 9.6 | 20.6 | | 7.1 | 10.2 | 1.8 |
| 11/11/2024 15:00 | 9.7 | 23.5 | 0.0 | 6.9 | 10.4 | 4.7 | 11/11/2024 15:00 | 9.6 | 20.5 | | 7.0 | 10.2 | 0.5 |
| 11/11/2024 15:15 | 9.6 | 23.4 | 0.0 | 6.8 | 10.4 | 3.7 | 11/11/2024 15:15 | 9.6 | 20.6 | | 7.1 | 10.2 | 0.2 |
| 11/11/2024 15:30 | 9.6 | 23.4 | 0.0 | 6.9 | 10.4 | 4.1 | 11/11/2024 15:30 | 9.6 | 20.5 | | 7.1 | 10.2 | 0.3 |
| 11/11/2024 15:45 | 9.6 | 23.5 | 0.0 | 6.9 | 10.4 | 4.5 | 11/11/2024 15:45 | 9.5 | 20.6 | | 7.1 | 10.2 | 0.3 |
| 11/11/2024 16:00 | 9.6 | 23.5 | 0.0 | 6.8 | 10.4 | 3.4 | 11/11/2024 16:00 | 9.5 | 20.5 | | 7.0 | 10.2 | 0.4 |
| 11/11/2024 16:15 | 9.7 | 31.5 | 0.0 | 7.1 | 10.4 | 3.5 | 11/11/2024 16:15 | 9.5 | 20.6 | | 7.1 | 10.2 | 0.2 |
| 11/11/2024 16:30 | 9.7 | 31.7 | 0.0 | 7.1 | 10.4 | 3.4 | 11/11/2024 16:30 | 9.5 | 20.5 | | 7.0 | 10.2 | 0.4 |
| 11/11/2024 16:45 | 9.7 | 31.7 | 0.0 | 7.1 | 10.4 | 3.6 | 11/11/2024 16:45 | 9.5 | 20.6 | | 7.1 | 10.2 | 0.7 |
| 11/11/2024 17:00 | 9.7 | 31.8 | 0.0 | 7.1 | 10.4 | 4.0 | 11/11/2024 17:00 | 9.5 | 20.7 | | 7.0 | 10.2 | 0.3 |
| 11/11/2024 17:15 | 9.7 | 31.9 | 0.0 | 7.1 | 10.4 | 3.8 | 11/11/2024 17:15 | 9.5 | 21.2 | | 7.0 | 10.2 | 0.5 |
| 11/11/2024 17:30 | 9.6 | 32.0 | 0.0 | 7.1 | 10.4 | 3.5 | 11/11/2024 17:30 | 9.5 | 21.5 | | 7.1 | 10.2 | 0.2 |
| 11/11/2024 17:45 | 9.6 | 32.1 | 0.0 | 7.1 | 10.4 | 3.8 | 11/11/2024 17:45 | 9.4 | 23.0 | | 7.1 | 10.2 | 0.4 |
| 11/11/2024 18:00 | 9.6 | 33.0 | 0.0 | 7.1 | 10.4 | 4.3 | 11/11/2024 18:00 | 9.4 | 27.3 | | 7.2 | 10.3 | 0.6 |
| 11/11/2024 18:15 | 9.6 | 35.6 | 0.0 | 7.1 | 10.4 | 3.7 | 11/11/2024 18:15 | 9.4 | 29.3 | | 7.2 | 10.3 | 2.9 |
| 11/11/2024 18:30 | 9.5 | 36.8 | 0.0 | 7.1 | 10.4 | 4.9 | 11/11/2024 18:30 | 9.3 | 31.7 | | 7.3 | 10.3 | 1.4 |
| 11/11/2024 18:45 | 9.5 | 38.2 | 0.0 | 7.2 | 10.4 | 4.5 | 11/11/2024 18:45 | 9.3 | 33.8 | | 7.3 | 10.3 | 1.6 |
| 11/11/2024 19:00 | 9.5 | 39.7 | 0.0 | 7.1 | 10.4 | 4.7 | 11/11/2024 19:00 | 9.3 | 35.7 | | 7.3 | 10.3 | 1.2 |
| 11/11/2024 19:15 | 9.5 | 40.4 | 0.0 | 7.2 | 10.4 | 6.5 | 11/11/2024 19:15 | 9.2 | 37.9 | | 7.3 | 10.3 | 2.1 |
| 11/11/2024 19:30 | 9.4 | 35.5 | 0.0 | 7.0 | 10.5 | 5.0 | 11/11/2024 19:30 | 9.2 | 42.2 | | 7.4 | 10.3 | 1.7 |
| 11/11/2024 19:45 | 9.3 | 39.7 | 0.0 | 7.1 | 10.5 | 6.8 | 11/11/2024 19:45 | 9.2 | 47.3 | | 7.4 | 10.3 | 6.2 |
| 11/11/2024 20:00 | 9.3 | 42.1 | 0.0 | 7.1 | 10.5 | 7.7 | 11/11/2024 20:00 | 9.2 | 46.6 | | 7.4 | 10.3 | 3.2 |
| 11/11/2024 20:15 | 9.3 | 41.5 | 0.0 | 7.1 | 10.5 | 6.9 | 11/11/2024 20:15 | 9.2 | 45.5 | | 7.4 | 10.3 | 3.7 |
| 11/11/2024 20:30 | 9.3 | 40.7 | 0.0 | 7.1 | 10.5 | 5.6 | 11/11/2024 20:30 | 9.2 | 43.3 | | 7.4 | 10.3 | 1.7 |
| 11/11/2024 20:45 | 9.3 | 39.3 | 0.0 | 7.1 | 10.5 | 8.7 | 11/11/2024 20:45 | 9.2 | 41.3 | | 7.4 | 10.3 | 2.2 |
| 11/11/2024 21:00 | 9.3 | 37.8 | 0.0 | 7.1 | 10.4 | 5.5 | 11/11/2024 21:00 | 9.2 | 38.6 | | 7.3 | 10.3 | 2.7 |
| 11/11/2024 21:15 | 9.3 | 36.4 | 0.0 | 7.0 | 10.5 | 5.7 | 11/11/2024 21:15 | 9.2 | 37.4 | | 7.3 | 10.3 | 1.6 |
| 11/11/2024 21:30 | 9.4 | 41.6 | 0.0 | 7.1 | 10.5 | 6.4 | 11/11/2024 21:30 | 9.2 | 35.8 | | 7.3 | 10.3 | 1.6 |
| 11/11/2024 21:45 | 9.4 | 41.3 | 0.0 | 7.2 | 10.5 | 4.8 | 11/11/2024 21:45 | 9.2 | 35.0 | | 7.3 | 10.3 | 1.8 |
| 11/11/2024 22:00 | 9.4 | 40.8 | 0.0 | 7.2 | 10.5 | 5.1 | 11/11/2024 22:00 | 9.2 | 35.2 | | 7.3 | 10.3 | 1.1 |
| 11/11/2024 22:15 | 9.4 | 41.0 | 0.0 | 7.2 | 10.5 | 4.8 | 11/11/2024 22:15 | 9.2 | 37.5 | | 7.3 | 10.3 | 1.4 |
| 11/11/2024 22:30 | 9.4 | 42.4 | 0.0 | 7.2 | 10.5 | 5.3 | 11/11/2024 22:30 | 9.2 | 39.8 | | 7.4 | 10.3 | 5.0 |
| 11/11/2024 22:45 | 9.3 | 44.1 | 0.0 | 7.2 | 10.5 | 6.8 | 11/11/2024 22:45 | 9.1 | 40.7 | | 7.4 | 10.3 | 2.3 |
| 11/11/2024 23:00 | 9.3 | 44.3 | 0.0 | 7.2 | 10.5 | 5.6 | 11/11/2024 23:00 | 9.1 | 38.8 | | 7.3 | 10.4 | 1.7 |
| 11/11/2024 23:15 | 9.3 | 43.5 | 0.0 | 7.2 | 10.5 | 4.9 | 11/11/2024 23:15 | 9.1 | 37.8 | | 7.3 | 10.3 | 1.0 |
| 11/11/2024 23:30 | 9.3 | 42.4 | 0.0 | 7.2 | 10.5 | 4.8 | 11/11/2024 23:30 | 9.1 | 36.4 | | 7.3 | 10.3 | 0.8 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/11/2024 23:45 | 9.3 | 42.0 | 0.0 | 7.2 | 10.5 | 4.6 | 11/11/2024 23:45 | 9.1 | 37.8 | 7.3 | 10.3 | 1.3 |
| 11/12/2024 0:00 | 9.3 | 42.6 | 0.0 | 7.2 | 10.5 | 6.2 | 11/12/2024 0:00 | 9.1 | 38.1 | 7.3 | 10.3 | 1.9 |
| 11/12/2024 0:15 | 9.3 | 42.7 | 0.0 | 7.2 | 10.5 | 5.4 | 11/12/2024 0:15 | 9.0 | 40.5 | 7.4 | 10.4 | 2.1 |
| 11/12/2024 0:30 | 9.2 | 38.0 | 0.0 | 7.1 | 10.5 | 5.6 | 11/12/2024 0:30 | 9.0 | 41.8 | 7.4 | 10.4 | 3.4 |
| 11/12/2024 0:45 | 9.2 | 39.5 | 0.0 | 7.1 | 10.5 | 6.0 | 11/12/2024 0:45 | 9.0 | 41.6 | 7.4 | 10.4 | 2.5 |
| 11/12/2024 1:00 | 9.1 | 38.6 | 0.0 | 7.1 | 10.5 | 6.2 | 11/12/2024 1:00 | 9.0 | 39.4 | 7.3 | 10.4 | 2.4 |
| 11/12/2024 1:15 | 9.1 | 37.2 | 0.0 | 7.0 | 10.5 | 4.9 | 11/12/2024 1:15 | 9.0 | 38.3 | 7.4 | 10.4 | 2.2 |
| 11/12/2024 1:30 | 9.1 | 36.2 | 0.0 | 7.0 | 10.5 | 6.1 | 11/12/2024 1:30 | 9.0 | 37.1 | 7.3 | 10.4 | 2.0 |
| 11/12/2024 1:45 | 9.1 | 35.2 | 0.0 | 7.0 | 10.5 | 4.5 | 11/12/2024 1:45 | 9.0 | 36.6 | 7.3 | 10.4 | 2.8 |
| 11/12/2024 2:00 | 9.1 | 34.8 | 0.0 | 7.0 | 10.6 | 6.5 | 11/12/2024 2:00 | 9.0 | 36.0 | 7.3 | 10.4 | 3.2 |
| 11/12/2024 2:15 | 9.2 | 40.4 | 0.0 | 7.2 | 10.6 | 5.5 | 11/12/2024 2:15 | 9.0 | 35.9 | 7.3 | 10.4 | 1.3 |
| 11/12/2024 2:30 | 9.2 | 39.9 | 0.0 | 7.2 | 10.5 | 5.7 | 11/12/2024 2:30 | 9.0 | 34.4 | 7.3 | 10.4 | 2.7 |
| 11/12/2024 2:45 | 9.2 | 39.0 | 0.0 | 7.1 | 10.6 | 5.8 | 11/12/2024 2:45 | 9.0 | 33.4 | 7.3 | 10.4 | 1.7 |
| 11/12/2024 3:00 | 9.2 | 38.1 | 0.0 | 7.1 | 10.6 | 6.5 | 11/12/2024 3:00 | 9.0 | 32.1 | 7.3 | 10.4 | 1.2 |
| 11/12/2024 3:15 | 9.2 | 37.5 | 0.0 | 7.1 | 10.6 | 4.7 | 11/12/2024 3:15 | 9.0 | 32.9 | 7.3 | 10.4 | 1.3 |
| 11/12/2024 3:30 | 9.2 | 37.7 | 0.0 | 7.1 | 10.6 | 6.5 | 11/12/2024 3:30 | 9.0 | 33.2 | 7.3 | 10.4 | 1.9 |
| 11/12/2024 3:45 | 9.2 | 37.9 | 0.0 | 7.2 | 10.6 | 5.3 | 11/12/2024 3:45 | 9.0 | 33.1 | 7.3 | 10.4 | 1.4 |
| 11/12/2024 4:00 | 9.2 | 37.6 | 0.0 | 7.1 | 10.6 | 6.9 | 11/12/2024 4:00 | 9.0 | 31.7 | 7.2 | 10.4 | 1.5 |
| 11/12/2024 4:15 | 9.2 | 36.9 | 0.0 | 7.1 | 10.6 | 5.8 | 11/12/2024 4:15 | 9.0 | 31.1 | 7.3 | 10.4 | 1.1 |
| 11/12/2024 4:30 | 9.2 | 36.0 | 0.0 | 7.1 | 10.6 | 4.5 | 11/12/2024 4:30 | 9.0 | 29.4 | 7.2 | 10.4 | 3.1 |
| 11/12/2024 4:45 | 9.2 | 35.1 | 0.0 | 7.1 | 10.6 | 4.4 | 11/12/2024 4:45 | 9.0 | 28.6 | 7.2 | 10.4 | 4.7 |
| 11/12/2024 5:00 | 9.2 | 34.4 | 0.0 | 7.1 | 10.6 | 4.5 | 11/12/2024 5:00 | 9.0 | 27.2 | 7.2 | 10.4 | 1.5 |
| 11/12/2024 5:15 | 9.1 | 28.1 | 0.0 | 6.9 | 10.6 | 4.1 | 11/12/2024 5:15 | 9.0 | 26.4 | 7.2 | 10.4 | 0.7 |
| 11/12/2024 5:30 | 9.1 | 27.4 | 0.0 | 6.9 | 10.6 | 3.8 | 11/12/2024 5:30 | 9.0 | 25.3 | 7.2 | 10.4 | 2.8 |
| 11/12/2024 5:45 | 9.1 | 26.8 | 0.0 | 6.9 | 10.6 | 5.5 | 11/12/2024 5:45 | 9.0 | 24.9 | 7.2 | 10.4 | 0.7 |
| 11/12/2024 6:00 | 9.1 | 26.4 | 0.0 | 6.9 | 10.6 | 4.1 | 11/12/2024 6:00 | 9.0 | 24.2 | 7.2 | 10.4 | 0.4 |
| 11/12/2024 6:15 | 9.1 | 25.9 | 0.0 | 6.9 | 10.6 | 4.3 | 11/12/2024 6:15 | 9.0 | 23.8 | 7.1 | 10.4 | 0.3 |
| 11/12/2024 6:30 | 9.1 | 25.6 | 0.0 | 6.9 | 10.6 | 4.1 | 11/12/2024 6:30 | 9.0 | 23.1 | 7.1 | 10.4 | 0.3 |
| 11/12/2024 6:45 | 9.1 | 25.3 | 0.0 | 6.9 | 10.6 | 3.8 | 11/12/2024 6:45 | 9.0 | 23.0 | 7.1 | 10.4 | 2.0 |
| 11/12/2024 7:00 | 9.1 | 25.0 | 0.0 | 6.9 | 10.6 | 7.6 | 11/12/2024 7:00 | 9.0 | 22.1 | 7.0 | 10.4 | 0.7 |
| 11/12/2024 7:15 | 9.1 | 31.7 | 0.0 | 7.1 | 10.6 | 5.5 | 11/12/2024 7:15 | 9.0 | 22.2 | 7.1 | 10.4 | 1.3 |
| 11/12/2024 7:30 | 9.1 | 31.8 | 0.0 | 7.1 | 10.6 | 4.1 | 11/12/2024 7:30 | 9.0 | 21.8 | 7.1 | 10.4 | 1.0 |
| 11/12/2024 7:45 | 9.1 | 31.8 | 0.0 | 7.1 | 10.6 | 3.4 | 11/12/2024 7:45 | 9.0 | 21.7 | 7.1 | 10.4 | 0.3 |
| 11/12/2024 8:00 | 9.1 | 31.7 | 0.0 | 7.1 | 10.6 | 3.9 | 11/12/2024 8:00 | 9.0 | 21.2 | 7.1 | 10.4 | 1.3 |
| 11/12/2024 8:15 | 9.1 | 31.7 | 0.0 | 7.1 | 10.6 | 3.5 | 11/12/2024 8:15 | 9.0 | 21.3 | 7.1 | 10.4 | 0.5 |
| 11/12/2024 8:30 | 9.2 | 31.7 | 0.0 | 7.1 | 10.6 | 3.7 | 11/12/2024 8:30 | 9.0 | 20.9 | 7.1 | 10.4 | 0.3 |
| 11/12/2024 8:45 | 9.2 | 31.8 | 0.0 | 7.1 | 10.6 | 3.8 | 11/12/2024 8:45 | 9.0 | 20.9 | 7.1 | 10.4 | 0.2 |
| 11/12/2024 9:00 | 9.2 | 31.7 | 0.0 | 7.1 | 10.6 | 3.6 | 11/12/2024 9:00 | 9.0 | 20.6 | 7.0 | 10.4 | 0.7 |
| 11/12/2024 9:15 | 9.2 | 31.8 | 0.0 | 7.1 | 10.6 | 4.4 | 11/12/2024 9:15 | 9.1 | 20.9 | 7.1 | 10.4 | 0.4 |
| 11/12/2024 9:30 | 9.2 | 30.5 | 0.0 | 7.1 | 10.6 | 3.7 | 11/12/2024 9:30 | 9.1 | 20.6 | 7.1 | 10.4 | 0.3 |
| 11/12/2024 9:45 | 9.1 | 23.7 | 0.0 | 6.9 | 10.6 | 4.1 | 11/12/2024 9:45 | 9.1 | 20.5 | 7.1 | 10.4 | 0.3 |
| 11/12/2024 10:00 | 9.1 | 23.6 | 0.0 | 6.8 | 10.6 | 4.4 | 11/12/2024 10:00 | 9.1 | 20.2 | 7.1 | 10.4 | 0.5 |
| 11/12/2024 10:15 | 9.2 | 23.4 | 0.0 | 6.9 | 10.6 | 3.8 | 11/12/2024 10:15 | 9.1 | 20.1 | 7.1 | 10.4 | 0.4 |
| 11/12/2024 10:30 | 9.2 | 23.4 | 0.0 | 6.9 | 10.6 | 3.8 | 11/12/2024 10:30 | 9.1 | 20.0 | 7.1 | 10.4 | 0.3 |
