Eagle Mountain - Woodfibre Gas Pipeline Project

BCER Waste Discharge Permit Weekly Report

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Appendix A: BC Rail Point of Discharge from Water Treatment System Documentation

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Appendix D: Woodfibre Receiving Environment Documentation

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

- No batches discharged this reporting period.
- Weekly upstream and downstream taken by Triton.
- Water produced by the water treatment plant is being recirculated for tunneling and to create grout for tunneling.

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
No batches this reporting period							

*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	2024-11-18	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	2023-11-18	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 taken by Triton.
- The lab results from November 19th came back with short term Zinc and short-term Copper exceedances as well as elevated levels of Aluminum (no short-term Aluminum guideline).
- The LC50 results came back with mortalities in the lab test, the QP is assessing these results.

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	2024-11-18	Yes-Appendix C	372m^3
Woodfibre	2024-11-19	Yes-Appendix C*lab sample day	369m^3
Woodfibre	2024-11-20	Yes-Appendix C	397 m^3
Woodfibre	2024-11-21	Yes-Appendix C	309m^3
Woodfibre	2024-11-22	Yes-Appendix C	380m^3
Woodfibre	2024-11-23	Yes-Appendix C	414m^3
Woodfibre	2024-11-24	Yes-Appendix C	387m^3

*Max discharge is 1500m^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	2024-11-19	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	2024-11-19	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

No Discharges

BCR Site Batch Sample Lab Documentation

No Discharges

BCR Site WTP Discharge Field Notes and Logs
No Discharges

Appendix B: BCR Site Receiving Environment Documentation

BCR Site Receiving Environment Sample Analysis

BCR Site Receiving Environment Lab Documentation

CERTIFICATE OF ANALYSIS

Work Order	: **VA24D1234**			
Client	:		Laboratory	: ALS Environmental - Vancouver
Contact	:		Account Manager	
Address	:		Address	
Telephone	: ----		Telephone	
Project	: 11964		Date Samples Received	: 18-Nov-2024 13:45
PO	: 11964-Task 20-Phase 3C-4C		Date Analysis Commenced	: 19-Nov-2024
C-O-C number	: ----		Issue Date	: 27-Nov-2024 14:01
Sampler	: SR+AR			
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*
	Account Manager Assistant	Administration, Burnaby, British Columbia
	Department Manager - Metals	Metals, Burnaby, British Columbia
	Lab Assistant	Inorganics, Burnaby, British Columbia
		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
µS/cm	microsiemens per centimetre
pH units	pH units
°C	degrees celsius
-	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
DLCI	Detection Limit Raised: Chromatographic interference due to co-elution.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SQU US1	SQU DS1	BCR Trip Blank	----	----
				Client sampling date / time	18-Nov-2024 10:04	18-Nov-2024 10:04	18-Nov-2024 10:04	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24D1234-001	VA24D1234-002	VA24D1234-003	----	----
					Result	Result	Result	----	----
Field Tests									
Conductivity, field	----	EF001/VA	0.10	µS/cm	219.00	152.00	----	----	----
pH, field	----	EF001/VA	0.10	pH units	7.02	7.14	----	----	----
Temperature, field	----	EF001/VA	0.10	°C	6.80	6.00	----	----	----
Physical Tests									
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	18.1	17.9	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	19.0	18.7	<0.60	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	49	57	<10	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	16.8	17.4	<2.0	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0705	0.0627	<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	2.67	2.56	<0.50	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.023	<0.022 DLCI	<0.020	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.166	0.147	<0.0050	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	0.0057	0.0052	<0.0010	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.259	0.231	<0.030	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0266	0.0273	<0.0020	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	5.42	5.25	<0.30	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	1.98	1.90	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US1	SQU DS1	BCR Trip Blank	----	----
					Client sampling date / time	18-Nov-2024 10:04	18-Nov-2024 10:04	18-Nov-2024 10:04	----	----
						VA24D1234-001	VA24D1234-002	VA24D1234-003	----	----
						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	----	----	----
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		0.117	0.139	<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		0.00013	0.00014	<0.00010	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.00911	0.00931	<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		0.0000125	0.0000104	<0.0000050	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		6.33	6.23	<0.050	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000015	0.000016	<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		<0.00010	0.00010	<0.00010	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00103	0.00099	<0.00050	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.204	0.216	<0.010	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		<0.000050	<0.000050	<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		0.787	0.766	<0.0050	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US1	SQU DS1	BCR Trip Blank	----	----
					Client sampling date / time	18-Nov-2024 10:04	18-Nov-2024 10:04	18-Nov-2024 10:04	----	----
						VA24D1234-001	VA24D1234-002	VA24D1234-003	----	----
						Result	Result	Result	----	----
Total Metals										
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.0100	0.0112	<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		0.000562	0.000529	<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		0.682	0.685	<0.050	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00091	0.00102	<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		5.24	5.07	<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		2.81	3.37	<0.050	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0379	0.0377	<0.00020	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		1.76	1.64	<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		0.00260	0.00380	<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		0.000030	0.000032	<0.000010	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		0.00128	0.00125	<0.00050	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US1	SQU DS1	BCR Trip Blank	----	----
					Client sampling date / time	18-Nov-2024 10:04	18-Nov-2024 10:04	18-Nov-2024 10:04	----	----
						VA24D1234-001	VA24D1234-002	VA24D1234-003	----	----
						Result	Result	Result	----	----
Total Metals										
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		<0.0030	0.152	<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		0.0451	0.0479	----	----	----
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		0.00013	0.00011	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00799	0.00827	----	----	----
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		0.0000118	0.0000094	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		6.13	6.08	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.000013	0.000013	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		0.00078	0.00076	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.134	0.160	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		0.673	0.662	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00802	0.00952	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US1	SQU DS1	BCR Trip Blank	----	----
					Client sampling date / time	18-Nov-2024 10:04	18-Nov-2024 10:04	18-Nov-2024 10:04	----	----
						VA24D1234-001	VA24D1234-002	VA24D1234-003	----	----
						Result	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		0.000574	0.000538	----	----	----
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		0.642	0.660	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00082	0.00084	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		4.93	4.72	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		2.56	2.56	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0399	0.0391	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		1.26	1.45	----	----	----
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		0.00042	0.00059	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.000031	0.000032	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		0.00115	0.00103	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0021	0.0039	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US1	SQU DS1	BCR Trip Blank	----	----
					Client sampling date / time	18-Nov-2024 10:04	18-Nov-2024 10:04	18-Nov-2024 10:04	----	----
						VA24D1234-001	VA24D1234-002	VA24D1234-003	----	----
						Result	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/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/VA	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	: **VA24D1234**	Page	: 1 of 17
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	: +1 604 253 4188
Project	: 11964	Date Samples Received	: 18-Nov-2024 13:45
PO	: 11964-Task 20-Phase 3C-4C	Issue Date	: 27-Nov-2024 14:00
C-O-C number	: ----		
Sampler	: SR+AR		
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
- Matrix Spike outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Matrix Spike (MS) Recoveries								
Dissolved Metals	Anonymous	Anonymous	Silver, dissolved	7440-22-4	E421	66.9 % MES	70.0-130%	Recovery less than lower data quality objective

Result Qualifiers

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

Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water** Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU DS1	E298	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	21-Nov-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU US1	E298	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	21-Nov-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (lab preserved) BCR Trip Blank	E298	18-Nov-2024	19-Nov-2024	3 days	1 days	✓	22-Nov-2024	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BCR Trip Blank	E235.Br-L	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	19-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU DS1	E235.Br-L	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	19-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU US1	E235.Br-L	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	19-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BCR Trip Blank	E235.Cl	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	19-Nov-2024	28 days	1 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SQU DS1	E235.Cl	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	19-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SQU US1	E235.Cl	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	19-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
BCR Trip Blank	E235.F	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	19-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SQU DS1	E235.F	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	19-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SQU US1	E235.F	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	19-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
BCR Trip Blank	E235.NO3-L	18-Nov-2024	19-Nov-2024	3 days	1 days	✓	19-Nov-2024	3 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
SQU DS1	E235.NO3-L	18-Nov-2024	19-Nov-2024	3 days	1 days	✓	19-Nov-2024	3 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
SQU US1	E235.NO3-L	18-Nov-2024	19-Nov-2024	3 days	1 days	✓	19-Nov-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
BCR Trip Blank	E235.NO2-L	18-Nov-2024	19-Nov-2024	3 days	1 days	✓	19-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 : Nitrite in Water by IC (Low Level)										
HDPE SQU DS1	E235.NO2-L	18-Nov-2024	19-Nov-2024	3 days	1 days	✓	19-Nov-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SQU US1	E235.NO2-L	18-Nov-2024	19-Nov-2024	3 days	1 days	✓	19-Nov-2024	3 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BCR Trip Blank	E235.SO4	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	19-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SQU DS1	E235.SO4	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	19-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SQU US1	E235.SO4	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	19-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) SQU DS1	E366	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	20-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) SQU US1	E366	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	20-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (lab preserved) BCR Trip Blank	E366	18-Nov-2024	19-Nov-2024	3 days	1 days	✓	20-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) SQU DS1	E372-U	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	20-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	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	20-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (lab preserved)										
BCR Trip Blank	E372-U	18-Nov-2024	19-Nov-2024	3 days	1 days	✓	20-Nov-2024	28 days	1 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SQU DS1	E509	18-Nov-2024	22-Nov-2024	28 days	4 days	✓	22-Nov-2024	28 days	4 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SQU US1	E509	18-Nov-2024	22-Nov-2024	28 days	4 days	✓	22-Nov-2024	28 days	4 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SQU DS1	E421	18-Nov-2024	21-Nov-2024	180 days	3 days	✓	23-Nov-2024	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SQU US1	E421	18-Nov-2024	21-Nov-2024	180 days	3 days	✓	23-Nov-2024	180 days	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)										
SQU DS1	EF001	18-Nov-2024	----	----	----		26-Nov-2024	----	8 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)										
SQU US1	EF001	18-Nov-2024	----	----	----		26-Nov-2024	----	8 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
SQU DS1	E358-L	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	19-Nov-2024	28 days	1 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) SQU US1	E358-L	18-Nov-2024	19-Nov-2024	28 days	1 days	✓	19-Nov-2024	28 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BCR Trip Blank	E290	18-Nov-2024	19-Nov-2024	14 days	1 days	✓	19-Nov-2024	14 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SQU DS1	E290	18-Nov-2024	19-Nov-2024	14 days	1 days	✓	19-Nov-2024	14 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SQU US1	E290	18-Nov-2024	19-Nov-2024	14 days	1 days	✓	19-Nov-2024	14 days	1 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BCR Trip Blank	E162	18-Nov-2024	----	----	----		23-Nov-2024	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SQU DS1	E162	18-Nov-2024	----	----	----		23-Nov-2024	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SQU US1	E162	18-Nov-2024	----	----	----		23-Nov-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BCR Trip Blank	E160	18-Nov-2024	----	----	----		23-Nov-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE SQU DS1	E160	18-Nov-2024	----	----	----		23-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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE										
SQU US1	E160	18-Nov-2024	----	----	----		23-Nov-2024	7 days	5 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
Opaque HDPE - total (sodium hydroxide)										
BCR Trip Blank	E532	18-Nov-2024	----	----	----		18-Nov-2024	28 days	1 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
Opaque HDPE - total (sodium hydroxide)										
SQU DS1	E532	18-Nov-2024	----	----	----		18-Nov-2024	28 days	1 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
Opaque HDPE - total (sodium hydroxide)										
SQU US1	E532	18-Nov-2024	----	----	----		18-Nov-2024	28 days	1 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
BCR Trip Blank	E508	18-Nov-2024	22-Nov-2024	28 days	4 days	✓	22-Nov-2024	28 days	4 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
SQU DS1	E508	18-Nov-2024	22-Nov-2024	28 days	4 days	✓	22-Nov-2024	28 days	4 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
SQU US1	E508	18-Nov-2024	22-Nov-2024	28 days	4 days	✓	22-Nov-2024	28 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
BCR Trip Blank	E420	18-Nov-2024	21-Nov-2024	180 days	3 days	✓	23-Nov-2024	180 days	5 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
SQU DS1	E420	18-Nov-2024	21-Nov-2024	180 days	3 days	✓	23-Nov-2024	180 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 Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
SQU US1	E420	18-Nov-2024	21-Nov-2024	180 days	3 days	✓	23-Nov-2024	180 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
BCR Trip Blank	E395	18-Nov-2024	----	----	----		19-Nov-2024	7 days	1 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
SQU DS1	E395	18-Nov-2024	----	----	----		19-Nov-2024	7 days	1 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
SQU US1	E395	18-Nov-2024	----	----	----		19-Nov-2024	7 days	1 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1772950	1	8	12.5	5.0	✓
Ammonia by Fluorescence	E298	1773076	2	40	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1772955	1	11	9.0	5.0	✓
Chloride in Water by IC	E235.Cl	1772954	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1778480	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1773156	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1773077	1	12	8.3	5.0	✓
Fluoride in Water by IC	E235.F	1772953	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1772956	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1772957	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1772952	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1780599	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1772511	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1778527	1	17	5.8	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1773165	1	19	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	1773082	2	22	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1773078	2	37	5.4	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1773301	1	15	6.6	5.0	✓
TSS by Gravimetry	E160	1780596	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1772950	1	8	12.5	5.0	✓
Ammonia by Fluorescence	E298	1773076	2	40	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1772955	1	11	9.0	5.0	✓
Chloride in Water by IC	E235.Cl	1772954	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1778480	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1773156	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1773077	1	12	8.3	5.0	✓
Fluoride in Water by IC	E235.F	1772953	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1772956	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1772957	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1772952	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1780599	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1772511	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1778527	1	17	5.8	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1773165	1	19	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	1773082	2	22	9.0	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1773078	2	37	5.4	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1773301	1	15	6.6	5.0	✓
TSS by Gravimetry	E160	1780596	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1772950	1	8	12.5	5.0	✓
Ammonia by Fluorescence	E298	1773076	2	40	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1772955	1	11	9.0	5.0	✓
Chloride in Water by IC	E235.Cl	1772954	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1778480	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1773156	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1773077	1	12	8.3	5.0	✓
Fluoride in Water by IC	E235.F	1772953	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1772956	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1772957	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1772952	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1780599	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1772511	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1778527	1	17	5.8	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1773165	1	19	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	1773082	2	22	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1773078	2	37	5.4	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1773301	1	15	6.6	5.0	✓
TSS by Gravimetry	E160	1780596	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1773076	2	40	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1772955	1	11	9.0	5.0	✓
Chloride in Water by IC	E235.Cl	1772954	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1778480	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1773156	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1773077	1	12	8.3	5.0	✓
Fluoride in Water by IC	E235.F	1772953	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1772956	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1772957	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1772952	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1772511	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1778527	1	17	5.8	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1773165	1	19	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	1773082	2	22	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1773078	2	37	5.4	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 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 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 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of 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 ALS Environmental - Vancouver	Water	Chinchilla Scientific Nitrate Method, 2011	Following digestion, total nitrogen is is determined colourimetrically using a discrete analyzer utilizing the vanadium chloride reduction method. This method of analysis is approved under US EPA 40 CFR Part 136 (May 2021).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated 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 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Hexavalent Chromium (Cr VI) by IC	E532 ALS Environmental - Vancouver	Water	APHA 3500-Cr C (Ion Chromatography)	Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection. Results are based on an un-filtered, field-preserved sample.
Dissolved Hardness (Calculated)	EC100 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 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 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 ALS Environmental - Vancouver	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine	EF001 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 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Nitrogen in water	EP366 ALS Environmental - Vancouver	Water	APHA 4500-P J (mod)	Samples for total nitrogen analysis are digested using a heated persulfate digestion. Nitrogen compounds are converted to nitrate in this digestion.
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.

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

QUALITY CONTROL REPORT

Work Order	: **VA24D1234**	Page	: 1 of 18
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project	: 11964	Date Samples Received	: 18-Nov-2024 13:45
PO	: 11964-Task 20-Phase 3C-4C	Date Analysis Commenced	: 18-Nov-2024
C-O-C number	: ----	Issue Date	: 27-Nov-2024 14:00
Sampler	: SR+AR		
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*
	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia
		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: 1772950)											
VA24D1231-002	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	60.6	60.6	0.00%	20%	----
Physical Tests (QC Lot: 1780596)											
FJ2403519-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	4.5	4.3	0.2	Diff <2x LOR	----
Physical Tests (QC Lot: 1780599)											
FJ2403519-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	364	365	0.137%	20%	----
Anions and Nutrients (QC Lot: 1772952)											
VA24D1185-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	110	110	0.0662%	20%	----
Anions and Nutrients (QC Lot: 1772953)											
VA24D1185-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.052	0.050	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1772954)											
VA24D1185-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	3.65	3.67	0.02	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1772955)											
VA24D1185-001	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: 1772956)											
VA24D1185-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1772957)											
VA24D1185-001	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: 1773076)											
FJ2403497-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0108	0.0103	0.0005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1773078)											
FJ2403497-004	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0124	0.0111	0.0013	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1773082)											
VA24D1234-001	SQU US1	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.259	0.260	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1773500)											
VA24D1107-002	Anonymous	Nitrogen, total	7727-37-9	E366	0.300	mg/L	7.60	7.75	1.89%	20%	----
Anions and Nutrients (QC Lot: 1773501)											
VA24D1105-003	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0104	0.0102	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1773502)											
VA24D1105-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1773077)											

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: 1773077) - continued											
FJ2403497-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.42	2.55	0.14	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: 1773165)											
VA24D1178-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0100	mg/L	1.85	1.79	3.22%	20%	----
		Antimony, total	7440-36-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00058	0.00061	0.00003	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.0200	mg/L	0.110	0.108	0.00124	Diff <2x LOR	----
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	0.000606	0.000616	1.59%	20%	----
		Boron, total	7440-42-8	E420	0.100	mg/L	0.620	0.614	0.006	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.000200	mg/L	<0.000200	<0.000200	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.100	mg/L	10.0	10.0	0.0396%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000198	0.000199	0.509%	20%	----
		Chromium, total	7440-47-3	E420	0.00200	mg/L	0.179	0.171	4.52%	20%	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	0.0215	0.0213	1.12%	20%	----
		Copper, total	7440-50-8	E420	0.00100	mg/L	0.0211	0.0211	0.125%	20%	----
		Iron, total	7439-89-6	E420	0.030	mg/L	48.5	47.8	1.50%	20%	----
		Lead, total	7439-92-1	E420	0.000500	mg/L	0.00200	0.00199	0.000016	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0019	0.0020	0.00008	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.100	mg/L	79.6	77.2	3.13%	20%	----
		Manganese, total	7439-96-5	E420	0.00200	mg/L	1.23	1.21	1.45%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000331	0.000351	0.000020	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.452	0.426	6.00%	20%	----
		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	3.16	3.13	1.08%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00264	0.00263	0.622%	20%	----
		Selenium, total	7782-49-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	31.6	31.7	0.0935%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	0.000034	0.000037	0.000004	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	2.00	mg/L	36.6	36.2	1.08%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.549	0.557	1.48%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	1.54	1.54	0.003	Diff <2x LOR	----
		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: 1773165) - continued											
VA24D1178-001	Anonymous	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	0.00698	0.00714	2.15%	20%	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.00750	0.00764	1.85%	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	0.000100	mg/L	0.000115	0.000115	0.0000003	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00540	0.00529	2.20%	20%	----
		Zinc, total	7440-66-6	E420	0.0500	mg/L	<0.0500	<0.0500	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: 1778527)											
VA24D1202-007	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1773156)											
VA24D1181-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0050	mg/L	0.146	0.144	1.40%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00050	mg/L	0.00193	0.00202	0.00008	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00050	mg/L	0.258	0.257	0.170%	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	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.050	mg/L	0.165	0.167	0.002	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	0.250	mg/L	47.7	47.8	0.246%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000050	mg/L	0.000111	0.000114	0.000003	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00250	mg/L	<0.00250	<0.00250	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00050	mg/L	0.00881	0.00896	1.59%	20%	----
		Copper, dissolved	7440-50-8	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.050	mg/L	6.86	6.74	1.80%	20%	----
		Lead, dissolved	7439-92-1	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0050	mg/L	0.0090	0.0094	0.0004	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0250	mg/L	3.83	3.88	1.27%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00050	mg/L	0.835	0.843	0.931%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000250	mg/L	0.00999	0.0100	0.153%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00250	mg/L	0.0128	0.0124	0.00034	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.250	mg/L	24.6	24.5	0.450%	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: 1773156) - continued											
VA24D1181-001	Anonymous	Rubidium, dissolved	7440-17-7	E421	0.00100	mg/L	0.00400	0.00408	0.00008	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.250	mg/L	1.21	1.14	0.072	Diff <2x LOR	----
		Silver, dissolved	7440-22-4	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.250	mg/L	780	792	1.54%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00100	mg/L	0.336	0.336	0.0249%	20%	----
		Sulfur, dissolved	7704-34-9	E421	2.50	mg/L	6.11	5.10	1.01	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00150	mg/L	<0.00150	<0.00150	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000050	mg/L	0.000121	0.000116	0.000006	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E421	0.00250	mg/L	<0.00250	<0.00250	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0050	mg/L	0.0238	0.0254	0.0015	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1778480)											
VA24D1234-001	SQU US1	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1772511)											
VA24D1134-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	0.00082	0.00071	0.00011	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: 1772950)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1780596)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1780599)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1772952)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1772953)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1772954)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1772955)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1772956)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1772957)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1773076)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1773078)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1773082)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1773500)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1773501)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1773502)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1773077)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1773301)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Sulfides (QCLot: 1773301) - continued						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1773165)						
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	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1773165) - continued						
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: 1778527)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1773156)						
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: 1773156) - 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	----
Dissolved Metals (QCLot: 1778480)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1772511)						
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: 1772950)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1780596)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	94.6	85.0	115	----
Physical Tests (QCLot: 1780599)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 1772952)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1772953)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	97.5	90.0	110	----
Anions and Nutrients (QCLot: 1772954)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 1772955)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 1772956)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 1772957)									
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: 1773076)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	95.4	85.0	115	----
Anions and Nutrients (QCLot: 1773078)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	88.7	80.0	120	----
Anions and Nutrients (QCLot: 1773082)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	86.2	75.0	125	----
Anions and Nutrients (QCLot: 1773500)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	87.7	75.0	125	----
Anions and Nutrients (QCLot: 1773501)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	89.1	80.0	120	----
Anions and Nutrients (QCLot: 1773502)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	93.3	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1773077)									

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike: Target Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Organic / Inorganic Carbon (QCLot: 1773077) - continued									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	100	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: 1773165)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	99.4	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	97.3	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	100	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	97.8	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	99.0	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	98.0	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	97.7	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	99.4	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	101	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	97.8	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	97.4	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	95.4	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	98.0	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	96.7	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	102	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	99.6	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	97.9	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	97.7	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	100	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	99.1	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	104	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	108	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	91.4	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	104	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	98.8	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	90.4	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	99.7	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: 1773165) - continued									
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	96.9	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	97.2	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	102	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	96.9	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	96.8	80.0	120	----
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	97.5	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	95.3	80.0	120	----
Total Metals (QCLot: 1778527)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	96.2	80.0	120	----
Dissolved Metals (QCLot: 1773156)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	100.0	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	97.8	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	97.7	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	96.1	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	98.0	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	95.4	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	97.0	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	97.4	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	98.3	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	98.5	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	96.1	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	96.1	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	102	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	97.9	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	96.3	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	94.5	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	98.3	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	94.7	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	105	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	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: 1773156) - continued									
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	96.0	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	101	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	92.9	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	96.9	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	100	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	89.3	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	99.0	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	101	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	98.6	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	99.3	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	91.0	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	94.5	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	102	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	100	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	93.9	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	95.8	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	94.3	80.0	120	----
Speciated Metals (QCLot: 1772511)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.25 mg/L	100	80.0	120	----

Matrix Spike (MS) Report

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

Sub-Matrix: **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: 1772952)										
VA24D1185-003	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1772953)										
VA24D1185-003	Anonymous	Fluoride	16984-48-8	E235.F	0.993 mg/L	1 mg/L	99.3	75.0	125	----
Anions and Nutrients (QCLot: 1772954)										
VA24D1185-003	Anonymous	Chloride	16887-00-6	E235.Cl	103 mg/L	100 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1772955)										
VA24D1185-003	Anonymous	Bromide	24959-67-9	E235.Br-L	0.531 mg/L	0.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1772956)										
VA24D1185-003	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.60 mg/L	2.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1772957)										
VA24D1185-003	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.508 mg/L	0.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1773076)										
FJ2403497-003	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0964 mg/L	0.1 mg/L	96.4	75.0	125	----
Anions and Nutrients (QCLot: 1773078)										
FJ2403497-005	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0438 mg/L	0.05 mg/L	87.6	70.0	130	----
Anions and Nutrients (QCLot: 1773082)										
VA24D1234-002	SQU DS1	Nitrogen, total	7727-37-9	E366	0.367 mg/L	0.4 mg/L	91.8	70.0	130	----
Anions and Nutrients (QCLot: 1773500)										
VA24D1107-003	Anonymous	Nitrogen, total	7727-37-9	E366	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1773501)										
VA24D1107-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1773502)										
VA24D1105-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.186 mg/L	0.2 mg/L	93.3	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1773077)										
FJ2403497-003	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	5.15 mg/L	5 mg/L	103	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: 1773165)										
VA24D1181-001	Anonymous	Aluminum, total	7429-90-5	E420	ND mg/L	----	ND	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0953 mg/L	0.1 mg/L	95.3	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.105 mg/L	0.1 mg/L	105	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1773165) - continued										
VA24D1181-001	Anonymous	Barium, total	7440-39-3	E420	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.198 mg/L	0.2 mg/L	99.0	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0446 mg/L	0.05 mg/L	89.2	70.0	130	----
		Boron, total	7440-42-8	E420	ND mg/L	----	ND	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0488 mg/L	0.05 mg/L	97.7	70.0	130	----
		Chromium, total	7440-47-3	E420	0.196 mg/L	0.2 mg/L	98.1	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0960 mg/L	0.1 mg/L	96.0	70.0	130	----
		Copper, total	7440-50-8	E420	0.0947 mg/L	0.1 mg/L	94.7	70.0	130	----
		Iron, total	7439-89-6	E420	ND mg/L	----	ND	70.0	130	----
		Lead, total	7439-92-1	E420	0.0899 mg/L	0.1 mg/L	89.9	70.0	130	----
		Lithium, total	7439-93-2	E420	0.464 mg/L	0.5 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	ND mg/L	----	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Nickel, total	7440-02-0	E420	0.193 mg/L	0.2 mg/L	96.4	70.0	130	----
		Phosphorus, total	7723-14-0	E420	50.0 mg/L	50 mg/L	99.9	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	----	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0953 mg/L	0.1 mg/L	95.3	70.0	130	----
		Selenium, total	7782-49-2	E420	0.205 mg/L	0.2 mg/L	102	70.0	130	----
		Silicon, total	7440-21-3	E420	48.9 mg/L	50 mg/L	97.8	70.0	130	----
		Silver, total	7440-22-4	E420	0.0187 mg/L	0.02 mg/L	93.6	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	99.4 mg/L	100 mg/L	99.4	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.197 mg/L	0.2 mg/L	98.6	70.0	130	----
		Thallium, total	7440-28-0	E420	0.0178 mg/L	0.02 mg/L	88.8	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0958 mg/L	0.1 mg/L	95.8	70.0	130	----
		Tin, total	7440-31-5	E420	0.0971 mg/L	0.1 mg/L	97.1	70.0	130	----
		Titanium, total	7440-32-6	E420	0.206 mg/L	0.2 mg/L	103	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0940 mg/L	0.1 mg/L	94.0	70.0	130	----
		Uranium, total	7440-61-1	E420	0.0187 mg/L	0.02 mg/L	93.6	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.512 mg/L	0.5 mg/L	102	70.0	130	----
		Zinc, total	7440-66-6	E420	1.98 mg/L	2 mg/L	99.2	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.197 mg/L	0.2 mg/L	98.7	70.0	130	----
Total Metals (QCLot: 1778527)										
VA24D1202-008	Anonymous	Mercury, total	7439-97-6	E508	ND mg/L	----	ND	70.0	130	----
Dissolved Metals (QCLot: 1773156)										
VA24D1189-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.182 mg/L	0.2 mg/L	90.9	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0194 mg/L	0.02 mg/L	96.9	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	ND mg/L	----	ND	70.0	130	----
		Barium, dissolved	7440-39-3	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: 1773156) - continued										
VA24D1189-001	Anonymous	Beryllium, dissolved	7440-41-7	E421	0.0374 mg/L	0.04 mg/L	93.5	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00808 mg/L	0.01 mg/L	80.8	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.090 mg/L	0.1 mg/L	89.7	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00382 mg/L	0.004 mg/L	95.4	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00986 mg/L	0.01 mg/L	98.6	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0387 mg/L	0.04 mg/L	96.7	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0182 mg/L	0.02 mg/L	91.2	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0180 mg/L	0.02 mg/L	89.9	70.0	130	----
		Iron, dissolved	7439-89-6	E421	ND mg/L	----	ND	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0182 mg/L	0.02 mg/L	91.2	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0921 mg/L	0.1 mg/L	92.1	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	----	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0354 mg/L	0.04 mg/L	88.5	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	9.95 mg/L	10 mg/L	99.5	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	4.03 mg/L	4 mg/L	101	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0198 mg/L	0.02 mg/L	98.9	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0398 mg/L	0.04 mg/L	99.5	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.07 mg/L	10 mg/L	90.7	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00268 mg/L	0.004 mg/L	66.9	70.0	130	MES
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	ND mg/L	----	ND	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0414 mg/L	0.04 mg/L	103	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00374 mg/L	0.004 mg/L	93.4	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0180 mg/L	0.02 mg/L	89.9	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0382 mg/L	0.04 mg/L	95.6	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0181 mg/L	0.02 mg/L	90.7	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00378 mg/L	0.004 mg/L	94.5	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0979 mg/L	0.1 mg/L	97.9	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.370 mg/L	0.4 mg/L	92.6	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
Dissolved Metals (QCLot: 1778480)										
VA24D1234-002	SQU DS1	Mercury, dissolved	7439-97-6	E509	0.0000927 mg/L	0 mg/L	92.7	70.0	130	----
Speciated Metals (QCLot: 1772511)										
VA24D1134-002	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.255 mg/L	0.25 mg/L	102	70.0	130	----

Qualifiers

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

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City/Province:	
Postal Code:	
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	Copy of Invoice with Report ☐ YES ☑ NO
Company:	
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Report Format / Distribution

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Quality Control (QC) Report with Report ☑ ☐ 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):	

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 (F)	Total hexavalent chromium	Total trivalent chromium	TSS	TDS	Nutrients (ammonia, ammonium, total nitrogen, total phosphorus) (P)	Total sulfide (low) (as H2S), Unionized Sulfide (low) (P)	Anions scan (Br, Cl, F, NO2, NO3, SO4)	General parameters (alkalinity)	DOC (F/P)	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	SQU US 1 219 µs 6.80°C	18-Nov-24	10:[illegible]04	Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: ~~6.45~~ 7.02 cond: ~~350 µs~~ temp: ~~7.18°C~~																	
	SQU DS 1		[illegible]	Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 7.14 cond: 152 µs temp: 6.0°C		10:40															
	BCR Trip Blank	↓	NA	Water	R	[illegible]	R	R	R	R	R	R	R	R	[illegible]		N	9

Environmental Division
Vancouver
Work Order Reference
VA24D1234

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 Criteri … t below

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			
				4			

SHIPMENT RELEASE (client use)

Date: Nov 18 2024 Time: 13:45

… only)

Received by: Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: CW Date: Nov 18 Time: 1345

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

2024-11-18-Renkers-6CBE5

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	11/18/2024	**Location:**	BC Rail Site
Triton QP:	Stephanie Renkers	**Latitude/Longitude:**	49.725383 -123.165129
Temperature(c):	Low 3 High 9	**Permit:**	AE 111824
Weather Conditions:	Clear	**Ground Conditions:**	Damp

Observations

Time: 10:41:26 **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**	N/A		
DOC	Yes	**EPH, PAH, LEPH/HEPH**	N/A		
		Trout LC50	N/A		

Logger Maintenance

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

Describe Logger Maintenance

Cleaned and maintained sonde probes

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

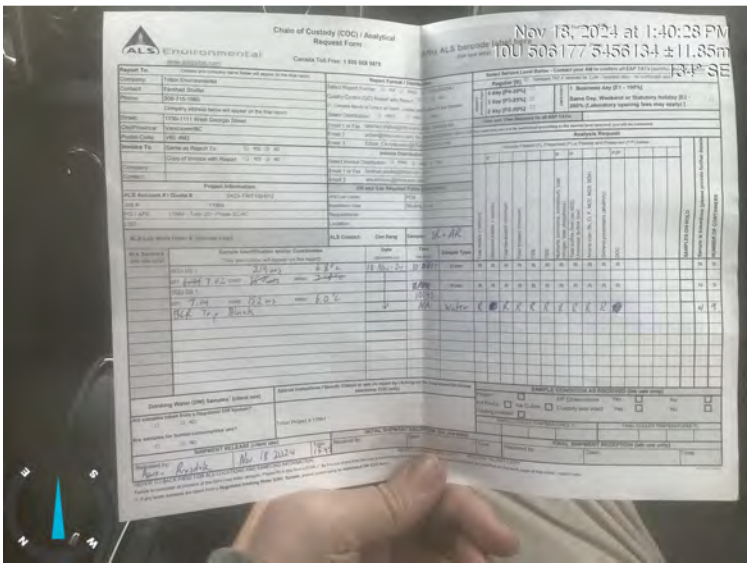

Photo: 4

Location:

Description: Sample 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

2024-11-18-Renkers-F2454

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	11/18/2024	**Location:**	BC Rail Site
Triton QP:	Stephanie Renkers	**Latitude/Longitude:**	49.726866 -123.163912
Temperature(c):	Low 3 High 9	**Permit:**	AE 111824
Weather Conditions:	Clear	**Ground Conditions:**	Damp

Observations

Time: 10:04:11 **Flow Volume (visual):** moderate

Notes: Sonde is still stuck on bottom under log, cannot be retrieved. Uploaded readings show sonde is functioning normally.

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**	N/A		
DOC	Yes	**EPH, PAH, LEPH/HEPH**	N/A		
		Trout LC50	N/A		

Logger Maintenance

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

Describe Logger Maintenance

Photos

Photo: 1

Location: SQU US1

Description: Upstream view

Photo: 2

Location: SQU US1

Description: Across view

Photos

Photo: 3

Location: SQU US1

Description: Downstream view

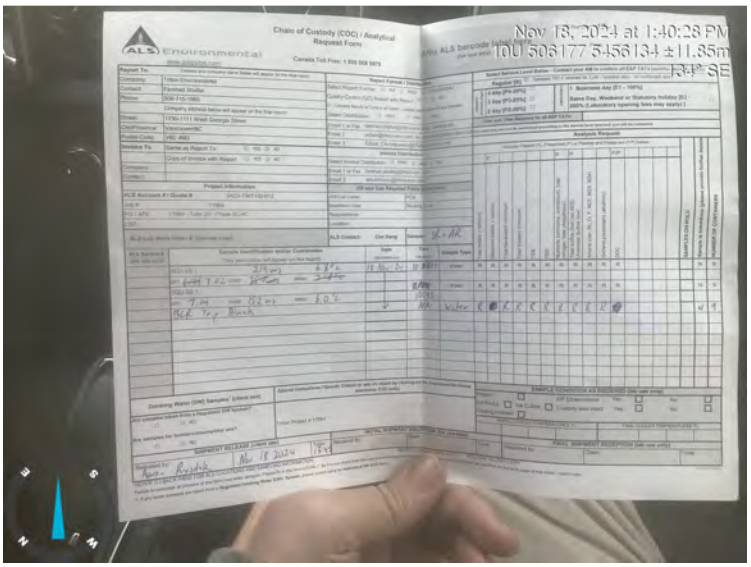

Photo: 4

Location:

Description: Sample COC

Sign Off

Report Prepared By:	Aaron Rysdale	**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)
11/18/2024 0:00	5.1	37.0	0.0	7.3	11.2	4.9	11/18/2024 0:00	6.3	69.7	0.0	6.7	11.6	52.7
11/18/2024 0:15	5.1	37.0	0.0	7.3	11.3	0.0	11/18/2024 0:15	6.3	70.0	0.0	6.7	11.6	53.8
11/18/2024 0:30	5.1	37.0	0.0	7.3	11.3	0.6	11/18/2024 0:30	6.3	70.1	0.0	6.7	11.6	53.0
11/18/2024 0:45	5.1	37.0	0.0	7.3	11.3	1.4	11/18/2024 0:45	6.2	70.0	0.0	6.7	11.6	54.4
11/18/2024 1:00	5.0	36.9	0.0	7.3	11.3	0.6	11/18/2024 1:00	6.2	69.7	0.0	6.7	11.6	52.7
11/18/2024 1:15	5.0	36.9	0.0	7.3	11.3	0.4	11/18/2024 1:15	6.2	69.8	0.0	6.7	11.7	53.7
11/18/2024 1:30	5.0	36.9	0.0	7.3	11.3	0.5	11/18/2024 1:30	6.2	69.9	0.0	6.7	11.6	54.8
11/18/2024 1:45	5.0	36.8	0.0	7.3	11.3	0.4	11/18/2024 1:45	6.2	69.9	0.0	6.7	11.7	54.3
11/18/2024 2:00	5.0	36.8	0.0	7.3	11.3	0.9	11/18/2024 2:00	6.2	70.1	0.0	6.7	11.7	53.1
11/18/2024 2:15	5.0	37.0	0.0	7.3	11.3	0.1	11/18/2024 2:15	6.2	69.9	0.0	6.7	11.6	53.8
11/18/2024 2:30	5.0	36.8	0.0	7.3	11.3	0.2	11/18/2024 2:30	6.2	69.5	0.0	6.7	11.7	53.7
11/18/2024 2:45	5.0	36.8	0.0	7.3	11.3	0.0	11/18/2024 2:45	6.2	69.5	0.0	6.7	11.7	55.4
11/18/2024 3:00	5.0	36.6	0.0	7.3	11.3	2.1	11/18/2024 3:00	6.1	69.7	0.0	6.7	11.7	54.9
11/18/2024 3:15	5.0	36.8	0.0	7.3	11.3	0.0	11/18/2024 3:15	6.1	70.5	0.0	6.7	11.7	54.1
11/18/2024 3:30	4.9	36.6	0.0	7.3	11.3	0.4	11/18/2024 3:30	6.1	69.5	0.0	6.7	11.7	54.5
11/18/2024 3:45	4.9	36.7	0.0	7.3	11.3	0.7	11/18/2024 3:45	6.1	69.6	0.0	6.7	11.7	54.6
11/18/2024 4:00	4.9	36.7	0.0	7.4	11.3	0.0	11/18/2024 4:00	6.1	69.1	0.0	6.7	11.7	56.0
11/18/2024 4:15	4.9	36.7	0.0	7.3	11.3	0.8	11/18/2024 4:15	6.1	69.4	0.0	6.7	11.7	54.9
11/18/2024 4:30	4.9	36.6	0.0	7.3	11.3	0.5	11/18/2024 4:30	6.1	69.2	0.0	6.7	11.7	55.0
11/18/2024 4:45	4.9	36.6	0.0	7.3	11.3	0.4	11/18/2024 4:45	6.1	69.5	0.0	6.7	11.7	54.5
11/18/2024 5:00	4.9	36.6	0.0	7.3	11.3	1.0	11/18/2024 5:00	6.1	69.3	0.0	6.7	11.7	54.4
11/18/2024 5:15	4.9	36.8	0.0	7.3	11.3	0.8	11/18/2024 5:15	6.1	69.5	0.0	6.7	11.7	54.0
11/18/2024 5:30	4.9	36.7	0.0	7.3	11.3	1.0	11/18/2024 5:30	6.1	69.1	0.0	6.7	11.7	55.5
11/18/2024 5:45	4.9	36.7	0.0	7.3	11.3	0.3	11/18/2024 5:45	6.1	69.1	0.0	6.7	11.7	56.1
11/18/2024 6:00	4.9	36.8	0.0	7.3	11.3	0.4	11/18/2024 6:00	6.1	69.7	0.0	6.7	11.7	55.5
11/18/2024 6:15	4.9	36.9	0.0	7.3	11.3	0.0	11/18/2024 6:15	6.0	70.0	0.0	6.7	11.7	56.0
11/18/2024 6:30	4.9	36.8	0.0	7.3	11.3	0.2	11/18/2024 6:30	6.0	69.7	0.0	6.7	11.7	56.1
11/18/2024 6:45	4.8	36.7	0.0	7.3	11.4	0.0	11/18/2024 6:45	6.0	68.9	0.0	6.7	11.7	56.1
11/18/2024 7:00	4.8	36.3	0.0	7.4	11.4	0.0	11/18/2024 7:00	6.0	68.6	0.0	6.7	11.8	56.5
11/18/2024 7:15	4.8	36.1	0.0	7.4	11.4	0.0	11/18/2024 7:15	6.0	67.9	0.0	6.7	11.8	59.2
11/18/2024 7:30	4.8	36.0	0.0	7.3	11.4	0.0	11/18/2024 7:30	5.9	67.4	0.0	6.7	11.8	56.6
11/18/2024 7:45	4.8	35.9	0.0	7.2	11.4	0.0	11/18/2024 7:45	5.9	66.8	0.0	6.8	11.8	57.2
11/18/2024 8:00	4.8	35.8	0.0	7.4	11.4	0.3	11/18/2024 8:00	5.9	66.5	0.0	6.8	11.9	56.7
11/18/2024 8:15	4.8	35.8	0.0	7.4	11.4	0.0	11/18/2024 8:15	5.9	66.9	0.0	6.8	11.9	57.1
11/18/2024 8:30	4.8	37.3	0.0	7.4	11.4	0.5	11/18/2024 8:30	5.9	66.7	0.0	6.8	11.9	56.9
11/18/2024 8:45	4.7	38.1	0.0	7.4	11.4	0.0	11/18/2024 8:45	5.9	67.2	0.0	6.8	11.9	58.1
11/18/2024 9:00	4.7	37.2	0.0	7.4	11.4	0.0	11/18/2024 9:00	5.8	66.8	0.0	6.8	11.9	57.7
11/18/2024 9:15	4.7	36.3	0.0	7.4	11.5	0.0	11/18/2024 9:15	5.8	67.0	0.0	6.8	11.9	58.1
11/18/2024 9:30	4.7	36.2	0.0	7.4	11.5	0.0	11/18/2024 9:30	5.8	67.2	0.0	6.8	11.9	59.1
11/18/2024 9:45	4.7	36.6	0.0	7.5	11.5	0.0	11/18/2024 9:45	5.8	69.3	0.0	6.8	11.9	57.9
11/18/2024 10:00	4.7	37.5	0.0	7.3	11.5	0.0	11/18/2024 10:00	5.9	70.4	0.0	6.8	11.9	59.5
11/18/2024 10:15	4.7	38.1	0.0	7.4	11.5	0.0	11/18/2024 10:15	5.9	71.9	0.0	6.8	11.9	59.7
11/18/2024 10:30	4.7	38.7	0.0	7.4	11.5	0.4	11/18/2024 10:30	5.9	72.0	0.0	6.8	11.9	59.7
11/18/2024 10:45	4.8	38.8	0.0	7.4	11.4	0.0	11/18/2024 10:45	5.9	73.0	0.0	6.8	11.9	60.4
11/18/2024 11:00	4.8	39.2	0.0	7.4	11.4	0.0	11/18/2024 11:00	6.0	74.3	0.0	6.8	11.8	60.0
11/18/2024 11:15	4.8	39.9	0.0	7.4	11.4	0.0	11/18/2024 11:15	6.0	74.2	0.0	6.8	11.8	54.2
11/18/2024 11:30	4.8	40.4	0.0	7.4	11.4	0.3	11/18/2024 11:30	6.0	76.8	0.0	6.7	11.6	49.8
11/18/2024 11:45	4.8	40.8	0.0	7.3	11.4	0.0	11/18/2024 11:45	6.1	77.1	0.0	6.7	11.6	49.0
11/18/2024 12:00	4.9	41.0	0.0	7.3	11.3	0.0	11/18/2024 12:00	6.1	75.8	0.0	6.6	11.5	49.8
11/18/2024 12:15	4.9	40.4	0.0	7.3	11.3	0.0	11/18/2024 12:15	6.2	77.5	0.0	6.6	11.5	49.5
11/18/2024 12:30	5.0	40.6	0.0	7.3	11.3	1.1	11/18/2024 12:30	6.2	76.4	0.0	6.6	11.6	49.4
11/18/2024 12:45	5.0	40.4	0.0	7.3	11.3	0.0	11/18/2024 12:45	6.3	75.3	0.0	6.6	11.6	49.4
11/18/2024 13:00	5.0	39.4	0.0	7.3	11.3	0.0	11/18/2024 13:00	6.2	72.6	0.0	6.6	11.7	39.9
11/18/2024 13:15	5.0	39.0	0.0	7.3	11.3	0.0	11/18/2024 13:15	6.2	72.9	0.0	6.7	11.6	39.9
11/18/2024 13:30	5.0	38.8	0.0	7.3	11.3	0.0	11/18/2024 13:30	6.2	72.5	0.0	6.7	11.7	39.6
11/18/2024 13:45	5.1	38.8	0.0	7.3	11.3	0.0	11/18/2024 13:45	6.3	73.5	0.0	6.7	11.7	39.0
11/18/2024 14:00	5.1	38.9	0.0	7.3	11.3	0.0	11/18/2024 14:00	6.3	72.5	0.0	6.7	11.6	38.8
11/18/2024 14:15	5.1	38.9	0.0	7.2	11.3	0.0	11/18/2024 14:15	6.3	72.3	0.0	6.7	11.6	38.4
11/18/2024 14:30	5.1	39.0	0.0	7.3	11.3	0.2	11/18/2024 14:30	6.3	72.3	0.0	6.7	11.6	38.7
11/18/2024 14:45	5.1	39.0	0.0	7.3	11.3	0.0	11/18/2024 14:45	6.3	72.2	0.0	6.7	11.6	38.7
11/18/2024 15:00	5.1	39.0	0.0	7.2	11.3	0.0	11/18/2024 15:00	6.3	73.0	0.0	6.7	11.6	37.8
11/18/2024 15:15	5.2	39.1	0.0	7.3	11.3	0.0	11/18/2024 15:15	6.3	72.0	0.0	6.7	11.7	38.1
11/18/2024 15:30	5.1	38.8	0.0	7.3	11.3	0.0	11/18/2024 15:30	6.3	71.8	0.0	6.7	11.7	38.7
11/18/2024 15:45	5.1	38.7	0.0	7.3	11.3	0.0	11/18/2024 15:45	6.3	71.9	0.0	6.7	11.7	39.2
11/18/2024 16:00	5.1	38.8	0.0	7.3	11.3	0.0	11/18/2024 16:00	6.2	71.6	0.0	6.7	11.7	38.3
11/18/2024 16:15	5.0	38.5	0.0	7.3	11.3	0.0	11/18/2024 16:15	6.2	71.0	0.0	6.7	11.7	39.1
11/18/2024 16:30	5.0	38.4	0.0	7.3	11.3	0.0	11/18/2024 16:30	6.2	70.8	0.0	6.7	11.7	40.1
11/18/2024 16:45	5.0	38.6	0.0	7.3	11.3	0.0	11/18/2024 16:45	6.1	71.1	0.0	6.7	11.7	39.0
11/18/2024 17:00	5.0	38.8	0.0	7.3	11.3	0.0	11/18/2024 17:00	6.1	71.5	0.0	6.7	11.7	39.2
11/18/2024 17:15	5.0	38.6	0.0	7.3	11.3	0.0	11/18/2024 17:15	6.1	71.5	0.0	6.7	11.7	39.5
11/18/2024 17:30	5.0	39.2	0.0	7.3	11.3	0.0	11/18/2024 17:30	6.1	72.1	0.0	6.7	11.7	40.2
11/18/2024 17:45	5.0	38.9	0.0	7.2	11.3	0.0	11/18/2024 17:45	6.1	71.7	0.0	6.7	11.7	39.3
11/18/2024 18:00	4.9	38.9	0.0	7.3	11.3	0.0	11/18/2024 18:00	6.1	73.0	0.0	6.7	11.7	39.8
11/18/2024 18:15	4.9	39.5	0.0	7.3	11.3	0.0	11/18/2024 18:15	6.1	72.9	0.0	6.7	11.7	40.1
11/18/2024 18:30	4.9	39.3	0.0	7.3	11.3	0.0	11/18/2024 18:30	6.0	73.0	0.0	6.7	11.7	40.8
11/18/2024 18:45	4.9	39.4	0.0	7.3	11.3	0.0	11/18/2024 18:45	6.0	73.1	0.0	6.7	11.7	40.6
11/18/2024 19:00	4.9	39.8	0.0	7.3	11.3	0.0	11/18/2024 19:00	6.0	73.7	0.0	6.7	11.7	41.1
11/18/2024 19:15	4.8	39.7	0.0	7.2	11.3	0.0	11/18/2024 19:15	6.0	73.0	0.0	6.7	11.7	42.0
11/18/2024 19:30	4.8	40.4	0.0	7.3	11.3	0.0	11/18/2024 19:30	6.0	75.1	0.0	6.7	11.7	41.1
11/18/2024 19:45	4.8	41.0	0.0	7.3	11.3	0.0	11/18/2024 19:45	6.0	75.6	0.0	6.7	11.7	40.7
11/18/2024 20:00	4.8	41.3	0.0	7.3	11.3	0.0	11/18/2024 20:00	6.0	77.6	0.0	6.7	11.7	41.3
11/18/2024 20:15	4.8	41.7	0.0	7.2	11.3	0.0	11/18/2024 20:15	5.9	76.0	0.0	6.7	11.6	41.2
11/18/2024 20:30	4.8	41.4	0.0	7.3	11.3	0.0	11/18/2024 20:30	5.9	76.7	0.0	6.7	11.6	41.1
11/18/2024 20:45	4.8	41.8	0.0	7.3	11.2	0.0	11/18/2024 20:45	5.9	77.0	0.0	6.7	11.6	41.3
11/18/2024 21:00	4.8	41.5	0.0	7.3	11.3	0.0	11/18/2024 21:00	5.9	76.4	0.0	6.7	11.6	41.2
11/18/2024 21:15	4.8	41.3	0.0	7.3	11.3	0.0	11/18/2024 21:15	5.9	76.0	0.0	6.7	11.6	41.7
11/18/2024 21:30	4.8	41.4	0.0	7.2	11.3	0.2	11/18/2024 21:30	5.9	76.6	0.0	6.6	11.6	41.6
11/18/2024 21:45	4.8	41.4	0.0	7.2	11.3	0.0	11/18/2024 21:45	5.9	76.8	0.0	6.6	11.6	41.7

11/18/2024 22:00	4.8	40.7	0.0	7.2	11.3	0.3
11/18/2024 22:15	4.8	40.7	0.0	7.2	11.3	0.0
11/18/2024 22:30	4.7	40.3	0.0	7.3	11.3	0.3
11/18/2024 22:45	4.7	40.3	0.0	7.2	11.3	0.0
11/18/2024 23:00	4.7	40.2	0.0	7.2	11.3	25.8
11/18/2024 23:15	4.7	40.1	0.0	7.3	11.3	0.0
11/18/2024 23:30	4.7	40.1	0.0	7.3	11.3	0.2
11/18/2024 23:45	4.7	40.2	0.0	7.2	11.3	0.0
11/19/2024 0:00	4.7	40.2	0.0	7.3	11.3	0.0
11/19/2024 0:15	4.7	40.1	0.0	7.2	11.3	0.0
11/19/2024 0:30	4.7	40.4	0.0	7.3	11.3	0.0
11/19/2024 0:45	4.7	40.3	0.0	7.3	11.3	8.7
11/19/2024 1:00	4.7	39.9	0.0	7.3	11.3	0.0
11/19/2024 1:15	4.7	39.7	0.0	7.3	11.4	0.0
11/19/2024 1:30	4.7	40.1	0.0	7.3	11.3	0.1
11/19/2024 1:45	4.7	40.0	0.0	7.2	11.3	0.0
11/19/2024 2:00	4.7	39.9	0.0	7.3	11.3	0.0
11/19/2024 2:15	4.6	39.8	0.0	7.3	11.4	0.0
11/19/2024 2:30	4.6	40.0	0.0	7.3	11.3	0.0
11/19/2024 2:45	4.6	39.8	0.0	7.3	11.4	0.0
11/19/2024 3:00	4.6	39.6	0.0	7.3	11.4	0.0
11/19/2024 3:15	4.6	39.8	0.0	7.3	11.4	0.0
11/19/2024 3:30	4.6	39.7	0.0	7.3	11.4	0.0
11/19/2024 3:45	4.6	39.6	0.0	7.2	11.4	0.0
11/19/2024 4:00	4.6	39.7	0.0	7.3	11.4	0.0
11/19/2024 4:15	4.6	45.9	0.0	7.3	11.4	0.0
11/19/2024 4:30	4.5	39.5	0.0	7.3	11.4	0.0
11/19/2024 4:45	4.5	39.7	0.0	7.3	11.4	0.0
11/19/2024 5:00	4.5	39.6	0.0	7.3	11.4	0.0
11/19/2024 5:15	4.5	39.8	0.0	7.3	11.4	0.0
11/19/2024 5:30	4.4	39.8	0.0	7.3	11.4	0.0
11/19/2024 5:45	4.4	39.9	0.0	7.3	11.4	0.0
11/19/2024 6:00	4.4	39.9	0.0	7.3	11.4	0.0
11/19/2024 6:15	4.3	39.9	0.0	7.3	11.4	0.0
11/19/2024 6:30	4.3	39.8	0.0	7.2	11.4	0.5
11/19/2024 6:45	4.3	39.9	0.0	7.3	11.4	0.0
11/19/2024 7:00	4.3	39.7	0.0	7.3	11.4	0.0
11/19/2024 7:15	4.3	39.8	0.0	7.3	11.4	0.0
11/19/2024 7:30	4.3	39.4	0.0	7.3	11.5	0.0
11/19/2024 7:45	4.3	39.2	0.0	7.3	11.5	0.0
11/19/2024 8:00	4.3	38.9	0.0	7.3	11.5	0.0
11/19/2024 8:15	4.2	38.6	0.0	7.2	11.5	0.0
11/19/2024 8:30	4.2	38.6	0.0	7.4	11.5	0.0
11/19/2024 8:45	4.2	38.7	0.0	7.3	11.6	0.0
11/19/2024 9:00	4.1	38.6	0.0	7.4	11.6	0.0
11/19/2024 9:15	4.1	38.6	0.0	7.4	11.6	0.0
11/19/2024 9:30	4.1	38.7	0.0	7.4	11.6	0.0
11/19/2024 9:45	4.0	38.8	0.0	7.4	11.6	0.0
11/19/2024 10:00	4.0	39.1	0.0	7.4	11.7	0.0
11/19/2024 10:15	4.0	39.3	0.0	7.3	11.7	0.0
11/19/2024 10:30	4.0	40.2	0.0	7.4	11.7	0.0
11/19/2024 10:45	4.0	40.5	0.0	7.3	11.7	0.0
11/19/2024 11:00	4.0	40.6	0.0	7.4	11.7	0.0
11/19/2024 11:15	4.0	40.7	0.0	7.4	11.7	0.0
11/19/2024 11:30	4.1	41.4	0.0	7.4	11.7	0.0
11/19/2024 11:45	4.1	42.1	0.0	7.4	11.7	0.0
11/19/2024 12:00	4.2	42.4	0.0	7.2	11.7	0.0
11/19/2024 12:15	4.2	42.7	0.0	7.3	11.6	0.0
11/19/2024 12:30	4.3	43.3	0.0	7.3	11.6	0.0
11/19/2024 12:45	4.3	43.4	0.0	7.3	11.6	0.0
11/19/2024 13:00	4.4	43.0	0.0	7.3	11.6	0.0
11/19/2024 13:15	4.4	42.8	0.0	7.3	11.5	0.0
11/19/2024 13:30	4.4	42.5	0.0	7.3	11.5	0.0
11/19/2024 13:45	4.4	42.3	0.0	7.3	11.5	0.0
11/19/2024 14:00	4.4	42.5	0.0	7.3	11.5	0.0
11/19/2024 14:15	4.4	41.8	0.0	7.2	11.5	0.0
11/19/2024 14:30	4.4	42.0	0.0	7.3	11.5	0.0
11/19/2024 14:45	4.5	41.7	0.0	7.3	11.5	0.0
11/19/2024 15:00	4.5	41.5	0.0	7.3	11.5	0.0
11/19/2024 15:15	4.5	41.4	0.0	7.3	11.5	0.0
11/19/2024 15:30	4.5	41.6	0.0	7.3	11.5	0.0
11/19/2024 15:45	4.5	41.6	0.0	7.3	11.5	0.0
11/19/2024 16:00	4.5	41.3	0.0	7.3	11.4	0.0
11/19/2024 16:15	4.4	41.4	0.0	7.3	11.5	0.0
11/19/2024 16:30	4.4	41.4	0.0	7.3	11.4	0.0
11/19/2024 16:45	4.4	41.4	0.0	7.3	11.4	0.0
11/19/2024 17:00	4.4	41.2	0.0	7.3	11.4	0.0
11/19/2024 17:15	4.4	41.2	0.0	7.2	11.4	0.0
11/19/2024 17:30	4.4	41.6	0.0	7.2	11.4	0.0
11/19/2024 17:45	4.4	41.6	0.0	7.2	11.4	0.0
11/19/2024 18:00	4.4	40.8	0.0	7.2	11.4	0.0
11/19/2024 18:15	4.4	41.1	0.0	7.2	11.4	0.0
11/19/2024 18:30	4.4	40.8	0.0	7.2	11.4	0.0
11/19/2024 18:45	4.3	40.5	0.0	7.2	11.4	0.0
11/19/2024 19:00	4.4	41.3	0.0	7.2	11.4	0.0
11/19/2024 19:15	4.3	41.1	0.0	7.3	11.4	0.0
11/19/2024 19:30	4.3	40.9	0.0	7.3	11.4	1.1
11/19/2024 19:45	4.4	41.8	0.0	7.2	11.4	0.0
11/19/2024 20:00	4.4	41.9	0.0	7.3	11.4	0.0
11/19/2024 20:15	4.4	43.2	0.0	7.2	11.3	0.0
11/19/2024 20:30	4.4	42.3	0.0	7.2	11.4	0.0
11/19/2024 20:45	4.4	43.8	0.0	7.2	11.3	0.0
11/19/2024 21:00	4.4	43.2	0.0	7.1	11.3	0.0