| 11/12/2024 10:45 | 9.2 | 23.2 | 0.0 | 6.9 | 10.6 | 3.7 | 11/12/2024 10:45 | 9.1 | 20.0 | 7.1 | 10.4 | 0.4 |
| 11/12/2024 11:00 | 9.3 | 32.3 | 0.0 | 7.1 | 10.6 | 4.6 | 11/12/2024 11:00 | 9.2 | 19.8 | 7.0 | 10.4 | 0.6 |
| 11/12/2024 11:15 | 9.3 | 31.9 | 0.0 | 7.1 | 10.5 | 4.6 | 11/12/2024 11:15 | 9.2 | 19.9 | 7.1 | 10.4 | 0.4 |
| 11/12/2024 11:30 | 9.4 | 31.3 | 0.0 | 7.1 | 10.5 | 6.0 | 11/12/2024 11:30 | 9.2 | 19.7 | 7.0 | 10.4 | 0.7 |
| 11/12/2024 11:45 | 9.4 | 30.9 | 0.0 | 7.1 | 10.5 | 3.9 | 11/12/2024 11:45 | 9.2 | 20.0 | 7.1 | 10.4 | 1.2 |
| 11/12/2024 12:00 | 9.4 | 30.7 | 0.0 | 7.1 | 10.5 | 4.2 | 11/12/2024 12:00 | 9.2 | 20.4 | 7.0 | 10.4 | 1.2 |
| 11/12/2024 12:15 | 9.4 | 31.2 | 0.0 | 7.1 | 10.5 | 5.6 | 11/12/2024 12:15 | 9.2 | 20.9 | 7.1 | 10.4 | 2.7 |
| 11/12/2024 12:30 | 9.4 | 31.8 | 0.0 | 7.1 | 10.5 | 3.9 | 11/12/2024 12:30 | 9.3 | 21.9 | 7.1 | 10.4 | 1.5 |
| 11/12/2024 12:45 | 9.4 | 32.8 | 0.0 | 7.1 | 10.5 | 4.7 | 11/12/2024 12:45 | 9.3 | 21.8 | 7.1 | 10.4 | 3.1 |
| 11/12/2024 13:00 | 9.4 | 32.9 | 0.0 | 7.1 | 10.5 | 5.4 | 11/12/2024 13:00 | 9.3 | 21.3 | 7.1 | 10.4 | 1.2 |
| 11/12/2024 13:15 | 9.4 | 32.9 | 0.0 | 7.1 | 10.5 | 5.1 | 11/12/2024 13:15 | 9.3 | 21.8 | 7.1 | 10.4 | 1.5 |
| 11/12/2024 13:30 | 9.4 | 33.1 | 0.0 | 7.1 | 10.5 | 4.7 | 11/12/2024 13:30 | 9.3 | 21.9 | 7.1 | 10.4 | 1.2 |
| 11/12/2024 13:45 | 9.4 | 33.6 | 0.0 | 7.1 | 10.5 | 5.6 | 11/12/2024 13:45 | 9.3 | 23.4 | 7.2 | 10.3 | 1.9 |
| 11/12/2024 14:00 | 9.4 | 34.4 | 0.0 | 7.1 | 10.5 | 4.9 | 11/12/2024 14:00 | 9.3 | 23.4 | 7.1 | 10.4 | 2.2 |
| 11/12/2024 14:15 | 9.3 | 25.8 | 0.0 | 6.9 | 10.5 | 5.3 | 11/12/2024 14:15 | 9.3 | 23.7 | 7.1 | 10.4 | 1.5 |
| 11/12/2024 14:30 | 9.3 | 25.9 | 0.0 | 6.9 | 10.5 | 5.5 | 11/12/2024 14:30 | 9.3 | 23.9 | 7.2 | 10.4 | 2.1 |
| 11/12/2024 14:45 | 9.4 | 26.1 | 0.0 | 6.9 | 10.5 | 5.2 | 11/12/2024 14:45 | 9.3 | 23.9 | 7.1 | 10.4 | 1.5 |
| 11/12/2024 15:00 | 9.4 | 26.1 | 0.0 | 6.9 | 10.5 | 5.1 | 11/12/2024 15:00 | 9.3 | 23.7 | 7.1 | 10.4 | 1.1 |
| 11/12/2024 15:15 | 9.4 | 26.0 | 0.0 | 6.9 | 10.5 | 5.4 | 11/12/2024 15:15 | 9.3 | 23.7 | 7.1 | 10.4 | 0.7 |
| 11/12/2024 15:30 | 9.4 | 35.2 | 0.0 | 7.1 | 10.5 | 5.2 | 11/12/2024 15:30 | 9.3 | 23.4 | 7.2 | 10.4 | 1.0 |
| 11/12/2024 15:45 | 9.4 | 35.3 | 0.0 | 7.2 | 10.5 | 4.9 | 11/12/2024 15:45 | 9.3 | 23.5 | 7.2 | 10.3 | 0.9 |
| 11/12/2024 16:00 | 9.4 | 32.1 | 0.0 | 7.1 | 10.5 | 4.3 | 11/12/2024 16:00 | 9.3 | 23.1 | 7.1 | 10.3 | 0.6 |
| 11/12/2024 16:15 | 9.4 | 35.0 | 0.0 | 7.2 | 10.5 | 4.3 | 11/12/2024 16:15 | 9.2 | 23.2 | 7.1 | 10.4 | 0.4 |
| 11/12/2024 16:30 | 9.4 | 34.6 | 0.0 | 7.2 | 10.5 | 4.4 | 11/12/2024 16:30 | 9.2 | 23.0 | 7.1 | 10.3 | 0.5 |
| 11/12/2024 16:45 | 9.4 | 34.5 | 0.0 | 7.1 | 10.5 | 3.9 | 11/12/2024 16:45 | 9.2 | 22.9 | 7.1 | 10.4 | 0.5 |
| 11/12/2024 17:00 | 9.4 | 31.5 | 0.0 | 7.1 | 10.5 | 3.8 | 11/12/2024 17:00 | 9.2 | 22.8 | 7.1 | 10.4 | 0.4 |
| 11/12/2024 17:15 | 9.4 | 34.4 | 0.0 | 7.2 | 10.5 | 3.5 | 11/12/2024 17:15 | 9.2 | 22.8 | 7.1 | 10.4 | 0.7 |
| 11/12/2024 17:30 | 9.4 | 34.6 | 0.0 | 7.2 | 10.5 | 3.6 | 11/12/2024 17:30 | 9.2 | 22.5 | 7.0 | 10.4 | 1.4 |
| 11/12/2024 17:45 | 9.4 | 34.6 | 0.0 | 7.2 | 10.5 | 3.6 | 11/12/2024 17:45 | 9.2 | 23.4 | 7.2 | 10.3 | 0.4 |
| 11/12/2024 18:00 | 9.4 | 34.9 | 0.0 | 7.2 | 10.5 | 3.8 | 11/12/2024 18:00 | 9.1 | 23.8 | 7.2 | 10.4 | 0.9 |
| 11/12/2024 18:15 | 9.4 | 35.3 | 0.0 | 7.2 | 10.5 | 4.6 | 11/12/2024 18:15 | 9.1 | 24.5 | 7.1 | 10.4 | 2.1 |
| 11/12/2024 18:30 | 9.3 | 35.5 | 0.0 | 7.2 | 10.5 | 3.8 | 11/12/2024 18:30 | 9.1 | 24.3 | 7.2 | 10.4 | 0.7 |
| 11/12/2024 18:45 | 9.3 | 35.8 | 0.0 | 7.2 | 10.5 | 3.7 | 11/12/2024 18:45 | 9.1 | 24.9 | 7.2 | 10.4 | 0.9 |
| 11/12/2024 19:00 | 9.3 | 36.2 | 0.0 | 7.2 | 10.5 | 3.6 | 11/12/2024 19:00 | 9.1 | 25.1 | 7.2 | 10.4 | 11.6 |
| 11/12/2024 19:15 | 9.2 | 27.8 | 0.0 | 6.9 | 10.5 | 4.2 | 11/12/2024 19:15 | 9.1 | 26.4 | 7.2 | 10.3 | 0.4 |
| 11/12/2024 19:30 | 9.2 | 28.3 | 0.0 | 6.9 | 10.5 | 4.1 | 11/12/2024 19:30 | 9.1 | 26.5 | 7.2 | 10.4 | 0.5 |
| 11/12/2024 19:45 | 9.2 | 28.7 | 0.0 | 7.0 | 10.5 | 3.9 | 11/12/2024 19:45 | 9.1 | 27.5 | 7.2 | 10.4 | 2.8 |
| 11/12/2024 20:00 | 9.2 | 29.1 | 0.0 | 6.9 | 10.5 | 3.8 | 11/12/2024 20:00 | 9.0 | 27.1 | 7.2 | 10.4 | 0.9 |
| 11/12/2024 20:15 | 9.1 | 29.2 | 0.0 | 6.9 | 10.5 | 4.7 | 11/12/2024 20:15 | 9.0 | 28.0 | 7.2 | 10.4 | 0.5 |
| 11/12/2024 20:30 | 9.1 | 29.5 | 0.0 | 6.9 | 10.5 | 4.0 | 11/12/2024 20:30 | 9.0 | 29.1 | 7.2 | 10.4 | 0.7 |
| 11/12/2024 20:45 | 9.1 | 30.6 | 0.0 | 7.0 | 10.5 | 3.6 | 11/12/2024 20:45 | 9.0 | 31.2 | 7.2 | 10.4 | 2.9 |
| 11/12/2024 21:00 | 9.2 | 39.9 | 0.0 | 7.2 | 10.5 | 4.2 | 11/12/2024 21:00 | 9.0 | 32.0 | 7.3 | 10.4 | 0.8 |
| 11/12/2024 21:15 | 9.2 | 38.6 | 0.0 | 7.2 | 10.5 | 4.4 | 11/12/2024 21:15 | 9.0 | 33.8 | 7.3 | 10.4 | 1.9 |
| 11/12/2024 21:30 | 9.2 | 43.4 | 0.0 | 7.2 | 10.5 | 5.5 | 11/12/2024 21:30 | 9.0 | 34.4 | 7.3 | 10.4 | 3.7 |
| 11/12/2024 21:45 | 9.2 | 44.1 | 0.0 | 7.2 | 10.5 | 4.7 | 11/12/2024 21:45 | 8.9 | 35.1 | 7.3 | 10.4 | 1.0 |
| 11/12/2024 22:00 | 9.2 | 44.3 | 0.0 | 7.2 | 10.5 | 4.9 | 11/12/2024 22:00 | 8.9 | 36.2 | 7.3 | 10.4 | 1.3 |
| 11/12/2024 22:15 | 9.1 | 44.7 | 0.0 | 7.2 | 10.5 | 5.8 | 11/12/2024 22:15 | 8.9 | 41.1 | 7.4 | 10.4 | 3.8 |
| 11/12/2024 22:30 | 9.1 | 48.1 | 0.0 | 7.2 | 10.5 | 9.9 | 11/12/2024 22:30 | 8.8 | 44.5 | 7.4 | 10.4 | 10.5 |
| 11/12/2024 22:45 | 9.1 | 50.9 | 0.0 | 7.3 | 10.5 | 11.8 | 11/12/2024 22:45 | 8.8 | 46.4 | 7.4 | 10.4 | 9.0 |
| 11/12/2024 23:00 | 9.1 | 51.3 | 0.0 | 7.3 | 10.5 | 11.6 | 11/12/2024 23:00 | 8.8 | 44.4 | 7.4 | 10.4 | 6.4 |
| 11/12/2024 23:15 | 9.1 | 49.9 | 0.0 | 7.3 | 10.5 | 10.0 | 11/12/2024 23:15 | 8.8 | 42.8 | 7.4 | 10.4 | 4.0 |
| 11/12/2024 23:30 | 9.1 | 48.3 | 0.0 | 7.2 | 10.5 | 10.1 | 11/12/2024 23:30 | 8.8 | 40.7 | 7.4 | 10.4 | 3.7 |
| 11/12/2024 23:45 | 9.1 | 46.7 | 0.0 | 7.2 | 10.5 | 8.5 | 11/12/2024 23:45 | 8.8 | 39.6 | 7.4 | 10.4 | 4.0 |
| 11/13/2024 0:00 | 9.0 | 38.8 | 0.0 | 7.1 | 10.5 | 7.7 | 11/13/2024 0:00 | 8.8 | 38.4 | 7.4 | 10.4 | 4.8 |
| 11/13/2024 0:15 | 8.9 | 37.8 | 0.0 | 7.1 | 10.5 | 9.7 | 11/13/2024 0:15 | 8.8 | 39.3 | 7.3 | 10.4 | 4.3 |
| 11/13/2024 0:30 | 8.9 | 38.8 | 0.0 | 7.0 | 10.5 | 9.6 | 11/13/2024 0:30 | 8.8 | 39.7 | 7.4 | 10.4 | 8.8 |
| 11/13/2024 0:45 | 8.9 | 39.4 | 0.0 | 7.1 | 10.5 | 8.7 | 11/13/2024 0:45 | 8.8 | 39.8 | 7.3 | 10.4 | 5.3 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/13/2024 1:00 | 8.9 | 38.6 | 0.0 | 7.1 | 10.5 | 7.2 | 11/13/2024 1:00 | 8.8 | 39.1 | 7.3 | 10.5 | 9.0 |
| 11/13/2024 1:15 | 8.9 | 39.1 | 0.0 | 7.0 | 10.6 | 11.1 | 11/13/2024 1:15 | 8.8 | 40.4 | 7.3 | 10.4 | 8.9 |
| 11/13/2024 1:30 | 8.9 | 39.6 | 0.0 | 7.0 | 10.6 | 16.4 | 11/13/2024 1:30 | 8.7 | 39.6 | 7.3 | 10.4 | 15.5 |
| 11/13/2024 1:45 | 8.9 | 43.8 | 0.0 | 7.1 | 10.6 | 26.7 | 11/13/2024 1:45 | 8.7 | 39.4 | 7.3 | 10.4 | 12.3 |
| 11/13/2024 2:00 | 8.9 | 42.6 | 0.0 | 7.1 | 10.5 | 20.9 | 11/13/2024 2:00 | 8.7 | 36.0 | 7.3 | 10.5 | 10.7 |
| 11/13/2024 2:15 | 8.9 | 39.9 | 0.0 | 7.1 | 10.6 | 14.1 | 11/13/2024 2:15 | 8.7 | 34.6 | 7.2 | 10.4 | 10.9 |
| 11/13/2024 2:30 | 8.9 | 37.8 | 0.0 | 7.1 | 10.6 | 16.6 | 11/13/2024 2:30 | 8.8 | 33.2 | 7.3 | 10.4 | 8.3 |
| 11/13/2024 2:45 | 8.9 | 37.1 | 0.0 | 7.1 | 10.6 | 25.2 | 11/13/2024 2:45 | 8.8 | 32.0 | 7.3 | 10.4 | 9.6 |
| 11/13/2024 3:00 | 8.9 | 35.6 | 0.0 | 7.0 | 10.6 | 20.0 | 11/13/2024 3:00 | 8.8 | 30.1 | 7.2 | 10.4 | 7.7 |
| 11/13/2024 3:15 | 9.0 | 34.5 | 0.0 | 7.0 | 10.5 | 14.8 | 11/13/2024 3:15 | 8.8 | 29.2 | 7.1 | 10.4 | 9.2 |
| 11/13/2024 3:30 | 9.0 | 33.2 | 0.0 | 7.0 | 10.5 | 15.5 | 11/13/2024 3:30 | 8.8 | 28.1 | 7.1 | 10.4 | 8.2 |
| 11/13/2024 3:45 | 9.0 | 32.6 | 0.0 | 7.0 | 10.5 | 14.6 | 11/13/2024 3:45 | 8.8 | 27.8 | 7.2 | 10.4 | 7.2 |
| 11/13/2024 4:00 | 9.0 | 32.1 | 0.0 | 7.0 | 10.5 | 16.6 | 11/13/2024 4:00 | 8.9 | 26.7 | 7.2 | 10.4 | 5.8 |
| 11/13/2024 4:15 | 9.0 | 31.1 | 0.0 | 7.0 | 10.5 | 16.5 | 11/13/2024 4:15 | 8.9 | 25.5 | 7.1 | 10.4 | 4.7 |
| 11/13/2024 4:30 | 9.0 | 30.0 | 0.0 | 7.0 | 10.5 | 9.7 | 11/13/2024 4:30 | 8.9 | 24.4 | 7.1 | 10.4 | 6.6 |
| 11/13/2024 4:45 | 9.0 | 26.2 | 0.0 | 6.9 | 10.5 | 10.2 | 11/13/2024 4:45 | 8.9 | 24.5 | 7.1 | 10.4 | 3.3 |
| 11/13/2024 5:00 | 9.0 | 29.4 | 0.0 | 7.0 | 10.5 | 7.9 | 11/13/2024 5:00 | 8.9 | 23.9 | 7.1 | 10.4 | 3.4 |
| 11/13/2024 5:15 | 9.0 | 29.4 | 0.0 | 7.0 | 10.5 | 11.2 | 11/13/2024 5:15 | 8.9 | 25.0 | 7.1 | 10.4 | 3.9 |
| 11/13/2024 5:30 | 9.0 | 30.1 | 0.0 | 7.0 | 10.5 | 17.4 | 11/13/2024 5:30 | 8.9 | 25.5 | 7.0 | 10.4 | 4.4 |
| 11/13/2024 5:45 | 9.0 | 26.9 | 0.0 | 6.9 | 10.5 | 11.2 | 11/13/2024 5:45 | 8.9 | 24.9 | 7.1 | 10.4 | 4.5 |
| 11/13/2024 6:00 | 9.0 | 26.3 | 0.0 | 6.8 | 10.5 | 9.9 | 11/13/2024 6:00 | 8.9 | 23.7 | 7.1 | 10.3 | 3.9 |
| 11/13/2024 6:15 | 9.0 | 25.4 | 0.0 | 6.8 | 10.5 | 12.1 | 11/13/2024 6:15 | 8.9 | 23.5 | 7.1 | 10.3 | 3.4 |
| 11/13/2024 6:30 | 9.0 | 24.9 | 0.0 | 6.8 | 10.5 | 8.2 | 11/13/2024 6:30 | 8.9 | 22.8 | 7.1 | 10.4 | 2.5 |
| 11/13/2024 6:45 | 8.9 | 24.5 | 0.0 | 6.8 | 10.5 | 10.3 | 11/13/2024 6:45 | 8.9 | 23.4 | 7.1 | 10.3 | 3.0 |
| 11/13/2024 7:00 | 8.9 | 25.3 | 0.0 | 6.8 | 10.5 | 14.3 | 11/13/2024 7:00 | 8.9 | 25.1 | 7.0 | 10.4 | 8.5 |
| 11/13/2024 7:15 | 8.9 | 27.0 | 0.0 | 6.8 | 10.6 | 15.5 | 11/13/2024 7:15 | 8.8 | 26.6 | 7.2 | 10.4 | 14.1 |
| 11/13/2024 7:30 | 8.9 | 27.0 | 0.0 | 6.8 | 10.5 | 17.8 | 11/13/2024 7:30 | 8.9 | 26.3 | 7.1 | 10.4 | 10.4 |
| 11/13/2024 7:45 | 8.9 | 29.5 | 0.0 | 6.9 | 10.5 | 15.3 | 11/13/2024 7:45 | 8.9 | 25.9 | 7.1 | 10.4 | 8.7 |
| 11/13/2024 8:00 | 9.0 | 28.6 | 0.0 | 6.9 | 10.5 | 16.0 | 11/13/2024 8:00 | 8.9 | 24.0 | 7.1 | 10.4 | 8.5 |
| 11/13/2024 8:15 | 9.0 | 28.5 | 0.0 | 6.9 | 10.5 | 17.6 | 11/13/2024 8:15 | 8.9 | 22.9 | 7.1 | 10.4 | 5.5 |
| 11/13/2024 8:30 | 9.0 | 27.4 | 0.0 | 6.9 | 10.5 | 10.4 | 11/13/2024 8:30 | 8.9 | 21.9 | 7.1 | 10.4 | 4.1 |
| 11/13/2024 8:45 | 9.0 | 26.8 | 0.0 | 6.9 | 10.5 | 8.4 | 11/13/2024 8:45 | 8.9 | 21.3 | 7.1 | 10.3 | 7.4 |
| 11/13/2024 9:00 | 9.0 | 26.5 | 0.0 | 6.9 | 10.5 | 10.2 | 11/13/2024 9:00 | 8.9 | 20.7 | 7.0 | 10.4 | 6.9 |
| 11/13/2024 9:15 | 9.0 | 26.3 | 0.0 | 6.9 | 10.5 | 7.5 | 11/13/2024 9:15 | 8.9 | 20.4 | 7.0 | 10.4 | 2.6 |
| 11/13/2024 9:30 | 9.0 | 25.9 | 0.0 | 6.9 | 10.5 | 8.1 | 11/13/2024 9:30 | 8.9 | 20.4 | 7.0 | 10.4 | 7.3 |
| 11/13/2024 9:45 | 9.0 | 26.3 | 0.0 | 6.9 | 10.5 | 14.3 | 11/13/2024 9:45 | 8.9 | 21.7 | 7.1 | 10.4 | 7.3 |
| 11/13/2024 10:00 | 9.0 | 24.0 | 0.0 | 6.8 | 10.5 | 11.3 | 11/13/2024 10:00 | 8.9 | 21.5 | 7.0 | 10.4 | 4.8 |
| 11/13/2024 10:15 | 9.0 | 23.8 | 0.0 | 6.8 | 10.5 | 6.8 | 11/13/2024 10:15 | 8.9 | 21.3 | 7.1 | 10.4 | 6.7 |
| 11/13/2024 10:30 | 9.0 | 23.6 | 0.0 | 6.8 | 10.5 | 9.3 | 11/13/2024 10:30 | 8.9 | 20.8 | 7.0 | 10.4 | 2.5 |
| 11/13/2024 10:45 | 9.0 | 23.3 | 0.0 | 6.8 | 10.5 | 6.8 | 11/13/2024 10:45 | 8.9 | 20.6 | 7.1 | 10.3 | 2.3 |
| 11/13/2024 11:00 | 9.0 | 22.9 | 0.0 | 6.7 | 10.5 | 6.7 | 11/13/2024 11:00 | 8.9 | 19.8 | 7.1 | 10.4 | 4.0 |
| 11/13/2024 11:15 | 9.0 | 22.7 | 0.0 | 6.7 | 10.5 | 7.4 | 11/13/2024 11:15 | 8.9 | 19.9 | 7.1 | 10.3 | 1.9 |
| 11/13/2024 11:30 | 9.0 | 22.5 | 0.0 | 6.8 | 10.5 | 11.1 | 11/13/2024 11:30 | 8.9 | 19.2 | 7.0 | 10.4 | 2.7 |
| 11/13/2024 11:45 | 9.0 | 26.1 | 0.0 | 6.9 | 10.5 | 8.4 | 11/13/2024 11:45 | 8.9 | 20.0 | 7.0 | 10.3 | 5.7 |
| 11/13/2024 12:00 | 9.1 | 26.3 | 0.0 | 6.9 | 10.5 | 11.0 | 11/13/2024 12:00 | 8.9 | 19.9 | 7.0 | 10.4 | 10.2 |
| 11/13/2024 12:15 | 9.0 | 26.6 | 0.0 | 6.9 | 10.5 | 15.4 | 11/13/2024 12:15 | 8.9 | 22.0 | 7.1 | 10.4 | 14.9 |
| 11/13/2024 12:30 | 9.0 | 28.2 | 0.0 | 7.0 | 10.5 | 26.0 | 11/13/2024 12:30 | 8.9 | 23.7 | 7.1 | 10.4 | 25.7 |
| 11/13/2024 12:45 | 9.0 | 29.3 | 0.0 | 7.0 | 10.5 | 27.3 | 11/13/2024 12:45 | 8.9 | 25.5 | 7.2 | 10.4 | 19.6 |
| 11/13/2024 13:00 | 9.0 | 30.2 | 0.0 | 7.0 | 10.5 | 30.5 | 11/13/2024 13:00 | 8.9 | 25.8 | 7.1 | 10.4 | 32.8 |
| 11/13/2024 13:15 | 9.0 | 30.2 | 0.0 | 7.0 | 10.5 | 33.3 | 11/13/2024 13:15 | 8.9 | 26.1 | 7.1 | 10.4 | 35.2 |
| 11/13/2024 13:30 | 9.0 | 30.1 | 0.0 | 7.0 | 10.5 | 38.0 | 11/13/2024 13:30 | 8.9 | 25.9 | 7.2 | 10.4 | 35.9 |
| 11/13/2024 13:45 | 9.0 | 30.7 | 0.0 | 7.0 | 10.5 | 27.3 | 11/13/2024 13:45 | 8.9 | 27.2 | 7.2 | 10.4 | 26.8 |
| 11/13/2024 14:00 | 9.0 | 30.2 | 0.0 | 7.0 | 10.5 | 31.2 | 11/13/2024 14:00 | 8.9 | 25.4 | 7.2 | 10.4 | 45.5 |
| 11/13/2024 14:15 | 9.0 | 26.8 | 0.0 | 6.8 | 10.5 | 39.7 | 11/13/2024 14:15 | 8.9 | 25.7 | 7.2 | 10.4 | 72.6 |
| 11/13/2024 14:30 | 9.0 | 26.5 | 0.0 | 6.8 | 10.5 | 51.5 | 11/13/2024 14:30 | 8.9 | 24.5 | 7.1 | 10.4 | 62.5 |
| 11/13/2024 14:45 | 9.0 | 26.0 | 0.0 | 6.8 | 10.5 | 47.5 | 11/13/2024 14:45 | 8.9 | 24.0 | 7.2 | 10.4 | 70.4 |
| 11/13/2024 15:00 | 9.0 | 25.1 | 0.0 | 6.8 | 10.5 | 72.8 | 11/13/2024 15:00 | 8.9 | 22.7 | 7.2 | 10.4 | 38.2 |
| 11/13/2024 15:15 | 9.0 | 24.3 | 0.0 | 6.8 | 10.5 | 35.1 | 11/13/2024 15:15 | 8.9 | 21.7 | 7.1 | 10.3 | 26.3 |
| 11/13/2024 15:30 | 9.0 | 24.0 | 0.0 | 6.8 | 10.5 | 28.2 | 11/13/2024 15:30 | 8.9 | 22.0 | 7.1 | 10.4 | 26.3 |
| 11/13/2024 15:45 | 9.0 | 24.6 | 0.0 | 6.8 | 10.5 | 36.9 | 11/13/2024 15:45 | 8.9 | 22.8 | 7.1 | 10.4 | 36.1 |
| 11/13/2024 16:00 | 9.0 | 27.7 | 0.0 | 6.9 | 10.5 | 30.7 | 11/13/2024 16:00 | 8.9 | 22.8 | 7.1 | 10.4 | 43.2 |
| 11/13/2024 16:15 | 9.0 | 28.2 | 0.0 | 6.9 | 10.5 | 51.7 | 11/13/2024 16:15 | 8.9 | 24.3 | 7.2 | 10.3 | 60.3 |
| 11/13/2024 16:30 | 9.0 | 28.4 | 0.0 | 6.9 | 10.5 | 53.8 | 11/13/2024 16:30 | 8.9 | 25.3 | 7.2 | 10.4 | 79.6 |
| 11/13/2024 16:45 | 9.0 | 29.3 | 0.0 | 7.0 | 10.5 | 82.1 | 11/13/2024 16:45 | 8.9 | 26.3 | 7.2 | 10.4 | 89.9 |
| 11/13/2024 17:00 | 9.0 | 29.2 | 0.0 | 6.9 | 10.5 | 65.1 | 11/13/2024 17:00 | 8.9 | 25.7 | 7.1 | 10.4 | 65.8 |
| 11/13/2024 17:15 | 9.0 | 28.4 | 0.0 | 6.9 | 10.5 | 68.6 | 11/13/2024 17:15 | 8.9 | 24.7 | 7.1 | 10.4 | 37.4 |
| 11/13/2024 17:30 | 9.0 | 27.6 | 0.0 | 6.9 | 10.5 | 39.3 | 11/13/2024 17:30 | 8.9 | 23.2 | 7.1 | 10.4 | 25.5 |
| 11/13/2024 17:45 | 9.0 | 26.7 | 0.0 | 6.8 | 10.5 | 32.2 | 11/13/2024 17:45 | 8.9 | 22.1 | 7.0 | 10.4 | 18.8 |
| 11/13/2024 18:00 | 9.0 | 25.9 | 0.0 | 6.8 | 10.5 | 23.3 | 11/13/2024 18:00 | 8.9 | 21.2 | 7.0 | 10.4 | 15.4 |
| 11/13/2024 18:15 | 9.0 | 26.2 | 0.0 | 6.8 | 10.5 | 22.4 | 11/13/2024 18:15 | 8.9 | 22.0 | 7.1 | 10.4 | 15.9 |
| 11/13/2024 18:30 | 9.0 | 26.0 | 0.0 | 6.8 | 10.5 | 21.4 | 11/13/2024 18:30 | 8.9 | 21.0 | 7.0 | 10.4 | 10.6 |
| 11/13/2024 18:45 | 9.0 | 25.5 | 0.0 | 6.8 | 10.5 | 14.3 | 11/13/2024 18:45 | 8.9 | 20.5 | 7.0 | 10.4 | 11.2 |
| 11/13/2024 19:00 | 9.1 | 25.0 | 0.0 | 6.8 | 10.5 | 11.8 | 11/13/2024 19:00 | 9.0 | 19.3 | 7.0 | 10.4 | 5.3 |
| 11/13/2024 19:15 | 9.1 | 24.6 | 0.0 | 6.8 | 10.5 | 14.6 | 11/13/2024 19:15 | 9.0 | 19.1 | 7.0 | 10.4 | 5.9 |
| 11/13/2024 19:30 | 9.0 | 21.8 | 0.0 | 6.7 | 10.5 | 11.5 | 11/13/2024 19:30 | 9.0 | 18.4 | 7.0 | 10.4 | 4.5 |
| 11/13/2024 19:45 | 9.0 | 21.5 | 0.0 | 6.7 | 10.5 | 16.1 | 11/13/2024 19:45 | 9.0 | 18.3 | 7.0 | 10.4 | 3.2 |
| 11/13/2024 20:00 | 9.0 | 21.2 | 0.0 | 6.7 | 10.5 | 8.1 | 11/13/2024 20:00 | 9.0 | 17.7 | 7.0 | 10.4 | 4.1 |
| 11/13/2024 20:15 | 9.0 | 21.2 | 0.0 | 6.7 | 10.5 | 7.7 | 11/13/2024 20:15 | 8.9 | 18.0 | 7.0 | 10.4 | 2.0 |
| 11/13/2024 20:30 | 9.0 | 21.1 | 0.0 | 6.7 | 10.5 | 9.9 | 11/13/2024 20:30 | 8.9 | 17.4 | 7.0 | 10.4 | 3.0 |
| 11/13/2024 20:45 | 9.0 | 21.1 | 0.0 | 6.7 | 10.5 | 7.1 | 11/13/2024 20:45 | 8.9 | 17.8 | 7.0 | 10.4 | 3.9 |
| 11/13/2024 21:00 | 9.0 | 23.9 | 0.0 | 6.8 | 10.5 | 6.5 | 11/13/2024 21:00 | 8.9 | 17.4 | 7.0 | 10.4 | 1.2 |
| 11/13/2024 21:15 | 9.0 | 23.0 | 0.0 | 6.8 | 10.5 | 8.1 | 11/13/2024 21:15 | 8.9 | 17.6 | 7.0 | 10.4 | 1.2 |
| 11/13/2024 21:30 | 9.0 | 21.5 | 0.0 | 6.8 | 10.6 | 10.8 | 11/13/2024 21:30 | 8.9 | 17.8 | 7.1 | 10.4 | 2.5 |
| 11/13/2024 21:45 | 9.0 | 24.8 | 0.0 | 6.9 | 10.5 | 8.4 | 11/13/2024 21:45 | 8.9 | 19.4 | 7.0 | 10.4 | 15.6 |
| 11/13/2024 22:00 | 9.0 | 25.6 | 0.0 | 6.9 | 10.6 | 8.5 | 11/13/2024 22:00 | 8.9 | 19.5 | 7.1 | 10.4 | 6.3 |
| 11/13/2024 22:15 | 9.0 | 26.0 | 0.0 | 6.9 | 10.5 | 6.6 | 11/13/2024 22:15 | 8.9 | 20.0 | 7.1 | 10.4 | 3.3 |
| 11/13/2024 22:30 | 9.0 | 26.0 | 0.0 | 6.9 | 10.5 | 11.4 | 11/13/2024 22:30 | 8.9 | 19.5 | 7.1 | 10.4 | 3.9 |
| 11/13/2024 22:45 | 9.0 | 25.6 | 0.0 | 6.9 | 10.5 | 6.4 | 11/13/2024 22:45 | 8.8 | 19.7 | 7.1 | 10.4 | 2.1 |
| 11/13/2024 23:00 | 9.0 | 25.9 | 0.0 | 6.9 | 10.6 | 7.1 | 11/13/2024 23:00 | 8.8 | 19.1 | 7.1 | 10.4 | 2.8 |
| 11/13/2024 23:15 | 9.0 | 25.8 | 0.0 | 6.9 | 10.6 | 7.0 | 11/13/2024 23:15 | 8.8 | 19.3 | 7.1 | 10.4 | 3.1 |
| 11/13/2024 23:30 | 9.0 | 25.7 | 0.0 | 6.9 | 10.6 | 6.7 | 11/13/2024 23:30 | 8.8 | 18.9 | 7.1 | 10.5 | 1.0 |
| 11/13/2024 23:45 | 8.9 | 22.4 | 0.0 | 6.8 | 10.6 | 5.7 | 11/13/2024 23:45 | 8.8 | 19.3 | 6.9 | 10.4 | 2.7 |
| 11/14/2024 0:00 | 8.9 | 22.4 | 0.0 | 6.8 | 10.6 | 7.6 | 11/14/2024 0:00 | 8.8 | 19.4 | 7.1 | 10.4 | 1.7 |
| 11/14/2024 0:15 | 8.9 | 22.6 | 0.0 | 6.8 | 10.6 | 7.0 | 11/14/2024 0:15 | 8.8 | 19.6 | 7.0 | 10.4 | 1.6 |
| 11/14/2024 0:30 | 8.9 | 24.3 | 0.0 | 6.8 | 10.6 | 5.9 | 11/14/2024 0:30 | 8.8 | 19.7 | 7.1 | 10.5 | 2.0 |
| 11/14/2024 0:45 | 8.9 | 26.7 | 0.0 | 6.9 | 10.6 | 5.6 | 11/14/2024 0:45 | 8.8 | 21.1 | 7.0 | 10.4 | 1.3 |
| 11/14/2024 1:00 | 8.9 | 27.1 | 0.0 | 6.9 | 10.6 | 8.9 | 11/14/2024 1:00 | 8.7 | 21.1 | 7.1 | 10.5 | 1.9 |
| 11/14/2024 1:15 | 8.8 | 24.3 | 0.0 | 6.8 | 10.6 | 7.9 | 11/14/2024 1:15 | 8.7 | 21.7 | 7.1 | 10.5 | 1.8 |
| 11/14/2024 1:30 | 8.8 | 24.4 | 0.0 | 6.8 | 10.6 | 6.7 | 11/14/2024 1:30 | 8.7 | 21.9 | 7.2 | 10.5 | 1.5 |
| 11/14/2024 1:45 | 8.8 | 24.5 | 0.0 | 6.8 | 10.6 | 9.7 | 11/14/2024 1:45 | 8.7 | 22.5 | 7.2 | 10.5 | 2.4 |