11/18/2024 22:00	5.9	74.8	0.0	6.6	11.6	42.3
11/18/2024 22:15	5.9	75.1	0.0	6.6	11.7	39.9
11/18/2024 22:30	5.9	74.8	0.0	6.6	11.7	40.5
11/18/2024 22:45	5.9	74.7	0.0	6.7	11.7	40.9
11/18/2024 23:00	5.9	74.2	0.0	6.7	11.7	41.3
11/18/2024 23:15	5.9	74.6	0.0	6.7	11.7	41.4
11/18/2024 23:30	5.8	73.8	0.0	6.7	11.7	40.2
11/18/2024 23:45	5.8	73.5	0.0	6.7	11.7	41.0
11/19/2024 0:00	5.8	75.3	0.0	6.7	11.7	41.4
11/19/2024 0:15	5.8	73.6	0.0	6.7	11.7	42.2
11/19/2024 0:30	5.8	74.5	0.0	6.7	11.7	41.0
11/19/2024 0:45	5.8	74.9	0.0	6.7	11.7	42.2
11/19/2024 1:00	5.8	74.4	0.0	6.7	11.7	42.3
11/19/2024 1:15	5.8	74.4	0.0	6.7	11.7	43.3
11/19/2024 1:30	5.8	73.9	0.0	6.7	11.7	43.0
11/19/2024 1:45	5.8	74.4	0.0	6.7	11.7	43.2
11/19/2024 2:00	5.8	73.8	0.0	6.7	11.7	41.6
11/19/2024 2:15	5.8	73.7	0.0	6.7	11.7	42.2
11/19/2024 2:30	5.8	73.8	0.0	6.7	11.7	43.0
11/19/2024 2:45	5.8	73.6	0.0	6.7	11.7	42.6
11/19/2024 3:00	5.8	72.0	0.0	6.7	11.8	43.8
11/19/2024 3:15	5.7	73.1	0.0	6.7	11.8	43.2
11/19/2024 3:30	5.7	73.7	0.0	6.7	11.8	44.1
11/19/2024 3:45	5.7	73.3	0.0	6.7	11.8	43.4
11/19/2024 4:00	5.7	73.3	0.0	6.7	11.8	44.3
11/19/2024 4:15	5.7	73.0	0.0	6.7	11.8	44.4
11/19/2024 4:30	5.6	73.3	0.0	6.7	11.8	44.9
11/19/2024 4:45	5.6	71.6	0.0	6.7	11.8	42.6
11/19/2024 5:00	5.6	73.2	0.0	6.7	11.8	43.9
11/19/2024 5:15	5.6	73.5	0.0	6.7	11.8	44.3
11/19/2024 5:30	5.5	73.7	0.0	6.7	11.8	43.5
11/19/2024 5:45	5.5	73.3	0.0	6.7	11.8	45.7
11/19/2024 6:00	5.5	73.7	0.0	6.7	11.8	45.3
11/19/2024 6:15	5.5	73.4	0.0	6.7	11.8	45.2
11/19/2024 6:30	5.5	73.2	0.0	6.7	11.8	44.9
11/19/2024 6:45	5.4	73.2	0.0	6.7	11.8	44.9
11/19/2024 7:00	5.4	72.5	0.0	6.7	11.8	45.8
11/19/2024 7:15	5.4	72.0	0.0	6.7	11.8	45.9
11/19/2024 7:30	5.4	71.4	0.0	6.7	11.8	46.4
11/19/2024 7:45	5.4	71.9	0.0	6.7	11.9	48.0
11/19/2024 8:00	5.3	69.4	0.0	6.7	11.9	49.5
11/19/2024 8:15	5.3	70.4	0.0	6.7	11.9	49.7
11/19/2024 8:30	5.3	70.3	0.0	6.8	12.0	48.7
11/19/2024 8:45	5.2	70.1	0.0	6.8	12.0	48.8
11/19/2024 9:00	5.2	69.5	0.0	6.8	12.0	47.9
11/19/2024 9:15	5.2	70.0	0.0	6.8	12.1	47.8
11/19/2024 9:30	5.1	68.8	0.0	6.8	12.1	48.3
11/19/2024 9:45	5.1	70.3	0.0	6.8	12.1	47.3
11/19/2024 10:00	5.1	70.7	0.0	6.8	12.1	47.2
11/19/2024 10:15	5.1	72.3	0.0	6.8	12.1	46.7
11/19/2024 10:30	5.1	72.2	0.0	6.8	12.1	47.3
11/19/2024 10:45	5.1	72.9	0.0	6.8	12.2	47.2
11/19/2024 11:00	5.1	72.6	0.0	6.8	12.2	49.2
11/19/2024 11:15	5.2	74.4	0.0	6.8	12.2	49.0
11/19/2024 11:30	5.2	75.3	0.0	6.8	12.1	47.7
11/19/2024 11:45	5.3	75.8	0.0	6.8	12.1	48.3
11/19/2024 12:00	5.4	77.8	0.0	6.7	12.0	48.0
11/19/2024 12:15	5.4	79.3	0.0	6.7	11.8	47.3
11/19/2024 12:30	5.5	79.7	0.0	6.7	11.9	48.6
11/19/2024 12:45	5.5	79.7	0.0	6.7	11.9	49.6
11/19/2024 13:00	5.6	78.8	0.0	6.7	11.9	49.1
11/19/2024 13:15	5.6	77.7	0.0	6.7	11.9	48.5
11/19/2024 13:30	5.6	77.2	0.0	6.7	11.9	49.8
11/19/2024 13:45	5.6	77.0	0.0	6.7	11.9	50.3
11/19/2024 14:00	5.6	76.4	0.0	6.7	11.9	50.2
11/19/2024 14:15	5.6	75.3	0.0	6.7	11.9	50.0
11/19/2024 14:30	5.6	74.5	0.0	6.7	11.8	51.3
11/19/2024 14:45	5.6	75.0	0.0	6.7	11.8	51.7
11/19/2024 15:00	5.6	74.9	0.0	6.7	11.9	51.8
11/19/2024 15:15	5.6	75.0	0.0	6.7	11.8	52.0
11/19/2024 15:30	5.6	75.0	0.0	6.7	11.8	52.3
11/19/2024 15:45	5.6	74.6	0.0	6.7	11.8	52.5
11/19/2024 16:00	5.6	72.6	0.0	6.7	11.8	51.7
11/19/2024 16:15	5.6	74.2	0.0	6.7	11.8	51.6
11/19/2024 16:30	5.6	74.3	0.0	6.7	11.8	52.2
11/19/2024 16:45	5.6	73.4	0.0	6.7	11.8	52.5
11/19/2024 17:00	5.5	72.7	0.0	6.7	11.8	52.7
11/19/2024 17:15	5.5	73.7	0.0	6.7	11.8	52.6
11/19/2024 17:30	5.5	73.2	0.0	6.7	11.9	52.7
11/19/2024 17:45	5.5	73.6	0.0	6.7	11.8	53.4
11/19/2024 18:00	5.5	73.5	0.0	6.7	11.8	53.0
11/19/2024 18:15	5.5	72.8	0.0	6.7	11.8	53.6
11/19/2024 18:30	5.4	72.4	0.0	6.7	11.9	53.2
11/19/2024 18:45	5.4	72.5	0.0	6.7	11.9	53.0
11/19/2024 19:00	5.4	73.8	0.0	6.7	11.8	52.9
11/19/2024 19:15	5.4	72.1	0.0	6.7	11.9	53.3
11/19/2024 19:30	5.4	73.7	0.0	6.7	11.8	52.7
11/19/2024 19:45	5.5	73.6	0.0	6.7	11.8	51.9
11/19/2024 20:00	5.5	76.0	0.0	6.7	11.8	52.2
11/19/2024 20:15	5.5	74.7	0.0	6.7	11.8	51.9
11/19/2024 20:30	5.5	75.7	0.0	6.7	11.8	52.4
11/19/2024 20:45	5.5	76.8	0.0	6.7	11.7	53.9
11/19/2024 21:00	5.5	76.6	0.0	6.7	11.7	53.3

11/19/2024 21:15	4.5	46.3	0.0	7.1	11.1	2.9
11/19/2024 21:30	4.6	46.0	0.0	7.1	11.1	0.0
11/19/2024 21:45	4.5	44.9	0.0	7.2	11.2	0.4
11/19/2024 22:00	4.5	43.8	0.0	7.0	11.2	5.2
11/19/2024 22:15	4.6	44.8	0.0	7.1	11.2	3.2
11/19/2024 22:30	4.7	48.7	0.0	7.0	11.2	25.4
11/19/2024 22:45	4.8	48.1	0.0	6.9	11.0	41.0
11/19/2024 23:00	4.8	44.8	0.0	6.9	10.8	105.0
11/19/2024 23:15	4.9	34.1	0.0	6.6	10.8	110.0
11/19/2024 23:30	5.5	22.2	0.0	6.3	10.5	263.8
11/19/2024 23:45	5.8	25.8	0.0	6.3	10.2	65.0
11/20/2024 0:00	6.0	30.3	0.0	6.3	10.2	390.8
11/20/2024 0:15	6.1	36.5	0.0	6.3	10.1	9.3
11/20/2024 0:30	6.3	41.4	0.0	6.3	10.0	5.9
11/20/2024 0:45	6.4	44.4	0.0	6.3	9.9	5.6
11/20/2024 1:00	6.4	46.9	0.0	6.3	9.7	5.4
11/20/2024 1:15	6.5	48.5	0.0	6.3	9.5	5.1
11/20/2024 1:30	6.5	49.6	0.0	6.3	9.3	5.1
11/20/2024 1:45	6.6	50.2	0.0	6.3	9.2	5.1
11/20/2024 2:00	6.6	50.6	0.0	6.3	8.9	5.0
11/20/2024 2:15	6.6	50.8	0.0	6.3	8.7	4.9
11/20/2024 2:30	6.6	51.0	0.0	6.3	8.4	4.9
11/20/2024 2:45	6.6	51.1	0.0	6.3	8.1	4.8
11/20/2024 3:00	6.5	51.1	0.0	6.3	7.8	4.7
11/20/2024 3:15	6.5	51.1	0.0	6.3	7.6	4.6
11/20/2024 3:30	6.4	51.2	0.0	6.3	7.3	4.3
11/20/2024 3:45	6.4	51.3	0.0	6.3	6.9	4.1
11/20/2024 4:00	6.4	51.3	0.0	6.3	6.6	3.9
11/20/2024 4:15	6.4	51.4	0.0	6.3	6.2	3.6
11/20/2024 4:30	6.4	51.4	0.0	6.3	5.9	3.1
11/20/2024 4:45	6.4	51.4	0.0	6.3	5.6	3.2
11/20/2024 5:00	6.4	51.5	0.0	6.3	5.3	3.5
11/20/2024 5:15	6.4	51.4	0.0	6.3	5.0	3.5
11/20/2024 5:30	6.4	51.5	0.0	6.3	4.7	3.5
11/20/2024 5:45	6.5	51.6	0.0	6.3	4.4	3.6
11/20/2024 6:00	6.6	51.6	0.0	6.3	4.1	3.6
11/20/2024 6:15	6.7	51.5	0.0	6.3	3.9	3.5
11/20/2024 6:30	6.7	51.5	0.0	6.3	3.8	3.3
11/20/2024 6:45	6.7	51.4	0.0	6.3	3.6	3.3
11/20/2024 7:00	6.6	51.4	0.0	6.3	3.4	3.2
11/20/2024 7:15	6.5	51.3	0.0	6.3	3.2	3.1
11/20/2024 7:30	6.3	51.2	0.0	6.4	3.1	3.1
11/20/2024 7:45	6.1	51.3	0.0	6.4	3.3	5.6
11/20/2024 8:00	5.3	51.1	0.0	6.3	3.4	402.2
11/20/2024 8:15	4.4	37.8	0.0	7.1	11.2	0.1
11/20/2024 8:30	4.3	41.5	0.0	7.2	11.3	0.0
11/20/2024 8:45	4.2	40.7	0.0	7.3	11.4	0.0
11/20/2024 9:00	4.2	40.4	0.0	7.3	11.4	0.0
11/20/2024 9:15	4.2	40.5	0.0	7.4	11.4	0.0
11/20/2024 9:30	4.2	40.3	0.0	7.3	11.4	0.0
11/20/2024 9:45	4.2	40.3	0.0	7.4	11.4	0.0
11/20/2024 10:00	4.1	40.2	0.0	7.3	11.5	0.0
11/20/2024 10:15	4.1	40.2	0.0	7.4	11.5	0.0
11/20/2024 10:30	4.1	41.0	0.0	7.4	11.5	0.0
11/20/2024 10:45	4.1	41.0	0.0	7.4	11.5	0.0
11/20/2024 11:00	4.1	40.9	0.0	7.4	11.6	0.0
11/20/2024 11:15	4.1	41.4	0.0	7.4	11.6	0.0
11/20/2024 11:30	4.0	41.3	0.0	7.4	11.6	0.0
11/20/2024 11:45	4.1	42.4	0.0	7.4	11.6	0.0
11/20/2024 12:00	4.1	42.2	0.0	7.4	11.6	0.0
11/20/2024 12:15	4.1	42.0	0.0	7.4	11.6	0.0
11/20/2024 12:30	4.1	42.7	0.0	7.4	11.6	0.0
11/20/2024 12:45	4.1	44.0	0.0	7.4	11.6	2.7
11/20/2024 13:00	4.2	44.1	0.0	7.4	11.5	4.5
11/20/2024 13:15	4.2	44.4	0.0	7.4	11.6	3.9
11/20/2024 13:30	4.2	44.9	0.0	7.4	11.5	1.3
11/20/2024 13:45	4.2	45.3	0.0	7.4	11.5	0.7
11/20/2024 14:00	4.2	45.5	0.0	7.3	11.4	1.8
11/20/2024 14:15	4.2	44.0	0.0	7.3	11.5	0.0
11/20/2024 14:30	4.2	43.9	0.0	7.3	11.4	0.0
11/20/2024 14:45	4.2	43.6	0.0	7.3	11.4	0.0
11/20/2024 15:00	4.2	43.3	0.0	7.3	11.4	0.0
11/20/2024 15:15	4.2	42.8	0.0	7.3	11.4	0.2
11/20/2024 15:30	4.2	42.2	0.0	7.3	11.5	0.0
11/20/2024 15:45	4.2	42.1	0.0	7.2	11.5	0.2
11/20/2024 16:00	4.2	42.2	0.0	7.3	11.5	0.0
11/20/2024 16:15	4.2	42.4	0.0	7.2	11.5	0.0
11/20/2024 16:30	4.2	42.2	0.0	7.3	11.5	0.0
11/20/2024 16:45	4.2	42.3	0.0	7.3	11.4	0.0
11/20/2024 17:00	4.2	42.2	0.0	7.3	11.4	0.0
11/20/2024 17:15	4.2	41.8	0.0	7.3	11.4	0.0
11/20/2024 17:30	4.2	41.9	0.0	7.3	11.5	0.0
11/20/2024 17:45	4.2	41.7	0.0	7.2	11.4	0.7
11/20/2024 18:00	4.2	41.6	0.0	7.3	11.4	0.2
11/20/2024 18:15	4.2	41.4	0.0	7.3	11.4	0.9
11/20/2024 18:30	4.2	41.4	0.0	7.3	11.4	0.2
11/20/2024 18:45	4.2	41.4	0.0	7.2	11.5	0.1
11/20/2024 19:00	4.2	41.5	0.0	7.3	11.4	0.0
11/20/2024 19:15	4.2	41.5	0.0	7.2	11.5	0.1
11/20/2024 19:30	4.2	40.8	0.0	7.3	11.5	0.8
11/20/2024 19:45	4.2	40.8	0.0	7.3	11.5	0.8
11/20/2024 20:00	4.2	41.0	0.0	7.3	11.5	0.1
11/20/2024 20:15	4.2	41.8	0.0	7.3	11.5	0.1

11/19/2024 21:15	5.6	79.5	0.0	6.7	11.6	54.4
11/19/2024 21:30	5.6	78.5	0.0	6.7	11.6	53.7
11/19/2024 21:45	5.6	79.0	0.0	6.7	11.6	52.6
11/19/2024 22:00	5.6	76.9	0.0	6.7	11.7	54.0
11/19/2024 22:15	5.6	76.6	0.0	6.7	11.7	53.6
11/19/2024 22:30	5.6	75.5	0.0	6.7	11.7	54.0
11/19/2024 22:45	5.6	75.4	0.0	6.7	11.7	54.4
11/19/2024 23:00	5.6	75.8	0.0	6.7	11.7	55.4
11/19/2024 23:15	5.6	74.3	0.0	6.7	11.7	54.0
11/19/2024 23:30	5.6	75.3	0.0	6.7	11.7	56.6
11/19/2024 23:45	5.6	75.1	0.0	6.7	11.7	54.8
11/20/2024 0:00	5.6	74.7	0.0	6.7	11.7	56.2
11/20/2024 0:15	5.6	75.0	0.0	6.7	11.7	56.9
11/20/2024 0:30	5.6	74.7	0.0	6.7	11.7	58.1
11/20/2024 0:45	5.6	75.1	0.0	6.7	11.7	58.2
11/20/2024 1:00	5.6	75.5	0.0	6.7	11.7	58.7
11/20/2024 1:15	5.6	74.8	0.0	6.7	11.7	59.2
11/20/2024 1:30	5.6	75.1	0.0	6.7	11.7	60.2
11/20/2024 1:45	5.6	75.5	0.0	6.7	11.7	60.8
11/20/2024 2:00	5.6	75.0	0.0	6.7	11.7	60.6
11/20/2024 2:15	5.6	75.6	0.0	6.7	11.7	61.3
11/20/2024 2:30	5.6	74.5	0.0	6.7	11.7	61.6
11/20/2024 2:45	5.6	74.0	0.0	6.7	11.7	63.1
11/20/2024 3:00	5.6	74.4	0.0	6.7	11.7	64.4
11/20/2024 3:15	5.5	74.5	0.0	6.7	11.7	64.0
11/20/2024 3:30	5.5	74.8	0.0	6.7	11.7	65.1
11/20/2024 3:45	5.5	74.3	0.0	6.7	11.7	66.0
11/20/2024 4:00	5.5	74.9	0.0	6.7	11.7	66.7
11/20/2024 4:15	5.5	74.2	0.0	6.7	11.7	66.3
11/20/2024 4:30	5.5	74.4	0.0	6.7	11.7	67.3
11/20/2024 4:45	5.5	74.3	0.0	6.7	11.7	67.1
11/20/2024 5:00	5.5	74.7	0.0	6.7	11.7	64.6
11/20/2024 5:15	5.5	74.4	0.0	6.7	11.7	68.8
11/20/2024 5:30	5.5	74.9	0.0	6.7	11.7	69.4
11/20/2024 5:45	5.5	74.3	0.0	6.7	11.8	68.2
11/20/2024 6:00	5.5	74.4	0.0	6.7	11.8	68.1
11/20/2024 6:15	5.4	74.2	0.0	6.7	11.8	69.0
11/20/2024 6:30	5.4	74.2	0.0	6.7	11.8	62.1
11/20/2024 6:45	5.4	74.4	0.0	6.7	11.8	65.0
11/20/2024 7:00	5.4	74.0	0.0	6.7	11.8	64.8
11/20/2024 7:15	5.4	74.3	0.0	6.7	11.7	66.8
11/20/2024 7:30	5.4	73.9	0.0	6.7	11.8	66.3
11/20/2024 7:45	5.4	73.3	0.0	6.7	11.8	71.2
11/20/2024 8:00	5.4	73.1	0.0	6.7	11.8	71.3
11/20/2024 8:15	5.4	72.3	0.0	6.8	11.8	71.9
11/20/2024 8:30	5.3	70.9	0.0	6.8	11.8	73.2
11/20/2024 8:45	5.3	70.3	0.0	6.8	11.9	74.0
11/20/2024 9:00	5.3	70.5	0.0	6.8	11.9	74.2
11/20/2024 9:15	5.3	70.0	0.0	6.8	11.9	73.4
11/20/2024 9:30	5.3	70.0	0.0	6.8	11.9	74.2
11/20/2024 9:45	5.2	69.4	0.0	6.8	11.9	73.1
11/20/2024 10:00	5.2	68.9	0.0	6.8	11.9	73.9
11/20/2024 10:15	5.2	71.1	0.0	6.8	12.0	73.3
11/20/2024 10:30	5.2	71.0	0.0	6.8	12.0	73.5
11/20/2024 10:45	5.2	72.1	0.0	6.8	12.0	74.3
11/20/2024 11:00	5.2	70.6	0.0	6.8	12.0	73.8
11/20/2024 11:15	5.2	70.2	0.0	6.8	12.0	70.9
11/20/2024 11:30	5.2	72.8	0.0	6.8	12.0	72.6
11/20/2024 11:45	5.2	72.9	0.0	6.8	12.0	73.3
11/20/2024 12:00	5.2	72.9	0.0	6.8	12.0	74.1
11/20/2024 12:15	5.2	71.5	0.0	6.8	12.0	70.8
11/20/2024 12:30	5.3	76.9	0.0	6.8	12.0	70.9
11/20/2024 12:45	5.3	76.5	0.0	6.8	12.0	73.8
11/20/2024 13:00	5.3	75.6	0.0	6.8	11.9	70.5
11/20/2024 13:15	5.4	79.6	0.0	6.7	11.8	75.3
11/20/2024 13:30	5.4	79.3	0.0	6.7	11.8	76.7
11/20/2024 13:45	5.5	80.0	0.0	6.7	11.7	76.8
11/20/2024 14:00	5.4	75.6	0.0	6.7	11.8	76.7
11/20/2024 14:15	5.5	78.2	0.0	6.7	11.8	76.2
11/20/2024 14:30	5.5	76.8	0.0	6.7	11.8	79.1
11/20/2024 14:45	5.5	76.6	0.0	6.7	11.8	76.7
11/20/2024 15:00	5.5	75.4	0.0	6.7	11.8	77.0
11/20/2024 15:15	5.4	72.7	0.0	6.7	11.8	76.3
11/20/2024 15:30	5.4	70.8	0.0	6.7	11.9	77.3
11/20/2024 15:45	5.4	73.4	0.0	6.7	11.8	76.6
11/20/2024 16:00	5.4	71.7	0.0	6.7	11.8	64.4
11/20/2024 16:15	5.4	74.2	0.0	6.7	11.8	68.7
11/20/2024 16:30	5.4	73.2	0.0	6.7	11.8	76.1
11/20/2024 16:45	5.4	70.8	0.0	6.7	11.8	72.0
11/20/2024 17:00	5.4	72.0	0.0	6.7	11.8	68.5
11/20/2024 17:15	5.4	72.0	0.0	6.7	11.8	76.3
11/20/2024 17:30	5.4	70.1	0.0	6.7	11.8	69.8
11/20/2024 17:45	5.4	71.9	0.0	6.7	11.8	74.3
11/20/2024 18:00	5.4	72.0	0.0	6.7	11.9	76.9
11/20/2024 18:15	5.4	71.9	0.0	6.7	11.8	73.5
11/20/2024 18:30	5.4	71.7	0.0	6.7	11.9	71.6
11/20/2024 18:45	5.4	70.9	0.0	6.7	11.9	75.3
11/20/2024 19:00	5.4	69.8	0.0	6.7	11.9	74.7
11/20/2024 19:15	5.4	68.9	0.0	6.7	11.9	70.2
11/20/2024 19:30	5.4	69.6	0.0	6.7	11.9	75.9
11/20/2024 19:45	5.4	68.5	0.0	6.7	11.9	74.9
11/20/2024 20:00	5.4	71.7	0.0	6.7	11.9	76.7
11/20/2024 20:15	5.4	71.6	0.0	6.7	11.8	75.0

11/20/2024 20:30	4.2	41.2	0.0	7.3	11.5	0.0
11/20/2024 20:45	4.2	41.8	0.0	7.3	11.5	0.0
11/20/2024 21:00	4.3	42.4	0.0	7.2	11.4	0.0
11/20/2024 21:15	4.3	43.3	0.0	7.3	11.4	0.0
11/20/2024 21:30	4.3	43.5	0.0	7.3	11.5	0.0
11/20/2024 21:45	4.3	43.1	0.0	7.2	11.4	0.0
11/20/2024 22:00	4.3	44.1	0.0	7.2	11.4	0.0
11/20/2024 22:15	4.3	44.0	0.0	7.2	11.4	0.0
11/20/2024 22:30	4.3	44.7	0.0	7.1	11.4	0.4
11/20/2024 22:45	4.3	44.9	0.0	7.2	11.4	0.0
11/20/2024 23:00	4.3	43.7	0.0	7.2	11.4	0.0
11/20/2024 23:15	4.3	43.6	0.0	7.2	11.3	6.5
11/20/2024 23:30	4.3	42.8	0.0	7.2	11.4	0.5
11/20/2024 23:45	4.3	43.6	0.0	7.2	11.4	8.6
11/21/2024 0:00	4.5	45.5	0.0	7.1	11.2	11.6
11/21/2024 0:15	4.4	43.2	0.0	7.1	11.1	1.3
11/21/2024 0:30	4.6	47.6	0.0	7.0	11.0	7.5
11/21/2024 0:45	4.6	46.8	0.0	7.0	11.1	10.7
11/21/2024 1:00	4.6	45.9	0.0	7.0	10.9	4.6
11/21/2024 1:15	4.6	46.7	0.0	7.0	10.9	3.1
11/21/2024 1:30	4.7	47.9	0.0	7.0	10.9	2.1
11/21/2024 1:45	4.6	46.7	0.0	7.0	11.0	7.2
11/21/2024 2:00	4.6	45.9	0.0	7.0	11.0	1.9
11/21/2024 2:15	4.5	44.8	0.0	7.0	11.1	1.2
11/21/2024 2:30	4.6	46.3	0.0	7.0	11.0	0.9
11/21/2024 2:45	4.6	45.1	0.0	6.9	11.0	3.5
11/21/2024 3:00	4.6	46.6	0.0	7.0	11.0	2.4
11/21/2024 3:15	4.5	45.0	0.0	7.0	11.2	3.6
11/21/2024 3:30	4.7	45.8	0.0	6.9	10.7	8.9
11/21/2024 3:45	4.8	49.2	0.0	6.9	10.9	6.7
11/21/2024 4:00	4.9	48.0	0.0	6.8	10.4	6.7
11/21/2024 4:15	4.9	49.2	0.0	6.8	10.8	15.7
11/21/2024 4:30	4.7	46.6	0.0	6.8	10.9	14.9
11/21/2024 4:45	4.8	47.7	0.0	6.8	10.9	24.6
11/21/2024 5:00	4.8	47.4	0.0	6.8	10.9	28.9
11/21/2024 5:15	4.8	48.4	0.0	6.8	10.8	8.3
11/21/2024 5:30	4.8	48.7	0.0	6.8	11.4	35.6
11/21/2024 5:45	4.8	46.2	0.0	6.8	11.7	9.7
11/21/2024 6:00	5.0	47.4	0.0	6.8	11.7	17.7
11/21/2024 6:15	5.0	45.3	0.0	6.8	11.8	18.8
11/21/2024 6:30	5.2	40.9	0.0	6.8	11.7	40.7
11/21/2024 6:45	5.3	14.3	0.0	6.7	11.7	65.7
11/21/2024 7:00	5.4	17.4	0.0	6.8	11.7	40.5
11/21/2024 7:15	5.3	16.5	0.0	6.5	11.7	346.8
11/21/2024 7:30	5.3	30.8	0.0	6.4	11.7	81.6
11/21/2024 7:45	5.1	34.3	0.0	6.4	11.7	80.9
11/21/2024 8:00	4.9	48.6	0.0	6.4	10.7	52.9
11/21/2024 8:15	4.5	42.7	0.0	6.4	11.3	48.6
11/21/2024 8:30	4.4	41.6	0.0	6.4	11.4	50.0
11/21/2024 8:45	4.4	40.9	0.0	6.4	11.5	49.0
11/21/2024 9:00	4.4	40.1	0.0	6.4	11.5	2.2
11/21/2024 9:15	4.4	39.8	0.0	6.3	11.5	4.3
11/21/2024 9:30	4.3	40.1	0.0	6.7	11.5	0.0
11/21/2024 9:45	4.3	39.9	0.0	7.1	11.5	0.0
11/21/2024 10:00	4.3	39.6	0.0	7.2	11.5	0.0
11/21/2024 10:15	4.3	39.4	0.0	7.3	11.5	0.0
11/21/2024 10:30	4.3	39.3	0.0	7.3	11.5	0.0
11/21/2024 10:45	4.4	39.3	0.0	7.3	11.6	0.0
11/21/2024 11:00	4.4	39.3	0.0	7.3	11.6	0.0
11/21/2024 11:15	4.4	39.2	0.0	7.4	11.6	0.0
11/21/2024 11:30	4.4	39.7	0.0	7.4	11.6	0.0
11/21/2024 11:45	4.5	39.9	0.0	7.4	11.6	0.0
11/21/2024 12:00	4.5	40.1	0.0	7.4	11.6	0.0
11/21/2024 12:15	4.5	40.3	0.0	7.4	11.6	0.0
11/21/2024 12:30	4.6	40.5	0.0	7.4	11.6	0.0
11/21/2024 12:45	4.6	42.4	0.0	7.4	11.6	0.0
11/21/2024 13:00	4.7	42.8	0.0	7.4	11.6	0.0
11/21/2024 13:15	4.7	42.3	0.0	7.4	11.6	0.0
11/21/2024 13:30	4.7	42.4	0.0	7.4	11.6	0.0
11/21/2024 13:45	4.8	43.1	0.0	7.4	11.6	0.0
11/21/2024 14:00	4.8	44.3	0.0	7.4	11.5	0.0
11/21/2024 14:15	4.9	45.3	0.0	7.4	11.5	0.0
11/21/2024 14:30	4.9	45.6	0.0	7.3	11.4	0.0
11/21/2024 14:45	4.9	44.3	0.0	7.3	11.4	0.0
11/21/2024 15:00	4.9	44.2	0.0	7.4	11.4	0.0
11/21/2024 15:15	4.9	44.3	0.0	7.3	11.4	0.0
11/21/2024 15:30	4.9	43.5	0.0	7.3	11.4	0.0
11/21/2024 15:45	4.9	42.6	0.0	7.3	11.4	0.0
11/21/2024 16:00	4.9	42.6	0.0	7.3	11.4	0.0
11/21/2024 16:15	4.9	42.2	0.0	7.2	11.4	0.0
11/21/2024 16:30	4.9	41.8	0.0	7.3	11.4	0.0
11/21/2024 16:45	4.8	41.6	0.0	7.3	11.4	0.0
11/21/2024 17:00	4.8	41.1	0.0	7.3	11.4	0.0
11/21/2024 17:15	4.8	41.2	0.0	7.3	11.3	0.0
11/21/2024 17:30	4.8	41.4	0.0	7.2	11.3	0.0
11/21/2024 17:45	4.8	42.0	0.0	7.2	11.3	0.3
11/21/2024 18:00	4.8	42.1	0.0	7.2	11.3	0.0
11/21/2024 18:15	4.8	41.9	0.0	7.2	11.3	0.0
11/21/2024 18:30	4.8	42.1	0.0	7.2	11.3	0.0
11/21/2024 18:45	4.8	42.4	0.0	7.2	11.3	0.0
11/21/2024 19:00	4.8	42.0	0.0	7.2	11.3	0.0
11/21/2024 19:15	4.8	42.1	0.0	7.2	11.3	0.0
11/21/2024 19:30	4.8	42.5	0.0	7.1	11.2	0.0