| 11/14/2024 2:00 | 8.8 | 24.7 | 0.0 | 6.8 | 10.6 | 9.0 | 11/14/2024 2:00 | 8.7 | 22.8 | 7.2 | 10.5 | 3.4 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/14/2024 2:15 | 8.8 | 25.1 | 0.0 | 6.8 | 10.6 | 19.7 | 11/14/2024 2:15 | 8.7 | 23.5 | | 7.2 | 10.4 | 2.7 |
| 11/14/2024 2:30 | 8.8 | 26.7 | 0.0 | 6.8 | 10.6 | 19.1 | 11/14/2024 2:30 | 8.7 | 23.2 | | 7.2 | 10.5 | 4.8 |
| 11/14/2024 2:45 | 8.8 | 28.5 | 0.0 | 6.9 | 10.6 | 11.8 | 11/14/2024 2:45 | 8.7 | 23.1 | | 7.1 | 10.5 | 2.3 |
| 11/14/2024 3:00 | 8.8 | 28.1 | 0.0 | 6.9 | 10.6 | 9.8 | 11/14/2024 3:00 | 8.7 | 22.7 | | 7.2 | 10.5 | 2.0 |
| 11/14/2024 3:15 | 8.8 | 27.9 | 0.0 | 6.9 | 10.6 | 8.5 | 11/14/2024 3:15 | 8.7 | 22.4 | | 7.1 | 10.5 | 1.3 |
| 11/14/2024 3:30 | 8.8 | 27.5 | 0.0 | 6.9 | 10.6 | 8.7 | 11/14/2024 3:30 | 8.7 | 21.8 | | 7.2 | 10.5 | 2.1 |
| 11/14/2024 3:45 | 8.8 | 27.1 | 0.0 | 6.9 | 10.6 | 8.4 | 11/14/2024 3:45 | 8.7 | 21.8 | | 7.0 | 10.5 | 2.2 |
| 11/14/2024 4:00 | 8.8 | 27.1 | 0.0 | 6.9 | 10.6 | 10.6 | 11/14/2024 4:00 | 8.7 | 21.0 | | 7.1 | 10.5 | 4.9 |
| 11/14/2024 4:15 | 8.8 | 26.8 | 0.0 | 6.9 | 10.6 | 7.9 | 11/14/2024 4:15 | 8.7 | 20.9 | | 7.1 | 10.5 | 1.6 |
| 11/14/2024 4:30 | 8.8 | 26.3 | 0.0 | 6.9 | 10.6 | 10.5 | 11/14/2024 4:30 | 8.7 | 20.1 | | 7.1 | 10.5 | 11.0 |
| 11/14/2024 4:45 | 8.8 | 26.0 | 0.0 | 6.8 | 10.6 | 6.9 | 11/14/2024 4:45 | 8.7 | 19.8 | | 7.1 | 10.5 | 2.6 |
| 11/14/2024 5:00 | 8.8 | 25.6 | 0.0 | 6.9 | 10.6 | 7.4 | 11/14/2024 5:00 | 8.7 | 19.2 | | 7.1 | 10.5 | 1.2 |
| 11/14/2024 5:15 | 8.8 | 25.6 | 0.0 | 6.9 | 10.6 | 8.4 | 11/14/2024 5:15 | 8.7 | 19.7 | | 7.1 | 10.5 | 3.9 |
| 11/14/2024 5:30 | 8.8 | 23.3 | 0.0 | 6.8 | 10.7 | 9.7 | 11/14/2024 5:30 | 8.7 | 20.4 | | 7.1 | 10.5 | 6.6 |
| 11/14/2024 5:45 | 8.8 | 23.7 | 0.0 | 6.8 | 10.7 | 8.2 | 11/14/2024 5:45 | 8.7 | 20.8 | | 7.1 | 10.5 | 5.3 |
| 11/14/2024 6:00 | 8.8 | 23.6 | 0.0 | 6.8 | 10.6 | 9.8 | 11/14/2024 6:00 | 8.7 | 20.5 | | 7.0 | 10.5 | 2.2 |
| 11/14/2024 6:15 | 8.7 | 23.4 | 0.0 | 6.8 | 10.7 | 7.0 | 11/14/2024 6:15 | 8.7 | 20.4 | | 6.9 | 10.5 | 2.9 |
| 11/14/2024 6:30 | 8.8 | 23.1 | 0.0 | 6.8 | 10.7 | 7.6 | 11/14/2024 6:30 | 8.7 | 20.0 | | 7.1 | 10.6 | 3.4 |
| 11/14/2024 6:45 | 8.7 | 22.8 | 0.0 | 6.7 | 10.7 | 7.8 | 11/14/2024 6:45 | 8.7 | 19.5 | | 7.1 | 10.5 | 1.2 |
| 11/14/2024 7:00 | 8.8 | 25.5 | 0.0 | 6.8 | 10.7 | 6.7 | 11/14/2024 7:00 | 8.7 | 18.9 | | 7.0 | 10.5 | 2.6 |
| 11/14/2024 7:15 | 8.8 | 25.2 | 0.0 | 6.8 | 10.7 | 6.5 | 11/14/2024 7:15 | 8.7 | 18.7 | | 7.1 | 10.5 | 1.4 |
| 11/14/2024 7:30 | 8.8 | 24.9 | 0.0 | 6.9 | 10.7 | 6.0 | 11/14/2024 7:30 | 8.7 | 17.8 | | 7.1 | 10.5 | 0.9 |
| 11/14/2024 7:45 | 8.8 | 24.6 | 0.0 | 6.9 | 10.7 | 5.2 | 11/14/2024 7:45 | 8.7 | 17.6 | | 7.0 | 10.5 | 1.5 |
| 11/14/2024 8:00 | 8.8 | 24.4 | 0.0 | 6.9 | 10.7 | 5.6 | 11/14/2024 8:00 | 8.7 | 17.1 | | 7.1 | 10.5 | 1.7 |
| 11/14/2024 8:15 | 8.8 | 24.2 | 0.0 | 6.9 | 10.7 | 5.2 | 11/14/2024 8:15 | 8.7 | 17.0 | | 7.0 | 10.5 | 3.3 |
| 11/14/2024 8:30 | 8.7 | 23.3 | 0.0 | 6.8 | 10.7 | 7.0 | 11/14/2024 8:30 | 8.7 | 16.5 | | 7.0 | 10.5 | 3.3 |
| 11/14/2024 8:45 | 8.8 | 24.1 | 0.0 | 6.9 | 10.7 | 6.3 | 11/14/2024 8:45 | 8.7 | 16.6 | | 7.0 | 10.5 | 1.6 |
| 11/14/2024 9:00 | 8.8 | 24.0 | 0.0 | 6.9 | 10.7 | 6.5 | 11/14/2024 9:00 | 8.7 | 16.3 | | 6.9 | 10.5 | 0.7 |
| 11/14/2024 9:15 | 8.7 | 20.3 | 0.0 | 6.7 | 10.7 | 5.4 | 11/14/2024 9:15 | 8.7 | 16.2 | | 7.0 | 10.5 | 0.7 |
| 11/14/2024 9:30 | 8.7 | 20.2 | 0.0 | 6.7 | 10.7 | 5.4 | 11/14/2024 9:30 | 8.7 | 16.0 | | 7.0 | 10.5 | 0.6 |
| 11/14/2024 9:45 | 8.7 | 20.1 | 0.0 | 6.7 | 10.7 | 4.2 | 11/14/2024 9:45 | 8.7 | 16.0 | | 7.0 | 10.5 | 0.4 |
| 11/14/2024 10:00 | 8.8 | 20.0 | 0.0 | 6.7 | 10.7 | 4.6 | 11/14/2024 10:00 | 8.7 | 15.6 | | 7.0 | 10.6 | 0.9 |
| 11/14/2024 10:15 | 8.8 | 20.0 | 0.0 | 6.7 | 10.7 | 4.2 | 11/14/2024 10:15 | 8.7 | 15.8 | | 7.0 | 10.5 | 0.8 |
| 11/14/2024 10:30 | 8.8 | 23.8 | 0.0 | 6.8 | 10.7 | 5.4 | 11/14/2024 10:30 | 8.7 | 15.5 | | 6.9 | 10.5 | 2.8 |
| 11/14/2024 10:45 | 8.8 | 24.0 | 0.0 | 6.9 | 10.7 | 5.4 | 11/14/2024 10:45 | 8.7 | 15.7 | | 7.0 | 10.5 | 1.0 |
| 11/14/2024 11:00 | 8.8 | 23.3 | 0.0 | 6.9 | 10.7 | 4.7 | 11/14/2024 11:00 | 8.7 | 15.2 | | 6.9 | 10.6 | 1.0 |
| 11/14/2024 11:15 | 8.9 | 23.3 | 0.0 | 6.9 | 10.7 | 5.7 | 11/14/2024 11:15 | 8.8 | 15.4 | | 7.0 | 10.5 | 2.5 |
| 11/14/2024 11:30 | 8.9 | 23.3 | 0.0 | 6.9 | 10.7 | 8.0 | 11/14/2024 11:30 | 8.8 | 15.2 | | 7.0 | 10.5 | 4.7 |
| 11/14/2024 11:45 | 8.9 | 23.3 | 0.0 | 6.9 | 10.7 | 9.3 | 11/14/2024 11:45 | 8.8 | 15.3 | | 7.0 | 10.5 | 3.5 |
| 11/14/2024 12:00 | 8.9 | 23.2 | 0.0 | 6.9 | 10.7 | 7.0 | 11/14/2024 12:00 | 8.8 | 15.1 | | 6.8 | 10.5 | 2.4 |
| 11/14/2024 12:15 | 8.9 | 23.2 | 0.0 | 6.9 | 10.7 | 6.0 | 11/14/2024 12:15 | 8.9 | 15.0 | 0.0 | 6.9 | 10.5 | 2.1 |
| 11/14/2024 12:30 | 9.0 | 23.1 | 0.0 | 6.9 | 10.6 | 6.9 | 11/14/2024 12:30 | 8.9 | 15.1 | 0.0 | 6.9 | 10.5 | 3.4 |
| 11/14/2024 12:45 | 9.0 | 23.1 | 0.0 | 6.9 | 10.6 | 5.6 | 11/14/2024 12:45 | 8.9 | 15.0 | 0.0 | 6.8 | 10.5 | 3.0 |
| 11/14/2024 13:00 | 9.0 | 23.0 | 0.0 | 6.9 | 10.6 | 7.7 | 11/14/2024 13:00 | 8.9 | 15.0 | 0.0 | 6.9 | 10.5 | 4.6 |
| 11/14/2024 13:15 | 9.0 | 22.9 | 0.0 | 6.9 | 10.6 | 7.3 | 11/14/2024 13:15 | 8.9 | 14.9 | 0.0 | 6.8 | 10.5 | 2.7 |
| 11/14/2024 13:30 | 9.0 | 22.9 | 0.0 | 6.9 | 10.6 | 8.3 | 11/14/2024 13:30 | 8.9 | 14.8 | 0.0 | 6.9 | 10.5 | 2.1 |
| 11/14/2024 13:45 | 9.0 | 23.0 | 0.0 | 6.9 | 10.6 | 4.6 | 11/14/2024 13:45 | 8.9 | 14.8 | 0.0 | 6.9 | 10.5 | 1.3 |
| 11/14/2024 14:00 | 9.0 | 23.0 | 0.0 | 6.9 | 10.6 | 4.9 | 11/14/2024 14:00 | | 14.7 | 0.0 | 6.8 | 10.5 | 1.2 |
| 11/14/2024 14:15 | 9.0 | 23.0 | 0.0 | 6.9 | 10.7 | 4.9 | 11/14/2024 14:15 | 8.9 | 14.7 | 0.0 | 6.9 | 10.5 | 1.4 |
| 11/14/2024 14:30 | 9.0 | 22.8 | 0.0 | 6.9 | 10.7 | 6.3 | 11/14/2024 14:30 | 8.9 | 14.7 | 0.0 | 6.8 | 10.5 | 1.9 |
| 11/14/2024 14:45 | 9.0 | 22.8 | 0.0 | 6.9 | 10.6 | 5.0 | 11/14/2024 14:45 | 8.9 | 14.7 | 0.0 | 6.8 | 10.5 | 1.1 |
| 11/14/2024 15:00 | 9.0 | 19.4 | 0.0 | 6.8 | 10.7 | 4.4 | 11/14/2024 15:00 | 8.9 | 14.9 | 0.0 | 6.8 | 10.5 | 2.2 |
| 11/14/2024 15:15 | 8.9 | 19.5 | 0.0 | 6.7 | 10.7 | 6.5 | 11/14/2024 15:15 | 8.9 | 15.0 | 0.0 | 6.8 | 10.5 | 1.1 |
| 11/14/2024 15:30 | 8.9 | 19.7 | 0.0 | 6.7 | 10.7 | 6.0 | 11/14/2024 15:30 | 8.8 | 15.7 | 0.0 | 6.9 | 10.5 | 1.6 |
| 11/14/2024 15:45 | 8.9 | 20.1 | 0.0 | 6.8 | 10.7 | 8.3 | 11/14/2024 15:45 | 8.8 | 16.0 | 0.0 | 6.9 | 10.5 | 6.1 |
| 11/14/2024 16:00 | 8.9 | 20.3 | 0.0 | 6.7 | 10.7 | 6.2 | 11/14/2024 16:00 | 8.8 | 15.7 | 0.0 | 6.9 | 10.5 | 3.5 |
| 11/14/2024 16:15 | 8.8 | 20.0 | 0.0 | 6.7 | 10.7 | 5.7 | 11/14/2024 16:15 | 8.7 | 15.6 | 0.0 | 6.9 | 10.5 | 2.2 |
| 11/14/2024 16:30 | 8.8 | 19.8 | 0.0 | 6.8 | 10.7 | 4.9 | 11/14/2024 16:30 | 8.7 | 15.4 | 0.0 | 6.9 | 10.5 | 1.7 |
| 11/14/2024 16:45 | 8.8 | 23.4 | 0.0 | 6.9 | 10.7 | 4.1 | 11/14/2024 16:45 | 8.7 | 15.5 | 0.0 | 6.9 | 10.6 | 1.0 |
| 11/14/2024 17:00 | 8.8 | 23.3 | 0.0 | 6.9 | 10.7 | 4.8 | 11/14/2024 17:00 | 8.7 | 15.3 | 0.0 | 6.9 | 10.6 | 1.1 |
| 11/14/2024 17:15 | 8.8 | 25.2 | 0.0 | 6.9 | 10.7 | 4.6 | 11/14/2024 17:15 | 8.6 | 15.3 | 0.0 | 6.8 | 10.6 | 0.7 |
| 11/14/2024 17:30 | 8.8 | 25.0 | 0.0 | 6.9 | 10.7 | 4.2 | 11/14/2024 17:30 | 8.6 | 15.2 | 0.0 | 6.8 | 10.6 | 0.8 |
| 11/14/2024 17:45 | 8.7 | 25.0 | 0.0 | 6.9 | 10.7 | 5.4 | 11/14/2024 17:45 | 8.6 | 15.1 | 0.0 | 6.9 | 10.6 | 11.7 |
| 11/14/2024 18:00 | 8.7 | 24.8 | 0.0 | 6.9 | 10.7 | 5.6 | 11/14/2024 18:00 | 8.5 | 15.1 | 0.0 | 6.8 | 10.6 | 0.8 |
| 11/14/2024 18:15 | 8.7 | 24.6 | 0.0 | 6.9 | 10.7 | 4.3 | 11/14/2024 18:15 | 8.5 | 15.0 | 0.0 | 6.9 | 10.6 | 0.6 |
| 11/14/2024 18:30 | 8.6 | 24.4 | 0.0 | 6.9 | 10.8 | 5.0 | 11/14/2024 18:30 | 8.5 | 14.9 | 0.0 | 6.8 | 10.6 | 0.9 |
| 11/14/2024 18:45 | 8.6 | 24.3 | 0.0 | 6.9 | 10.8 | 4.5 | 11/14/2024 18:45 | 8.5 | 14.9 | 0.0 | 6.8 | 10.6 | 0.7 |
| 11/14/2024 19:00 | 8.6 | 24.1 | 0.0 | 6.9 | 10.8 | 4.6 | 11/14/2024 19:00 | 8.5 | 14.8 | 0.0 | 6.9 | 10.6 | 0.6 |
| 11/14/2024 19:15 | 8.6 | 23.9 | 0.0 | 6.9 | 10.8 | 5.1 | 11/14/2024 19:15 | 8.5 | 14.8 | 0.0 | 6.7 | 10.6 | 0.5 |
| 11/14/2024 19:30 | 8.6 | 23.8 | 0.0 | 6.9 | 10.8 | 5.2 | 11/14/2024 19:30 | 8.4 | 14.7 | 0.0 | 6.8 | 10.6 | 0.3 |
| 11/14/2024 19:45 | 8.6 | 24.8 | 0.0 | 6.9 | 10.8 | 4.7 | 11/14/2024 19:45 | 8.4 | 14.6 | 0.0 | 6.7 | 10.6 | 0.8 |
| 11/14/2024 20:00 | 8.5 | 22.8 | 0.0 | 6.9 | 10.8 | 4.2 | 11/14/2024 20:00 | 8.4 | 14.6 | 0.0 | 6.8 | 10.6 | 0.5 |
| 11/14/2024 20:15 | 8.5 | 24.4 | 0.0 | 6.9 | 10.8 | 4.1 | 11/14/2024 20:15 | 8.3 | 14.5 | 0.0 | 6.8 | 10.7 | 0.5 |
| 11/14/2024 20:30 | 8.5 | 24.8 | 0.0 | 6.9 | 10.8 | 3.8 | 11/14/2024 20:30 | 8.3 | 14.5 | 0.0 | 6.8 | 10.7 | 0.6 |
| 11/14/2024 20:45 | 8.5 | 24.7 | 0.0 | 6.9 | 10.8 | 3.7 | 11/14/2024 20:45 | 8.3 | 14.5 | 0.0 | 6.9 | 10.7 | 0.6 |
| 11/14/2024 21:00 | 8.4 | 24.8 | 0.0 | 6.9 | 10.8 | 4.0 | 11/14/2024 21:00 | 8.3 | 14.4 | 0.0 | 6.8 | 10.7 | 0.2 |
| 11/14/2024 21:15 | 8.4 | 24.5 | 0.0 | 6.9 | 10.8 | 4.8 | 11/14/2024 21:15 | 8.3 | 14.4 | 0.0 | 6.8 | 10.7 | 0.3 |
| 11/14/2024 21:30 | 8.4 | 24.5 | 0.0 | 6.9 | 10.8 | 4.1 | 11/14/2024 21:30 | 8.3 | 14.2 | 0.0 | 6.9 | 10.7 | 0.5 |
| 11/14/2024 21:45 | 8.3 | 19.4 | 0.0 | 6.8 | 10.9 | 3.8 | 11/14/2024 21:45 | 8.3 | 14.3 | 0.0 | 6.8 | 10.7 | 0.4 |
| 11/14/2024 22:00 | 8.3 | 19.2 | 0.0 | 6.7 | 10.8 | 3.6 | 11/14/2024 22:00 | 8.3 | 14.3 | 0.0 | 6.8 | 10.7 | 2.1 |
| 11/14/2024 22:15 | 8.3 | 19.1 | 0.0 | 6.7 | 10.9 | 3.7 | 11/14/2024 22:15 | 8.3 | 14.2 | 0.0 | 6.9 | 10.7 | 0.3 |
| 11/14/2024 22:30 | 8.3 | 19.0 | 0.0 | 6.7 | 10.9 | 3.5 | 11/14/2024 22:30 | 8.3 | 14.2 | 0.0 | 6.9 | 10.7 | 0.5 |
| 11/14/2024 22:45 | 8.3 | 19.5 | 0.0 | 6.8 | 10.9 | 3.7 | 11/14/2024 22:45 | 8.2 | 14.1 | 0.0 | 6.8 | 10.7 | 0.3 |
| 11/14/2024 23:00 | 8.4 | 24.6 | 0.0 | 6.9 | 10.8 | 3.6 | 11/14/2024 23:00 | 8.2 | 14.2 | 0.0 | 6.8 | 10.7 | 0.3 |
| 11/14/2024 23:15 | 8.3 | 24.6 | 0.0 | 6.9 | 10.9 | 3.7 | 11/14/2024 23:15 | 8.2 | 14.0 | 0.0 | 6.8 | 10.7 | 0.2 |
| 11/14/2024 23:30 | 8.3 | 24.7 | 0.0 | 6.9 | 10.8 | 4.7 | 11/14/2024 23:30 | 8.2 | 14.1 | 0.0 | 6.8 | 10.7 | 0.3 |
| 11/14/2024 23:45 | 8.3 | 24.7 | 0.0 | 6.9 | 10.9 | 3.4 | 11/14/2024 23:45 | 8.2 | 14.0 | 0.0 | 6.8 | 10.7 | 0.5 |
| 11/15/2024 0:00 | 8.3 | 23.5 | 0.0 | 6.9 | 10.9 | 3.6 | 11/15/2024 0:00 | 8.2 | 14.0 | 0.0 | 6.9 | 10.7 | 0.4 |
| 11/15/2024 0:15 | 8.2 | 19.1 | 0.0 | 6.8 | 10.9 | 3.7 | 11/15/2024 0:15 | 8.1 | 13.9 | 0.0 | 6.8 | 10.7 | 1.3 |
| 11/15/2024 0:30 | 8.2 | 19.0 | 0.0 | 6.7 | 10.9 | 3.6 | 11/15/2024 0:30 | 8.1 | 13.8 | 0.0 | 6.8 | 10.7 | 0.4 |
| 11/15/2024 0:45 | 8.1 | 18.8 | 0.0 | 6.7 | 10.9 | 3.5 | 11/15/2024 0:45 | 8.1 | 13.9 | 0.0 | 6.8 | 10.7 | 0.4 |
| 11/15/2024 1:00 | 8.1 | 18.7 | 0.0 | 6.8 | 10.9 | 4.0 | 11/15/2024 1:00 | 8.1 | 13.8 | 0.0 | 6.8 | 10.7 | 0.3 |
| 11/15/2024 1:15 | 8.1 | 18.8 | 0.0 | 6.7 | 10.9 | 3.6 | 11/15/2024 1:15 | 8.1 | 13.8 | 0.0 | 6.9 | 10.7 | 0.2 |
| 11/15/2024 1:30 | 8.2 | 24.8 | 0.0 | 6.9 | 10.9 | 3.8 | 11/15/2024 1:30 | 8.1 | 13.7 | 0.0 | 6.8 | 10.7 | 1.3 |
| 11/15/2024 1:45 | 8.2 | 24.9 | 0.0 | 6.9 | 10.9 | 3.5 | 11/15/2024 1:45 | 8.1 | 13.7 | 0.0 | 6.8 | 10.7 | 0.5 |
| 11/15/2024 2:00 | 8.2 | 24.8 | 0.0 | 7.0 | 10.9 | 3.4 | 11/15/2024 2:00 | 8.0 | 13.6 | 0.0 | 6.9 | 10.7 | 0.4 |
| 11/15/2024 2:15 | 8.1 | 24.9 | 0.0 | 6.9 | 10.9 | 4.0 | 11/15/2024 2:15 | 8.0 | 13.6 | 0.0 | 6.7 | 10.8 | 0.7 |
| 11/15/2024 2:30 | 8.1 | 24.9 | 0.0 | 6.9 | 10.9 | 3.5 | 11/15/2024 2:30 | 8.0 | 13.6 | 0.0 | 6.8 | 10.8 | 0.3 |
| 11/15/2024 2:45 | 8.1 | 24.9 | 0.0 | 7.0 | 10.9 | 3.4 | 11/15/2024 2:45 | 8.0 | 13.5 | 0.0 | 6.8 | 10.8 | 0.5 |
| 11/15/2024 3:00 | 8.0 | 18.9 | 0.0 | 6.8 | 10.9 | 3.8 | 11/15/2024 3:00 | 8.0 | 13.4 | 0.0 | 6.8 | 10.8 | 0.2 |
| 11/15/2024 3:15 | 8.0 | 18.9 | 0.0 | 6.7 | 10.9 | 4.0 | 11/15/2024 3:15 | 8.0 | 13.5 | 0.0 | 6.8 | 10.8 | 0.1 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/15/2024 3:30 | 8.0 | 18.9 | 0.0 | 6.7 | 11.0 | 3.6 | 11/15/2024 3:30 | 8.0 | 13.5 | 0.0 | 6.9 | 10.8 | 0.3 |
| 11/15/2024 3:45 | 8.1 | 25.0 | 0.0 | 7.0 | 10.9 | 3.6 | 11/15/2024 3:45 | 8.0 | 13.4 | 0.0 | 6.8 | 10.8 | 3.3 |
| 11/15/2024 4:00 | 8.1 | 25.0 | 0.0 | 7.0 | 10.9 | 3.5 | 11/15/2024 4:00 | | 13.5 | 0.0 | 6.9 | 10.8 | 0.2 |
| 11/15/2024 4:15 | 8.1 | 25.0 | 0.0 | 7.0 | 10.9 | 3.4 | 11/15/2024 4:15 | 8.0 | 13.4 | 0.0 | 6.8 | 10.8 | 0.4 |
| 11/15/2024 4:30 | 8.1 | 25.1 | 0.0 | 7.0 | 10.9 | 4.7 | 11/15/2024 4:30 | 8.0 | 13.4 | 0.0 | 6.9 | 10.8 | 1.0 |
| 11/15/2024 4:45 | 8.1 | 25.1 | 0.0 | 7.0 | 10.9 | 4.6 | 11/15/2024 4:45 | 8.0 | 13.4 | 0.0 | 6.8 | 10.8 | 0.1 |
| 11/15/2024 5:00 | 8.0 | 25.0 | 0.0 | 7.0 | 10.9 | 4.3 | 11/15/2024 5:00 | 7.9 | 13.3 | 0.0 | 6.9 | 10.8 | 0.4 |
| 11/15/2024 5:15 | 8.0 | 25.2 | 0.0 | 7.0 | 10.9 | 4.3 | 11/15/2024 5:15 | 7.9 | 13.2 | 0.0 | 6.8 | 10.8 | 0.2 |
| 11/15/2024 5:30 | 8.0 | 25.2 | 0.0 | 7.0 | 10.9 | 3.8 | 11/15/2024 5:30 | 7.9 | 13.4 | 0.0 | 6.8 | 10.8 | 0.5 |
| 11/15/2024 5:45 | 8.0 | 25.2 | 0.0 | 7.0 | 11.0 | 4.3 | 11/15/2024 5:45 | 7.9 | 13.2 | 0.0 | 6.9 | 10.8 | 0.4 |
| 11/15/2024 6:00 | 8.0 | 25.1 | 0.0 | 7.0 | 11.0 | 3.7 | 11/15/2024 6:00 | 7.9 | 13.2 | 0.0 | 6.8 | 10.8 | 0.3 |
| 11/15/2024 6:15 | 7.9 | 25.2 | 0.0 | 7.0 | 11.0 | 3.7 | 11/15/2024 6:15 | 7.8 | 13.3 | 0.0 | 6.7 | 10.8 | 0.3 |
| 11/15/2024 6:30 | 7.9 | 25.2 | 0.0 | 7.0 | 11.0 | 4.1 | 11/15/2024 6:30 | 7.8 | 13.2 | 0.0 | 6.8 | 10.8 | 0.2 |
| 11/15/2024 6:45 | 7.8 | 18.4 | 0.0 | 6.8 | 11.0 | 3.4 | 11/15/2024 6:45 | 7.8 | 13.2 | 0.0 | 6.8 | 10.8 | 1.0 |
| 11/15/2024 7:00 | 7.8 | 18.2 | 0.0 | 6.7 | 11.0 | 3.4 | 11/15/2024 7:00 | 7.8 | 13.1 | 0.0 | 6.8 | 10.8 | 0.3 |
| 11/15/2024 7:15 | 7.8 | 18.2 | 0.0 | 6.7 | 11.0 | 3.5 | 11/15/2024 7:15 | 7.8 | 13.1 | 0.0 | 6.8 | 10.8 | 0.2 |
| 11/15/2024 7:30 | 7.8 | 18.2 | 0.0 | 6.7 | 11.0 | 3.6 | 11/15/2024 7:30 | 7.8 | 13.1 | 0.0 | 6.8 | 10.8 | 0.2 |
| 11/15/2024 7:45 | 7.8 | 18.2 | 0.0 | 6.7 | 11.0 | 3.6 | 11/15/2024 7:45 | 7.9 | 13.0 | 0.0 | 6.8 | 10.8 | 0.2 |
| 11/15/2024 8:00 | 7.8 | 18.1 | 0.0 | 6.7 | 11.0 | 3.5 | 11/15/2024 8:00 | 7.8 | 13.1 | 0.0 | 6.8 | 10.8 | 0.3 |
| 11/15/2024 8:15 | 7.8 | 18.1 | 0.0 | 6.7 | 11.0 | 3.6 | 11/15/2024 8:15 | 7.9 | 13.1 | 0.0 | 6.9 | 10.8 | 0.2 |
| 11/15/2024 8:30 | 7.8 | 18.1 | 0.0 | 6.7 | 11.0 | 3.5 | 11/15/2024 8:30 | 7.9 | 13.0 | 0.0 | 6.8 | 10.8 | 0.3 |
| 11/15/2024 8:45 | 7.8 | 18.1 | 0.0 | 6.7 | 11.0 | 3.6 | 11/15/2024 8:45 | 7.9 | 13.0 | 0.0 | 6.8 | 10.8 | 0.2 |
| 11/15/2024 9:00 | 7.9 | 21.2 | 0.0 | 6.8 | 11.0 | 3.5 | 11/15/2024 9:00 | 7.9 | 12.9 | 0.0 | 6.8 | 10.8 | 0.2 |
| 11/15/2024 9:15 | 7.9 | 19.0 | 0.0 | 6.8 | 11.0 | 3.5 | 11/15/2024 9:15 | 7.9 | 12.9 | 0.0 | 6.8 | 10.8 | 0.2 |
| 11/15/2024 9:30 | 7.9 | 20.3 | 0.0 | 6.8 | 11.0 | 3.3 | 11/15/2024 9:30 | 7.9 | 12.9 | 0.0 | 6.8 | 10.8 | 0.1 |
| 11/15/2024 9:45 | 8.3 | 42.6 | 0.0 | 7.3 | 10.9 | 12.9 | 11/15/2024 9:45 | 8.0 | 12.9 | 0.0 | 6.9 | 10.8 | 0.3 |
| 11/15/2024 10:00 | 8.1 | 25.7 | 0.0 | 7.1 | 10.9 | 3.6 | 11/15/2024 10:00 | 8.0 | 12.9 | 0.0 | 6.9 | 10.8 | 0.3 |
| 11/15/2024 10:15 | 8.0 | 18.9 | 0.0 | 6.8 | 11.0 | 3.3 | 11/15/2024 10:15 | 8.0 | 12.8 | 0.0 | 6.9 | 10.8 | 0.6 |
| 11/15/2024 10:30 | 8.2 | 30.6 | 0.0 | 7.1 | 10.9 | 3.5 | 11/15/2024 10:30 | 8.1 | 12.8 | 0.0 | 6.8 | 10.8 | 0.1 |
| 11/15/2024 10:45 | 8.3 | 31.9 | 0.0 | 7.2 | 10.9 | 3.5 | 11/15/2024 10:45 | 8.1 | 12.8 | 0.0 | 6.8 | 10.8 | 0.2 |
| 11/15/2024 11:00 | 8.3 | 32.0 | 0.0 | 7.2 | 10.9 | 3.9 | 11/15/2024 11:00 | 8.1 | 12.8 | 0.0 | 6.8 | 10.8 | 0.2 |
| 11/15/2024 11:15 | 8.3 | 30.7 | 0.0 | 7.1 | 10.9 | 5.4 | 11/15/2024 11:15 | 8.2 | 12.7 | 0.0 | 6.8 | 10.8 | 0.2 |
| 11/15/2024 11:30 | 8.4 | 32.2 | 0.0 | 7.2 | 10.9 | 3.9 | 11/15/2024 11:30 | 8.2 | 12.7 | 0.0 | 6.8 | 10.7 | 0.2 |
| 11/15/2024 11:45 | 8.3 | 21.0 | 0.0 | 7.0 | 10.9 | 3.5 | 11/15/2024 11:45 | 8.2 | 12.7 | 0.0 | 6.9 | 10.7 | 0.2 |
| 11/15/2024 12:00 | 8.2 | 19.3 | 0.0 | 6.9 | 10.9 | 3.5 | 11/15/2024 12:00 | 8.2 | 12.6 | 0.0 | 6.8 | 10.7 | 0.2 |
| 11/15/2024 12:15 | 8.2 | 18.1 | 0.0 | 6.8 | 10.9 | 3.5 | 11/15/2024 12:15 | 8.3 | 12.6 | 0.0 | 6.9 | 10.7 | 0.1 |
| 11/15/2024 12:30 | 8.3 | 17.8 | 0.0 | 6.8 | 10.9 | 3.4 | 11/15/2024 12:30 | 8.3 | 12.5 | 0.0 | 6.8 | 10.7 | 0.5 |
| 11/15/2024 12:45 | 8.3 | 17.8 | 0.0 | 6.8 | 10.9 | 3.9 | 11/15/2024 12:45 | 8.3 | 12.5 | 0.0 | 6.7 | 10.7 | 0.2 |
| 11/15/2024 13:00 | 8.3 | 18.2 | 0.0 | 6.8 | 10.9 | 3.4 | 11/15/2024 13:00 | 8.4 | 12.5 | 0.0 | 6.8 | 10.7 | 0.2 |
| 11/15/2024 13:15 | 8.3 | 17.8 | 0.0 | 6.8 | 10.9 | 3.4 | 11/15/2024 13:15 | 8.4 | 12.5 | 0.0 | 6.7 | 10.7 | 0.3 |
| 11/15/2024 13:30 | 8.4 | 17.7 | 0.0 | 6.8 | 10.9 | 3.5 | 11/15/2024 13:30 | 8.4 | 12.5 | 0.0 | 6.8 | 10.7 | 0.3 |
| 11/15/2024 13:45 | 8.5 | 24.5 | 0.0 | 7.0 | 10.8 | 3.8 | 11/15/2024 13:45 | 8.4 | 12.4 | 0.0 | 6.8 | 10.7 | 0.2 |
| 11/15/2024 14:00 | 8.4 | 24.1 | 0.0 | 7.0 | 10.8 | 3.5 | 11/15/2024 14:00 | 8.4 | 12.4 | 0.0 | 6.8 | 10.7 | 0.6 |
| 11/15/2024 14:15 | 8.4 | 23.6 | 0.0 | 7.0 | 10.8 | 3.6 | 11/15/2024 14:15 | 8.4 | 12.4 | 0.0 | 6.8 | 10.7 | 0.4 |
| 11/15/2024 14:30 | 8.4 | 23.0 | 0.0 | 6.9 | 10.9 | 4.0 | 11/15/2024 14:30 | 8.3 | 12.4 | 0.0 | 6.7 | 10.7 | 0.7 |
| 11/15/2024 14:45 | 8.3 | 18.1 | 0.0 | 6.8 | 10.9 | 3.5 | 11/15/2024 14:45 | 8.4 | 12.4 | 0.0 | 6.8 | 10.7 | 0.2 |
| 11/15/2024 15:00 | 8.3 | 17.9 | 0.0 | 6.8 | 10.9 | 3.6 | 11/15/2024 15:00 | 8.3 | 12.4 | 0.0 | 6.9 | 10.7 | 0.1 |
| 11/15/2024 15:15 | 8.3 | 17.7 | 0.0 | 6.8 | 10.9 | 3.5 | 11/15/2024 15:15 | 8.3 | 12.4 | 0.0 | 6.8 | 10.7 | 0.5 |
| 11/15/2024 15:30 | 8.2 | 17.6 | 0.0 | 6.7 | 10.9 | 3.6 | 11/15/2024 15:30 | 8.3 | 12.4 | 0.0 | 6.8 | 10.7 | 0.2 |
| 11/15/2024 15:45 | 8.2 | 17.6 | 0.0 | 6.8 | 10.9 | 3.4 | 11/15/2024 15:45 | 8.2 | 12.4 | 0.0 | 6.8 | 10.7 | 0.2 |
| 11/15/2024 16:00 | 8.2 | 17.6 | 0.0 | 6.8 | 10.9 | 3.6 | 11/15/2024 16:00 | 8.2 | 12.4 | 0.0 | 6.9 | 10.7 | 0.3 |