11/20/2024 20:30	5.4	70.9	0.0	6.7	11.9	78.7
11/20/2024 20:45	5.5	73.1	0.0	6.7	11.8	73.1
11/20/2024 21:00	5.5	73.4	0.0	6.7	11.8	73.3
11/20/2024 21:15	5.5	76.5	0.0	6.7	11.8	72.2
11/20/2024 21:30	5.5	72.4	0.0	6.7	11.8	76.3
11/20/2024 21:45	5.5	75.8	0.0	6.7	11.8	76.3
11/20/2024 22:00	5.5	76.4	0.0	6.7	11.8	75.5
11/20/2024 22:15	5.5	76.7	0.0	6.7	11.8	76.5
11/20/2024 22:30	5.5	77.2	0.0	6.7	11.8	77.6
11/20/2024 22:45	5.5	75.1	0.0	6.7	11.8	75.9
11/20/2024 23:00	5.5	72.6	0.0	6.7	11.8	72.4
11/20/2024 23:15	5.5	70.7	0.0	6.7	11.8	76.8
11/20/2024 23:30	5.5	72.1	0.0	6.7	11.8	76.4
11/20/2024 23:45	5.5	73.2	0.0	6.7	11.8	75.0
11/21/2024 0:00	5.5	73.1	0.0	6.7	11.8	74.6
11/21/2024 0:15	5.5	72.3	0.0	6.7	11.9	71.7
11/21/2024 0:30	5.5	71.9	0.0	6.7	11.9	65.1
11/21/2024 0:45	5.5	72.4	0.0	6.7	11.9	74.7
11/21/2024 1:00	5.5	72.2	0.0	6.7	11.9	73.2
11/21/2024 1:15	5.5	71.7	0.0	6.7	11.9	72.4
11/21/2024 1:30	5.5	71.1	0.0	6.7	11.9	69.7
11/21/2024 1:45	5.5	71.4	0.0	6.7	11.9	72.6
11/21/2024 2:00	5.4	70.8	0.0	6.7	11.9	62.1
11/21/2024 2:15	5.5	70.5	0.0	6.7	11.9	59.7
11/21/2024 2:30	5.5	70.7	0.0	6.7	11.9	67.8
11/21/2024 2:45	5.5	70.7	0.0	6.7	11.9	59.6
11/21/2024 3:00	5.4	70.6	0.0	6.7	11.9	63.7
11/21/2024 3:15	5.5	70.7	0.0	6.7	11.9	65.7
11/21/2024 3:30	5.5	69.9	0.0	6.7	11.9	53.6
11/21/2024 3:45	5.5	68.7	0.0	6.7	11.9	62.2
11/21/2024 4:00	5.5	69.2	0.0	6.7	11.9	57.2
11/21/2024 4:15	5.5	70.5	0.0	6.7	11.9	65.6
11/21/2024 4:30	5.5	68.8	0.0	6.7	11.9	56.2
11/21/2024 4:45	5.5	69.4	0.0	6.7	11.9	63.1
11/21/2024 5:00	5.5	69.2	0.0	6.7	11.9	57.5
11/21/2024 5:15	5.5	67.3	0.0	6.7	11.9	63.3
11/21/2024 5:30	5.5	67.1	0.0	6.7	11.9	67.3
11/21/2024 5:45	5.5	68.9	0.0	6.7	11.9	70.8
11/21/2024 6:00	5.5	69.6	0.0	6.7	11.9	66.5
11/21/2024 6:15	5.5	69.9	0.0	6.7	11.9	56.2
11/21/2024 6:30	5.5	68.8	0.0	6.7	11.9	57.2
11/21/2024 6:45	5.5	69.4	0.0	6.7	11.9	63.7
11/21/2024 7:00	5.5	69.2	0.0	6.7	11.9	66.0
11/21/2024 7:15	5.5	70.4	0.0	6.7	11.9	66.7
11/21/2024 7:30	5.5	68.4	0.0	6.7	11.9	68.1
11/21/2024 7:45	5.5	69.5	0.0	6.7	11.9	64.8
11/21/2024 8:00	5.5	69.7	0.0	6.7	11.9	61.9
11/21/2024 8:15	5.5	69.5	0.0	6.7	11.9	65.5
11/21/2024 8:30	5.5	68.2	0.0	6.7	11.9	70.4
11/21/2024 8:45	5.5	68.7	0.0	6.7	11.9	67.9
11/21/2024 9:00	5.5	66.7	0.0	6.7	11.9	72.3
11/21/2024 9:15	5.5	65.9	0.0	6.7	11.9	70.3
11/21/2024 9:30	5.5	65.6	0.0	6.7	11.9	63.1
11/21/2024 9:45	5.5	64.5	0.0	6.7	11.9	71.8
11/21/2024 10:00	5.5	64.0	0.0	6.8	12.0	70.5
11/21/2024 10:15	5.5	63.7	0.0	6.8	12.0	69.7
11/21/2024 10:30	5.5	63.6	0.0	6.8	12.0	70.1
11/21/2024 10:45	5.5	63.5	0.0	6.8	12.0	70.9
11/21/2024 11:00	5.5	63.5	0.0	6.8	12.0	70.5
11/21/2024 11:15	5.6	64.8	0.0	6.8	12.0	73.0
11/21/2024 11:30	5.6	64.7	0.0	6.8	12.1	70.4
11/21/2024 11:45	5.7	65.5	0.0	6.8	12.1	73.2
11/21/2024 12:00	5.7	66.3	0.0	6.8	12.1	70.8
11/21/2024 12:15	5.7	65.8	0.0	6.8	12.1	71.6
11/21/2024 12:30	5.8	70.7	0.0	6.8	12.0	70.6
11/21/2024 12:45	5.9	71.1	0.0	6.8	12.0	71.1
11/21/2024 13:00	5.9	69.0	0.0	6.8	12.0	70.2
11/21/2024 13:15	5.9	69.3	0.0	6.8	12.0	70.2
11/21/2024 13:30	6.0	71.2	0.0	6.8	12.0	71.1
11/21/2024 13:45	6.0	73.1	0.0	6.8	11.9	69.4
11/21/2024 14:00	6.1	76.8	0.0	6.7	11.7	71.8
11/21/2024 14:15	6.2	76.6	0.0	6.7	11.6	71.6
11/21/2024 14:30	6.2	74.8	0.0	6.7	11.7	71.5
11/21/2024 14:45	6.2	74.3	0.0	6.7	11.7	67.1
11/21/2024 15:00	6.2	73.8	0.0	6.7	11.7	70.3
11/21/2024 15:15	6.2	72.9	0.0	6.7	11.7	71.3
11/21/2024 15:30	6.1	70.9	0.0	6.7	11.7	71.2
11/21/2024 15:45	6.1	70.5	0.0	6.7	11.8	68.3
11/21/2024 16:00	6.1	69.2	0.0	6.7	11.7	70.8
11/21/2024 16:15	6.1	69.1	0.0	6.7	11.7	72.6
11/21/2024 16:30	6.1	68.8	0.0	6.7	11.7	68.3
11/21/2024 16:45	6.0	67.9	0.0	6.7	11.7	73.6
11/21/2024 17:00	6.0	67.2	0.0	6.7	11.8	72.9
11/21/2024 17:15	6.0	67.4	0.0	6.7	11.8	71.4
11/21/2024 17:30	6.0	67.0	0.0	6.7	11.7	72.0
11/21/2024 17:45	6.0	68.1	0.0	6.7	11.7	72.0
11/21/2024 18:00	6.0	67.4	0.0	6.7	11.7	66.5
11/21/2024 18:15	6.0	67.4	0.0	6.7	11.7	73.0
11/21/2024 18:30	6.0	67.7	0.0	6.7	11.7	71.3
11/21/2024 18:45	6.0	68.2	0.0	6.7	11.7	68.5
11/21/2024 19:00	6.0	68.2	0.0	6.7	11.7	73.2
11/21/2024 19:15	6.0	67.7	0.0	6.7	11.7	73.0
11/21/2024 19:30	6.0	68.0	0.0	6.7	11.7	71.2

11/21/2024 19:45	4.8	42.5	0.0	7.2	11.3	0.0
11/21/2024 20:00	4.8	42.7	0.0	7.2	11.2	0.0
11/21/2024 20:15	4.9	42.8	0.0	7.2	11.2	0.1
11/21/2024 20:30	4.8	42.8	0.0	7.2	11.3	0.0
11/21/2024 20:45	4.9	43.4	0.0	7.2	11.2	0.0
11/21/2024 21:00	4.9	43.0	0.0	7.1	11.2	0.0
11/21/2024 21:15	4.9	42.6	0.0	7.3	11.3	0.0
11/21/2024 21:30	4.9	43.2	0.0	7.2	11.2	0.0
11/21/2024 21:45	4.9	42.9	0.0	7.3	11.2	0.0
11/21/2024 22:00	4.9	43.0	0.0	7.2	11.2	0.0
11/21/2024 22:15	4.9	43.8	0.0	7.2	11.2	0.0
11/21/2024 22:30	4.9	44.1	0.0	7.2	11.2	0.0
11/21/2024 22:45	4.9	43.6	0.0	7.2	11.3	0.0
11/21/2024 23:00	4.9	45.4	0.0	7.1	11.2	0.2
11/21/2024 23:15	5.0	45.6	0.0	7.1	11.0	1.4
11/21/2024 23:30	5.0	46.5	0.0	7.0	10.9	4.8
11/21/2024 23:45	5.5	52.6	0.0	6.8	11.4	20.1
11/22/2024 0:00	6.2	7.8	0.0	6.6	11.4	0.0
11/22/2024 0:15	6.4	0.1	0.0	6.6	11.3	0.0
11/22/2024 0:30	6.2	0.1	0.0	7.1	11.4	0.0
11/22/2024 0:45	6.2	0.1	0.0	7.2	11.4	0.0
11/22/2024 1:00	6.2	0.1	0.0	7.4	11.4	0.0
11/22/2024 1:15	6.3	0.1	0.0	7.4	11.4	0.0
11/22/2024 1:30	6.2	0.1	0.0	7.4	11.4	0.0
11/22/2024 1:45	6.3	0.1	0.0	7.5	11.4	0.0
11/22/2024 2:00	6.3	0.1	0.0	7.5	11.4	0.0
11/22/2024 2:15	6.2	0.1	0.0	7.5	11.4	0.0
11/22/2024 2:30	6.0	0.1	0.0	7.5	11.4	0.0
11/22/2024 2:45	6.0	0.1	0.0	7.5	11.5	0.0
11/22/2024 3:00	5.9	0.1	0.0	7.5	11.4	0.0
11/22/2024 3:15	5.9	0.1	0.0	7.5	11.5	0.0
11/22/2024 3:30	5.9	0.1	0.0	7.5	11.5	0.0
11/22/2024 3:45	5.9	0.1	0.0	7.6	11.4	0.0
11/22/2024 4:00	5.9	0.1	0.0	7.5	11.4	0.0
11/22/2024 4:15	5.9	0.1	0.0	7.5	11.5	0.0
11/22/2024 4:30	5.8	0.1	0.0	7.5	11.5	0.0
11/22/2024 4:45	5.8	0.1	0.0	7.5	11.5	0.0
11/22/2024 5:00	5.9	0.1	0.0	7.5	11.4	0.0
11/22/2024 5:15	6.0	0.1	0.0	7.5	11.4	0.0
11/22/2024 5:30	6.0	0.1	0.0	7.4	11.4	0.0
11/22/2024 5:45	6.1	0.1	0.0	7.4	11.4	0.0
11/22/2024 6:00	6.1	0.1	0.0	7.4	11.4	0.0
11/22/2024 6:15	6.2	0.1	0.0	7.4	11.3	0.0
11/22/2024 6:30	6.2	0.1	0.0	7.4	11.3	0.0
11/22/2024 6:45	6.2	0.1	0.0	7.5	11.3	0.0
11/22/2024 7:00	6.3	0.1	0.0	7.5	11.3	0.0
11/22/2024 7:15	6.3	0.1	0.0	7.5	11.3	0.0
11/22/2024 7:30	6.3	0.1	0.0	7.5	11.3	0.0
11/22/2024 7:45	6.2	0.1	0.0	7.4	11.3	0.0
11/22/2024 8:00	6.3	0.1	0.0	7.5	11.3	0.0
11/22/2024 8:15	6.3	0.1	0.0	7.4	11.2	0.0
11/22/2024 8:30	6.0	0.1	0.0	7.4	11.4	0.1
11/22/2024 8:45	4.9	45.5	0.0	7.0	11.0	15.0
11/22/2024 9:00	4.7	42.8	0.0	7.2	11.2	0.0
11/22/2024 9:15	4.7	42.5	0.0	7.2	11.2	0.0
11/22/2024 9:30	4.7	42.8	0.0	7.2	11.2	0.0
11/22/2024 9:45	4.7	42.2	0.0	7.3	11.3	0.0
11/22/2024 10:00	4.7	42.2	0.0	7.3	11.3	0.0
11/22/2024 10:15	4.7	42.6	0.0	7.3	11.3	0.0
11/22/2024 10:30	4.7	43.4	0.0	7.3	11.2	0.0
11/22/2024 10:45	4.7	41.7	0.0	7.3	11.3	0.0
11/22/2024 11:00	4.7	43.1	0.0	7.4	11.3	0.0
11/22/2024 11:15	4.7	45.0	0.0	7.4	11.3	0.0
11/22/2024 11:30	4.7	43.6	0.0	7.3	11.3	0.0
11/22/2024 11:45	4.7	41.5	0.0	7.4	11.3	0.0
11/22/2024 12:00	4.7	44.0	0.0	7.4	11.3	0.0
11/22/2024 12:15	4.7	44.4	0.0	7.4	11.3	0.0
11/22/2024 12:30	4.7	42.6	0.0	7.4	11.4	0.0
11/22/2024 12:45	4.7	42.8	0.0	7.4	11.4	0.0
11/22/2024 13:00	4.8	43.9	0.0	7.4	11.4	0.0
11/22/2024 13:15	4.8	43.4	0.0	7.4	11.4	0.0
11/22/2024 13:30	4.8	42.8	0.0	7.5	11.4	0.0
11/22/2024 13:45	4.8	43.8	0.0	7.4	11.4	0.0
11/22/2024 14:00	4.8	43.5	0.0	7.5	11.5	0.0
11/22/2024 14:15	4.9	44.6	0.0	7.5	11.4	0.0
11/22/2024 14:30	4.9	44.6	0.0	7.5	11.4	0.0
11/22/2024 14:45	4.9	46.7	0.0	7.4	11.4	0.0
11/22/2024 15:00	4.9	46.2	0.0	7.4	11.3	0.0
11/22/2024 15:15	4.9	45.5	0.0	7.4	11.3	0.0
11/22/2024 15:30	4.9	46.6	0.0	7.4	11.3	0.0
11/22/2024 15:45	5.0	48.9	0.0	7.4	11.2	0.0
11/22/2024 16:00	4.9	48.3	0.0	7.4	11.2	0.0
11/22/2024 16:15	4.9	45.6	0.0	7.4	11.3	0.0
11/22/2024 16:30	4.9	44.9	0.0	7.4	11.2	0.0
11/22/2024 16:45	4.9	45.6	0.0	7.3	11.2	0.0
11/22/2024 17:00	4.9	45.7	0.0	7.3	11.2	0.0
11/22/2024 17:15	4.9	44.9	0.0	7.3	11.2	0.0
11/22/2024 17:30	4.9	43.8	0.0	7.3	11.2	0.0
11/22/2024 17:45	4.8	43.3	0.0	7.3	11.2	0.0
11/22/2024 18:00	4.8	43.4	0.0	7.3	11.1	0.0
11/22/2024 18:15	4.8	43.4	0.0	7.3	11.2	0.0
11/22/2024 18:30	4.8	43.6	0.0	7.2	11.1	0.0
11/22/2024 18:45	4.9	43.8	0.0	7.3	11.1	1.3

11/21/2024 19:45	6.0	68.5	0.0	6.7	11.7	72.5
11/21/2024 20:00	6.0	68.4	0.0	6.7	11.7	72.5
11/21/2024 20:15	6.0	69.3	0.0	6.7	11.7	75.4
11/21/2024 20:30	6.0	68.4	0.0	6.7	11.7	75.3
11/21/2024 20:45	6.0	69.7	0.0	6.7	11.7	74.6
11/21/2024 21:00	6.0	69.3	0.0	6.7	11.7	75.4
11/21/2024 21:15	6.0	69.5	0.0	6.7	11.7	74.3
11/21/2024 21:30	6.0	69.6	0.0	6.7	11.7	75.7
11/21/2024 21:45	6.0	70.0	0.0	6.7	11.7	75.9
11/21/2024 22:00	6.0	70.5	0.0	6.7	11.6	67.0
11/21/2024 22:15	6.0	70.6	0.0	6.7	11.7	76.4
11/21/2024 22:30	6.1	70.7	0.0	6.7	11.6	76.4
11/21/2024 22:45	6.1	71.8	0.0	6.7	11.6	77.5
11/21/2024 23:00	6.0	71.3	0.0	6.7	11.6	78.5
11/21/2024 23:15	6.0	71.2	0.0	6.7	11.7	76.3
11/21/2024 23:30	6.0	71.9	0.0	6.7	11.6	75.1
11/21/2024 23:45	6.0	71.7	0.0	6.7	11.6	76.5
11/22/2024 0:00	6.0	71.4	0.0	6.7	11.7	76.3
11/22/2024 0:15	6.0	71.3	0.0	6.7	11.7	78.4
11/22/2024 0:30	6.0	71.6	0.0	6.7	11.6	78.2
11/22/2024 0:45	5.9	70.5	0.0	6.7	11.7	78.4
11/22/2024 1:00	5.9	71.3	0.0	6.7	11.6	74.2
11/22/2024 1:15	5.9	70.7	0.0	6.7	11.7	80.5
11/22/2024 1:30	5.9	70.4	0.0	6.7	11.7	77.4
11/22/2024 1:45	5.9	70.2	0.0	6.7	11.7	76.5
11/22/2024 2:00	5.9	68.5	0.0	6.7	11.7	80.4
11/22/2024 2:15	5.9	70.3	0.0	6.7	11.7	77.9
11/22/2024 2:30	5.8	69.5	0.0	6.7	11.7	79.5
11/22/2024 2:45	5.8	68.4	0.0	6.7	11.7	82.9
11/22/2024 3:00	5.8	67.8	0.0	6.7	11.7	70.3
11/22/2024 3:15	5.8	66.9	0.0	6.7	11.7	78.2
11/22/2024 3:30	5.8	66.5	0.0	6.7	11.7	79.7
11/22/2024 3:45	5.8	66.8	0.0	6.7	11.7	86.5
11/22/2024 4:00	5.8	67.8	0.0	6.7	11.7	76.9
11/22/2024 4:15	5.8	67.7	0.0	6.7	11.7	83.0
11/22/2024 4:30	5.8	66.9	0.0	6.7	11.7	80.4
11/22/2024 4:45	5.8	67.6	0.0	6.7	11.7	82.0
11/22/2024 5:00	5.8	67.5	0.0	6.7	11.7	86.6
11/22/2024 5:15	5.8	67.4	0.0	6.7	11.7	80.0
11/22/2024 5:30	5.8	67.8	0.0	6.7	11.7	81.5
11/22/2024 5:45	5.8	67.7	0.0	6.7	11.7	86.3
11/22/2024 6:00	5.8	68.0	0.0	6.7	11.7	81.8
11/22/2024 6:15	5.8	67.8	0.0	6.7	11.7	81.3
11/22/2024 6:30	5.8	68.4	0.0	6.7	11.7	84.2
11/22/2024 6:45	5.8	68.4	0.0	6.7	11.7	87.1
11/22/2024 7:00	5.8	68.8	0.0	6.7	11.7	81.5
11/22/2024 7:15	5.8	68.5	0.0	6.7	11.7	83.6
11/22/2024 7:30	5.8	67.8	0.0	6.7	11.7	83.8
11/22/2024 7:45	5.8	68.2	0.0	6.7	11.7	82.9
11/22/2024 8:00	5.8	69.2	0.0	6.7	11.7	81.1
11/22/2024 8:15	5.8	69.0	0.0	6.7	11.7	79.4
11/22/2024 8:30	5.8	68.4	0.0	6.7	11.7	83.3
11/22/2024 8:45	5.8	69.1	0.0	6.7	11.7	87.4
11/22/2024 9:00	5.8	69.2	0.0	6.7	11.7	87.3
11/22/2024 9:15	5.8	69.1	0.0	6.7	11.7	86.6
11/22/2024 9:30	5.8	69.8	0.0	6.7	11.6	90.5
11/22/2024 9:45	5.8	68.2	0.0	6.7	11.7	88.1
11/22/2024 10:00	5.8	69.0	0.0	6.7	11.7	87.9
11/22/2024 10:15	5.8	71.8	0.0	6.7	11.6	86.7
11/22/2024 10:30	5.8	68.4	0.0	6.7	11.7	85.9
11/22/2024 10:45	5.8	71.5	0.0	6.7	11.7	93.2
11/22/2024 11:00	5.9	74.8	0.0	6.7	11.6	91.9
11/22/2024 11:15	5.9	71.1	0.0	6.7	11.7	93.1
11/22/2024 11:30	5.8	66.5	0.0	6.8	11.8	91.6
11/22/2024 11:45	5.9	72.6	0.0	6.8	11.7	91.6
11/22/2024 12:00	5.9	73.5	0.0	6.8	11.7	91.5
11/22/2024 12:15	5.9	68.8	0.0	6.8	11.8	89.3
11/22/2024 12:30	5.9	69.7	0.0	6.8	11.8	88.9
11/22/2024 12:45	5.9	72.3	0.0	6.8	11.8	90.7
11/22/2024 13:00	5.9	70.7	0.0	6.8	11.9	91.5
11/22/2024 13:15	5.9	68.6	0.0	6.8	11.9	89.3
11/22/2024 13:30	6.0	71.3	0.0	6.8	11.9	88.3
11/22/2024 13:45	5.9	69.1	0.0	6.8	11.9	90.5
11/22/2024 14:00	6.0	73.0	0.0	6.8	11.9	87.5
11/22/2024 14:15	6.0	71.4	0.0	6.8	11.9	88.0
11/22/2024 14:30	6.1	79.9	0.0	6.8	11.7	89.3
11/22/2024 14:45	6.2	78.7	0.0	6.7	11.6	90.2
11/22/2024 15:00	6.1	75.7	0.0	6.7	11.6	86.7
11/22/2024 15:15	6.1	75.3	0.0	6.7	11.6	90.4
11/22/2024 15:30	6.2	80.8	0.0	6.7	11.6	89.0
11/22/2024 15:45	6.2	81.9	0.0	6.7	11.5	88.3
11/22/2024 16:00	6.1	76.2	0.0	6.7	11.6	89.3
11/22/2024 16:15	6.1	72.0	0.0	6.8	11.6	88.0
11/22/2024 16:30	6.1	73.2	0.0	6.7	11.6	88.9
11/22/2024 16:45	6.1	76.1	0.0	6.7	11.5	91.3
11/22/2024 17:00	6.1	74.1	0.0	6.7	11.6	88.1
11/22/2024 17:15	6.0	72.0	0.0	6.7	11.6	91.6
11/22/2024 17:30	6.0	71.0	0.0	6.7	11.6	92.7
11/22/2024 17:45	6.0	70.3	0.0	6.7	11.6	91.2
11/22/2024 18:00	6.0	70.2	0.0	6.7	11.6	90.7
11/22/2024 18:15	6.0	70.2	0.0	6.7	11.5	94.8
11/22/2024 18:30	6.0	70.5	0.0	6.7	11.5	88.8
11/22/2024 18:45	6.0	70.3	0.0	6.7	11.5	96.5

11/22/2024 19:00	4.8	43.6	0.0	7.2	11.1	0.0
11/22/2024 19:15	4.8	43.8	0.0	7.3	11.1	0.0
11/22/2024 19:30	4.8	43.7	0.0	7.3	11.1	0.0
11/22/2024 19:45	4.8	43.8	0.0	7.2	11.1	0.0
11/22/2024 20:00	4.8	43.6	0.0	7.2	11.1	0.0
11/22/2024 20:15	4.8	44.3	0.0	7.3	11.1	0.0
11/22/2024 20:30	4.8	43.8	0.0	7.2	11.1	0.0
11/22/2024 20:45	4.9	44.0	0.0	7.2	11.1	0.0
11/22/2024 21:00	4.9	43.9	0.0	7.2	11.1	0.0
11/22/2024 21:15	4.9	43.9	0.0	7.3	11.1	0.0
11/22/2024 21:30	4.9	44.2	0.0	7.2	11.1	0.0
11/22/2024 21:45	4.9	43.8	0.0	7.3	11.2	0.0
11/22/2024 22:00	4.9	43.7	0.0	7.3	11.2	0.0
11/22/2024 22:15	4.9	44.2	0.0	7.3	11.1	0.0
11/22/2024 22:30	4.9	43.9	0.0	7.3	11.2	0.0
11/22/2024 22:45	4.9	43.6	0.0	7.3	11.2	1.6
11/22/2024 23:00	4.9	43.9	0.0	7.3	11.2	0.0
11/22/2024 23:15	4.9	44.4	0.0	7.2	11.2	0.0
11/22/2024 23:30	4.9	44.3	0.0	7.3	11.2	0.0
11/22/2024 23:45	4.9	44.2	0.0	7.3	11.2	0.0
11/23/2024 0:00	4.9	44.4	0.0	7.3	11.2	0.0
11/23/2024 0:15	4.9	44.5	0.0	7.3	11.2	0.0
11/23/2024 0:30	4.9	44.3	0.0	7.3	11.2	0.3
11/23/2024 0:45	4.9	44.3	0.0	7.2	11.2	0.0
11/23/2024 1:00	4.9	44.1	0.0	7.3	11.2	0.0
11/23/2024 1:15	4.9	43.8	0.0	7.2	11.2	0.0
11/23/2024 1:30	4.9	43.6	0.0	7.3	11.2	0.4
11/23/2024 1:45	5.0	43.8	0.0	7.3	11.2	0.1
11/23/2024 2:00	5.0	43.2	0.0	7.2	11.2	0.0
11/23/2024 2:15	5.0	43.5	0.0	7.2	11.2	0.4
11/23/2024 2:30	5.0	43.2	0.0	7.2	11.2	0.7
11/23/2024 2:45	5.0	43.0	0.0	7.2	11.2	0.8
11/23/2024 3:00	4.9	41.5	0.0	7.3	11.2	1.7
11/23/2024 3:15	5.0	41.8	0.0	7.3	11.2	1.1
11/23/2024 3:30	5.0	41.0	0.0	7.3	11.2	1.4
11/23/2024 3:45	4.9	41.0	0.0	7.3	11.2	0.3
11/23/2024 4:00	4.9	40.3	0.0	7.3	11.3	0.7
11/23/2024 4:15	5.0	40.5	0.0	7.3	11.2	1.0
11/23/2024 4:30	5.0	40.2	0.0	7.3	11.3	0.7
11/23/2024 4:45	5.0	40.5	0.0	7.3	11.3	0.2
11/23/2024 5:00	4.9	39.5	0.0	7.3	11.3	0.9
11/23/2024 5:15	4.9	39.1	0.0	7.3	11.3	0.9
11/23/2024 5:30	4.9	39.0	0.0	7.3	11.3	1.0
11/23/2024 5:45	4.9	38.7	0.0	7.3	11.3	0.7
11/23/2024 6:00	4.9	38.9	0.0	7.3	11.3	0.7
11/23/2024 6:15	4.9	38.6	0.0	7.3	11.3	0.4
11/23/2024 6:30	4.9	38.6	0.0	7.3	11.3	0.9
11/23/2024 6:45	4.9	37.9	0.0	7.3	11.4	0.6
11/23/2024 7:00	4.9	37.8	0.0	7.3	11.4	1.1
11/23/2024 7:15	4.9	38.0	0.0	7.3	11.4	0.6
11/23/2024 7:30	4.9	37.6	0.0	7.3	11.3	0.8
11/23/2024 7:45	4.9	37.2	0.0	7.3	11.4	0.6
11/23/2024 8:00	4.9	37.0	0.0	7.3	11.4	1.2
11/23/2024 8:15	4.9	37.2	0.0	7.3	11.3	0.5
11/23/2024 8:30	4.9	36.9	0.0	7.3	11.4	2.0
11/23/2024 8:45	4.9	36.6	0.0	7.3	11.4	3.2
11/23/2024 9:00	4.9	36.4	0.0	7.4	11.4	3.7
11/23/2024 9:15	4.8	36.2	0.0	7.3	11.4	1.8
11/23/2024 9:30	4.9	35.9	0.0	7.3	11.4	1.2
11/23/2024 9:45	4.9	35.8	0.0	7.3	11.4	1.5
11/23/2024 10:00	4.9	35.4	0.0	7.4	11.4	1.4
11/23/2024 10:15	4.9	35.2	0.0	7.4	11.4	1.8
11/23/2024 10:30	4.9	34.6	0.0	7.4	11.5	1.4
11/23/2024 10:45	4.9	34.0	0.0	7.4	11.5	0.4
11/23/2024 11:00	4.9	34.0	0.0	7.4	11.5	0.6
11/23/2024 11:15	4.9	34.4	0.0	7.4	11.5	0.3
11/23/2024 11:30	4.9	34.3	0.0	7.4	11.5	0.3
11/23/2024 11:45	4.9	34.1	0.0	7.4	11.5	0.0
11/23/2024 12:00	4.9	33.8	0.0	7.4	11.5	0.4
11/23/2024 12:15	5.0	33.7	0.0	7.4	11.5	0.8
11/23/2024 12:30	5.0	34.1	0.0	7.4	11.5	0.5
11/23/2024 12:45	5.0	34.3	0.0	7.5	11.5	0.5
11/23/2024 13:00	5.0	34.0	0.0	7.5	11.6	0.6
11/23/2024 13:15	5.0	34.2	0.0	7.5	11.6	0.2
11/23/2024 13:30	5.1	34.3	0.0	7.5	11.6	0.7
11/23/2024 13:45	5.1	34.6	0.0	7.5	11.6	0.7
11/23/2024 14:00	5.1	35.7	0.0	7.5	11.5	0.0
11/23/2024 14:15	5.2	35.0	0.0	7.5	11.5	0.4
11/23/2024 14:30	5.2	34.6	0.0	7.5	11.6	0.7
11/23/2024 14:45	5.2	35.2	0.0	7.5	11.5	0.0
11/23/2024 15:00	5.3	35.9	0.0	7.5	11.5	0.2
11/23/2024 15:15	5.3	35.8	0.0	7.5	11.5	0.2
11/23/2024 15:30	5.3	34.7	0.0	7.4	11.5	0.1
11/23/2024 15:45	5.3	34.8	0.0	7.4	11.5	0.1
11/23/2024 16:00	5.3	34.5	0.0	7.4	11.5	0.0
11/23/2024 16:15	5.2	34.9	0.0	7.4	11.5	0.4
11/23/2024 16:30	5.2	34.2	0.0	7.4	11.5	0.0
11/23/2024 16:45	5.2	33.5	0.0	7.4	11.5	8.6
11/23/2024 17:00	5.2	33.1	0.0	7.4	11.4	7.2
11/23/2024 17:15	5.2	33.3	0.0	7.4	11.4	3.0
11/23/2024 17:30	5.2	33.4	0.0	7.4	11.4	0.5
11/23/2024 17:45	5.2	33.5	0.0	7.4	11.4	2.0
11/23/2024 18:00	5.2	33.5	0.0	7.4	11.4	1.1