| 11/15/2024 16:15 | 8.3 | 28.4 | 0.0 | 7.1 | 10.9 | 3.5 | 11/15/2024 16:15 | 8.2 | 12.4 | 0.0 | 6.7 | 10.7 | 0.2 |
| 11/15/2024 16:30 | 8.3 | 27.6 | 0.0 | 7.1 | 10.9 | 3.6 | 11/15/2024 16:30 | 8.1 | 12.4 | 0.0 | 6.8 | 10.8 | 0.6 |
| 11/15/2024 16:45 | 8.2 | 27.9 | 0.0 | 7.0 | 10.9 | 3.4 | 11/15/2024 16:45 | 8.1 | 12.4 | 0.0 | 6.8 | 10.8 | 0.3 |
| 11/15/2024 17:00 | 8.2 | 29.3 | 0.0 | 7.1 | 10.9 | 4.4 | 11/15/2024 17:00 | 8.0 | 12.5 | 0.0 | 6.7 | 10.8 | 0.2 |
| 11/15/2024 17:15 | 8.2 | 29.3 | 0.0 | 7.1 | 10.9 | 3.5 | 11/15/2024 17:15 | 8.0 | 12.6 | 0.0 | 6.8 | 10.8 | 0.3 |
| 11/15/2024 17:30 | 8.0 | 22.5 | 0.0 | 7.1 | 10.9 | 3.4 | 11/15/2024 17:30 | 7.9 | 12.4 | 0.0 | 6.8 | 10.8 | 0.1 |
| 11/15/2024 17:45 | 7.9 | 18.1 | 0.0 | 6.8 | 11.0 | 3.6 | 11/15/2024 17:45 | 7.9 | 12.6 | 0.0 | 6.8 | 10.8 | 0.1 |
| 11/15/2024 18:00 | 7.8 | 17.9 | 0.0 | 6.8 | 11.0 | 4.8 | 11/15/2024 18:00 | 7.9 | 12.5 | 0.0 | 6.8 | 10.8 | 0.2 |
| 11/15/2024 18:15 | 7.8 | 17.8 | 0.0 | 6.7 | 11.0 | 3.4 | 11/15/2024 18:15 | 7.8 | 12.5 | 0.0 | 6.9 | 10.8 | 0.1 |
| 11/15/2024 18:30 | 7.8 | 17.6 | 0.0 | 6.8 | 11.0 | 3.8 | 11/15/2024 18:30 | 7.8 | 12.5 | 0.0 | 6.7 | 10.9 | 0.2 |
| 11/15/2024 18:45 | 7.7 | 17.7 | 0.0 | 6.7 | 11.0 | 3.5 | 11/15/2024 18:45 | 7.8 | 12.4 | 0.0 | 6.9 | 10.9 | 0.3 |
| 11/15/2024 19:00 | 7.7 | 17.9 | 0.0 | 6.8 | 11.0 | 3.6 | 11/15/2024 19:00 | 7.8 | 12.4 | 0.0 | 6.8 | 10.8 | 0.2 |
| 11/15/2024 19:15 | 7.9 | 29.3 | 0.0 | 7.1 | 11.0 | 3.7 | 11/15/2024 19:15 | 7.8 | 12.5 | 0.0 | 6.8 | 10.8 | 0.1 |
| 11/15/2024 19:30 | 7.9 | 29.5 | 0.0 | 7.1 | 11.0 | 3.5 | 11/15/2024 19:30 | 7.8 | 12.4 | 0.0 | 6.8 | 10.8 | 0.1 |
| 11/15/2024 19:45 | 7.9 | 29.6 | 0.0 | 7.2 | 11.0 | 3.5 | 11/15/2024 19:45 | 7.8 | 12.4 | 0.0 | 6.9 | 10.9 | 0.1 |
| 11/15/2024 20:00 | 7.9 | 29.7 | 0.0 | 7.2 | 11.0 | 3.5 | 11/15/2024 20:00 | 7.7 | 12.5 | 0.0 | 6.8 | 10.9 | 0.1 |
| 11/15/2024 20:15 | 7.9 | 27.6 | 0.0 | 7.1 | 11.0 | 3.7 | 11/15/2024 20:15 | 7.7 | 12.4 | 0.0 | 6.9 | 10.8 | 0.3 |
| 11/15/2024 20:30 | 7.9 | 29.7 | 0.0 | 7.2 | 11.0 | 4.2 | 11/15/2024 20:30 | 7.7 | 12.4 | 0.0 | 6.7 | 10.9 | 0.2 |
| 11/15/2024 20:45 | 7.6 | 18.5 | 0.0 | 6.8 | 11.1 | 3.4 | 11/15/2024 20:45 | 7.7 | 12.4 | 0.0 | 6.9 | 10.9 | 0.3 |
| 11/15/2024 21:00 | 7.6 | 18.1 | 0.0 | 6.8 | 11.1 | 3.4 | 11/15/2024 21:00 | 7.7 | 12.5 | 0.0 | 6.8 | 10.9 | 0.2 |
| 11/15/2024 21:15 | 7.6 | 17.9 | 0.0 | 6.8 | 11.1 | 4.8 | 11/15/2024 21:15 | 7.7 | 12.4 | 0.0 | 6.9 | 10.9 | 0.8 |
| 11/15/2024 21:30 | 7.6 | 17.6 | 0.0 | 6.8 | 11.1 | 3.5 | 11/15/2024 21:30 | 7.7 | 12.3 | 0.0 | 6.8 | 10.9 | 0.2 |
| 11/15/2024 21:45 | 7.6 | 17.6 | 0.0 | 6.8 | 11.1 | 4.2 | 11/15/2024 21:45 | 7.7 | 12.3 | 0.0 | 6.8 | 10.9 | 0.1 |
| 11/15/2024 22:00 | 7.6 | 17.6 | 0.0 | 6.8 | 11.1 | 3.5 | 11/15/2024 22:00 | 7.6 | 12.4 | 0.0 | 6.8 | 10.9 | 0.3 |
| 11/15/2024 22:15 | 7.5 | 17.5 | 0.0 | 6.8 | 11.1 | 3.5 | 11/15/2024 22:15 | 7.6 | 12.3 | 0.0 | 6.7 | 10.9 | 0.3 |
| 11/15/2024 22:30 | 7.5 | 17.9 | 0.0 | 6.8 | 11.1 | 3.5 | 11/15/2024 22:30 | 7.6 | 12.3 | 0.0 | 6.8 | 10.9 | 0.2 |
| 11/15/2024 22:45 | 7.7 | 29.9 | 0.0 | 7.1 | 11.0 | 3.7 | 11/15/2024 22:45 | 7.6 | 12.3 | 0.0 | 6.7 | 10.9 | 0.3 |
| 11/15/2024 23:00 | 7.7 | 30.0 | 0.0 | 7.1 | 11.0 | 4.2 | 11/15/2024 23:00 | 7.6 | 12.3 | 0.0 | 6.7 | 10.9 | 0.2 |
| 11/15/2024 23:15 | 7.5 | 18.2 | 0.0 | 6.8 | 11.1 | 3.5 | 11/15/2024 23:15 | 7.6 | 12.3 | 0.0 | 6.7 | 10.9 | 0.2 |
| 11/15/2024 23:30 | 7.5 | 18.1 | 0.0 | 6.8 | 11.1 | 3.7 | 11/15/2024 23:30 | 7.6 | 12.2 | 0.0 | 6.7 | 10.9 | 0.7 |
| 11/15/2024 23:45 | 7.7 | 30.0 | 0.0 | 7.1 | 11.1 | 3.4 | 11/15/2024 23:45 | 7.6 | 12.2 | 0.0 | 6.7 | 10.9 | 1.0 |
| 11/16/2024 0:00 | 7.7 | 30.3 | 0.0 | 7.2 | 11.1 | 3.4 | 11/16/2024 0:00 | 7.5 | 12.2 | 0.0 | 6.8 | 10.9 | 0.2 |
| 11/16/2024 0:15 | 7.7 | 30.2 | 0.0 | 7.1 | 11.1 | 3.3 | 11/16/2024 0:15 | 7.5 | 12.3 | 0.0 | 6.6 | 10.9 | 0.1 |
| 11/16/2024 0:30 | 7.6 | 30.4 | 0.0 | 7.2 | 11.1 | 3.4 | 11/16/2024 0:30 | 7.5 | 12.2 | 0.0 | 6.8 | 10.9 | 0.1 |
| 11/16/2024 0:45 | 7.6 | 30.4 | 0.0 | 7.2 | 11.1 | 3.5 | 11/16/2024 0:45 | 7.5 | 12.2 | 0.0 | 6.7 | 10.9 | 0.1 |
| 11/16/2024 1:00 | 7.5 | 20.1 | 0.0 | 7.0 | 11.1 | 3.5 | 11/16/2024 1:00 | 7.5 | 12.2 | 0.0 | 6.9 | 10.9 | 0.1 |
| 11/16/2024 1:15 | 7.5 | 29.1 | 0.0 | 7.1 | 11.1 | 3.4 | 11/16/2024 1:15 | 7.5 | 12.2 | 0.0 | 6.7 | 10.9 | 0.1 |
| 11/16/2024 1:30 | 7.6 | 29.9 | 0.0 | 7.2 | 11.1 | 3.3 | 11/16/2024 1:30 | 7.5 | 12.2 | 0.0 | 6.8 | 10.9 | 0.2 |
| 11/16/2024 1:45 | 7.4 | 18.4 | 0.0 | 6.8 | 11.1 | 3.6 | 11/16/2024 1:45 | 7.5 | 12.3 | 0.0 | 6.8 | 10.9 | 0.3 |
| 11/16/2024 2:00 | 7.3 | 17.9 | 0.0 | 6.8 | 11.1 | 3.5 | 11/16/2024 2:00 | 7.5 | 12.2 | 0.0 | 6.8 | 10.9 | 0.1 |
| 11/16/2024 2:15 | 7.3 | 17.7 | 0.0 | 6.8 | 11.1 | 3.3 | 11/16/2024 2:15 | 7.4 | 12.1 | 0.0 | 6.7 | 10.9 | 0.1 |
| 11/16/2024 2:30 | 7.3 | 17.5 | 0.0 | 6.8 | 11.1 | 3.4 | 11/16/2024 2:30 | 7.4 | 12.1 | 0.0 | 6.7 | 10.9 | 0.9 |
| 11/16/2024 2:45 | 7.3 | 17.5 | 0.0 | 6.8 | 11.1 | 3.3 | 11/16/2024 2:45 | 7.4 | 12.1 | 0.0 | 6.7 | 10.9 | 0.2 |
| 11/16/2024 3:00 | 7.3 | 17.5 | 0.0 | 6.8 | 11.1 | 3.4 | 11/16/2024 3:00 | 7.4 | 12.1 | 0.0 | 6.9 | 10.9 | 0.3 |
| 11/16/2024 3:15 | 7.3 | 17.9 | 0.0 | 6.8 | 11.1 | 3.3 | 11/16/2024 3:15 | 7.4 | 12.0 | 0.0 | 6.7 | 10.9 | 0.2 |
| 11/16/2024 3:30 | 7.5 | 29.8 | 0.0 | 7.1 | 11.1 | 3.3 | 11/16/2024 3:30 | 7.4 | 12.0 | 0.0 | 6.8 | 10.9 | 0.8 |
| 11/16/2024 3:45 | 7.4 | 25.7 | 0.0 | 7.1 | 11.1 | 3.3 | 11/16/2024 3:45 | 7.4 | 12.1 | 0.0 | 6.7 | 10.9 | 0.2 |
| 11/16/2024 4:00 | 7.5 | 29.9 | 0.0 | 7.1 | 11.1 | 3.3 | 11/16/2024 4:00 | 7.4 | 12.0 | 0.0 | 6.8 | 10.9 | 0.4 |
| 11/16/2024 4:15 | 7.5 | 29.9 | 0.0 | 7.2 | 11.1 | 3.4 | 11/16/2024 4:15 | 7.4 | 12.0 | 0.0 | 6.7 | 10.9 | 0.3 |
| 11/16/2024 4:30 | 7.5 | 29.8 | 0.0 | 7.1 | 11.1 | 3.3 | 11/16/2024 4:30 | 7.4 | 12.1 | 0.0 | 6.8 | 10.9 | 0.1 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11/16/2024 4:45 | 7.5 | 29.6 | 0.0 | 7.2 | 11.1 | 3.4 |
| 11/16/2024 5:00 | 7.5 | 29.8 | 0.0 | 7.2 | 11.1 | 3.9 |
| 11/16/2024 5:15 | 7.3 | 19.4 | 0.0 | 6.9 | 11.1 | 3.4 |
| 11/16/2024 5:30 | 7.3 | 18.3 | 0.0 | 6.8 | 11.2 | 3.7 |
| 11/16/2024 5:45 | 7.2 | 18.1 | 0.0 | 6.8 | 11.2 | 3.4 |
| 11/16/2024 6:00 | 7.2 | 17.9 | 0.0 | 6.8 | 11.1 | 3.4 |
| 11/16/2024 6:15 | 7.2 | 17.8 | 0.0 | 6.8 | 11.2 | 3.7 |
| 11/16/2024 6:30 | 7.2 | 18.2 | 0.0 | 6.8 | 11.2 | 3.4 |
| 11/16/2024 6:45 | 7.4 | 29.1 | 0.0 | 7.1 | 11.1 | 3.5 |
| 11/16/2024 7:00 | 7.4 | 29.9 | 0.0 | 7.1 | 11.1 | 3.5 |
| 11/16/2024 7:15 | 7.4 | 29.8 | 0.0 | 7.2 | 11.1 | 3.4 |
| 11/16/2024 7:30 | 7.4 | 30.8 | 0.0 | 7.2 | 11.1 | 3.4 |
| 11/16/2024 7:45 | 7.4 | 30.9 | 0.0 | 7.2 | 11.1 | 3.4 |
| 11/16/2024 8:00 | 7.4 | 30.9 | 0.0 | 7.2 | 11.1 | 3.4 |
| 11/16/2024 8:15 | 7.4 | 27.6 | 0.0 | 7.2 | 11.1 | 3.5 |
| 11/16/2024 8:30 | 7.2 | 18.7 | 0.0 | 6.8 | 11.1 | 3.6 |
| 11/16/2024 8:45 | 7.2 | 18.4 | 0.0 | 6.8 | 11.1 | 3.4 |
| 11/16/2024 9:00 | 7.2 | 18.4 | 0.0 | 6.8 | 11.2 | 3.8 |
| 11/16/2024 9:15 | 7.2 | 18.4 | 0.0 | 6.8 | 11.1 | 3.6 |
| 11/16/2024 9:30 | 7.2 | 18.3 | 0.0 | 6.8 | 11.1 | 3.6 |
| 11/16/2024 9:45 | 7.2 | 18.3 | 0.0 | 6.8 | 11.1 | 3.5 |
| 11/16/2024 10:00 | 7.3 | 18.3 | 0.0 | 6.8 | 11.1 | 3.6 |
| 11/16/2024 10:15 | 7.3 | 18.6 | 0.0 | 6.8 | 11.1 | 3.4 |
| 11/16/2024 10:30 | 7.5 | 31.2 | 0.0 | 7.2 | 11.1 | 3.6 |
| 11/16/2024 10:45 | 7.6 | 31.5 | 0.0 | 7.2 | 11.0 | 3.5 |
| 11/16/2024 11:00 | 7.6 | 31.7 | 0.0 | 7.2 | 11.0 | 3.4 |
| 11/16/2024 11:15 | 7.6 | 32.0 | 0.0 | 7.2 | 11.0 | 3.4 |
| 11/16/2024 11:30 | 7.6 | 32.5 | 0.0 | 7.2 | 11.0 | 3.4 |
| 11/16/2024 11:45 | 7.6 | 32.7 | 0.0 | 7.2 | 11.0 | 3.5 |
| 11/16/2024 12:00 | 7.3 | 20.9 | 0.0 | 6.9 | 11.1 | 3.7 |
| 11/16/2024 12:15 | 7.3 | 21.4 | 0.0 | 6.8 | 11.1 | 4.0 |
| 11/16/2024 12:30 | 7.3 | 22.0 | 0.0 | 6.9 | 11.1 | 5.4 |
| 11/16/2024 12:45 | 7.2 | 22.5 | 0.0 | 6.8 | 11.1 | 5.2 |
| 11/16/2024 13:00 | 7.2 | 23.4 | 0.0 | 6.9 | 11.1 | 5.6 |
| 11/16/2024 13:15 | 7.2 | 24.4 | 0.0 | 6.9 | 11.1 | 6.2 |
| 11/16/2024 13:30 | 7.2 | 24.8 | 0.0 | 6.9 | 11.1 | 8.1 |
| 11/16/2024 13:45 | 7.1 | 25.9 | 0.0 | 6.9 | 11.1 | 7.6 |
| 11/16/2024 14:00 | 7.3 | 37.7 | 0.0 | 7.2 | 11.1 | 7.5 |
| 11/16/2024 14:15 | 7.3 | 38.2 | 0.0 | 7.2 | 11.1 | 8.1 |
| 11/16/2024 14:30 | 7.4 | 41.4 | 0.0 | 7.3 | 11.0 | 8.5 |
| 11/16/2024 14:45 | 7.4 | 42.1 | 0.0 | 7.3 | 11.0 | 11.2 |
| 11/16/2024 15:00 | 7.3 | 43.7 | 0.0 | 7.3 | 11.0 | 14.8 |
| 11/16/2024 15:15 | 7.0 | 34.1 | 0.0 | 7.0 | 11.1 | 19.6 |
| 11/16/2024 15:30 | 7.0 | 36.1 | 0.0 | 7.0 | 11.1 | 18.9 |
| 11/16/2024 15:45 | 7.0 | 37.8 | 0.0 | 7.0 | 11.1 | 25.9 |
| 11/16/2024 16:00 | 7.0 | 38.6 | 0.0 | 7.1 | 11.1 | 21.1 |
| 11/16/2024 16:15 | 7.0 | 39.2 | 0.0 | 7.1 | 11.1 | 17.9 |
| 11/16/2024 16:30 | 6.9 | 39.9 | 0.0 | 7.0 | 11.1 | 18.9 |