11/22/2024 19:00	6.0	70.8	0.0	6.7	11.5	91.7
11/22/2024 19:15	6.0	70.6	0.0	6.7	11.5	94.1
11/22/2024 19:30	6.0	70.5	0.0	6.7	11.5	92.1
11/22/2024 19:45	6.0	70.5	0.0	6.7	11.5	90.9
11/22/2024 20:00	6.0	70.6	0.0	6.7	11.5	91.5
11/22/2024 20:15	6.0	71.3	0.0	6.7	11.5	88.2
11/22/2024 20:30	6.0	71.1	0.0	6.7	11.5	91.2
11/22/2024 20:45	6.0	71.0	0.0	6.7	11.5	90.7
11/22/2024 21:00	6.0	71.1	0.0	6.7	11.5	93.7
11/22/2024 21:15	6.0	72.5	0.0	6.7	11.5	91.8
11/22/2024 21:30	6.0	71.2	0.0	6.7	11.5	91.4
11/22/2024 21:45	6.0	71.4	0.0	6.7	11.5	97.9
11/22/2024 22:00	6.0	71.5	0.0	6.7	11.5	94.2
11/22/2024 22:15	6.0	71.1	0.0	6.7	11.6	90.8
11/22/2024 22:30	6.0	71.1	0.0	6.7	11.5	95.4
11/22/2024 22:45	6.0	71.0	0.0	6.7	11.6	93.1
11/22/2024 23:00	6.0	71.4	0.0	6.7	11.6	96.7
11/22/2024 23:15	6.1	72.2	0.0	6.7	11.5	87.9
11/22/2024 23:30	6.1	71.8	0.0	6.7	11.6	91.4
11/22/2024 23:45	6.1	72.1	0.0	6.7	11.6	91.6
11/23/2024 0:00	6.1	72.6	0.0	6.7	11.6	94.2
11/23/2024 0:15	6.1	71.4	0.0	6.7	11.6	94.3
11/23/2024 0:30	6.1	71.6	0.0	6.7	11.6	91.6
11/23/2024 0:45	6.1	71.4	0.0	6.7	11.6	91.9
11/23/2024 1:00	6.1	71.4	0.0	6.7	11.6	92.7
11/23/2024 1:15	6.1	70.6	0.0	6.7	11.6	91.2
11/23/2024 1:30	6.1	70.8	0.0	6.7	11.6	98.4
11/23/2024 1:45	6.1	70.7	0.0	6.7	11.6	78.1
11/23/2024 2:00	6.1	69.4	0.0	6.7	11.7	87.6
11/23/2024 2:15	6.1	69.3	0.0	6.7	11.7	96.8
11/23/2024 2:30	6.1	69.4	0.0	6.7	11.7	93.7
11/23/2024 2:45	6.1	68.1	0.0	6.8	11.7	93.6
11/23/2024 3:00	6.0	66.2	0.0	6.8	11.7	85.1
11/23/2024 3:15	6.0	66.0	0.0	6.8	11.7	91.3
11/23/2024 3:30	6.0	65.7	0.0	6.8	11.7	89.3
11/23/2024 3:45	6.0	65.6	0.0	6.8	11.7	96.4
11/23/2024 4:00	6.0	64.0	0.0	6.8	11.7	89.1
11/23/2024 4:15	6.0	63.9	0.0	6.8	11.8	81.2
11/23/2024 4:30	6.0	64.5	0.0	6.8	11.7	111.7
11/23/2024 4:45	6.1	65.1	0.0	6.8	11.7	98.4
11/23/2024 5:00	6.0	62.9	0.0	6.8	11.8	91.0
11/23/2024 5:15	6.0	64.1	0.0	6.8	11.8	88.5
11/23/2024 5:30	6.0	62.6	0.0	6.8	11.8	86.1
11/23/2024 5:45	6.0	62.7	0.0	6.8	11.8	94.9
11/23/2024 6:00	6.0	62.6	0.0	6.8	11.8	92.2
11/23/2024 6:15	6.0	61.9	0.0	6.8	11.8	82.0
11/23/2024 6:30	6.0	62.0	0.0	6.8	11.8	90.5
11/23/2024 6:45	6.0	60.3	0.0	6.8	11.8	97.6
11/23/2024 7:00	6.0	61.6	0.0	6.8	11.8	95.4
11/23/2024 7:15	6.0	60.6	0.0	6.8	11.8	87.1
11/23/2024 7:30	6.0	60.6	0.0	6.8	11.8	96.3
11/23/2024 7:45	6.0	60.1	0.0	6.8	11.8	88.5
11/23/2024 8:00	6.0	59.8	0.0	6.8	11.8	87.4
11/23/2024 8:15	6.0	60.0	0.0	6.8	11.8	88.0
11/23/2024 8:30	5.9	59.2	0.0	6.8	11.8	80.4
11/23/2024 8:45	5.9	59.0	0.0	6.8	11.8	89.1
11/23/2024 9:00	5.9	58.8	0.0	6.8	11.8	91.0
11/23/2024 9:15	6.0	58.8	0.0	6.8	11.8	91.0
11/23/2024 9:30	6.0	58.7	0.0	6.8	11.8	91.4
11/23/2024 9:45	6.0	58.3	0.0	6.8	11.9	89.9
11/23/2024 10:00	6.0	57.9	0.0	6.8	11.9	95.7
11/23/2024 10:15	6.0	57.1	0.0	6.8	11.9	95.6
11/23/2024 10:30	6.0	55.7	0.0	6.8	11.9	83.5
11/23/2024 10:45	6.0	55.2	0.0	6.8	11.9	73.2
11/23/2024 11:00	6.0	57.5	0.0	6.8	11.9	69.6
11/23/2024 11:15	6.1	56.7	0.0	6.8	11.9	74.4
11/23/2024 11:30	6.1	56.1	0.0	6.8	11.9	75.5
11/23/2024 11:45	6.1	55.6	0.0	6.8	12.0	72.3
11/23/2024 12:00	6.1	55.4	0.0	6.8	12.0	66.7
11/23/2024 12:15	6.1	56.7	0.0	6.8	12.0	69.1
11/23/2024 12:30	6.1	56.4	0.0	6.8	12.0	68.8
11/23/2024 12:45	6.1	56.9	0.0	6.8	12.0	69.4
11/23/2024 13:00	6.2	56.4	0.0	6.9	12.0	80.9
11/23/2024 13:15	6.2	57.0	0.0	6.8	12.0	74.5
11/23/2024 13:30	6.2	57.6	0.0	6.8	12.0	82.7
11/23/2024 13:45	6.3	59.9	0.0	6.8	12.0	66.6
11/23/2024 14:00	6.3	59.0	0.0	6.8	12.0	67.4
11/23/2024 14:15	6.3	58.0	0.0	6.8	12.0	90.3
11/23/2024 14:30	6.4	58.1	0.0	6.8	12.0	95.9
11/23/2024 14:45	6.4	60.2	0.0	6.8	12.0	91.6
11/23/2024 15:00	6.5	60.6	0.0	6.8	11.9	92.7
11/23/2024 15:15	6.5	58.8	0.0	6.8	11.9	89.5
11/23/2024 15:30	6.5	59.0	0.0	6.8	11.9	92.4
11/23/2024 15:45	6.5	58.7	0.0	6.7	11.8	97.1
11/23/2024 16:00	6.4	59.5	0.0	6.7	11.8	96.7
11/23/2024 16:15	6.4	58.7	0.0	6.7	11.8	93.9
11/23/2024 16:30	6.4	57.7	0.0	6.7	11.8	97.4
11/23/2024 16:45	6.3	56.6	0.0	6.8	11.9	92.2
11/23/2024 17:00	6.3	56.6	0.0	6.8	11.9	91.0
11/23/2024 17:15	6.3	56.9	0.0	6.8	11.8	99.4
11/23/2024 17:30	6.3	56.8	0.0	6.8	11.9	85.9
11/23/2024 17:45	6.3	56.6	0.0	6.8	11.8	84.3
11/23/2024 18:00	6.3	57.0	0.0	6.8	11.8	97.1

11/23/2024 18:15	5.2	33.6	0.0	7.4	11.4	2.0
11/23/2024 18:30	5.2	33.5	0.0	7.4	11.4	0.8
11/23/2024 18:45	5.2	33.7	0.0	7.4	11.4	1.6
11/23/2024 19:00	5.1	33.4	0.0	7.4	11.4	1.2
11/23/2024 19:15	5.1	33.5	0.0	7.4	11.4	3.1
11/23/2024 19:30	5.1	33.6	0.0	7.3	11.4	2.2
11/23/2024 19:45	5.1	33.4	0.0	7.3	11.4	3.4
11/23/2024 20:00	5.1	33.3	0.0	7.3	11.4	2.3
11/23/2024 20:15	5.1	33.1	0.0	7.4	11.4	2.5
11/23/2024 20:30	5.1	33.2	0.0	7.4	11.4	3.3
11/23/2024 20:45	5.1	33.2	0.0	7.3	11.4	2.2
11/23/2024 21:00	5.1	33.0	0.0	7.3	11.4	2.3
11/23/2024 21:15	5.1	32.9	0.0	7.3	11.4	2.8
11/23/2024 21:30	5.1	33.2	0.0	7.3	11.4	1.0
11/23/2024 21:45	5.0	32.6	0.0	7.3	11.4	1.5
11/23/2024 22:00	5.0	32.8	0.0	7.3	11.4	1.6
11/23/2024 22:15	5.0	32.8	0.0	7.3	11.4	1.3
11/23/2024 22:30	5.0	32.9	0.0	7.3	11.4	2.4
11/23/2024 22:45	5.0	32.8	0.0	7.3	11.4	1.3
11/23/2024 23:00	5.0	32.7	0.0	7.4	11.4	1.2
11/23/2024 23:15	5.0	32.6	0.0	7.4	11.4	0.7
11/23/2024 23:30	5.0	32.7	0.0	7.3	11.5	0.8
11/23/2024 23:45	5.0	32.8	0.0	7.3	11.5	0.9
11/24/2024 0:00	5.0	32.9	0.0	7.3	11.5	1.3
11/24/2024 0:15	5.0	32.9	0.0	7.3	11.5	7.3
11/24/2024 0:30	5.0	32.9	0.0	7.3	11.5	1.8
11/24/2024 0:45	5.0	33.0	0.0	7.3	11.5	1.0
11/24/2024 1:00	5.0	32.8	0.0	7.3	11.5	0.3
11/24/2024 1:15	5.0	32.6	0.0	7.3	11.5	0.3
11/24/2024 1:30	5.0	32.7	0.0	7.3	11.5	1.0
11/24/2024 1:45	5.0	32.8	0.0	7.3	11.5	0.5
11/24/2024 2:00	5.0	32.8	0.0	7.3	11.5	0.3
11/24/2024 2:15	5.0	32.6	0.0	7.3	11.5	0.6
11/24/2024 2:30	5.0	32.8	0.0	7.3	11.5	1.0
11/24/2024 2:45	5.0	32.6	0.0	7.3	11.4	0.7
11/24/2024 3:00	5.0	32.6	0.0	7.3	11.4	0.6
11/24/2024 3:15	5.0	32.5	0.0	7.3	11.4	0.6
11/24/2024 3:30	5.0	32.6	0.0	7.3	11.4	0.6
11/24/2024 3:45	5.0	32.6	0.0	7.3	11.4	0.8
11/24/2024 4:00	5.0	32.4	0.0	7.3	11.4	0.9
11/24/2024 4:15	5.0	32.4	0.0	7.3	11.4	1.0
11/24/2024 4:30	5.0	32.3	0.0	7.3	11.4	0.6
11/24/2024 4:45	5.0	32.3	0.0	7.3	11.4	0.7
11/24/2024 5:00	5.0	32.6	0.0	7.3	11.4	0.5
11/24/2024 5:15	5.0	32.4	0.0	7.3	11.5	0.4
11/24/2024 5:30	5.0	32.7	0.0	7.3	11.4	0.5
11/24/2024 5:45	5.0	32.7	0.0	7.3	11.4	0.8
11/24/2024 6:00	5.0	32.5	0.0	7.3	11.4	1.0
11/24/2024 6:15	4.9	32.5	0.0	7.3	11.5	1.0
11/24/2024 6:30	4.9	32.7	0.0	7.3	11.4	0.9
11/24/2024 6:45	4.9	32.7	0.0	7.3	11.4	0.7
11/24/2024 7:00	4.9	32.5	0.0	7.3	11.4	0.5
11/24/2024 7:15	4.9	32.9	0.0	7.2	11.4	0.6
11/24/2024 7:30	4.9	32.8	0.0	7.3	11.5	0.0
11/24/2024 7:45	4.9	33.0	0.0	7.3	11.4	0.5
11/24/2024 8:00	4.9	32.9	0.0	7.3	11.4	0.4
11/24/2024 8:15	4.9	33.0	0.0	7.3	11.4	0.4
11/24/2024 8:30	4.9	33.1	0.0	7.3	11.4	0.0
11/24/2024 8:45	4.9	33.1	0.0	7.3	11.4	0.6
11/24/2024 9:00	4.9	33.1	0.0	7.3	11.4	0.2
11/24/2024 9:15	4.9	33.2	0.0	7.3	11.4	0.1
11/24/2024 9:30	4.9	33.3	0.0	7.3	11.4	0.3
11/24/2024 9:45	4.9	33.4	0.0	7.3	11.4	0.8
11/24/2024 10:00	4.9	33.3	0.0	7.3	11.4	0.2
11/24/2024 10:15	4.9	33.5	0.0	7.3	11.4	0.4
11/24/2024 10:30	4.9	33.6	0.0	7.3	11.4	0.2
11/24/2024 10:45	4.9	33.3	0.0	7.3	11.5	0.1
11/24/2024 11:00	4.9	33.1	0.0	7.3	11.5	0.6
11/24/2024 11:15	5.0	33.0	0.0	7.4	11.5	0.4
11/24/2024 11:30	5.0	33.1	0.0	7.3	11.5	0.3
11/24/2024 11:45	5.0	33.1	0.0	7.4	11.5	0.0
11/24/2024 12:00	5.1	33.7	0.0	7.3	11.5	0.4
11/24/2024 12:15	5.1	33.8	0.0	7.4	11.5	0.2
11/24/2024 12:30	5.1	33.8	0.0	7.4	11.5	0.1
11/24/2024 12:45	5.1	33.8	0.0	7.4	11.5	0.2
11/24/2024 13:00	5.2	34.0	0.0	7.4	11.5	0.0
11/24/2024 13:15	5.2	34.2	0.0	7.4	11.5	0.2
11/24/2024 13:30	5.2	34.4	0.0	7.4	11.5	0.0
11/24/2024 13:45	5.3	34.9	0.0	7.4	11.5	0.0
11/24/2024 14:00	5.4	35.4	0.0	7.4	11.5	0.0
11/24/2024 14:15	5.4	35.7	0.0	7.4	11.5	0.5
11/24/2024 14:30	5.4	36.0	0.0	7.4	11.5	0.0
11/24/2024 14:45	5.5	37.1	0.0	7.4	11.5	0.0
11/24/2024 15:00	5.5	36.9	0.0	7.4	11.5	0.0
11/24/2024 15:15	5.5	37.7	0.0	7.4	11.5	0.0
11/24/2024 15:30	5.5	37.9	0.0	7.4	11.4	0.0
11/24/2024 15:45	5.5	37.8	0.0	7.4	11.4	0.1
11/24/2024 16:00	5.4	37.5	0.0	7.4	11.4	0.0
11/24/2024 16:15	5.4	37.1	0.0	7.4	11.4	0.3
11/24/2024 16:30	5.4	37.2	0.0	7.4	11.4	0.0
11/24/2024 16:45	5.4	37.0	0.0	7.3	11.4	1.0
11/24/2024 17:00	5.4	36.7	0.0	7.4	11.4	0.2
11/24/2024 17:15	5.4	37.0	0.0	7.4	11.4	0.0

11/23/2024 18:15	6.3	56.9	0.0	6.8	11.8	83.6
11/23/2024 18:30	6.3	57.1	0.0	6.7	11.8	80.4
11/23/2024 18:45	6.3	56.9	0.0	6.7	11.8	79.6
11/23/2024 19:00	6.3	56.4	0.0	6.7	11.8	76.5
11/23/2024 19:15	6.3	57.3	0.0	6.7	11.8	86.5
11/23/2024 19:30	6.3	57.1	0.0	6.7	11.8	86.4
11/23/2024 19:45	6.3	56.6	0.0	6.7	11.8	77.4
11/23/2024 20:00	6.2	56.5	0.0	6.7	11.8	83.6
11/23/2024 20:15	6.2	56.0	0.0	6.7	11.8	90.9
11/23/2024 20:30	6.2	56.2	0.0	6.7	11.8	83.4
11/23/2024 20:45	6.2	56.4	0.0	6.7	11.8	84.8
11/23/2024 21:00	6.2	55.8	0.0	6.7	11.8	93.7
11/23/2024 21:15	6.2	56.0	0.0	6.7	11.8	75.4
11/23/2024 21:30	6.2	56.0	0.0	6.7	11.8	84.5
11/23/2024 21:45	6.1	55.5	0.0	6.7	11.8	89.0
11/23/2024 22:00	6.1	56.0	0.0	6.7	11.8	86.5
11/23/2024 22:15	6.1	55.5	0.0	6.7	11.8	88.4
11/23/2024 22:30	6.1	56.0	0.0	6.7	11.9	88.0
11/23/2024 22:45	6.1	55.6	0.0	6.7	11.9	86.8
11/23/2024 23:00	6.1	55.8	0.0	6.7	11.9	91.5
11/23/2024 23:15	6.1	55.5	0.0	6.7	11.9	89.4
11/23/2024 23:30	6.1	55.6	0.0	6.7	11.9	80.1
11/23/2024 23:45	6.1	55.8	0.0	6.7	11.9	89.7
11/24/2024 0:00	6.1	55.9	0.0	6.7	11.9	87.7
11/24/2024 0:15	6.1	55.6	0.0	6.7	11.9	86.5
11/24/2024 0:30	6.1	55.6	0.0	6.7	11.9	88.5
11/24/2024 0:45	6.1	55.8	0.0	6.7	11.9	71.5
11/24/2024 1:00	6.1	55.1	0.0	6.7	11.9	83.3
11/24/2024 1:15	6.1	55.5	0.0	6.7	11.9	90.1
11/24/2024 1:30	6.1	55.2	0.0	6.7	11.9	92.4
11/24/2024 1:45	6.1	55.7	0.0	6.7	11.9	91.4
11/24/2024 2:00	6.1	55.2	0.0	6.7	11.9	77.3
11/24/2024 2:15	6.1	55.2	0.0	6.7	11.9	78.9
11/24/2024 2:30	6.1	55.1	0.0	6.7	11.9	86.4
11/24/2024 2:45	6.1	55.0	0.0	6.7	11.9	92.7
11/24/2024 3:00	6.0	55.0	0.0	6.7	11.9	81.0
11/24/2024 3:15	6.0	54.8	0.0	6.7	11.9	92.9
11/24/2024 3:30	6.0	55.2	0.0	6.7	11.9	85.4
11/24/2024 3:45	6.0	54.5	0.0	6.7	11.9	73.8
11/24/2024 4:00	6.0	54.8	0.0	6.7	11.9	85.4
11/24/2024 4:15	6.0	54.8	0.0	6.7	11.9	86.0
11/24/2024 4:30	6.0	54.8	0.0	6.7	11.9	82.0
11/24/2024 4:45	6.0	54.5	0.0	6.7	11.9	85.2
11/24/2024 5:00	6.0	54.7	0.0	6.7	11.9	84.1
11/24/2024 5:15	6.0	55.1	0.0	6.7	11.9	90.2
11/24/2024 5:30	6.0	55.1	0.0	6.7	11.9	85.0
11/24/2024 5:45	6.0	55.0	0.0	6.7	11.9	85.3
11/24/2024 6:00	6.0	54.9	0.0	6.7	11.9	86.0
11/24/2024 6:15	6.0	54.9	0.0	6.7	11.9	95.4
11/24/2024 6:30	6.0	54.8	0.0	6.7	11.9	87.6
11/24/2024 6:45	6.0	54.9	0.0	6.7	11.9	91.9
11/24/2024 7:00	6.0	54.8	0.0	6.7	11.9	89.3
11/24/2024 7:15	6.0	55.0	0.0	6.7	11.9	85.7
11/24/2024 7:30	6.0	52.6	0.0	6.7	11.9	86.2
11/24/2024 7:45	6.0	52.8	0.0	6.7	11.9	89.9
11/24/2024 8:00	6.0	52.7	0.0	6.7	11.9	94.0
11/24/2024 8:15	6.0	55.2	0.0	6.7	11.9	91.4
11/24/2024 8:30	6.0	55.4	0.0	6.7	11.9	87.4
11/24/2024 8:45	6.0	55.1	0.0	6.7	11.9	86.7
11/24/2024 9:00	6.0	55.3	0.0	6.7	11.9	87.8
11/24/2024 9:15	6.0	55.4	0.0	6.7	11.9	66.0
11/24/2024 9:30	6.0	55.8	0.0	6.7	11.9	88.4
11/24/2024 9:45	6.0	55.5	0.0	6.7	11.9	87.6
11/24/2024 10:00	6.0	55.8	0.0	6.7	11.9	92.2
11/24/2024 10:15	6.0	56.0	0.0	6.7	11.9	80.2
11/24/2024 10:30	6.0	55.9	0.0	6.7	11.9	89.5
11/24/2024 10:45	6.0	55.4	0.0	6.7	11.9	88.8
11/24/2024 11:00	6.0	55.1	0.0	6.8	11.9	90.8
11/24/2024 11:15	6.0	55.4	0.0	6.8	12.0	89.6
11/24/2024 11:30	6.1	55.4	0.0	6.8	12.0	88.9
11/24/2024 11:45	6.1	53.4	0.0	6.8	12.0	89.7
11/24/2024 12:00	6.2	54.1	0.0	6.8	12.0	92.5
11/24/2024 12:15	6.2	53.7	0.0	6.8	12.0	88.5
11/24/2024 12:30	6.2	53.3	0.0	6.8	12.0	92.3
11/24/2024 12:45	6.3	53.8	0.0	6.8	12.0	90.2
11/24/2024 13:00	6.3	53.8	0.0	6.8	12.0	95.2
11/24/2024 13:15	6.3	54.5	0.0	6.8	12.0	88.1
11/24/2024 13:30	6.4	55.4	0.0	6.8	12.0	93.5
11/24/2024 13:45	6.5	56.4	0.0	6.8	12.0	90.4
11/24/2024 14:00	6.5	56.6	0.0	6.8	12.0	93.8
11/24/2024 14:15	6.5	57.2	0.0	6.8	12.0	88.4
11/24/2024 14:30	6.6	59.0	0.0	6.8	12.0	93.2
11/24/2024 14:45	6.6	59.5	0.0	6.8	11.9	96.2
11/24/2024 15:00	6.6	60.8	0.0	6.8	11.9	94.2
11/24/2024 15:15	6.6	62.2	0.0	6.7	11.8	89.1
11/24/2024 15:30	6.6	60.8	0.0	6.7	11.8	88.8
11/24/2024 15:45	6.6	61.0	0.0	6.7	11.8	93.8
11/24/2024 16:00	6.6	60.0	0.0	6.7	11.8	92.9
11/24/2024 16:15	6.5	59.4	0.0	6.7	11.8	92.6
11/24/2024 16:30	6.5	59.7	0.0	6.7	11.8	88.1
11/24/2024 16:45	6.5	58.9	0.0	6.7	11.8	96.1
11/24/2024 17:00	6.5	58.8	0.0	6.7	11.8	96.8
11/24/2024 17:15	6.5	58.6	0.0	6.7	11.8	91.8

11/24/2024 17:30	5.4	36.9	0.0	7.4	11.3	1.7
11/24/2024 17:45	5.4	37.4	0.0	7.4	11.3	0.4
11/24/2024 18:00	5.4	37.1	0.0	7.4	11.3	0.6
11/24/2024 18:15	5.4	37.2	0.0	7.4	11.3	0.3
11/24/2024 18:30	5.4	36.7	0.0	7.3	11.3	1.4
11/24/2024 18:45	5.4	36.6	0.0	7.3	11.3	1.1
11/24/2024 19:00	5.4	36.5	0.0	7.3	11.3	0.4
11/24/2024 19:15	5.4	37.0	0.0	7.3	11.2	0.5
11/24/2024 19:30	5.4	36.9	0.0	7.3	11.2	0.7
11/24/2024 19:45	5.4	37.6	0.0	7.3	11.2	0.4
11/24/2024 20:00	5.4	37.8	0.0	7.2	11.2	0.2
11/24/2024 20:15	5.4	37.3	0.0	7.3	11.2	0.1
11/24/2024 20:30	5.4	37.5	0.0	7.3	11.2	0.3
11/24/2024 20:45	5.4	37.7	0.0	7.3	11.2	0.5
11/24/2024 21:00	5.4	37.7	0.0	7.3	11.2	0.7
11/24/2024 21:15	5.4	38.1	0.0	7.3	11.2	0.1
11/24/2024 21:30	5.4	38.7	0.0	7.2	11.2	0.5
11/24/2024 21:45	5.4	37.8	0.0	7.3	11.2	0.3
11/24/2024 22:00	5.4	38.0	0.0	7.3	11.2	0.2
11/24/2024 22:15	5.4	37.7	0.0	7.3	11.2	0.3
11/24/2024 22:30	5.4	39.0	0.0	7.3	11.2	0.4
11/24/2024 22:45	5.4	40.3	0.0	7.2	11.1	1.3
11/24/2024 23:00	5.4	38.4	0.0	7.3	11.2	0.2
11/24/2024 23:15	5.4	38.3	0.0	7.3	11.2	0.0
11/24/2024 23:30	5.4	38.6	0.0	7.3	11.2	0.0
11/24/2024 23:45	5.3	37.9	0.0	7.3	11.2	0.0

11/24/2024 17:30	6.5	59.0	0.0	6.7	11.8	92.0
11/24/2024 17:45	6.5	59.5	0.0	6.7	11.7	95.2
11/24/2024 18:00	6.5	59.0	0.0	6.7	11.7	86.7
11/24/2024 18:15	6.5	58.9	0.0	6.7	11.7	96.4
11/24/2024 18:30	6.4	58.2	0.0	6.7	11.7	90.5
11/24/2024 18:45	6.4	57.8	0.0	6.7	11.7	94.1
11/24/2024 19:00	6.4	57.8	0.0	6.7	11.7	89.8
11/24/2024 19:15	6.4	58.2	0.0	6.7	11.7	91.9
11/24/2024 19:30	6.4	58.0	0.0	6.7	11.7	90.3
11/24/2024 19:45	6.4	58.2	0.0	6.7	11.7	86.3
11/24/2024 20:00	6.4	58.4	0.0	6.7	11.7	91.8
11/24/2024 20:15	6.4	58.7	0.0	6.7	11.7	94.7
11/24/2024 20:30	6.4	59.3	0.0	6.7	11.7	98.0
11/24/2024 20:45	6.4	58.8	0.0	6.7	11.7	96.6
11/24/2024 21:00	6.4	59.4	0.0	6.7	11.7	95.7
11/24/2024 21:15	6.4	59.0	0.0	6.7	11.7	92.0
11/24/2024 21:30	6.4	59.5	0.0	6.7	11.7	90.1
11/24/2024 21:45	6.4	59.1	0.0	6.7	11.7	96.6
11/24/2024 22:00	6.4	59.5	0.0	6.7	11.7	95.3
11/24/2024 22:15	6.4	59.6	0.0	6.7	11.7	98.1
11/24/2024 22:30	6.4	59.7	0.0	6.7	11.7	92.7
11/24/2024 22:45	6.4	59.3	0.0	6.7	11.7	95.6
11/24/2024 23:00	6.4	60.3	0.0	6.7	11.7	92.5
11/24/2024 23:15	6.4	59.4	0.0	6.7	11.7	92.3
11/24/2024 23:30	6.4	60.1	0.0	6.7	11.7	95.3
11/24/2024 23:45	6.4	59.5	0.0	6.7	11.7	94.2

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

Woodfibre Site Sample Analysis

TRITON	Sample ID	Reviewed and signed off by:	COLLEGE OF APPLIED BIOLOGISTS Farshad Shafiei RPBio 3781 CAB		Farshad Shafiei Ph.D., R.P.Bio.	WLNG EOP	Sample or value notes	BCWQ FAL - Short Term	BCWQ FAL - Long Term	BCWQ MAL - Short Term	BCWQ MAL - Long Term
	LAB ID					VA24D1381-001					
	Date Sampled					19-Nov-2024					
	Time Sampled					11:16					
Analyte	Units	FAL-ST [1,2]	FAL-LT [1,2]	MAL-ST [1]	MAL-LT [1,2]	Water		Guideline notes			
						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	6.99		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	Multiple guidelines dependent on water use and species, see notes: Short-term daily temperature = 15°C, or Max +/- 1°C from optimum temperature range for most sensitive salmonid species present, or Short-term daily temperature is 19°C, or Max +/- from BKG 1°C	-	Max +/- from BKG 1°C	-	8.4		Guideline is species-dependent. Short-term daily temperature is 15°C for streams with Bull Trout &/or Dolly Varden, Max +/- 1°C from the optimum range as shown in Table 43B of the BCWG for aquatic life for each life history phase of the most sensitive salmoind species present, Mean Weekly Max Temperature guideline is18°C, Short-term daily temperature guideline 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. Calculation: US value +/- 1 = guideline range	
Conductivity (field)	µS/cm	-	-	-	-	179					
Turbidity (field)	NTU	Varies with background, see note US1 (background) guideline = 12.0	Varies with background, see note US1 (background) guideline = 4.26 5-week discrete sampling average = 3.2 (EOP)	Varies with background, see note US1 (background) guideline = 12.0	Varies with background, see note US1 (background) guideline = 4.26 5-week discrete sampling average = 3.2 (EOP)	8.83		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.
General Parameters											
Hardness (as $CaCO_3$) (total)	mg/L	-	-	-	-	60.9					
Total Dissolved Solids	mg/L	-	-	-	-	285					
Total Suspended Solids	mg/L	Varies with background, see note US1 (background) guideline = 28	Varies with background, see note US1 (background) guideline = 8.00 5-week discrete sampling average = 4.34 (EOP)	Varies with background, see note US1 (background) guideline = 28	Varies with background, see note US1 (background) guideline = 8.00 5-week discrete sampling average = 4.34 (EOP)	7.2		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 druation 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 druation 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	-	-	-	-	< 0.50			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	48.3			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 (un-ionized as H_2S)	mg/L	-	0.002	-	-	< 0.0015			Working guideline		
Total Sulfide (as H_2S)	mg/L	-	-	-	-	< 0.0016					
Anions and Nutrients											
Ammonia	mg/L ammonia-N	Varies with pH and temperature. See note. Guideline = 15	Varies with pH and temperature. See note. Guideline = 1.86	Varies with pH and temperature. See note. Guideline = 777	Varies with pH, temperature and salinity. See note. Guideline = 12.0	0.008		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					
Chloride	mg/L	600	150	+/- 10% from BKG	+/- 10% from BKG	41.2				Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural	Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more
Fluoride	mg/L	Varies with hardness US1 (background) guideline = 0.485	-	1.5	-	0.072		Guideline has interim status. 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	0.0139					
Nitrite (as N)	mg/L	Varies with chloride. Table 27B, see note. US1 (background) guideline = 0.06	Varies with chloride. Table 27B, see note. US1 (background) guideline = 0.02	-	-	< 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. US1 (background) guideline = 128	-	-	5.62			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 US1 (background) guideline = 0.104 5-week discrete sampling averages = **12.802** (EOP), 0.184 (US), 0.196 (DS)	-	-	**63.8**	Although there is no short-term guideline for total Al, the concentration in this sampling even is extremely high and in fact the highest since the start of the WQM program of the Project.		Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated with the following equation: Guideline = (EXP((0.645 * LN(DOC)) + (2.255 * LN(hardness)) + (1.995 * pH) + (-0.284 * (LN(hardness) * pH))-9.898)/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	-	-	< 0.00050					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.00313					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.00597			Working guideline status		
Beryllium (Be)-Total	mg/L	-	0.00013	-	0.100	< 0.000100			Working guideline status		Working guideline status
Bismuth (Bi)-Total	mg/L	-	-	-	-	< 0.000050					
Boron (B)-Total	mg/L	-	1.2	-	1.2	< 0.050					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	< 0.0000250					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	22.6					
Cesium (Cs)-Total	mg/L	-	-	-	-	< 0.000050					
Chromium (Cr) - Total	mg/L	-	-	-	-	< 0.00050					
Chromium (Cr(III))-Total	mg/L	-	0.0089	-	0.056	< 0.00056			Working guideline status		Working guideline status
Chromium (Cr(VI))-Total	mg/L	-	0.0025	-	0.0015	< 0.00050			Working guideline status		Working guideline status
Cobalt (Co)-Total	mg/L	0.11	0.004	-	-	< 0.00050					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002 5-week discrete sampling averages = 0.00247 (EOP), 0.00151 (US), 0.00108 (DS)	0.00628	Total Cu exceeds short-term BCWQG for MAL.				
Iron (Fe)-Total	mg/L	1	-	-	-	0.252					
Lead (Pb)-Total	mg/L			0.14	0.002 5-week discrete sampling averages = 0.00123 (EOP), 0.000102 (US), 0.00009 (DS)	0.00261					
Lithium (Li)-Total	mg/L	-	-	-	-	< 0.0050					
Magnesium (Mg)-Total	mg/L	-	-	-	-	1.09					
Manganese (Mn)-Total	mg/L	Varies with hardness US1 (background) guideline = 0.82	Varies with hardness US1 (background) guideline = 0.77 5-week discrete sampling averages = 0.0049 (EOP), 0.0035 (US), 0.0032 (DS)	-	-	0.00893		Guideline varies with hardness. The guideline is calculated using the following equation: Guideline = (0.0044 * hardness + 0.605) 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: 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 US1 (background) guideline = N/A	-	-	< 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	-	-	0.0172					
Nickel (Ni)-Total	mg/L	-		-	0.008	< 0.00250					Working guideline status
Phosphorus (P)-Total	mg/L	-	0.005 to 0.015	-	-	< 0.250			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	-	-	-	-	0.943					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00206					
Selenium (Se)-Total	mg/L	-	0.002	-	0.002	< 0.000250			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	-	-	-	-	6.53					
Silver (Ag)-Total	mg/L	Varies with hardness, see note US1 (background) guideline = 0.0001	Varies with hardness, see note US1 (background) guideline = 0.00005	0.003	0.0015	< 0.000050		Varies with hardness Guideline ranges: Hardness ≤ 100: 0.0001 Hardness > 100: 0.003	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	-	-	-	-	3.15					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0434					
Sulfur (S)-Total	mg/L	-	-	-	-	< 2.50					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00100					
Thallium (Tl)-Total	mg/L	-	0.00003 5-week discrete sampling averages = 0.000019 (EOP), <0.000010 (US), 0.00001 (DS)	-	-	< 0.000050			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	-	-	-	-	< 0.00050					
Tin (Sn)-Total	mg/L	-	-	-	-	< 0.00050					
Titanium (Ti)-Total	mg/L	-	-	-	-	0.00811					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00050					
Uranium (U)-Total	mg/L	0.0165	0.0075	-	-	0.0113			Working guideline status		
Vanadium (V)-Total	mg/L	-	0.06	-	0.005	0.00722					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	0.010 5-week discrete sampling averages = 0.0214 (EOP), 0.003 (US), 0.003 (DS)	0.0645	Total Zn exceeds short-term BCWQG for MAL.				
Zirconium (Zr)-Total	mg/L	-	-	-	-	< 0.00100					
Dissolved Metals											
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	57	Although there is no short-term guideline for dissolved Al, the concentration in this sampling even is extremely high and in fact the highest since the start of the WQM program of the Project.				
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00311					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.00535					
Beryllium (Be)-Dissolved	mg/L	-	-	-	-	< 0.000100					
Bismuth (Bi)-Dissolved	mg/L	-	-	-	-	< 0.000250					
Boron (B)-Dissolved	mg/L	-	-	-	-	< 0.050					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note US1 (background) guideline = 0.000067	Varies with hardness, see note US1 (background) guideline = 0.000037 5-week discrete sampling averages = 0.0000118 (EOP), 0.0000068 (US), 0.0000059 (DS)	-	-	< 0.0000250		Guideline is hardness dependent. Guideline is applicable to water hardness between 7.0 and 455 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	-	-	22.4			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	-	-	-	-	< 0.000050					
Chromium (Cr)-Dissolved	mg/L	-	-	-	-	< 0.00250					
Cobalt (Co)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Copper (Cu)-Dissolved	mg/L	Guideline varies with other parameters, see note US1 (background) guideline = 0.0036	Guideline varies with other parameters, see note US1 (background) guideline = 0.0006 5-week discrete sampling averages = 0.00412 (EOP), 0.00116 (US), 0.00083 (DS)	-	-	0.0143	Dissolved Cu exceeds short-term BCWQG for FAL.	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	-	-	-	0.134					
Lead (Pb)-Dissolved	mg/L	-	Guideline varies with DOC and hardness Guideline: 0.00233 5-week discrete sampling average = 0.00193 (EOP), <0.00005 (US), <0.00005 (DS)	-	-	0.00697			Guideline varies with DOC and hardness, refer to BC Water Quality Guidelines for more information. 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	-	-	-	-	< 0.0050					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	1.1					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.0066					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.0172					
Nickel (Ni)-Dissolved	mg/L	Guideline varies with pH, temperature, DOC, and hardness US1 (background) guideline: 0.0205	Guideline varies with pH, temperature, DOC, and hardness US1 (background) guideline: 0.00142 5-week discrete sampling averages = 0.0009 (EOP), 0.000534 (US), 0.000506 (DS)	-	-	< 0.00250		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	-	-	-	-	< 0.250					
Potassium (K)-Dissolved	mg/L	-	-	-	-	0.971					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00206					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	< 0.000250					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	6.52					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000050					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	3.32					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0424					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	< 2.50					
Tellurium (Te)-Dissolved	mg/L	-	-	-	-	< 0.00100					
Thallium (Tl)-Dissolved	mg/L	-	-	-	-	< 0.000050					
Thorium (Th)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Tin (Sn)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Titanium (Ti)-Dissolved	mg/L	-	-	-	-	0.00249					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.0107					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	0.00718					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness US1 (background) guideline = 0.010	Varies with pH, DOC, hardness US1 (background) guideline = 0.0046 5-week discrete sampling average = 0.0217 (EOP), 0.0015 (US), 0.0026 (DS)	-	-	0.069	Dissolved Zn exceeds short-term BCWQG for FAL.	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)/2/1000) 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)/2/1000) Guideline only applies to water with pH between 6.5 and 8.13, DOC between 0.3 and 22.9 mg/L, anmd 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	-	-	-	-	< 0.00100					
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	-	-	-	-	< 0.75					
Dichloropropylene, cis-1,3-	ug/L	-	-	-	-	< 0.50					
Tetrachloroethane, 1,1,1,2-	ug/L	-	-	-	-	< 0.50					
Tetrachloroethane, 1,1,2,2-	ug/L	-	-	-	-	< 0.20					
Trichloroethane, 1,1,2-	ug/L	-	-	-	-	< 0.50					
Trichlorofluoromethane	ug/L	-	-	-	-	< 0.50					
Carbon tetrachloride	ug/L	-	-	-	-	< 0.50					
Chloroethane	ug/L	-	-	-	-	< 0.50					
Dichloroethane, 1,1-	ug/L	-	-	-	-	< 0.50					
Dichloroethane, 1,2-	ug/L	-	100	-	-	< 0.50			Working guideline status		
Dichloroethylene, 1,1-	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		
Dichloropropylene, trans-1,3-	ug/L	-	-	-	-	< 0.50					
Tetrachloroethylene	ug/L	-	110	-	-	< 0.50			Working guideline status		
Trichloroethane, 1,1,1-	ug/L	-	-	-	-	< 0.50					
Trichloroethylene	ug/L	-	21	-	-	< 0.50			Working guideline status		
Vinyl chloride	ug/L	-	-	-	-	< 0.40					
Benzene	ug/L	-	40	-	110	< 0.50			Interim guideline status		Interim guideline status
Ethylbenzene	ug/L	-	200	-	250	< 0.50			Interim guideline status		Interim guideline status
Methyl-tert-butyl ether [MTBE]	ug/L	3400	-	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					
VHw (C6-C10)	ug/L	-	-	-	-	< 100					
LEPHw	ug/L	-	-	-	-	-					
VPHw	ug/L	-	-	-	-	< 100					
HEPHw	ug/L	-	-	-	-	-					
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+j+k)fluoranthene	ug/L	-	-	-	-	< 0.015					
Benzo(g,h,i)perylene	ug/L	-	-	-	-	< 0.010					
Benzo(k)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-	µg/L	-	-	-	1	< 0.010					Guideline is for total methylated napthalene and is presented here for reference
Methylnaphthalene, 2-	µg/L	-	-	-	1	< 0.010					Guideline is for total methylated napthalene and is presented here for reference
Naphthalene	ug/L	-	1	-	1	< 0.050					
Phenanthrene	ug/L	-	0.3	-	-	< 0.020					
Pyrene	ug/L	0.02	-	-	-	< 0.010					
Quinoline	ug/L	-	3.4	-	-	< 0.050		Working guideline status			
Glycols											
Ethylene glycol	mg/L	-	192	-	-	< 5.0					
Propylene glycol, 1,2-	mg/L	-	500	-	-	< 5.0					
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 (**LT**) 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 (**ST**).

[4]Background temperature ranges: Dec-Feb: 0.3-8.0C; 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 guideline.

Parameters Used to Calculate Guidelines

Analyte	Units	Measurement method	Values: WLNG EOP	Values: WLNG US 19-Nov-2024
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations	6.99	7.36
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations	8.4	6.2
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations	8.83	4.02
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	60.9	12.1
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations	0.5	2.93
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations	48.3	7.9
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations	41.2	1.16
Total Suspended Solids	mg/L	Laboratory tested total suspended solids tested at the lab used in guideline calculations	7.2	< 3.0

RESULTS OF RAINBOW TROUT LC50 MULTI-CONCENTRATION

Client : 4800 Triton Environmental Consultants Ltd., Vancouver Job Number: C494210

Client Project Name & Number: EGP EOP 11964-Task 40-phase 3C-4C

Test Result:

96 hrs LC50 % vol/vol (95% CL): < 6.25 (<6.25-6.25) Statistical Method: Binomial

Sample Name : WLNG EOP

Description:	Cloudy colourless			Sample Number:	DAQ694-01
Sample Collected:	Nov 19, 2024 11:16 AM	Sampling Method :	N/A	Site Collection:	N/A
Sample Collected By:	N/A	Volume Received:	4 x ECO10	Avg Temp Arrival:	8 °C Storage: 2-6°C
Sample Received:	Nov 19, 2024 05:03 PM	pH:	6.9	Dissolved Oxygen:	10.9 mg/L
Analysis Start :	Nov 20, 2024 02:30 PM	Temperature :	15 °C	Sample Conductance:	170 µS/cm

Concentration	Temperature (°C)	Temperature (°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	pH	pH	Conductivity (uS/cm)	Mortality (#)	Mortality (#)	Mortality (#)	Mortality (#)
% vol/vol	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	Initial	24 hrs	48 hrs	72 hrs	96 hrs
0	15	15	10.1	10.0	7.7	7.5	55	0	0	0	0
6.25	15	15	10.1	10.1	7.6	7.6	62	9	10	10	10
12.5	15	15	10.1	10.1	7.5	7.7	70	10	10	10	10
25	15	15	10.2	10.1	7.3	7.5	84	10	10	10	10
50	14	15	10.2	10.1	7.2	7.5	114	10	10	10	10
100	15	15	10.3	10.1	6.9	7.3	170	10	10	10	10

Concentration	Mortality (%)	Atypical Behaviour (#)
% vol/vol	96 hrs	96 hrs
0	0	0
6.25	100	0
12.5	100	0
25	100	0
50	100	0
100	100	0

Comments : All fish in the control appeared and behaved normally at 24 hours, 48 hours, 72 hours, and 96 hours into testing. At 24 hours, there were 9 dead fish in the 6.25% concentration, and all other fish in the other concentrations were dead. By end of day on November 21, 2024, all fish in the 6.25% up to the 100% concentration were dead.

Culture/Control/Dilution Water Burnaby Municipal Dechlorinated Water

Hardness: 24 mg/L $CaCO_3$ Other parameters available on request.

Test Conditions Test concentration : 0,6.25,12.5,25,50,100 (% vol/vol)

Organisms per Vessel :	10	Test Temperature :	15 ± 1 °C	Solution Depth :	>15 cm
Total # of Organisms Used :	60	Pre-aeration Time :	120 min.	Rate of Aeration	6.5±1 mL/ (min*L)
Test Volume :	15 L	Vessel Volume :	20L	Test pH Adjusted:	No
Loading Density :	0.3 g/L	Photoperiod :	16:8 (light: dark)		

Test Organism : Rainbow Trout *(Oncorhynchus mykiss)* Source : Aqua Farm

Culture Temperature :	15 ± 2 °C	Weight (Mean) +- SD :	0.5 ± 0.1 g	Length (Mean) +- SD :	3.96 ± 0.32 cm
Culture Water Renewal :	≥ 1L/min/kg fish	Weight (Range) :	0.3 – 0.6 g	Length (Range) :	3.40 – 4.40 cm
Culture Photoperiod :	16:8 (light: dark)			% Mortality within 7 days :	0%
Feeding rate and frequency :	daily: 1-5% biomass of trout.			Acclimation Time:	>14 days

RESULTS OF RAINBOW TROUT LC50 MULTI-CONCENTRATION

Client : 4800 Triton Environmental Consultants Ltd., Vancouver | Job Number: C494210

Client Project Name & Number: EGP EOP 11964-Task 40-phase 3C-4C | Sample Number: DAQ694-01

Reference chemical:	Zinc	Test Date:	Nov 19, 2024
Test Endpoint 96 hrs LC50 (95% confidence interval) :	0.21 (0.19, 0.24)mg/L	Statistical Method :	Untrimmed Spearman-Kärber
Historical Mean LC50 (warning limits) :	0.18 (0.12, 0.27) mg/L	Concentration :	0,0.04,0.08,0.16,0.32,0.64 mg/L

Test Method BV Lab's BBY2SOP-00004 is based on the latest version of EPS 1/RM9 and EPS 1 /RM13.

Method Deviations : None.

Note: The results contained in this report refer only to the testing of the sample submitted. Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation, including the toxicity parameters reported herein. The conductivity, dissolved oxygen and pH data contained within the toxicity report are provided for information purposes and are not individually accredited parameters. This report may not be reproduced, except in its entirety, without the written approval of the laboratory.

Analyst : Donald Lai, Melanie Mazziotti, Ryan Colman

Verified By : Kimberly Tamaki, Scientist, Ecotoxicology Date: Nov 27, 2024 11:08 AM

Woodfibre Site Sample Lab Documentation

CERTIFICATE OF ANALYSIS

Work Order	:	**VA24D1381**		
Client	:	**Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact	:		Account Manager	
Address	:		Address	
Telephone	:		Telephone	
Project	:	11964	Date Samples Received	: 19-Nov-2024 17:45
PO	:	11964-Task40-Phase 3C-4C	Date Analysis Commenced	: 20-Nov-2024
C-O-C number	:	----	Issue Date	: 27-Nov-2024 14:58
Sampler	:	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
- 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*
		Metals, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Administration, Burnaby, British Columbia
		Organics, Burnaby, British Columbia

General Comments

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

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

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

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

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

Unit	*Description*
mg/L	milligrams per litre
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
pH units	pH units
°C	degrees celsius
-	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
DLA	Detection Limit adjusted for required dilution.
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
RRV	Reported result verified by repeat analysis.
SFP	Sample was filtered and preserved at the laboratory.
SUR-ND	Surrogate recovery marginally exceeded ALS DQO. Reported non-detect results for associated samples were deemed to be unaffected.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	WLNG EOP	Trip Blank	----	----	----
				Client sampling date / time	19-Nov-2024 11:16	19-Nov-2024 08:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24D1381-001	VA24D1381-002	----	----	----
					Result	Result	----	----	----
Field Tests									
Conductivity, field	----	EF001/VA	0.10	µS/cm	179.00	----	----	----	----
pH, field	----	EF001/VA	0.10	pH units	6.99	----	----	----	----
Temperature, field	----	EF001/VA	0.10	°C	8.40	----	----	----	----
Physical Tests									
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	60.5	----	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	60.9	<0.60	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	285 RRV	<10	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	7.2	<3.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	48.3	<2.0	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0080	<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	41.2	<0.50	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.072	<0.020	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.0139	<0.0050	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	<0.0010	<0.0010	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	5.62	<0.30	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	<0.50 SFP	----	----	----	----
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	Trip Blank	----	----	----
					Client sampling date / time	19-Nov-2024 11:16	19-Nov-2024 08:00	----	----	----
						VA24D1381-001	VA24D1381-002	----	----	----
						Result	Result	----	----	----
Total Sulfides										
Sulfide, un-ionized (as H2S), from total	7783-06-4	EC395/VA	0.0015	mg/L		<0.0015	----	----	----	----
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L		<0.0016	<0.0016	----	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L		63.8	<0.0030	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		<0.00050 DLA	<0.00010	----	----	----
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00313	<0.00010	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.00597	<0.00010	----	----	----
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		<0.000250 DLA	<0.000050	----	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L		<0.050 DLA	<0.010	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		<0.0000250 DLA	<0.0000050	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		22.6	<0.050	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		<0.000050 DLA	<0.000010	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		<0.00250 DLA	<0.00050	----	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		<0.00050 DLA	<0.00010	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00628	<0.00050	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.252	<0.010	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.00261	<0.000050	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		<0.0050 DLA	<0.0010	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		1.09	<0.0050	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.00893	<0.00010	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	Trip Blank	----	----	----
					Client sampling date / time	19-Nov-2024 11:16	19-Nov-2024 08:00	----	----	----
						VA24D1381-001	VA24D1381-002	----	----	----
						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		0.0172	<0.000050	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		<0.00250 DLA	<0.00050	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.250 DLA	<0.050	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		0.943	<0.050	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00206	<0.00020	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		<0.000250 DLA	<0.000050	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		6.53	<0.10	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000050 DLA	<0.000010	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		3.15	<0.050	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0434	<0.00020	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		<2.50 DLA	<0.50	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00100 DLA	<0.00020	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		<0.000050 DLA	<0.000010	----	----	----
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		<0.00050 DLA	<0.00010	----	----	----
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		<0.00050 DLA	<0.00010	----	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		0.00811	<0.00030	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		<0.00050 DLA	<0.00010	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.0113	<0.000010	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		0.00722	<0.00050	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		0.0645	<0.0030	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	Trip Blank	----	----	----
					Client sampling date / time	19-Nov-2024 11:16	19-Nov-2024 08:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24D1381-001	VA24D1381-002	----	----	----
						Result	Result	----	----	----
Total Metals										
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00100 DLA	<0.00020	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		57.0	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		<0.00050 DLA	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00311	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00535	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L		<0.000100	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		<0.000250 DLA	----	----	----	----
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		<0.050 DLA	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		<0.0000250 DLA	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		22.4	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		<0.000050 DLA	----	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		<0.00250 DLA	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		<0.00050 DLA	----	----	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		0.0143 DTC	----	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.134	----	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		0.00697 DTC	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		<0.0050 DLA	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		1.10	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00660	----	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	Trip Blank	----	----	----
					Client sampling date / time	19-Nov-2024 11:16	19-Nov-2024 08:00	----	----	----
						VA24D1381-001	VA24D1381-002	----	----	----
						Result	Result	----	----	----
Dissolved Metals										
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.0172	----	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		<0.00250 DLA	----	----	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.250 DLA	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		0.971	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00206	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		<0.000250 DLA	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		6.52	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000050 DLA	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		3.32	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0424	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		<2.50 DLA	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00100 DLA	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		<0.000050 DLA	----	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00050 DLA	----	----	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00050 DLA	----	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		0.00249	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		<0.00050 DLA	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.0107	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		0.00718	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0690	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00100 DLA	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	Trip Blank	----	----	----
					Client sampling date / time	19-Nov-2024 11:16	19-Nov-2024 08:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24D1381-001	VA24D1381-002	----	----	----
						Result	Result	----	----	----
Dissolved Metals										
Dissolved mercury filtration location	----	EP509/VA	-	-		Field	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Laboratory	----	----	----	----
Speciated Metals										
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/VA	0.00050	mg/L		<0.00056	<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	Trip Blank	----	----	----
					Client sampling date / time	19-Nov-2024 11:16	19-Nov-2024 08:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24D1381-001	VA24D1381-002	----	----	----
						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	Trip Blank	----	----	----
					Client sampling date / time	19-Nov-2024 11:16	19-Nov-2024 08:00	----	----	----
						VA24D1381-001	VA24D1381-002	----	----	----
						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		<0.50	<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	%		87.7	79.7	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%		126	121	----	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%		95.0	94.6	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611C/VA	1.0	%		100	100	----	----	----
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	Trip Blank	----	----	----
					Client sampling date / time	19-Nov-2024 11:16	19-Nov-2024 08:00	----	----	----
						VA24D1381-001	VA24D1381-002	----	----	----
						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	%		95.0	96.7	----	----	----
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%		97.5	95.2	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	Trip Blank	----	----	----
					Client sampling date / time	19-Nov-2024 11:16	19-Nov-2024 08:00	----	----	----
						VA24D1381-001	VA24D1381-002	----	----	----
						Result	Result	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%		95.5	96.2	----	----	----
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	%		96.6	69.6 SUR-ND	----	----	----

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

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24D1381**	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	: 19-Nov-2024 17:45
PO	: 11964-Task40-Phase 3C-4C	Issue Date	: 27-Nov-2024 14:58
C-O-C number	: ----		
Sampler	: 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.
- Test sample Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.

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

- No Quality Control Sample Frequency Outliers occur.

Regular Sample Surrogates

Sub-Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Result	Limits	Comment
Samples Submitted							
Glycols Surrogates	VA24D1381-002	Trip Blank	Propanediol, 1,3-	504-63-2	69.6 %	70.0-130 %	Recovery less than lower data quality objective

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	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	23-Nov-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (lab preserved) Trip Blank	E298	19-Nov-2024	20-Nov-2024	3 days	1 days	✓	21-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE Trip Blank	E235.Br-L	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	21-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG EOP	E235.Br-L	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	21-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE Trip Blank	E235.Cl	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	21-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG EOP	E235.Cl	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	21-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE Trip Blank	E235.F	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	21-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 : Fluoride in Water by IC										
HDPE										
WLNG EOP	E235.F	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	21-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
Trip Blank	E235.NO3-L	19-Nov-2024	21-Nov-2024	3 days	2 days	✓	21-Nov-2024	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
WLNG EOP	E235.NO3-L	19-Nov-2024	21-Nov-2024	3 days	2 days	✓	21-Nov-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
Trip Blank	E235.NO2-L	19-Nov-2024	21-Nov-2024	3 days	2 days	✓	21-Nov-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
WLNG EOP	E235.NO2-L	19-Nov-2024	21-Nov-2024	3 days	2 days	✓	21-Nov-2024	3 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
Trip Blank	E235.SO4	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	21-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
WLNG EOP	E235.SO4	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	21-Nov-2024	28 days	2 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
WLNG EOP	E509	19-Nov-2024	22-Nov-2024	28 days	3 days	✓	22-Nov-2024	28 days	3 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
WLNG EOP	E421	19-Nov-2024	21-Nov-2024	180 days	2 days	✓	22-Nov-2024	180 days	3 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
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	19-Nov-2024	----	----	----		20-Nov-2024	----	1 days	
Glycols : Glycols (4 analytes) by GC-FID										
Glass vial										
Trip Blank	E680E	19-Nov-2024	21-Nov-2024	7 days	2 days	✓	21-Nov-2024	40 days	0 days	✓
Glycols : Glycols (4 analytes) by GC-FID										
Glass vial										
WLNG EOP	E680E	19-Nov-2024	21-Nov-2024	7 days	2 days	✓	21-Nov-2024	40 days	0 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate)										
Trip Blank	E601A	19-Nov-2024	20-Nov-2024	14 days	1 days	✓	20-Nov-2024	40 days	1 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate)										
WLNG EOP	E601A	19-Nov-2024	20-Nov-2024	14 days	1 days	✓	20-Nov-2024	40 days	1 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate)										
Trip Blank	E581.VH+F1	19-Nov-2024	22-Nov-2024	14 days	3 days	✓	22-Nov-2024	14 days	3 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate)										
WLNG EOP	E581.VH+F1	19-Nov-2024	22-Nov-2024	14 days	3 days	✓	22-Nov-2024	14 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (lab preserved)										
WLNG EOP	E358-L	19-Nov-2024	25-Nov-2024	3 days	6 days	× EHT	25-Nov-2024	28 days	0 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
Trip Blank	E290	19-Nov-2024	21-Nov-2024	14 days	2 days	✓	21-Nov-2024	14 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG EOP	E290	19-Nov-2024	21-Nov-2024	14 days	2 days	✓	21-Nov-2024	14 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
Trip Blank	E162	19-Nov-2024	----	----	----		25-Nov-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
WLNG EOP	E162	19-Nov-2024	----	----	----		25-Nov-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
Trip Blank	E160	19-Nov-2024	----	----	----		25-Nov-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
WLNG EOP	E160	19-Nov-2024	----	----	----		25-Nov-2024	7 days	6 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate)										
Trip Blank	E641A	19-Nov-2024	20-Nov-2024	14 days	1 days	✓	20-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	E641A	19-Nov-2024	20-Nov-2024	14 days	1 days	✓	20-Nov-2024	40 days	0 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
Opaque HDPE - total (sodium hydroxide)										
Trip Blank	E532	19-Nov-2024	----	----	----		19-Nov-2024	28 days	1 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
Opaque HDPE - total (sodium hydroxide)										
WLNG EOP	E532	19-Nov-2024	----	----	----		19-Nov-2024	28 days	1 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
Trip Blank	E508	19-Nov-2024	22-Nov-2024	28 days	3 days	✓	22-Nov-2024	28 days	3 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
WLNG EOP	E508	19-Nov-2024	22-Nov-2024	28 days	3 days	✓	22-Nov-2024	28 days	3 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
Trip Blank	E420	19-Nov-2024	25-Nov-2024	180 days	6 days	✓	26-Nov-2024	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
WLNG EOP	E420	19-Nov-2024	25-Nov-2024	180 days	6 days	✓	26-Nov-2024	180 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
Trip Blank	E395	19-Nov-2024	----	----	----		20-Nov-2024	7 days	1 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG EOP	E395	19-Nov-2024	----	----	----		20-Nov-2024	7 days	1 days	✓
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
Trip Blank	E611C	19-Nov-2024	22-Nov-2024	14 days	3 days	✓	22-Nov-2024	14 days	3 days	✓
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
WLNG EOP	E611C	19-Nov-2024	22-Nov-2024	14 days	3 days	✓	22-Nov-2024	14 days	3 days	✓

Legend & Qualifier Definitions

EHT: Exceeded ALS recommended hold time prior to analysis.

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	1776581	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1774453	2	31	6.4	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1776589	1	14	7.1	5.0	✓
Chloride in Water by IC	E235.Cl	1776588	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1779226	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1775143	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1777932	1	7	14.2	5.0	✓
Fluoride in Water by IC	E235.F	1776587	1	15	6.6	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1776852	1	18	5.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1776585	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1776586	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1776584	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1782601	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1774433	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1779221	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1775129	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1775322	1	4	25.0	5.0	✓
TSS by Gravimetry	E160	1782597	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1778924	1	17	5.8	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1778926	1	10	10.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1776581	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1774453	2	31	6.4	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1774509	1	4	25.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1776589	1	14	7.1	5.0	✓
Chloride in Water by IC	E235.Cl	1776588	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1779226	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1775143	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1777932	1	7	14.2	5.0	✓
Fluoride in Water by IC	E235.F	1776587	1	15	6.6	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1776852	1	18	5.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1776585	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1776586	1	20	5.0	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1774510	1	4	25.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1776584	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1782601	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	1774433	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1779221	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1775129	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1775322	1	4	25.0	5.0	✓
TSS by Gravimetry	E160	1782597	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1778924	1	17	5.8	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1778926	1	10	10.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1776581	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1774453	2	31	6.4	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1774509	1	4	25.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1776589	1	14	7.1	5.0	✓
Chloride in Water by IC	E235.Cl	1776588	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1779226	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1775143	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1777932	1	7	14.2	5.0	✓
Fluoride in Water by IC	E235.F	1776587	1	15	6.6	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1776852	1	18	5.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1776585	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1776586	1	20	5.0	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1774510	1	4	25.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1776584	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1782601	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1774433	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1779221	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1775129	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1775322	1	4	25.0	5.0	✓
TSS by Gravimetry	E160	1782597	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1778924	1	17	5.8	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1778926	1	10	10.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1774453	2	31	6.4	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1776589	1	14	7.1	5.0	✓
Chloride in Water by IC	E235.Cl	1776588	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1779226	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1775143	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1777932	1	7	14.2	5.0	✓
Fluoride in Water by IC	E235.F	1776587	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1776585	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	1776586	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1776584	1	15	6.6	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1774433	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1779221	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1775129	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1775322	1	4	25.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1778924	1	17	5.8	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1778926	1	10	10.0	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
TSS by Gravimetry	E160 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 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 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of 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 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 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Total Hexavalent Chromium (Cr VI) by IC	E532 ALS Environmental - Vancouver	Water	APHA 3500-Cr C (Ion Chromatography)	Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection. 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 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. 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 ALS Environmental - Vancouver	Water	BC MOE Lab Manual	Sample extracts are analyzed by GC-FID for BC hydrocarbon fractions.
VOCs (BC List) by Headspace GC-MS	E611C ALS Environmental - Vancouver	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. 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 ALS Environmental - Vancouver	Water	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by large volume injection (LVI) GC-MS.
Glycols (4 analytes) by GC-FID	E680E ALS Environmental - Vancouver	Water	EPA 8015D (mod)	Derivatized glycols are analyzed by GC-FID.
Dissolved Hardness (Calculated)	EC100 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 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 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 ALS Environmental - Vancouver	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
VPH: VH-BTEX-Styrene	EC580A 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 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 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 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Vancouver	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID.