| 11/16/2024 16:45 | 6.9 | 40.9 | 0.0 | 7.0 | 11.1 | 14.6 |
| 11/16/2024 17:00 | 6.9 | 41.5 | 0.0 | 7.0 | 11.1 | 14.1 |
| 11/16/2024 17:15 | 7.1 | 49.4 | 0.0 | 7.3 | 11.1 | 12.6 |
| 11/16/2024 17:30 | 7.2 | 48.1 | 0.0 | 7.2 | 11.1 | 11.9 |
| 11/16/2024 17:45 | 7.1 | 47.0 | 0.0 | 7.3 | 11.1 | 8.3 |
| 11/16/2024 18:00 | 7.1 | 45.9 | 0.0 | 7.2 | 11.1 | 10.3 |
| 11/16/2024 18:15 | 6.9 | 36.7 | 0.0 | 7.0 | 11.1 | 8.7 |
| 11/16/2024 18:30 | 6.9 | 35.9 | 0.0 | 7.0 | 11.1 | 9.4 |
| 11/16/2024 18:45 | 6.9 | 35.5 | 0.0 | 7.0 | 11.1 | 7.9 |
| 11/16/2024 19:00 | 6.9 | 34.7 | 0.0 | 7.0 | 11.1 | 8.5 |
| 11/16/2024 19:15 | 7.0 | 34.1 | 0.0 | 7.0 | 11.1 | 7.5 |
| 11/16/2024 19:30 | 7.1 | 39.9 | 0.0 | 7.1 | 11.0 | 7.3 |
| 11/16/2024 19:45 | 7.2 | 40.4 | 0.0 | 7.2 | 11.0 | 7.0 |
| 11/16/2024 20:00 | 7.2 | 39.3 | 0.0 | 7.2 | 11.0 | 5.6 |
| 11/16/2024 20:15 | 7.1 | 32.2 | 0.0 | 7.0 | 11.0 | 6.8 |
| 11/16/2024 20:30 | 7.1 | 31.1 | 0.0 | 6.9 | 11.1 | 6.7 |
| 11/16/2024 20:45 | 7.1 | 30.3 | 0.0 | 6.9 | 11.1 | 5.5 |
| 11/16/2024 21:00 | 7.1 | 29.7 | 0.0 | 6.9 | 11.0 | 4.9 |
| 11/16/2024 21:15 | 7.1 | 29.4 | 0.0 | 6.9 | 11.1 | 5.6 |
| 11/16/2024 21:30 | 7.1 | 29.5 | 0.0 | 6.9 | 11.0 | 5.0 |
| 11/16/2024 21:45 | 7.2 | 34.8 | 0.0 | 7.1 | 11.0 | 7.1 |
| 11/16/2024 22:00 | 7.3 | 36.0 | 0.0 | 7.1 | 11.0 | 7.9 |
| 11/16/2024 22:15 | 7.3 | 35.4 | 0.0 | 7.1 | 11.0 | 7.1 |
| 11/16/2024 22:30 | 7.3 | 34.6 | 0.0 | 7.1 | 11.0 | 9.5 |
| 11/16/2024 22:45 | 7.3 | 34.2 | 0.0 | 7.1 | 11.0 | 10.2 |
| 11/16/2024 23:00 | 7.2 | 26.4 | 0.0 | 6.9 | 11.0 | 9.7 |
| 11/16/2024 23:15 | 7.4 | 33.1 | 0.0 | 7.1 | 11.0 | 8.7 |
| 11/16/2024 23:30 | 7.3 | 25.3 | 0.0 | 6.8 | 11.0 | 8.5 |
| 11/16/2024 23:45 | 7.3 | 25.0 | 0.0 | 6.8 | 11.0 | 8.7 |
| 11/17/2024 0:00 | 7.3 | 25.0 | 0.0 | 6.8 | 11.0 | 9.0 |
| 11/17/2024 0:15 | 7.3 | 25.1 | 0.0 | 6.8 | 11.0 | 9.0 |
| 11/17/2024 0:30 | 7.4 | 33.1 | 0.0 | 7.0 | 11.0 | 9.5 |
| 11/17/2024 0:45 | 7.4 | 32.9 | 0.0 | 7.1 | 10.9 | 8.9 |
| 11/17/2024 1:00 | 7.4 | 32.8 | 0.0 | 7.1 | 10.9 | 8.7 |
| 11/17/2024 1:15 | 7.4 | 25.1 | 0.0 | 6.9 | 10.9 | 8.4 |
| 11/17/2024 1:30 | 7.4 | 29.1 | 0.0 | 6.9 | 10.9 | 8.0 |
| 11/17/2024 1:45 | 7.5 | 30.2 | 0.0 | 7.0 | 10.9 | 7.8 |
| 11/17/2024 2:00 | 7.5 | 32.8 | 0.0 | 7.1 | 10.9 | 8.1 |
| 11/17/2024 2:15 | 7.6 | 32.9 | 0.0 | 7.1 | 10.9 | 7.7 |
| 11/17/2024 2:30 | 7.5 | 24.6 | 0.0 | 6.9 | 10.9 | 7.6 |
| 11/17/2024 2:45 | 7.5 | 24.1 | 0.0 | 6.8 | 10.9 | 8.0 |
| 11/17/2024 3:00 | 7.5 | 23.9 | 0.0 | 6.8 | 10.9 | 7.6 |
| 11/17/2024 3:15 | 7.6 | 23.7 | 0.0 | 6.8 | 10.9 | 8.2 |
| 11/17/2024 3:30 | 7.6 | 23.9 | 0.0 | 6.8 | 10.9 | 7.2 |
| 11/17/2024 3:45 | 7.6 | 23.5 | 0.0 | 6.8 | 10.9 | 7.5 |
| 11/17/2024 4:00 | 7.6 | 24.0 | 0.0 | 6.8 | 10.9 | 8.0 |
| 11/17/2024 4:15 | 7.8 | 32.8 | 0.0 | 7.1 | 10.8 | 7.3 |
| 11/17/2024 4:30 | 7.8 | 32.7 | 0.0 | 7.1 | 10.8 | 7.5 |
| 11/17/2024 4:45 | 7.7 | 23.8 | 0.0 | 6.8 | 10.8 | 8.2 |
| 11/17/2024 5:00 | 7.8 | 23.7 | 0.0 | 6.9 | 10.8 | 9.2 |
| 11/17/2024 5:15 | 7.8 | 23.5 | 0.0 | 6.8 | 10.8 | 1422.0 |
| 11/17/2024 5:30 | 7.8 | 23.6 | 0.0 | 6.8 | 10.8 | 7.4 |
| 11/17/2024 5:45 | 7.8 | 30.9 | 0.0 | 7.0 | 10.8 | 8.2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11/16/2024 4:45 | 7.4 | 12.1 | 0.0 | 6.8 | 10.9 | 1.0 |
| 11/16/2024 5:00 | 7.4 | 12.1 | 0.0 | 6.8 | 10.9 | 0.2 |
| 11/16/2024 5:15 | 7.4 | 12.2 | 0.0 | 6.7 | 10.9 | 0.1 |
| 11/16/2024 5:30 | 7.4 | 12.3 | 0.0 | 6.8 | 10.9 | 0.2 |
| 11/16/2024 5:45 | 7.4 | 12.3 | 0.0 | 6.7 | 10.9 | 0.3 |
| 11/16/2024 6:00 | 7.4 | 12.1 | 0.0 | 6.8 | 10.9 | 0.1 |
| 11/16/2024 6:15 | 7.4 | 12.1 | 0.0 | 6.8 | 10.9 | 0.1 |
| 11/16/2024 6:30 | 7.4 | 10.8 | 0.0 | 6.7 | 10.9 | 0.1 |
| 11/16/2024 6:45 | 7.4 | 12.2 | 0.0 | 6.8 | 10.9 | 0.7 |
| 11/16/2024 7:00 | 7.4 | 12.1 | 0.0 | 6.7 | 10.9 | 0.4 |
| 11/16/2024 7:15 | 7.4 | 12.0 | 0.0 | 6.8 | 10.9 | 0.1 |
| 11/16/2024 7:30 | 7.3 | 12.3 | 0.0 | 6.8 | 10.9 | 0.3 |
| 11/16/2024 7:45 | 7.3 | 12.2 | 0.0 | 6.7 | 10.9 | 0.2 |
| 11/16/2024 8:00 | | 12.4 | 0.0 | 6.8 | 10.9 | 0.5 |
| 11/16/2024 8:15 | 7.4 | 12.5 | 0.0 | 6.8 | 10.9 | 0.2 |
| 11/16/2024 8:30 | 7.4 | 12.7 | 0.0 | 6.8 | 10.9 | 0.4 |
| 11/16/2024 8:45 | 7.4 | 12.9 | 0.0 | 6.8 | 10.9 | 0.4 |
| 11/16/2024 9:00 | 7.4 | 12.9 | 0.0 | 6.9 | 10.9 | 0.1 |
| 11/16/2024 9:15 | 7.4 | 12.9 | 0.0 | 6.8 | 10.9 | 0.2 |
| 11/16/2024 9:30 | 7.4 | 12.8 | 0.0 | 6.8 | 10.9 | 0.2 |
| 11/16/2024 9:45 | 7.4 | 12.7 | 0.0 | 6.8 | 10.9 | 0.3 |
| 11/16/2024 10:00 | 7.4 | 12.8 | 0.0 | 6.8 | 10.9 | 0.3 |
| 11/16/2024 10:15 | 7.5 | 12.6 | 0.0 | 6.7 | 10.9 | 0.1 |
| 11/16/2024 10:30 | 7.5 | 12.8 | 0.0 | 6.8 | 10.9 | 0.3 |
| 11/16/2024 10:45 | 7.5 | 13.0 | 0.0 | 6.7 | 10.9 | 0.2 |
| 11/16/2024 11:00 | 7.5 | 13.5 | 0.0 | 6.7 | 10.8 | 0.4 |
| 11/16/2024 11:15 | 7.5 | 13.9 | 0.0 | 6.8 | 10.9 | 0.2 |
| 11/16/2024 11:30 | 7.5 | 14.2 | 0.0 | 6.8 | 10.8 | 0.2 |
| 11/16/2024 11:45 | 7.5 | 14.6 | 0.0 | 6.8 | 10.9 | 0.3 |
| 11/16/2024 12:00 | 7.4 | 15.7 | 0.0 | 6.9 | 10.9 | 1.0 |
| 11/16/2024 12:15 | 7.4 | 16.6 | 0.0 | 6.9 | 10.9 | 0.8 |
| 11/16/2024 12:30 | 7.4 | 17.4 | 0.0 | 6.8 | 10.9 | 1.0 |
| 11/16/2024 12:45 | 7.4 | 18.2 | 0.0 | 6.9 | 10.9 | 1.5 |
| 11/16/2024 13:00 | 7.3 | 19.0 | 0.0 | 7.0 | 10.9 | 2.1 |
| 11/16/2024 13:15 | 7.3 | 19.7 | 0.0 | 7.0 | 10.9 | 2.4 |
| 11/16/2024 13:30 | 7.3 | 20.5 | 0.0 | 7.0 | 10.9 | 2.7 |
| 11/16/2024 13:45 | 7.3 | 21.7 | 0.0 | 7.0 | 10.9 | 3.3 |
| 11/16/2024 14:00 | 7.2 | 22.4 | 0.0 | 7.0 | 10.9 | 3.8 |
| 11/16/2024 14:15 | 7.2 | 22.6 | 0.0 | 7.0 | 10.9 | 6.8 |
| 11/16/2024 14:30 | 7.2 | 23.7 | 0.0 | 7.1 | 10.9 | 5.7 |
| 11/16/2024 14:45 | 7.2 | 26.2 | 0.0 | 7.1 | 10.9 | 6.8 |
| 11/16/2024 15:00 | 7.2 | 28.8 | 0.0 | 7.2 | 10.9 | 11.3 |
| 11/16/2024 15:15 | 7.2 | 31.5 | 0.0 | 7.2 | 10.9 | 19.0 |
| 11/16/2024 15:30 | 7.1 | 33.5 | 0.0 | 7.3 | 10.9 | 14.4 |
| 11/16/2024 15:45 | 7.1 | 34.5 | 0.0 | 7.2 | 10.9 | 14.5 |
| 11/16/2024 16:00 | 7.1 | 34.5 | 0.0 | 7.2 | 10.9 | 12.0 |
| 11/16/2024 16:15 | 7.1 | 35.6 | 0.0 | 7.2 | 10.9 | 9.4 |
| 11/16/2024 16:30 | 7.1 | 37.1 | 0.0 | 7.2 | 10.9 | 10.8 |
| 11/16/2024 16:45 | 7.1 | 37.3 | 0.0 | 7.3 | 10.9 | 9.0 |
| 11/16/2024 17:00 | | 36.6 | 0.0 | 7.2 | 10.9 | 9.5 |
| 11/16/2024 17:15 | 7.1 | 35.3 | 0.0 | 7.3 | 10.9 | 7.1 |
| 11/16/2024 17:30 | 7.1 | 34.3 | 0.0 | 7.2 | 10.9 | 6.4 |
| 11/16/2024 17:45 | 7.1 | 32.6 | 0.0 | 7.2 | 10.9 | 5.4 |
| 11/16/2024 18:00 | 7.1 | 32.5 | 0.0 | 7.2 | 10.9 | 5.0 |
| 11/16/2024 18:15 | 7.1 | 31.8 | 0.0 | 7.1 | 10.9 | 4.0 |
| 11/16/2024 18:30 | 7.1 | 31.1 | 0.0 | 7.2 | 10.9 | 3.4 |
| 11/16/2024 18:45 | 7.1 | 31.0 | 0.0 | 7.2 | 10.9 | 3.0 |
| 11/16/2024 19:00 | 7.1 | 29.8 | 0.0 | 7.1 | 10.9 | 2.2 |
| 11/16/2024 19:15 | 7.2 | 29.3 | 0.0 | 7.1 | 10.9 | 3.7 |
| 11/16/2024 19:30 | 7.2 | 28.9 | 0.0 | 7.2 | 10.9 | 2.4 |
| 11/16/2024 19:45 | 7.2 | 28.3 | 0.0 | 7.2 | 10.8 | 2.2 |
| 11/16/2024 20:00 | 7.2 | 27.3 | 0.0 | 7.1 | 10.8 | 2.5 |
| 11/16/2024 20:15 | 7.3 | 27.0 | 0.0 | 7.1 | 10.8 | 1.6 |
| 11/16/2024 20:30 | 7.3 | 25.9 | 0.0 | 7.1 | 10.8 | 1.5 |
| 11/16/2024 20:45 | 7.3 | 25.3 | 0.0 | 7.1 | 10.8 | 1.7 |
| 11/16/2024 21:00 | 7.3 | 25.0 | 0.0 | 7.0 | 10.8 | 2.1 |
| 11/16/2024 21:15 | 7.3 | 25.0 | 0.0 | 7.1 | 10.8 | 1.3 |
| 11/16/2024 21:30 | 7.3 | 24.7 | 0.0 | 7.1 | 10.8 | 3.1 |
| 11/16/2024 21:45 | 7.3 | 23.9 | 0.0 | 7.1 | 10.8 | 1.6 |
| 11/16/2024 22:00 | 7.3 | 23.2 | 0.0 | 7.0 | 10.8 | 1.1 |
| 11/16/2024 22:15 | 7.4 | 22.7 | 0.0 | 7.0 | 10.8 | 1.0 |
| 11/16/2024 22:30 | 7.4 | 22.0 | 0.0 | 7.0 | 10.8 | 0.8 |
| 11/16/2024 22:45 | 7.4 | 21.7 | 0.0 | 7.1 | 10.8 | 0.9 |
| 11/16/2024 23:00 | 7.4 | 21.0 | 0.0 | 7.1 | 10.8 | 0.8 |
| 11/16/2024 23:15 | 7.4 | 20.3 | 0.0 | 7.1 | 10.8 | 0.6 |
| 11/16/2024 23:30 | 7.4 | 20.4 | 0.0 | 6.9 | 10.7 | 0.7 |
| 11/16/2024 23:45 | 7.4 | 20.2 | 0.0 | 7.0 | 10.7 | 2.6 |
| 11/17/2024 0:00 | 7.5 | 20.4 | 0.0 | 7.0 | 10.8 | 0.7 |
| 11/17/2024 0:15 | 7.5 | 20.2 | 0.0 | 6.9 | 10.7 | 0.8 |
| 11/17/2024 0:30 | 7.5 | 20.6 | 0.0 | 7.0 | 10.7 | 0.8 |
| 11/17/2024 0:45 | 7.5 | 20.2 | 0.0 | 7.0 | 10.7 | 4.4 |
| 11/17/2024 1:00 | 7.5 | 20.1 | 0.0 | 6.9 | 10.7 | 0.6 |
| 11/17/2024 1:15 | 7.5 | 20.2 | 0.0 | 6.9 | 10.7 | 1.3 |
| 11/17/2024 1:30 | 7.5 | 19.9 | 0.0 | 7.0 | 10.7 | 1.4 |
| 11/17/2024 1:45 | 7.6 | 20.0 | 0.0 | 7.0 | 10.7 | 16.8 |
| 11/17/2024 2:00 | 7.6 | 19.9 | 0.0 | 6.9 | 10.7 | 0.5 |
| 11/17/2024 2:15 | 7.6 | 19.4 | 0.0 | 6.9 | 10.7 | 0.6 |
| 11/17/2024 2:30 | 7.6 | 18.7 | 0.0 | 7.1 | 10.7 | 0.7 |
| 11/17/2024 2:45 | 7.6 | 19.0 | 0.0 | 6.9 | 10.7 | 0.5 |
| 11/17/2024 3:00 | 7.7 | 19.0 | 0.0 | 7.0 | 10.7 | 0.5 |
| 11/17/2024 3:15 | 7.7 | 18.8 | 0.0 | 7.0 | 10.7 | 0.4 |
| 11/17/2024 3:30 | 7.7 | 18.4 | 0.0 | 6.9 | 10.7 | 0.3 |
| 11/17/2024 3:45 | 7.7 | 19.5 | 0.0 | 7.0 | 10.7 | 0.5 |
| 11/17/2024 4:00 | 7.7 | 19.6 | 0.0 | 7.0 | 10.6 | 0.8 |
| 11/17/2024 4:15 | 7.8 | 19.0 | 0.0 | 7.0 | 10.6 | 0.5 |
| 11/17/2024 4:30 | 7.8 | 18.9 | 0.0 | 7.0 | 10.6 | 0.6 |
| 11/17/2024 4:45 | 7.8 | 18.9 | 0.0 | 7.0 | 10.6 | 0.3 |
| 11/17/2024 5:00 | 7.8 | 18.8 | 0.0 | 7.0 | 10.6 | 1.4 |
| 11/17/2024 5:15 | 7.8 | 18.6 | 0.0 | 7.0 | 10.6 | 0.2 |
| 11/17/2024 5:30 | 7.8 | 18.5 | 0.0 | 6.9 | 10.6 | 1.0 |
| 11/17/2024 5:45 | 7.8 | 18.4 | 0.0 | 6.9 | 10.6 | 0.3 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/17/2024 6:00 | 7.9 | 32.9 | 0.0 | 7.1 | 10.8 | 7.8 | 11/17/2024 6:00 | 7.8 | 18.4 | 0.0 | 6.9 | 10.7 | 0.2 |
| 11/17/2024 6:15 | 7.9 | 33.0 | 0.0 | 7.2 | 10.8 | 7.4 | 11/17/2024 6:15 | 7.8 | 18.2 | 0.0 | 6.9 | 10.6 | 0.4 |
| 11/17/2024 6:30 | 7.9 | 33.0 | 0.0 | 7.2 | 10.8 | 7.8 | 11/17/2024 6:30 | 7.8 | 18.0 | 0.0 | 7.0 | 10.6 | 0.4 |
| 11/17/2024 6:45 | 7.9 | 33.0 | 0.0 | 7.2 | 10.8 | 7.6 | 11/17/2024 6:45 | 7.8 | 17.7 | 0.0 | 6.9 | 10.6 | 0.4 |
| 11/17/2024 7:00 | 7.8 | 23.1 | 0.0 | 6.9 | 10.8 | 12.1 | 11/17/2024 7:00 | 7.8 | 17.6 | 0.0 | 7.0 | 10.7 | 0.4 |
| 11/17/2024 7:15 | 7.8 | 22.7 | 0.0 | 6.8 | 10.8 | 7.9 | 11/17/2024 7:15 | 7.8 | 17.5 | 0.0 | 7.0 | 10.6 | 2.9 |
| 11/17/2024 7:30 | 7.8 | 22.4 | 0.0 | 6.8 | 10.8 | 7.5 | 11/17/2024 7:30 | 7.8 | 17.4 | 0.0 | 6.9 | 10.7 | 0.2 |
| 11/17/2024 7:45 | 7.7 | 22.3 | 0.0 | 6.8 | 10.8 | 8.0 | 11/17/2024 7:45 | 7.8 | 17.0 | 0.0 | 6.9 | 10.7 | 1.1 |
| 11/17/2024 8:00 | 7.8 | 28.8 | 0.0 | 7.1 | 10.8 | 12.7 | 11/17/2024 8:00 | 7.8 | 17.0 | 0.0 | 6.9 | 10.7 | 0.6 |
| 11/17/2024 8:15 | 7.8 | 22.0 | 0.0 | 6.8 | 10.8 | 7.6 | 11/17/2024 8:15 | 7.8 | 16.8 | 0.0 | 6.9 | 10.7 | 0.4 |
| 11/17/2024 8:30 | 7.8 | 23.9 | 0.0 | 6.8 | 10.8 | 7.4 | 11/17/2024 8:30 | 7.8 | 16.8 | 0.0 | 6.9 | 10.6 | 1.6 |
| 11/17/2024 8:45 | 7.9 | 32.4 | 0.0 | 7.1 | 10.8 | 581.7 | 11/17/2024 8:45 | 7.8 | 16.6 | 0.0 | 6.8 | 10.6 | 0.5 |
| 11/17/2024 9:00 | 7.9 | 32.4 | 0.0 | 7.2 | 10.8 | 9.1 | 11/17/2024 9:00 | 7.8 | 16.4 | 0.0 | 6.9 | 10.6 | 1.2 |
| 11/17/2024 9:15 | 7.9 | 32.4 | 0.0 | 7.2 | 10.8 | 25.4 | 11/17/2024 9:15 | 7.8 | 16.3 | 0.0 | 7.0 | 10.7 | 0.1 |
| 11/17/2024 9:30 | 8.0 | 32.4 | 0.0 | 7.2 | 10.8 | 6.9 | 11/17/2024 9:30 | 7.8 | 16.2 | 0.0 | 6.9 | 10.6 | 0.8 |
| 11/17/2024 9:45 | 7.8 | 21.7 | 0.0 | 6.9 | 10.8 | 7.0 | 11/17/2024 9:45 | 7.9 | 16.1 | 0.0 | 6.9 | 10.7 | 0.2 |
| 11/17/2024 10:00 | 7.8 | 21.3 | 0.0 | 6.8 | 10.8 | 7.4 | 11/17/2024 10:00 | 7.9 | 16.2 | 0.0 | 6.8 | 10.6 | 0.2 |
| 11/17/2024 10:15 | 7.8 | 21.2 | 0.0 | 6.8 | 10.8 | 10.8 | 11/17/2024 10:15 | 7.9 | 16.0 | 0.0 | 6.8 | 10.7 | 0.5 |
| 11/17/2024 10:30 | 7.9 | 21.2 | 0.0 | 6.8 | 10.8 | 6.9 | 11/17/2024 10:30 | 7.9 | 15.8 | 0.0 | 6.9 | 10.6 | 0.7 |
| 11/17/2024 10:45 | 7.9 | 21.1 | 0.0 | 6.8 | 10.8 | 9.8 | 11/17/2024 10:45 | 7.9 | 15.9 | 0.0 | 7.0 | 10.6 | 0.2 |
| 11/17/2024 11:00 | 7.9 | 21.0 | 0.0 | 6.8 | 10.8 | 6.7 | 11/17/2024 11:00 | 7.9 | 15.8 | 0.0 | 6.9 | 10.6 | 0.2 |
| 11/17/2024 11:15 | 8.0 | 21.0 | 0.0 | 6.8 | 10.8 | 6.9 | 11/17/2024 11:15 | 8.0 | 15.7 | 0.0 | 6.8 | 10.6 | 0.4 |
| 11/17/2024 11:30 | 8.0 | 21.2 | 0.0 | 6.8 | 10.8 | 10.0 | 11/17/2024 11:30 | 8.0 | 15.5 | 0.0 | 6.9 | 10.6 | 0.3 |
| 11/17/2024 11:45 | 8.2 | 32.9 | 0.0 | 7.2 | 10.7 | 8.0 | 11/17/2024 11:45 | 8.0 | 15.4 | 0.0 | 6.9 | 10.6 | 0.2 |
| 11/17/2024 12:00 | 8.2 | 33.1 | 0.0 | 7.2 | 10.7 | 8.0 | 11/17/2024 12:00 | 8.0 | 15.4 | 0.0 | 6.9 | 10.6 | 0.3 |
| 11/17/2024 12:15 | 8.2 | 33.3 | 0.0 | 7.2 | 10.7 | 8.0 | 11/17/2024 12:15 | 8.0 | 15.2 | 0.0 | 6.8 | 10.6 | 0.3 |
| 11/17/2024 12:30 | 8.2 | 33.4 | 0.0 | 7.2 | 10.7 | 7.9 | 11/17/2024 12:30 | 8.0 | 15.4 | 0.0 | 6.8 | 10.6 | 0.2 |
| 11/17/2024 12:45 | 8.0 | 21.1 | 0.0 | 6.9 | 10.7 | 7.7 | 11/17/2024 12:45 | 8.0 | 15.2 | 0.0 | 6.8 | 10.6 | 0.2 |
| 11/17/2024 13:00 | 8.0 | 20.8 | 0.0 | 6.8 | 10.8 | 7.8 | 11/17/2024 13:00 | 8.0 | 15.2 | 0.0 | 6.9 | 10.6 | 0.4 |
| 11/17/2024 13:15 | 8.0 | 20.7 | 0.0 | 6.8 | 10.8 | 8.0 | 11/17/2024 13:15 | 8.0 | 15.1 | 0.0 | 6.8 | 10.6 | 0.2 |
| 11/17/2024 13:30 | 8.0 | 20.6 | 0.0 | 6.8 | 10.8 | 7.2 | 11/17/2024 13:30 | 8.0 | 15.0 | 0.0 | 6.8 | 10.6 | 0.2 |
| 11/17/2024 13:45 | 8.0 | 20.5 | 0.0 | 6.8 | 10.8 | 7.4 | 11/17/2024 13:45 | 8.0 | 15.0 | 0.0 | 6.9 | 10.6 | 0.5 |
| 11/17/2024 14:00 | 8.0 | 20.6 | 0.0 | 6.8 | 10.7 | 16.7 | 11/17/2024 14:00 | 8.0 | 15.0 | 0.0 | 6.9 | 10.6 | 0.1 |
| 11/17/2024 14:15 | 8.0 | 20.5 | 0.0 | 6.8 | 10.7 | 162.9 | 11/17/2024 14:15 | 8.0 | 15.1 | 0.0 | 6.9 | 10.6 | 0.2 |
| 11/17/2024 14:30 | 8.0 | 20.7 | 0.0 | 6.8 | 10.7 | 245.7 | 11/17/2024 14:30 | 8.0 | 14.9 | 0.0 | 6.8 | 10.6 | 0.8 |
| 11/17/2024 14:45 | 8.2 | 34.0 | 0.0 | 7.1 | 10.7 | 6.9 | 11/17/2024 14:45 | 8.0 | 15.0 | 0.0 | 6.9 | 10.6 | 0.3 |
| 11/17/2024 15:00 | 8.3 | 34.5 | 0.0 | 7.2 | 10.7 | 6.7 | 11/17/2024 15:00 | 8.0 | 14.8 | 0.0 | 6.9 | 10.6 | 3.2 |
| 11/17/2024 15:15 | 8.3 | 34.5 | 0.0 | 7.2 | 10.7 | 6.7 | 11/17/2024 15:15 | 8.0 | 14.9 | 0.0 | 6.9 | 10.6 | 0.2 |
| 11/17/2024 15:30 | 8.3 | 34.7 | 0.0 | 7.2 | 10.7 | 6.6 | 11/17/2024 15:30 | 8.0 | 14.8 | 0.0 | 6.9 | 10.6 | 0.2 |
| 11/17/2024 15:45 | 8.1 | 22.5 | 0.0 | 7.1 | 10.7 | 6.5 | 11/17/2024 15:45 | 8.0 | 15.0 | 0.0 | 6.9 | 10.6 | 0.7 |
| 11/17/2024 16:00 | 8.0 | 21.0 | 0.0 | 6.9 | 10.7 | 7.4 | 11/17/2024 16:00 | 7.9 | 15.7 | 0.0 | 6.9 | 10.6 | 0.6 |
| 11/17/2024 16:15 | 8.0 | 21.2 | 0.0 | 6.8 | 10.8 | 7.6 | 11/17/2024 16:15 | 7.9 | 16.5 | 0.0 | 6.9 | 10.6 | 0.3 |
| 11/17/2024 16:30 | 7.9 | 21.8 | 0.0 | 6.9 | 10.8 | 8.2 | 11/17/2024 16:30 | 7.9 | 16.5 | 0.0 | 6.9 | 10.6 | 0.2 |
| 11/17/2024 16:45 | 7.9 | 21.8 | 0.0 | 6.9 | 10.8 | 6.7 | 11/17/2024 16:45 | 7.8 | 16.7 | 0.0 | 6.8 | 10.6 | 0.3 |
| 11/17/2024 17:00 | 7.9 | 22.1 | 0.0 | 6.8 | 10.8 | 6.5 | 11/17/2024 17:00 | 7.8 | 16.7 | 0.0 | 6.9 | 10.6 | 0.3 |
| 11/17/2024 17:15 | 7.8 | 21.9 | 0.0 | 6.9 | 10.8 | 6.5 | 11/17/2024 17:15 | 7.8 | 16.5 | 0.0 | 6.9 | 10.6 | 0.2 |
| 11/17/2024 17:30 | 7.8 | 21.9 | 0.0 | 6.9 | 10.8 | 6.4 | 11/17/2024 17:30 | 7.8 | 16.3 | 0.0 | 6.9 | 10.6 | 0.7 |
| 11/17/2024 17:45 | 7.9 | 31.1 | 0.0 | 7.1 | 10.8 | 6.8 | 11/17/2024 17:45 | 7.8 | 16.1 | 0.0 | 6.9 | 10.6 | 0.3 |
| 11/17/2024 18:00 | 7.8 | 22.9 | 0.0 | 6.9 | 10.8 | 6.6 | 11/17/2024 18:00 | 7.7 | 16.1 | 0.0 | 7.0 | 10.7 | 0.1 |
| 11/17/2024 18:15 | 8.0 | 36.4 | 0.0 | 7.2 | 10.8 | 6.7 | 11/17/2024 18:15 | 7.7 | 16.2 | 0.0 | 6.9 | 10.7 | 1.5 |
| 11/17/2024 18:30 | 8.0 | 36.6 | 0.0 | 7.3 | 10.8 | 6.8 | 11/17/2024 18:30 | 7.7 | 16.0 | 0.0 | 6.8 | 10.7 | 0.6 |
| 11/17/2024 18:45 | 8.0 | 36.7 | 0.0 | 7.3 | 10.8 | 7.0 | 11/17/2024 18:45 | 7.7 | 16.1 | 0.0 | 6.9 | 10.7 | 0.2 |
| 11/17/2024 19:00 | 8.0 | 36.5 | 0.0 | 7.3 | 10.8 | 9.8 | 11/17/2024 19:00 | 7.6 | 15.8 | 0.0 | 6.9 | 10.7 | 0.1 |
| 11/17/2024 19:15 | 7.7 | 22.5 | 0.0 | 6.9 | 10.8 | 6.6 | 11/17/2024 19:15 | 7.6 | 16.0 | 0.0 | 6.9 | 10.7 | 0.1 |
| 11/17/2024 19:30 | 7.7 | 21.9 | 0.0 | 6.9 | 10.8 | 6.7 | 11/17/2024 19:30 | 7.6 | 15.7 | 0.0 | 6.9 | 10.7 | 0.4 |
| 11/17/2024 19:45 | 7.7 | 21.8 | 0.0 | 6.9 | 10.9 | 6.8 | 11/17/2024 19:45 | 7.6 | 15.9 | 0.0 | 6.9 | 10.7 | 0.1 |
| 11/17/2024 20:00 | 7.7 | 21.5 | 0.0 | 6.9 | 10.9 | 6.7 | 11/17/2024 20:00 | 7.6 | 15.7 | 0.0 | 6.9 | 10.7 | 1.1 |
| 11/17/2024 20:15 | 7.7 | 21.3 | 0.0 | 6.8 | 10.9 | 6.6 | 11/17/2024 20:15 | 7.6 | 15.5 | 0.0 | 6.9 | 10.7 | 0.2 |
| 11/17/2024 20:30 | 7.6 | 21.3 | 0.0 | 6.8 | 10.9 | 7.0 | 11/17/2024 20:30 | 7.6 | 15.7 | 0.0 | 6.9 | 10.7 | 0.1 |
| 11/17/2024 20:45 | 7.6 | 21.3 | 0.0 | 6.8 | 10.9 | 6.7 | 11/17/2024 20:45 | 7.6 | 15.7 | 0.0 | 6.9 | 10.7 | 0.1 |
| 11/17/2024 21:00 | 7.6 | 21.6 | 0.0 | 6.9 | 10.9 | 6.5 | 11/17/2024 21:00 | 7.5 | 15.3 | 0.0 | 6.8 | 10.7 | 0.2 |
| 11/17/2024 21:15 | 7.8 | 36.6 | 0.0 | 7.2 | 10.8 | 6.9 | 11/17/2024 21:15 | 7.5 | 15.6 | 0.0 | 6.9 | 10.7 | 0.1 |
| 11/17/2024 21:30 | 7.7 | 31.7 | 0.0 | 7.1 | 10.9 | 7.2 | 11/17/2024 21:30 | 7.5 | 15.3 | 0.0 | 6.9 | 10.7 | 0.3 |
| 11/17/2024 21:45 | 7.8 | 37.3 | 0.0 | 7.2 | 10.8 | 6.9 | 11/17/2024 21:45 | 7.5 | 15.3 | 0.0 | 6.8 | 10.8 | 0.4 |
| 11/17/2024 22:00 | 7.8 | 37.4 | 0.0 | 7.3 | 10.8 | 6.7 | 11/17/2024 22:00 | 7.5 | 15.3 | 0.0 | 6.9 | 10.8 | 0.2 |
| 11/17/2024 22:15 | 7.8 | 37.5 | 0.0 | 7.3 | 10.8 | 7.2 | 11/17/2024 22:15 | 7.4 | 15.2 | 0.0 | 6.9 | 10.8 | 0.2 |
| 11/17/2024 22:30 | 7.8 | 37.7 | 0.0 | 7.3 | 10.8 | 6.6 | 11/17/2024 22:30 | 7.4 | 15.3 | 0.0 | 6.9 | 10.8 | 0.8 |
| 11/17/2024 22:45 | 7.5 | 23.1 | 0.0 | 7.0 | 10.9 | 6.7 | 11/17/2024 22:45 | 7.4 | 15.3 | 0.0 | 6.9 | 10.8 | 0.5 |
| 11/17/2024 23:00 | 7.5 | 21.8 | 0.0 | 6.9 | 10.9 | 6.9 | 11/17/2024 23:00 | 7.4 | 15.0 | 0.0 | 6.8 | 10.8 | 0.3 |
| 11/17/2024 23:15 | 7.6 | 33.0 | 0.0 | 7.1 | 10.9 | 6.8 | 11/17/2024 23:15 | 7.4 | 14.9 | 0.0 | 6.9 | 10.8 | 0.1 |
| 11/17/2024 23:30 | 7.7 | 37.1 | 0.0 | 7.3 | 10.9 | 7.3 | 11/17/2024 23:30 | 7.4 | 14.9 | 0.0 | 6.9 | 10.8 | 0.2 |
| 11/17/2024 23:45 | 7.5 | 21.5 | 0.0 | 6.9 | 10.9 | 6.9 | 11/17/2024 23:45 | 7.4 | 15.0 | 0.0 | 6.9 | 10.8 | 0.2 |