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

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **VA24D1381**	Page	: 1 of 23
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 19-Nov-2024 17:45
PO	: 11964-Task40-Phase 3C-4C	Date Analysis Commenced	: 19-Nov-2024
C-O-C number	: ----	Issue Date	: 27-Nov-2024 14:58
Sampler	: 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*
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Administration, Burnaby, British Columbia
		Vancouver Organics, Burnaby, British Columbia

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **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: 1776581)											
VA24D1397-007	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1782597)											
KS2404911-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1782601)											
KS2404911-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	144	143	1	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1774453)											
VA24D1033-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0461	0.0442	0.0018	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1776584)											
VA24D1381-001	WLNG EOP	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	5.62	6.74	18.1%	20%	----
Anions and Nutrients (QC Lot: 1776585)											
VA24D1381-001	WLNG EOP	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0139	0.0133	0.0006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1776586)											
VA24D1381-001	WLNG EOP	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: 1776587)											
VA24D1381-001	WLNG EOP	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.072	0.094	0.022	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1776588)											
VA24D1381-001	WLNG EOP	Chloride	16887-00-6	E235.Cl	0.50	mg/L	41.2	40.6	1.59%	20%	----
Anions and Nutrients (QC Lot: 1776589)											
VA24D1381-001	WLNG EOP	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1777929)											
VA24D1381-001	WLNG EOP	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0080	0.0078	0.0002	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1777932)											
VA24D1381-001	WLNG EOP	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Sulfides (QC Lot: 1775322)											
VA24D1381-001	WLNG EOP	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
Total Metals (QC Lot: 1775129)											
VA24D1286-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0115	0.0118	0.0002	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00073	0.00077	0.00004	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0912	0.0909	0.299%	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: 1775129) - continued											
VA24D1286-001	Anonymous	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	0.046	0.038	0.008	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000100	mg/L	<0.0000100	<0.0000100	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	160	160	0.291%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000012	0.000013	0.0000010	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00121	0.00122	0.000008	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.022	0.022	0.0003	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	0.0098	0.0097	0.00010	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.100	mg/L	51.2	52.6	2.65%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0238	0.0238	0.0396%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0396	0.0395	0.288%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.300	mg/L	<0.300	<0.300	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	11.9	12.1	1.64%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00164	0.00166	0.00001	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000519	0.000513	1.23%	20%	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	13.5	13.3	1.40%	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	75.5	74.9	0.723%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	1.06	1.06	0.170%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	189	186	1.55%	20%	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	0.00021	0.00001	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	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.00380	0.00374	1.47%	20%	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00208	0.00211	0.00003	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 1775129) - continued											
VA24D1286-001	Anonymous	Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1779221)											
VA24D1326-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1775143)											
VA24D1370-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.479	0.495	3.25%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00012	0.00012	0.000003	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00213	0.00210	1.18%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00284	0.00277	2.50%	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	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.010	<0.010	0.0003	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	0.0000244	0.0000262	0.0000017	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	3.74	3.74	0.140%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000028	0.000028	0.0000008	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	0.00089	0.00095	0.00006	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00037	0.00037	0.000004	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00048	0.00055	0.00007	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.855	0.889	3.93%	20%	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.00116	0.00116	0.118%	20%	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0015	0.0014	0.00005	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	3.64	3.75	2.79%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0137	0.0140	2.32%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000066	0.000072	0.000006	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00109	0.00111	0.00002	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.300	mg/L	<0.300	<0.300	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.089	0.090	0.001	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00028	0.00031	0.00002	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.51	3.56	1.48%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.80	3.86	1.69%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0379	0.0387	2.05%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	4.64	4.50	0.14	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 1775143) - continued											
VA24D1370-001	Anonymous	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	<0.00040	0.00035	0.00005	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	0.0100	mg/L	0.0136	0.0135	0.00014	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	0.000169	0.000170	0.614%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	0.00241	0.00248	0.00007	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0024	0.0027	0.0003	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1779226)											
FJ2403514-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1774433)											
VA24D1211-001	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: 1778926)											
VA24D0813-014	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: 1778926) - continued											
VA24D0813-014	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: 1778924)											
FJ2403515-001	Anonymous	VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----
Glycols (QC Lot: 1776852)											
VA24D1295-001	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: 1776581)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1782597)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1782601)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1774453)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1776584)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1776585)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1776586)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1776587)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1776588)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1776589)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1777929)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1777932)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1775322)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1775129)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1775129) - continued						
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	----
Total Metals (QCLot: 1779221)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1775143)						
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	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1775143) - continued						
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: 1779226)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1774433)						
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	<0.00050	----
Volatile Organic Compounds (QCLot: 1778926)						
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	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	<0.20	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1778926) - continued						
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: 1774509)						
EPH (C10-C19)	----	E601A	250	µg/L	<250	----
EPH (C19-C32)	----	E601A	250	µg/L	<250	----
Hydrocarbons (QCLot: 1778924)						
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1774510)						
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Glycols (QCLot: 1776852)						
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: 1776581)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1782597)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	102	85.0	115	----
Physical Tests (QCLot: 1782601)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	92.2	85.0	115	----
Anions and Nutrients (QCLot: 1774453)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 1776584)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1776585)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.2	90.0	110	----
Anions and Nutrients (QCLot: 1776586)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	96.8	90.0	110	----
Anions and Nutrients (QCLot: 1776587)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	96.9	90.0	110	----
Anions and Nutrients (QCLot: 1776588)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.1	90.0	110	----
Anions and Nutrients (QCLot: 1776589)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 1777929)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.1	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1777932)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	94.8	80.0	120	----
Total Sulfides (QCLot: 1775322)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	108	80.0	120	----
Total Metals (QCLot: 1775129)									
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	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: 1775129) - continued									
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	102	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	101	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	99.0	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	98.5	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	98.9	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	107	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	104	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	101	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	94.2	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	103	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	110	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	114	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	103	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	103	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	110	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	95.7	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	103	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	103	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	105	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	100	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	100	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	104	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	97.6	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	107	80.0	120	----
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	101	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: 1775129) - continued									
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Total Metals (QCLot: 1779221)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	95.3	80.0	120	----
Dissolved Metals (QCLot: 1775143)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	93.7	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	100	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	94.6	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	97.5	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	98.4	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	95.0	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	97.9	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	97.9	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	100	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	98.5	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	94.9	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	99.1	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	96.4	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	96.9	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	93.2	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	98.1	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	96.2	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	102	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	92.6	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	97.1	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	103	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	93.2	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	100	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	88.7	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	98.2	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
Dissolved Metals (QCLot: 1775143) - continued									
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	93.5	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	99.4	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	96.8	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	95.4	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	96.8	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	95.9	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	91.2	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	98.7	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	95.3	80.0	120	----
Speciated Metals (QCLot: 1774433)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.25 mg/L	100	80.0	120	----
Volatile Organic Compounds (QCLot: 1778926)									
Benzene	71-43-2	E611C	0.5	µg/L	100 µg/L	97.3	70.0	130	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	100 µg/L	96.9	70.0	130	----
Bromoform	75-25-2	E611C	0.5	µg/L	100 µg/L	92.9	70.0	130	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	100 µg/L	98.8	70.0	130	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	100 µg/L	99.7	70.0	130	----
Chloroethane	75-00-3	E611C	0.5	µg/L	100 µg/L	110	60.0	140	----
Chloroform	67-66-3	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Chloromethane	74-87-3	E611C	5	µg/L	100 µg/L	98.2	60.0	140	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	100 µg/L	94.4	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	100 µg/L	99.5	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	100 µg/L	85.9	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	100 µg/L	95.6	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	100 µg/L	100	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	100 µg/L	98.4	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Dichloromethane	75-09-2	E611C	1	µg/L	100 µg/L	102	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	100 µg/L	97.2	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	100 µg/L	80.5	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	100 µg/L	81.4	70.0	130	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	100 µg/L	94.3	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: 1778926) - continued									
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	100 µg/L	103	70.0	130	----
Styrene	100-42-5	E611C	0.5	µg/L	100 µg/L	94.6	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	100 µg/L	99.3	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	100 µg/L	91.5	70.0	130	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	100 µg/L	97.1	70.0	130	----
Toluene	108-88-3	E611C	0.4	µg/L	100 µg/L	96.4	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	100 µg/L	97.3	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	100 µg/L	97.4	70.0	130	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	100 µg/L	97.9	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	99.9	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	95.3	70.0	130	----
Hydrocarbons (QCLot: 1774509)									
EPH (C10-C19)	----	E601A	250	µg/L	6490 µg/L	109	70.0	130	----
EPH (C19-C32)	----	E601A	250	µg/L	3360 µg/L	95.3	70.0	130	----
Hydrocarbons (QCLot: 1778924)									
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	84.3	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1774510)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.5 µg/L	109	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.5 µg/L	115	60.0	130	----
Acridine	260-94-6	E641A	0.01	µg/L	0.5 µg/L	102	60.0	130	----
Anthracene	120-12-7	E641A	0.01	µg/L	0.5 µg/L	116	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.5 µg/L	114	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	0.5 µg/L	106	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	0.5 µg/L	106	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.5 µg/L	101	60.0	130	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	0.5 µg/L	104	60.0	130	----
Chrysene	218-01-9	E641A	0.01	µg/L	0.5 µg/L	119	60.0	130	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	0.5 µg/L	114	60.0	130	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	0.5 µg/L	107	60.0	130	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.5 µg/L	104	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.5 µg/L	106	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.5 µg/L	104	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: 1774510) - continued									
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.5 µg/L	116	60.0	130	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.5 µg/L	109	50.0	130	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	0.5 µg/L	111	60.0	130	----
Pyrene	129-00-0	E641A	0.01	µg/L	0.5 µg/L	107	60.0	130	----
Quinoline	91-22-5	E641A	0.05	µg/L	0.5 µg/L	112	60.0	130	----
Glycols (QCLot: 1776852)									
Diethylene glycol	111-46-6	E680E	5	mg/L	25 mg/L	97.0	70.0	130	----
Ethylene glycol	107-21-1	E680E	5	mg/L	25 mg/L	95.4	70.0	130	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	25 mg/L	94.7	70.0	130	----
Triethylene glycol	112-27-6	E680E	5	mg/L	25 mg/L	95.5	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: 1774453)										
VA24D1033-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0931 mg/L	0.1 mg/L	93.1	75.0	125	----
Anions and Nutrients (QCLot: 1776584)										
VA24D1381-002	Trip Blank	Sulfate (as SO4)	14808-79-8	E235.SO4	107 mg/L	100 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 1776585)										
VA24D1381-002	Trip Blank	Nitrate (as N)	14797-55-8	E235.NO3-L	2.68 mg/L	2.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 1776586)										
VA24D1381-002	Trip Blank	Nitrite (as N)	14797-65-0	E235.NO2-L	0.522 mg/L	0.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1776587)										
VA24D1381-002	Trip Blank	Fluoride	16984-48-8	E235.F	0.907 mg/L	1 mg/L	90.7	75.0	125	----
Anions and Nutrients (QCLot: 1776588)										
VA24D1381-002	Trip Blank	Chloride	16887-00-6	E235.Cl	107 mg/L	100 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 1776589)										
VA24D1381-002	Trip Blank	Bromide	24959-67-9	E235.Br-L	0.564 mg/L	0.5 mg/L	113	75.0	125	----
Anions and Nutrients (QCLot: 1777929)										
VA24D1393-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0942 mg/L	0.1 mg/L	94.2	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1777932)										
VA24D1393-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	4.97 mg/L	5 mg/L	99.4	70.0	130	----
Total Sulfides (QCLot: 1775322)										
VA24D1381-002	Trip Blank	Sulfide, total (as S)	18496-25-8	E395	0.196 mg/L	0.2 mg/L	98.0	75.0	125	----
Total Metals (QCLot: 1775129)										
VA24D1286-002	Anonymous	Aluminum, total	7429-90-5	E420	0.199 mg/L	0.2 mg/L	99.6	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0187 mg/L	0.02 mg/L	93.7	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0209 mg/L	0.02 mg/L	104	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0366 mg/L	0.04 mg/L	91.6	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00931 mg/L	0.01 mg/L	93.1	70.0	130	----
		Boron, total	7440-42-8	E420	0.089 mg/L	0.1 mg/L	89.3	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00387 mg/L	0.004 mg/L	96.9	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00976 mg/L	0.01 mg/L	97.6	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0382 mg/L	0.04 mg/L	95.4	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0184 mg/L	0.02 mg/L	92.2	70.0	130	----
		Copper, total	7440-50-8	E420	0.0182 mg/L	0.02 mg/L	91.3	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1775129) - continued										
VA24D1286-002	Anonymous	Iron, total	7439-89-6	E420	1.86 mg/L	2 mg/L	93.0	70.0	130	----
		Lead, total	7439-92-1	E420	0.0185 mg/L	0.02 mg/L	92.5	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0910 mg/L	0.1 mg/L	91.0	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	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	0.0366 mg/L	0.04 mg/L	91.6	70.0	130	----
		Phosphorus, total	7723-14-0	E420	10.2 mg/L	10 mg/L	102	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	----	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0425 mg/L	0.04 mg/L	106	70.0	130	----
		Silicon, total	7440-21-3	E420	ND mg/L	----	ND	70.0	130	----
		Silver, total	7440-22-4	E420	0.00370 mg/L	0.004 mg/L	92.5	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	0.0406 mg/L	0.04 mg/L	102	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00368 mg/L	0.004 mg/L	92.0	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0188 mg/L	0.02 mg/L	94.0	70.0	130	----
		Tin, total	7440-31-5	E420	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0380 mg/L	0.04 mg/L	95.0	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		Uranium, total	7440-61-1	E420	ND mg/L	----	ND	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0991 mg/L	0.1 mg/L	99.1	70.0	130	----
		Zinc, total	7440-66-6	E420	0.385 mg/L	0.4 mg/L	96.3	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0389 mg/L	0.04 mg/L	97.3	70.0	130	----
Total Metals (QCLot: 1779221)										
VA24D1327-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000991 mg/L	0 mg/L	99.1	70.0	130	----
Dissolved Metals (QCLot: 1775143)										
VA24D1370-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.188 mg/L	0.2 mg/L	94.3	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0199 mg/L	0.02 mg/L	99.3	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0192 mg/L	0.02 mg/L	96.1	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0396 mg/L	0.04 mg/L	98.9	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00898 mg/L	0.01 mg/L	89.8	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.095 mg/L	0.1 mg/L	94.9	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00398 mg/L	0.004 mg/L	99.4	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.0101 mg/L	0.01 mg/L	101	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0393 mg/L	0.04 mg/L	98.3	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0189 mg/L	0.02 mg/L	94.6	70.0	130	----
		Iron, dissolved	7439-89-6	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: 1775143) - continued										
VA24D1370-002	Anonymous	Lead, dissolved	7439-92-1	E421	0.0197 mg/L	0.02 mg/L	98.7	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0953 mg/L	0.1 mg/L	95.3	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	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0385 mg/L	0.04 mg/L	96.2	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	10.3 mg/L	10 mg/L	103	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.85 mg/L	4 mg/L	96.3	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0361 mg/L	0.04 mg/L	90.2	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	ND mg/L	----	ND	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00330 mg/L	0.004 mg/L	82.4	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	17.3 mg/L	20 mg/L	86.7	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0339 mg/L	0.04 mg/L	84.8	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00393 mg/L	0.004 mg/L	98.3	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0185 mg/L	0.02 mg/L	92.5	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	ND mg/L	----	ND	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0191 mg/L	0.02 mg/L	95.5	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00397 mg/L	0.004 mg/L	99.3	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0967 mg/L	0.1 mg/L	96.7	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.390 mg/L	0.4 mg/L	97.6	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
Dissolved Metals (QCLot: 1779226)										
FJ2403514-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000958 mg/L	0 mg/L	95.8	70.0	130	----
Speciated Metals (QCLot: 1774433)										
VA24D1211-002	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.256 mg/L	0.25 mg/L	102	70.0	130	----
Volatile Organic Compounds (QCLot: 1778926)										
VA24D0953-001	Anonymous	Benzene	71-43-2	E611C	95.1 µg/L	100 µg/L	95.1	60.0	140	----
		Bromodichloromethane	75-27-4	E611C	97.4 µg/L	100 µg/L	97.4	60.0	140	----
		Bromoform	75-25-2	E611C	94.9 µg/L	100 µg/L	94.9	60.0	140	----
		Carbon tetrachloride	56-23-5	E611C	94.8 µg/L	100 µg/L	94.8	60.0	140	----
		Chlorobenzene	108-90-7	E611C	97.5 µg/L	100 µg/L	97.5	60.0	140	----
		Chloroethane	75-00-3	E611C	102 µg/L	100 µg/L	102	50.0	150	----
		Chloroform	67-66-3	E611C	100 µg/L	100 µg/L	100	60.0	140	----
		Chloromethane	74-87-3	E611C	86.1 µg/L	100 µg/L	86.1	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	97.7 µg/L	100 µg/L	97.7	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	98.9 µg/L	100 µg/L	98.9	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	99.2 µg/L	100 µg/L	99.2	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611C	95.7 µg/L	100 µg/L	95.7	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: 1778926) - continued										
VA24D0953-001	Anonymous	Dichloroethane, 1,2-	107-06-2	E611C	96.6 µg/L	100 µg/L	96.6	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611C	94.2 µg/L	100 µg/L	94.2	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	96.9 µg/L	100 µg/L	96.9	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611C	105 µg/L	100 µg/L	105	60.0	140	----
		Dichloromethane	75-09-2	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611C	96.6 µg/L	100 µg/L	96.6	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	83.6 µg/L	100 µg/L	83.6	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	84.9 µg/L	100 µg/L	84.9	60.0	140	----
		Ethylbenzene	100-41-4	E611C	90.7 µg/L	100 µg/L	90.7	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Styrene	100-42-5	E611C	93.1 µg/L	100 µg/L	93.1	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	97.8 µg/L	100 µg/L	97.8	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	92.3 µg/L	100 µg/L	92.3	60.0	140	----
		Tetrachloroethylene	127-18-4	E611C	91.0 µg/L	100 µg/L	91.0	60.0	140	----
		Toluene	108-88-3	E611C	93.4 µg/L	100 µg/L	93.4	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	93.7 µg/L	100 µg/L	93.7	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	98.5 µg/L	100 µg/L	98.5	60.0	140	----
		Trichloroethylene	79-01-6	E611C	94.8 µg/L	100 µg/L	94.8	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611C	96.8 µg/L	100 µg/L	96.8	50.0	150	----
		Vinyl chloride	75-01-4	E611C	88.1 µg/L	100 µg/L	88.1	50.0	150	----
		Xylene, m+p-	179601-23-1	E611C	191 µg/L	200 µg/L	95.6	60.0	140	----
		Xylene, o-	95-47-6	E611C	91.8 µg/L	100 µg/L	91.8	60.0	140	----
Hydrocarbons (QCLot: 1778924)										
FJ2403515-003	Anonymous	VHw (C6-C10)	----	E581.VH+F1	5160 µg/L	6310 µg/L	81.7	60.0	140	----

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number: 20 -

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Environmental Division Vancouver

Work Order Reference

VA24D1381

Telephone : + 1 604 253 4188

Report To	Contact and company name below will appear on the final report	Reports / Recipients	Turnaround Time (TAT) Requested
Company:	Triton Environmental	Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	☑ Routine [R] if received by 3pm M-F - no surcharges apply
Contact:		Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A	☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge
Phone:		☐ Compare Results to Criteria on Report - provide details below if box checked	☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge
		Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge
Street:		Email 1 or Fax	☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge
City/Province:		Email 2	Same day [E2] if received by 10am M-S - 200% rush surc
Postal Code:		Email 3	Additional fees may apply to rush requests on wee
Invoice To	Same as Report To ☐ YES ☑ NO		Date and Time Required for all E&P TATs:
	Copy of Invoice with Report ☐ YES ☑ NO	Select Invoice	For all tests with rush TATs requested, please contact your AM to confirm availability.
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information			
ALS Account # / Quote #:	VA23-TRIT100-012	AFE/Cost Center:	
Job #:	11964	Major/Minor Code:	
PO / AFE:	11964 - Task 40 - Phase 3C-4C	Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (ALS use only):	VD1381	ALS Contact:	

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	P	F/P							
	WLNG EOP	19-Nov-24	11:16	Water	15	R	R	R	R	R	R	R	R	R	R	R	R					
	pH: 6.99 cond: 179 temp: 8.4																					
	Trip Blank	19-Nov-24	8:00	Water	12	R		R	R	R	R	R	R	R		R	R					

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	*Polymer in water prevents field filtration of dissolved metals and DOC, neither were preserved or filtered.
Are samples for human consumption/ use? ☐ YES ☑ NO	ESDAT EDD to ESdat_CA+tritonenv@ESdatLabSync.net
	*Dissolved Mercury was filtered + preserved.

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		
				4	7	6.5

SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Date: Nov 19 2024	Time: 17:40	Received by:	Date:	Time:	Received by: RJ	Date: NOV 19	Time: 17:45

Woodfibre Site WTP Discharge Field Notes and Logs

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 18th to November 24th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **December 2, 2024**

Table of Contents:

1. Executive Summary and Notes
2. Discharge Parameter Summary
3. WTP Calibration Log
4. DS sonde Log: pH

Appendices:

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

1. Executive Summary and Field Notes:

From November 19 to November 22, the injection of chemicals into the Water Treatment Plant (WTP) caused the discharge water's pH to fall below the regulatory thresholds. Downstream sondes data indicates this discharge water did not lead to a pH reduction below regulatory thresholds in the receiving environment. The key other parameters, including temperature, 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 18th was 25,267 m^3.

Daily Volume Summary:

Table 1: Discharge Volumes Daily Summary

Date	Location	Volume (m3)	Comments
November 18	WoodFibre (WF)	372	None
November 19	WF	369	None
November 20	WF	397	None
November 21	WF	309	None
November 22	WF	380	None
November 23	WF	414	None
November 24	WF	387	None
	Total	2,628	None

2. Discharge Parameter Summary:

Table 2: Discharge Parameter Summary

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/18/2024	0:15:00	7.7	0.828	0	25,267	13.4	114
11/18/2024	1:15:00	7.6	0.809	0	25,287	14.5	114
11/18/2024	3:45:00	7.5	0.140	0.3	25,291	14.9	249
11/18/2024	4:00:00	7.5	0.805	0.1	25,302	15	251
11/18/2024	4:15:00	7.5	0.786	0.1	25,314	14.8	251
11/18/2024	4:30:00	7.5	0.314	0	25,325	15	248
11/18/2024	4:45:00	7.5	0.832	0	25,334	15.2	248
11/18/2024	5:00:00	7.5	0.813	0	25,346	15.2	250
11/18/2024	6:15:00	7.5	0.801	0	25,361	15	250
11/18/2024	7:30:00	7.5	0.782	0	25,378	14.1	251
11/18/2024	9:30:00	7.5	0.805	0	25,383	14.8	251
11/18/2024	9:45:00	7.5	0.779	0	25,395	14.6	252
11/18/2024	10:00:00	7.5	0.786	0	25,407	14.5	252
11/18/2024	10:15:00	7.5	0.782	0	25,418	14.9	253
11/18/2024	10:30:00	7.5	0.779	0	25,430	15.1	251
11/18/2024	12:45:00	7.4	0.794	2.6	25,437	16.7	248
11/18/2024	13:00:00	7.4	0.816	7.2	25,449	16.9	250
11/18/2024	13:15:00	7.4	0.786	22.7	25,461	17.1	250
11/18/2024	13:30:00	7.4	0.805	0	25,473	17.2	248

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/18/2024	15:15:00	7.6	0.775	5.9	25,484	11.4	113
11/18/2024	15:30:00	7.6	0.764	5.2	25,495	10.6	114
11/18/2024	15:45:00	7.5	0.760	5.8	25,507	10.6	114
11/18/2024	16:00:00	7.5	0.748	7.8	25,518	10.4	113
11/18/2024	16:15:00	7.5	0.748	8.1	25,529	10.4	113
11/18/2024	19:00:00	7.3	0.756	4.1	25,547	10.3	114
11/18/2024	19:15:00	7.3	0.771	4.6	25,558	10.3	113
11/18/2024	19:30:00	7.2	0.764	6.5	25,569	10.4	114
11/18/2024	19:45:00	7.2	0.737	6.3	25,581	10.3	113
11/18/2024	20:00:00	7.2	0.741	6.9	25,592	10.3	113
11/18/2024	20:30:00	7.1	0.718	5.4	25,601	10.1	112
11/18/2024	22:30:00	7.2	0.363	3.5	25,612	11	268
11/18/2024	22:45:00	7	0.843	58	25,619	9.7	275
11/18/2024	23:00:00	6.9	0.816	4.6	25,631	9.9	278
11/18/2024	23:45:00	7	0.820	4	25,639	9.9	279
11/19/2024	0:30:00	7	0.790	5.5	25,647	9.8	278
11/19/2024	0:45:00	6.7	0.760	4.2	25,659	10	282
11/19/2024	2:30:00	6.9	0.786	4.3	25,664	11.2	281
11/19/2024	2:45:00	6.6	0.786	2.7	25,676	10	284
11/19/2024	3:00:00	6.5	0.971	3.3	25,689	9.9	283
11/19/2024	3:15:00	6.5	0.953	4.3	25,704	10	289
11/19/2024	3:30:00	6.4	0.956	4.3	25,718	10	291
11/19/2024	3:45:00	6.4	0.983	3.5	25,733	10	292
11/19/2024	5:30:00	6.3	0.533	3.8	25,738	13.2	292
11/19/2024	5:45:00	6.5	0.794	7.7	25,747	9.7	285

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/19/2024	6:00:00	6.5	0.677	25	25,747	10.3	287
11/19/2024	6:30:00	6.6	0.779	3	25,750	9.9	283
11/19/2024	6:45:00	6.5	0.790	1.9	25,761	9.5	288
11/19/2024	7:00:00	6.5	0.438	1.1	25,773	9.5	288
11/19/2024	7:30:00	6.5	0.374	1.1	25,777	9.7	287
11/19/2024	9:30:00	6.4	0.514	1.6	25,777	12.1	288
11/19/2024	9:45:00	6.6	0.767	0.8	25,789	9.6	284
11/19/2024	10:00:00	6.5	0.779	0.9	25,801	9.5	283
11/19/2024	10:15:00	6.5	0.764	0.5	25,813	9.6	286
11/19/2024	10:30:00	6.5	0.968	1	25,825	9.6	283
11/19/2024	12:15:00	6.8	0.646	7.4	25,837	9.5	282
11/19/2024	12:30:00	6.7	0.673	7.1	25,847	9.5	279
11/19/2024	12:45:00	6.7	0.620	6.8	25,857	9.6	282
11/19/2024	14:15:00	6.8	0.616	7.4	25,860	10	282
11/19/2024	14:30:00	6.7	0.643	5.8	25,869	9.9	282
11/19/2024	14:45:00	6.7	0.635	5.3	25,879	10	281
11/19/2024	15:00:00	6.7	0.643	5.8	25,888	9.9	278
11/19/2024	15:15:00	6.6	0.624	5.3	25,898	10	281
11/19/2024	17:30:00	6.8	0.597	8.4	25,908	13	281
11/19/2024	17:45:00	6.7	0.612	2.9	25,917	10.2	283
11/19/2024	18:00:00	6.7	0.582	2.8	25,927	10.2	283
11/19/2024	18:15:00	6.7	0.605	2.5	25,936	10.2	283
11/19/2024	18:30:00	6.6	0.631	2.5	25,945	10.2	282
11/19/2024	18:45:00	6.6	0.609	2.3	25,954	10.2	282
11/19/2024	21:00:00	6.7	0.586	3.1	25,963	9.9	282

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/19/2024	21:15:00	6.7	0.609	2	25,972	10	282
11/19/2024	21:30:00	6.7	0.605	2.4	25,981	10	282
11/19/2024	21:45:00	6.6	0.748	3.1	25,992	9.9	281
11/19/2024	22:00:00	6.6	0.730	4.2	26,003	9.9	281
11/19/2024	23:45:00	6.7	0.480	6.7	26,016	11.2	277
11/20/2024	0:45:00	6.7	0.771	8.6	26,024	9.9	278
11/20/2024	1:00:00	6.7	0.775	2.9	26,036	9.5	277
11/20/2024	1:15:00	6.6	0.816	2	26,047	9.8	278
11/20/2024	1:30:00	6.6	0.771	2.1	26,059	9.8	274
11/20/2024	3:15:00	6.6	0.771	0.7	26,065	15.1	276
11/20/2024	3:30:00	6.6	0.748	0.6	26,076	15.4	279
11/20/2024	3:45:00	6.6	0.775	0.8	26,088	15.5	278
11/20/2024	4:00:00	6.6	0.771	0.5	26,100	15.6	277
11/20/2024	6:00:00	6.6	0.835	0.2	26,113	19.2	273
11/20/2024	6:15:00	6.6	0.760	0	26,124	19.3	274
11/20/2024	6:30:00	6.6	0.828	0.3	26,136	19.4	276
11/20/2024	6:45:00	6.5	0.767	0	26,148	19.5	276
11/20/2024	8:45:00	6.5	0.786	0	26,156	19.4	277
11/20/2024	9:00:00	6.5	0.756	0.9	26,168	10.4	281
11/20/2024	9:15:00	6.5	0.696	1.4	26,179	10.1	284
11/20/2024	9:30:00	6.5	0.737	1.2	26,190	10	283
11/20/2024	11:00:00	6.5	0.756	3.6	26,203	9.6	288
11/20/2024	12:30:00	6.6	0.658	6.3	26,207	10	282
11/20/2024	12:45:00	6.5	0.748	0.7	26,217	9.9	283
11/20/2024	13:00:00	6.5	0.767	0.6	26,228	10	283

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/20/2024	13:15:00	6.5	0.767	0.3	26,240	10.1	286
11/20/2024	14:45:00	6.6	0.767	0.1	26,249	10.1	287
11/20/2024	15:00:00	6.5	0.745	0.6	26,261	10.1	287
11/20/2024	15:15:00	6.5	0.756	1.7	26,272	10.1	284
11/20/2024	15:30:00	6.5	0.737	2.2	26,283	10.1	283
11/20/2024	17:15:00	6.6	0.726	9.1	26,291	10.2	276
11/20/2024	17:30:00	6.6	0.733	6.5	26,302	10.1	278
11/20/2024	17:45:00	6.5	0.737	6.6	26,313	10.1	279
11/20/2024	18:00:00	6.5	0.707	6.5	26,323	10.1	279
11/20/2024	19:30:00	6.6	0.718	7.3	26,330	10.4	278
11/20/2024	19:45:00	6.5	0.703	4.7	26,340	10.4	281
11/20/2024	20:00:00	6.5	0.707	5	26,351	10.4	283
11/20/2024	20:15:00	6.5	0.707	4	26,361	10.4	282
11/20/2024	20:30:00	6.5	0.703	4	26,372	10.5	287
11/20/2024	22:30:00	6.5	0.726	5.7	26,381	10.2	287
11/20/2024	22:45:00	6.5	0.730	35.9	26,387	10.8	287
11/20/2024	23:00:00	6.5	0.741	5.3	26,398	9.9	287
11/20/2024	23:15:00	6.5	0.730	4.9	26,409	9.9	287
11/20/2024	23:30:00	6.5	0.748	5.1	26,421	9.9	284
11/21/2024	1:00:00	6.4	0.714	4	26,437	13.7	286
11/21/2024	2:45:00	6.5	0.707	5.9	26,458	10.7	284
11/21/2024	3:00:00	6.5	0.692	7.4	26,468	10.5	287
11/21/2024	3:15:00	6.4	0.257	7.5	26,478	10.4	285
11/21/2024	5:15:00	6.5	0.733	15	26,489	13.2	283
11/21/2024	12:15:00	6.2	1.164	26	26,525	10.3	327

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/21/2024	12:30:00	6.2	1.440	23	26,544	10.3	329
11/21/2024	12:45:00	6.2	1.421	26.2	26,566	10.4	328
11/21/2024	13:15:00	6.2	0.987	1.4	26,579	13.7	327
11/21/2024	15:30:00	5.8	0.431	12	26,599	11	314
11/21/2024	16:00:00	6	1.194	13.7	26,603	10.4	322
11/21/2024	16:30:00	5.7	0.926	5.9	26,627	10.6	323
11/21/2024	16:45:00	6	0.714	12.6	26,631	12.6	315
11/21/2024	17:45:00	6.2	0.953	13.6	26,634	13	312
11/21/2024	18:00:00	6	0.442	22.7	26,648	10.9	320
11/21/2024	18:45:00	6	0.559	2.8	26,652	11.2	320
11/21/2024	19:00:00	6	0.548	6.2	26,660	11.1	323
11/21/2024	20:00:00	6.1	0.541	14.1	26,670	11.3	319
11/21/2024	20:15:00	6	0.541	24.3	26,679	11.2	319
11/21/2024	21:00:00	6.1	0.533	17.4	26,680	13.1	320
11/21/2024	21:15:00	6	0.559	30.3	26,688	10.5	321
11/21/2024	21:30:00	6	0.533	1.3	26,697	10.4	323
11/21/2024	21:45:00	6	0.559	1.2	26,705	10.3	324
11/21/2024	22:00:00	6	0.907	1.9	26,714	10.2	324
11/21/2024	22:45:00	6	0.635	0	26,727	10.7	321
11/21/2024	23:00:00	6	0.609	0	26,736	10.8	322
11/21/2024	23:15:00	6	0.654	0	26,746	10.9	320
11/22/2024	2:00:00	6.1	0.654	0.5	26,756	10.9	314
11/22/2024	2:15:00	6.1	0.635	3.4	26,765	10.9	309
11/22/2024	2:30:00	6.2	0.624	6	26,775	10.9	302
11/22/2024	2:45:00	6.2	0.654	9.5	26,784	10.9	297

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/22/2024	3:45:00	6.2	0.639	10.3	26,798	10.5	286
11/22/2024	4:15:00	6.4	1.005	14.7	26,817	10.1	275
11/22/2024	6:00:00	6.5	1.138	12.5	26,819	10.1	117
11/22/2024	6:15:00	6.6	1.134	11	26,834	10.2	116
11/22/2024	7:30:00	6.6	0.926	7.9	26,854	10.4	118
11/22/2024	7:45:00	6.7	0.900	10.6	26,868	10.5	118
11/22/2024	8:00:00	6.7	0.862	12	26,881	10.5	118
11/22/2024	8:15:00	6.8	0.847	14.4	26,894	10.6	118
11/22/2024	8:30:00	6.8	0.832	18.6	26,907	10.6	118
11/22/2024	10:15:00	6.6	0.635	13.2	26,913	12.4	115
11/22/2024	10:30:00	6.8	0.627	16.4	26,922	10.3	115
11/22/2024	10:45:00	6.8	0.605	10.8	26,931	10.4	116
11/22/2024	11:00:00	6.9	0.586	13.8	26,940	10.4	115
11/22/2024	13:30:00	6.8	0.609	2.5	26,955	10.9	118
11/22/2024	13:45:00	6.9	0.616	0.7	26,964	10.9	118
11/22/2024	14:00:00	7	0.575	0.6	26,973	10.8	118
11/22/2024	14:15:00	7	0.559	0.9	26,982	10.8	118
11/22/2024	16:00:00	7	0.654	0.8	26,991	16.4	119
11/22/2024	17:15:00	7	0.703	0	27,003	10.8	118
11/22/2024	17:30:00	7	0.669	0.9	27,008	11	118
11/22/2024	18:15:00	7	0.696	0	27,022	10.7	119
11/22/2024	18:30:00	7.1	0.680	0.1	27,032	10.7	118
11/22/2024	18:45:00	7.1	0.680	1.7	27,042	10.7	119
11/22/2024	20:00:00	7.1	0.680	3.9	27,048	10.7	119
11/22/2024	20:15:00	7.1	0.665	0	27,058	10.7	118

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/22/2024	20:30:00	7.2	0.711	0	27,069	10.5	116
11/22/2024	20:45:00	7.2	0.711	0.7	27,080	10.4	116
11/22/2024	21:00:00	7.2	0.696	2.3	27,090	10.2	114
11/22/2024	22:45:00	7.1	0.756	13.1	27,101	11.2	113
11/22/2024	23:00:00	7.1	0.639	26.1	27,107	10	114
11/22/2024	23:15:00	7.2	0.620	1.4	27,117	10	114
11/22/2024	23:30:00	7.2	0.631	1.4	27,126	10	114
11/22/2024	23:45:00	7.2	0.639	1.9	27,136	10.1	114
11/23/2024	0:00:00	7.3	0.620	1.2	27,145	10.1	114
11/23/2024	3:00:00	7.1	0.597	0	27,153	11	119
11/23/2024	3:15:00	7.2	0.620	0	27,162	10.8	119
11/23/2024	3:30:00	7.2	0.624	0	27,171	10.8	118
11/23/2024	3:45:00	7.3	0.616	0	27,180	10.7	119
11/23/2024	4:00:00	7.3	0.586	0.7	27,190	10.8	116
11/23/2024	4:15:00	7.3	0.858	0.6	27,202	10.5	116
11/23/2024	4:30:00	7.3	0.900	0	27,215	10.7	118
11/23/2024	5:30:00	7.3	0.858	0	27,231	10.6	117
11/23/2024	5:45:00	7.4	0.907	0	27,245	10.5	114
11/23/2024	6:00:00	7.4	0.922	0	27,259	10.5	114
11/23/2024	7:15:00	7.3	0.215	1.2	27,274	10.8	118
11/23/2024	8:30:00	7.3	0.866	1.1	27,279	11	119
11/23/2024	9:30:00	7.3	0.854	0	27,295	10.8	119
11/23/2024	9:45:00	7.4	0.832	0	27,307	10.8	119
11/23/2024	10:00:00	7.4	0.843	0	27,320	10.9	119
11/23/2024	12:00:00	7.3	0.828	15.2	27,333	13.3	121

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/23/2024	12:15:00	7.4	0.847	0	27,342	11.3	119
11/23/2024	12:30:00	7.4	0.877	0	27,355	11.4	119
11/23/2024	12:45:00	7.4	0.869	0	27,368	11.2	119
11/23/2024	13:00:00	7.5	0.847	0	27,381	11.2	119
11/23/2024	15:15:00	7.4	0.869	0	27,390	11.5	121
11/23/2024	15:30:00	7.4	0.885	4.8	27,403	11.4	119
11/23/2024	15:45:00	7.4	0.869	0	27,414	12.3	119
11/23/2024	16:00:00	7.5	0.873	0	27,427	11.4	119
11/23/2024	18:00:00	7.4	0.801	0	27,436	18.1	121
11/23/2024	18:15:00	7.4	0.873	0	27,449	11.4	119
11/23/2024	18:30:00	7.5	0.885	0	27,462	11.3	119
11/23/2024	18:45:00	7.5	0.854	0	27,472	12	119
11/23/2024	20:45:00	7.4	0.851	5.3	27,490	10.8	116
11/23/2024	21:00:00	7.5	0.873	0	27,503	10.6	114
11/23/2024	21:15:00	7.5	0.869	0	27,516	10.5	114
11/23/2024	21:30:00	7.5	0.900	0	27,529	10.5	113
11/23/2024	22:00:00	7.5	0.484	22.7	27,533	11.7	117
11/23/2024	22:15:00	7.5	0.873	0	27,545	10.7	116
11/23/2024	23:00:00	7.5	0.809	31.8	27,559	11.5	113
11/24/2024	1:15:00	7.4	0.873	0	27,573	12.2	119
11/24/2024	1:30:00	7.5	0.877	0	27,586	10.9	118
11/24/2024	1:45:00	7.5	0.869	2.5	27,600	10.9	118
11/24/2024	2:00:00	7.5	0.847	0	27,613	10.9	118
11/24/2024	2:15:00	7.5	0.805	16.8	27,621	11.4	117
11/24/2024	2:30:00	7.6	0.835	0	27,634	10.7	116

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/24/2024	5:15:00	7.5	0.881	0	27,643	10.9	119
11/24/2024	5:30:00	7.5	0.136	8.2	27,648	11.2	116
11/24/2024	5:45:00	7.5	0.896	0	27,661	10.7	117
11/24/2024	6:00:00	7.6	0.922	0	27,675	10.7	116
11/24/2024	7:00:00	7.5	0.885	0	27,689	10.9	118
11/24/2024	7:15:00	7.6	0.877	0	27,702	10.8	119
11/24/2024	9:45:00	7.5	0.903	0	27,717	11.3	119
11/24/2024	10:00:00	7.5	0.911	0	27,730	10.9	120
11/24/2024	10:15:00	7.6	0.885	0	27,744	10.9	118
11/24/2024	10:30:00	7.6	0.900	0	27,757	10.9	119
11/24/2024	12:45:00	7.5	0.911	0	27,772	10.6	114
11/24/2024	13:00:00	7.6	0.915	0	27,785	10.6	116
11/24/2024	13:15:00	7.6	0.900	2.3	27,799	10.8	116
11/24/2024	15:45:00	7.5	0.858	2.3	27,820	11.3	119
11/24/2024	16:00:00	7.6	0.877	11.7	27,833	11.3	118
11/24/2024	17:45:00	7.5	0.854	0	27,850	11.4	122
11/24/2024	18:00:00	7.6	0.896	2.2	27,863	11.3	119
11/24/2024	18:15:00	7.6	0.873	10.9	27,873	11.5	119
11/24/2024	18:30:00	7.6	0.862	6	27,886	11.2	119
11/24/2024	20:15:00	7.5	0.820	3	27,890	13.2	120
11/24/2024	20:30:00	7.6	0.843	0	27,903	11	119
11/24/2024	20:45:00	7.6	0.854	0	27,916	10.8	119
11/24/2024	21:00:00	7.6	0.854	0	27,929	10.7	118
11/24/2024	21:15:00	7.6	0.832	0	27,939	11	118
11/24/2024	22:15:00	7.6	0.816	0	27,948	11.1	119

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/24/2024	22:30:00	7.6	0.858	0	27,960	10.9	119

Table 3. In-Situ Parameters

Date	Time	Temperature °C	DO mg/L	Conductivity SPC-uS/cm	SAL-ppt	pH	ORP (mV)	NTU
11/18/2024	02:33:23AM	9.7	11.92	168.0	0.08	7.8	143.5	4.91
11/19/2024	09:42:59AM	9.3	12.11	168.1	0.08	7.1	110.1	2.75
11/20/2024	10:57:29PM	10.8	11.05	177.3	0.08	7.68	117.6	8.02
11/21/2024	11:40:38AM	10.1	12.48	219.5	0.10	6.8	235.1	7.72
11/22/2024	01:51:30PM	10.6	12.69	135.9	0.06	7.53	164.7	3.92
11/23/2024	09:24:17AM	11.6	11.78	125.2	0.06	7.75	74.7	1.50
11/24/2024	04:06:42PM	13.8	12.61	129.3	0.06	7.85	112.8	0.51

3. Calibration Log:

Table 4. Calibration Log

Date	Unit	pH	Conductivity/Temp.	Salinity	NTU
11/18/2024	YSI	✓	✓	✓	✓
11/20/2024	WTP	✓	N/A	N/A	✓

4. DS Sondes Log: pH

Date Time	pH (pH)
11/19/2024 4:00	7.01
11/19/2024 4:15	6.94
11/19/2024 4:30	6.90
11/19/2024 4:45	6.89
11/19/2024 5:00	6.88
11/19/2024 5:15	6.88
11/19/2024 5:30	7.10
11/19/2024 5:45	6.98
11/19/2024 6:00	7.17
11/19/2024 6:15	7.16
11/19/2024 6:30	6.99
11/19/2024 6:45	6.93
11/19/2024 7:00	7.17
11/19/2024 7:15	6.96
11/19/2024 7:30	6.84
11/19/2024 7:45	7.09
11/19/2024 8:00	7.11
11/19/2024 8:15	6.96
11/19/2024 8:30	6.91
11/19/2024 8:45	6.89
11/19/2024 9:00	6.88

Date Time	pH (pH)
11/19/2024 9:15	6.86
11/19/2024 9:30	6.83
11/19/2024 9:45	7.04
11/19/2024 10:00	7.06
11/19/2024 10:15	7.07
11/19/2024 10:30	7.07
11/19/2024 10:45	7.06
11/19/2024 11:00	7.20
11/19/2024 11:15	7.09
11/19/2024 11:30	7.05
11/19/2024 11:45	7.04
11/19/2024 12:00	7.02
11/19/2024 12:15	7.02
11/19/2024 12:30	7.00
11/19/2024 12:45	7.01
11/19/2024 13:00	7.11
11/19/2024 13:15	7.08
11/19/2024 13:30	7.05
11/19/2024 13:45	7.03
11/19/2024 14:00	7.04
11/19/2024 14:15	7.13
11/19/2024 14:30	6.94
11/19/2024 14:45	7.11

Date Time	pH (pH)
11/19/2024 15:00	7.07
11/19/2024 15:15	7.05
11/19/2024 15:30	7.03
11/19/2024 15:45	7.01
11/19/2024 16:00	7.00
11/19/2024 16:15	6.99
11/19/2024 16:30	6.99
11/19/2024 16:45	7.00
11/19/2024 17:00	7.07
11/19/2024 17:15	7.08
11/19/2024 17:30	7.09
11/19/2024 17:45	7.20
11/19/2024 18:00	7.13
11/19/2024 18:15	7.09
11/19/2024 18:30	7.02
11/19/2024 18:45	7.05
11/19/2024 19:00	7.04
11/19/2024 19:15	6.90
11/19/2024 19:30	7.04
11/19/2024 19:45	7.09
11/19/2024 20:00	7.17
11/19/2024 20:15	7.11
11/19/2024 20:30	7.07

Date Time	pH (pH)
11/19/2024 20:45	7.06
11/19/2024 21:00	7.05
11/19/2024 21:15	6.94
11/19/2024 21:30	7.06
11/19/2024 21:45	7.11
11/19/2024 22:00	7.12
11/19/2024 22:15	7.12
11/19/2024 22:30	7.13
11/19/2024 22:45	7.20
11/19/2024 23:00	7.13
11/19/2024 23:15	7.10
11/19/2024 23:30	7.08
11/19/2024 23:45	7.06
11/20/2024 0:00	7.05
11/20/2024 0:15	7.03
11/20/2024 0:30	7.02
11/20/2024 0:45	7.01
11/20/2024 1:00	7.06
11/20/2024 1:15	7.08
11/20/2024 1:30	7.09
11/20/2024 1:45	7.10
11/20/2024 2:00	7.21
11/20/2024 2:15	7.12

Date Time	pH (pH)
11/20/2024 2:30	7.01
11/20/2024 2:45	6.91
11/20/2024 3:00	6.89
11/20/2024 3:15	6.86
11/20/2024 3:30	6.87
11/20/2024 3:45	6.87
11/20/2024 4:00	6.99
11/20/2024 4:15	7.03
11/20/2024 4:30	7.07
11/20/2024 4:45	7.07
11/20/2024 5:00	7.09
11/20/2024 5:15	7.09
11/20/2024 5:30	7.09
11/20/2024 5:45	7.04
11/20/2024 6:00	7.00
11/20/2024 6:15	6.98
11/20/2024 6:30	6.92
11/20/2024 6:45	6.84
11/20/2024 7:00	7.15
11/20/2024 7:15	7.05
11/20/2024 7:30	7.03
11/20/2024 7:45	7.02
11/20/2024 8:00	7.05

Date Time	pH (pH)
11/20/2024 8:15	7.09
11/20/2024 8:30	7.09
11/20/2024 8:45	7.19
11/20/2024 9:00	7.12
11/20/2024 9:15	7.05
11/20/2024 9:30	7.03
11/20/2024 9:45	7.01
11/20/2024 10:00	7.02
11/20/2024 10:15	6.94
11/20/2024 10:30	7.11
11/20/2024 10:45	7.13
11/20/2024 11:00	7.15
11/20/2024 11:15	7.27
11/20/2024 11:30	7.18
11/20/2024 11:45	7.13
11/20/2024 12:00	7.15
11/20/2024 12:15	7.15
11/20/2024 12:30	7.12
11/20/2024 12:45	7.10
11/20/2024 13:00	7.10
11/20/2024 13:15	7.11
11/20/2024 13:30	7.11
11/20/2024 13:45	7.10

Date Time	pH (pH)
11/20/2024 14:00	7.20
11/20/2024 14:15	7.09
11/20/2024 14:30	7.04
11/20/2024 14:45	7.00
11/20/2024 15:00	6.98
11/20/2024 15:15	6.98
11/20/2024 15:30	6.98
11/20/2024 15:45	6.99
11/20/2024 16:00	7.04
11/20/2024 16:15	7.05
11/20/2024 16:30	7.04
11/20/2024 16:45	7.11
11/20/2024 17:00	7.01
11/20/2024 17:15	6.96
11/20/2024 17:30	6.95
11/20/2024 17:45	6.93
11/20/2024 18:00	6.98
11/20/2024 18:15	7.11
11/20/2024 18:30	7.00
11/20/2024 18:45	6.97
11/20/2024 19:00	6.96
11/20/2024 19:15	6.94
11/20/2024 19:30	6.91

Date Time	pH (pH)
11/20/2024 19:45	6.99
11/20/2024 20:00	7.02
11/20/2024 20:15	7.02
11/20/2024 20:30	7.06
11/20/2024 20:45	6.99
11/20/2024 21:00	6.96
11/20/2024 21:15	6.94
11/20/2024 21:30	6.96
11/20/2024 21:45	6.99
11/20/2024 22:00	6.98
11/20/2024 22:15	6.97
11/20/2024 22:30	7.00
11/20/2024 22:45	7.06
11/20/2024 23:00	6.97
11/20/2024 23:15	6.92
11/20/2024 23:30	6.91
11/20/2024 23:45	6.91
11/21/2024 0:00	6.90
11/21/2024 0:15	6.89
11/21/2024 0:30	6.95
11/21/2024 0:45	6.95
11/21/2024 1:00	6.95
11/21/2024 1:15	7.00

Date Time	pH (pH)
11/21/2024 1:30	6.91
11/21/2024 1:45	6.87
11/21/2024 2:00	6.87
11/21/2024 2:15	6.88
11/21/2024 2:30	6.86
11/21/2024 2:45	6.89
11/21/2024 3:00	6.87
11/21/2024 3:15	6.91
11/21/2024 3:30	6.86
11/21/2024 3:45	6.97
11/21/2024 4:00	6.90
11/21/2024 4:15	6.86
11/21/2024 4:30	6.87
11/21/2024 4:45	6.81
11/21/2024 5:00	6.81
11/21/2024 5:15	6.79
11/21/2024 5:30	6.76
11/21/2024 5:45	6.82
11/21/2024 6:00	6.84
11/21/2024 6:15	6.83
11/21/2024 6:30	6.83
11/21/2024 6:45	6.84
11/21/2024 7:00	6.92

Date Time	pH (pH)
11/21/2024 7:15	6.89
11/21/2024 7:30	6.83
11/21/2024 7:45	6.83
11/21/2024 8:00	6.81
11/21/2024 8:15	6.83
11/21/2024 8:30	6.91
11/21/2024 8:45	6.87
11/21/2024 9:00	6.85
11/21/2024 9:15	6.83
11/21/2024 9:30	6.84
11/21/2024 9:45	6.80
11/21/2024 10:00	6.79
11/21/2024 10:15	6.83
11/21/2024 10:30	6.84
11/21/2024 10:45	6.97
11/21/2024 11:00	6.88
11/21/2024 11:15	6.83
11/21/2024 11:30	6.84
11/21/2024 11:45	6.81
11/21/2024 12:00	6.81
11/21/2024 12:15	6.75
11/21/2024 12:30	6.84
11/21/2024 12:45	6.89

Date Time	pH (pH)
11/21/2024 13:00	6.98
11/21/2024 13:15	6.73
11/21/2024 13:30	6.75
11/21/2024 13:45	6.74
11/21/2024 14:00	6.96
11/21/2024 14:15	6.92
11/21/2024 14:30	6.87
11/21/2024 14:45	6.87
11/21/2024 15:00	6.85
11/21/2024 15:15	6.83
11/21/2024 15:30	6.84
11/21/2024 15:45	6.82
11/21/2024 16:00	6.82
11/21/2024 16:15	6.84
11/21/2024 16:30	6.79
11/21/2024 16:45	6.79
11/21/2024 17:00	6.82
11/21/2024 17:15	6.83
11/21/2024 17:30	6.81
11/21/2024 17:45	6.86
11/21/2024 18:00	6.79
11/21/2024 18:15	6.77
11/21/2024 18:30	6.82

Date Time	pH (pH)
11/21/2024 18:45	6.82
11/21/2024 19:00	6.40
11/21/2024 19:15	6.39
11/21/2024 19:30	6.43
11/21/2024 19:45	6.49
11/21/2024 20:00	6.69
11/21/2024 20:15	6.97
11/21/2024 20:30	6.55
11/21/2024 20:45	7.00
11/21/2024 21:00	6.98
11/21/2024 21:15	6.94
11/21/2024 21:30	6.95
11/21/2024 21:45	6.94
11/21/2024 22:00	6.92
11/21/2024 22:15	6.92
11/21/2024 22:30	6.75
11/21/2024 22:45	6.92
11/21/2024 23:00	6.75
11/21/2024 23:15	6.74
11/21/2024 23:30	6.52
11/21/2024 23:45	6.95
11/22/2024 0:00	6.95
11/22/2024 0:15	6.95

Date Time	pH (pH)
11/22/2024 0:30	6.95
11/22/2024 0:45	6.96
11/22/2024 1:00	6.48
11/22/2024 1:15	6.97
11/22/2024 1:30	6.98
11/22/2024 1:45	6.63
11/22/2024 2:00	6.58
11/22/2024 2:15	7.00
11/22/2024 2:30	6.97
11/22/2024 2:45	6.96
11/22/2024 3:00	6.58
11/22/2024 3:15	6.61
11/22/2024 3:30	6.99
11/22/2024 3:45	6.98
11/22/2024 4:00	6.98
11/22/2024 4:15	6.61
11/22/2024 4:30	6.65
11/22/2024 4:45	6.67
11/22/2024 5:00	6.69
11/22/2024 5:15	7.05
11/22/2024 5:30	7.09
11/22/2024 5:45	6.66
11/22/2024 6:00	6.68

Date Time	pH (pH)
11/22/2024 6:15	6.70
11/22/2024 6:30	7.10
11/22/2024 6:45	7.13
11/22/2024 7:00	7.10
11/22/2024 7:15	7.08
11/22/2024 7:30	7.07
11/22/2024 7:45	7.06
11/22/2024 8:00	7.04
11/22/2024 8:15	7.04
11/22/2024 8:30	7.02
11/22/2024 8:45	7.00
11/22/2024 9:00	6.60
11/22/2024 9:15	6.71
11/22/2024 9:30	6.79
11/22/2024 9:45	6.86
11/22/2024 10:00	6.99
11/22/2024 10:15	7.12
11/22/2024 10:30	7.11
11/22/2024 10:45	6.88
11/22/2024 11:00	6.97
11/22/2024 11:15	6.97
11/22/2024 11:30	7.16
11/22/2024 11:45	7.14

Date Time	pH (pH)
11/22/2024 12:00	7.10
11/22/2024 12:15	7.07
11/22/2024 12:30	7.08
11/22/2024 12:45	7.05
11/22/2024 13:00	6.96
11/22/2024 13:15	7.05
11/22/2024 13:30	7.22
11/22/2024 13:45	7.15
11/22/2024 14:00	7.10
11/22/2024 14:15	7.06
11/22/2024 14:30	7.01
11/22/2024 14:45	7.11
11/22/2024 15:00	7.16
11/22/2024 15:15	7.18
11/22/2024 15:30	7.22
11/22/2024 15:45	7.28
11/22/2024 16:00	7.17
11/22/2024 16:15	7.11
11/22/2024 16:30	7.08
11/22/2024 16:45	7.05
11/22/2024 17:00	7.03
11/22/2024 17:15	6.98
11/22/2024 17:30	7.12

Date Time	pH (pH)
11/22/2024 17:45	7.19
11/22/2024 18:00	7.23
11/22/2024 18:15	7.27
11/22/2024 18:30	7.27
11/22/2024 18:45	7.15
11/22/2024 19:00	7.10
11/22/2024 19:15	7.06
11/22/2024 19:30	7.05
11/22/2024 19:45	7.02
11/22/2024 20:00	6.99
11/22/2024 20:15	6.99
11/22/2024 20:30	7.06
11/22/2024 20:45	7.19
11/22/2024 21:00	7.25
11/22/2024 21:15	7.29
11/22/2024 21:30	7.33
11/22/2024 21:45	7.28
11/22/2024 22:00	7.19
11/22/2024 22:15	7.13
11/22/2024 22:30	7.11
11/22/2024 22:45	7.09
11/22/2024 23:00	7.06
11/22/2024 23:15	7.22

Date Time	pH (pH)
11/22/2024 23:30	7.12
11/22/2024 23:45	7.08
11/23/2024 0:00	7.06
11/23/2024 0:15	7.10
11/23/2024 0:30	7.16
11/23/2024 0:45	7.30
11/23/2024 1:00	7.20
11/23/2024 1:15	7.17
11/23/2024 1:30	7.30

APPENDIX A: WTP Log

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/18/2024	0:00:00	7.7	0.000	0	25,264	Open	13	113
11/18/2024	0:15:00	7.7	0.828	0	25,267	Open	13.4	114
11/18/2024	0:30:00	7.7	0.000	0.2	25,277	Open	13.7	114
11/18/2024	0:45:00	7.7	0.000	0	25,277	Open	14	114
11/18/2024	1:00:00	7.6	0.000	0	25,277	Open	14.2	114
11/18/2024	1:15:00	7.6	0.809	0	25,287	Open	14.5	114
11/18/2024	1:30:00	7.6	0.000	0	25,291	Open	14.7	249
11/18/2024	1:45:00	7.6	0.000	0	25,291	Open	14.9	251
11/18/2024	2:00:00	7.6	0.000	0	25,291	Open	14.9	251
11/18/2024	2:15:00	7.6	0.000	0.1	25,291	Open	15	251
11/18/2024	2:30:00	7.6	0.000	0.3	25,291	Open	15.1	251
11/18/2024	2:45:00	7.6	0.000	0.3	25,291	Open	15.1	251
11/18/2024	3:00:00	7.5	0.000	0.2	25,291	Open	15.1	251
11/18/2024	3:15:00	7.6	0.000	0.2	25,291	Open	15	251

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/18/2024	3:30:00	7.5	0.000	0.2	25,291	Open	15	251
11/18/2024	3:45:00	7.5	0.140	0.3	25,291	Open	14.9	249
11/18/2024	4:00:00	7.5	0.805	0.1	25,302	Open	15	251
11/18/2024	4:15:00	7.5	0.786	0.1	25,314	Open	14.8	251
11/18/2024	4:30:00	7.5	0.314	0	25,325	Open	15	248
11/18/2024	4:45:00	7.5	0.832	0	25,334	Open	15.2	248
11/18/2024	5:00:00	7.5	0.813	0	25,346	Open	15.2	250
11/18/2024	5:15:00	7.5	0.000	0	25,352	Open	15.1	249
11/18/2024	5:30:00	7.5	0.000	0	25,356	Open	14.9	249
11/18/2024	5:45:00	7.5	0.000	0	25,356	Open	14.9	250
11/18/2024	6:00:00	7.5	0.000	0	25,356	Open	15	249
11/18/2024	6:15:00	7.5	0.801	0	25,361	Open	15	250
11/18/2024	6:30:00	7.5	0.000	0	25,370	Open	14.9	249
11/18/2024	6:45:00	7.5	0.000	0	25,370	Open	14.6	249
11/18/2024	7:00:00	7.5	0.000	0	25,370	Open	14.4	247

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/18/2024	7:15:00	7.5	0.000	0	25,370	Open	14.2	249
11/18/2024	7:30:00	7.5	0.782	0	25,378	Open	14.1	251
11/18/2024	7:45:00	7.5	0.000	0	25,378	Open	14.3	251
11/18/2024	8:00:00	7.5	0.000	0	25,378	Open	14.5	251
11/18/2024	8:15:00	7.5	0.000	0	25,378	Open	14.7	249
11/18/2024	8:30:00	7.5	0.000	0	25,378	Open	14.9	250
11/18/2024	8:45:00	7.5	0.000	0	25,378	Open	15	251
11/18/2024	9:00:00	7.5	0.000	0	25,378	Open	15.2	251
11/18/2024	9:15:00	7.5	0.000	0	25,378	Open	15	251
11/18/2024	9:30:00	7.5	0.805	0	25,383	Open	14.8	251
11/18/2024	9:45:00	7.5	0.779	0	25,395	Open	14.6	252
11/18/2024	10:00:00	7.5	0.786	0	25,407	Open	14.5	252
11/18/2024	10:15:00	7.5	0.782	0	25,418	Open	14.9	253
11/18/2024	10:30:00	7.5	0.779	0	25,430	Open	15.1	251
11/18/2024	10:45:00	7.5	0.000	0	25,430	Open	15.4	250

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 18th to November 24th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **December 2, 2024**

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/18/2024	11:00:00	7.5	0.000	0	25,430	Open	15.6	252
11/18/2024	11:15:00	7.5	0.000	0	25,430	Open	15.7	251
11/18/2024	11:30:00	7.5	0.000	0	25,430	Open	16	250
11/18/2024	11:45:00	7.5	0.000	0	25,430	Open	16.2	250
11/18/2024	12:00:00	7.5	0.000	0	25,430	Open	16.3	248
11/18/2024	12:15:00	7.5	0.000	0	25,430	Open	16.5	250
11/18/2024	12:30:00	7.5	0.000	0	25,430	Open	16.6	250
11/18/2024	12:45:00	7.4	0.794	2.6	25,437	Open	16.7	248
11/18/2024	13:00:00	7.4	0.816	7.2	25,449	Open	16.9	250
11/18/2024	13:15:00	7.4	0.786	22.7	25,461	Open	17.1	250
11/18/2024	13:30:00	7.4	0.805	0	25,473	Open	17.2	248
11/18/2024	13:45:00	7.4	0.000	0	25,476	Open	17.1	248
11/18/2024	14:00:00	7.4	0.000	0	25,476	Open	17.1	251
11/18/2024	14:15:00	7.4	0.000	0	25,476	Open	17.1	246
11/18/2024	14:30:00	7.4	0.000	0	25,476	Open	17.2	248

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/18/2024	14:45:00	7.4	0.000	0	25,476	Open	17.1	247
11/18/2024	15:00:00	7.4	0.000	0	25,476	Open	17.1	247
11/18/2024	15:15:00	7.6	0.775	5.9	25,484	Open	11.4	113
11/18/2024	15:30:00	7.6	0.764	5.2	25,495	Open	10.6	114
11/18/2024	15:45:00	7.5	0.760	5.8	25,507	Open	10.6	114
11/18/2024	16:00:00	7.5	0.748	7.8	25,518	Open	10.4	113
11/18/2024	16:15:00	7.5	0.748	8.1	25,529	Open	10.4	113
11/18/2024	16:30:00	7.5	0.000	4.6	25,530	Open	11	114
11/18/2024	16:45:00	7.4	0.000	3.9	25,530	Open	11.6	114
11/18/2024	17:00:00	7.4	0.000	3.8	25,530	Open	12	113
11/18/2024	17:15:00	7.4	0.000	3.1	25,530	Open	12.6	257
11/18/2024	17:30:00	7.4	0.000	3	25,530	Open	13	256
11/18/2024	17:45:00	7.4	0.000	2.4	25,530	Open	13.3	257
11/18/2024	18:00:00	7.4	0.000	2.2	25,530	Open	13.7	258
11/18/2024	18:15:00	7.4	0.000	1.8	25,530	Open	13.9	258

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/18/2024	18:30:00	7.4	0.000	6	25,536	Open	10.2	113
11/18/2024	18:45:00	7.4	0.000	3.9	25,536	Open	10.9	114
11/18/2024	19:00:00	7.3	0.756	4.1	25,547	Open	10.3	114
11/18/2024	19:15:00	7.3	0.771	4.6	25,558	Open	10.3	113
11/18/2024	19:30:00	7.2	0.764	6.5	25,569	Open	10.4	114
11/18/2024	19:45:00	7.2	0.737	6.3	25,581	Open	10.3	113
11/18/2024	20:00:00	7.2	0.741	6.9	25,592	Open	10.3	113
11/18/2024	20:15:00	7.1	0.000	4.9	25,593	Open	10.9	266
11/18/2024	20:30:00	7.1	0.718	5.4	25,601	Open	10.1	112
11/18/2024	20:45:00	7.1	0.000	3.6	25,607	Open	10.2	268
11/18/2024	21:00:00	7.1	0.000	3.9	25,607	Open	10.5	269
11/18/2024	21:15:00	7	0.000	3.3	25,607	Open	10.7	270
11/18/2024	21:30:00	7	0.000	2.9	25,607	Open	10.9	268
11/18/2024	21:45:00	7	0.000	2.7	25,607	Open	11.2	272
11/18/2024	22:00:00	7	0.000	2.3	25,607	Open	11.4	271

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/18/2024	22:15:00	7	0.000	3	25,607	Open	11.5	268
11/18/2024	22:30:00	7.2	0.363	3.5	25,612	Open	11	268
11/18/2024	22:45:00	7	0.843	58	25,619	Open	9.7	275
11/18/2024	23:00:00	6.9	0.816	4.6	25,631	Open	9.9	278
11/18/2024	23:15:00	6.8	0.000	3.2	25,635	Open	10.1	278
11/18/2024	23:30:00	6.8	0.000	3	25,635	Open	10.3	278
11/18/2024	23:45:00	7	0.820	4	25,639	Open	9.9	279
11/19/2024	0:00:00	6.8	0.000	2.6	25,644	Open	10	278
11/19/2024	0:15:00	6.8	0.000	2.6	25,644	Open	10.1	280
11/19/2024	0:30:00	7	0.790	5.5	25,647	Open	9.8	278
11/19/2024	0:45:00	6.7	0.760	4.2	25,659	Open	10	282
11/19/2024	1:00:00	6.6	0.000	2.7	25,662	Open	10.4	284
11/19/2024	1:15:00	6.6	0.000	2.9	25,662	Open	10.8	283
11/19/2024	1:30:00	6.6	0.000	2.3	25,662	Open	11.3	284
11/19/2024	1:45:00	6.6	0.000	2.1	25,662	Open	11.7	286

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/19/2024	2:00:00	6.6	0.000	1.9	25,662	Open	12	286
11/19/2024	2:15:00	6.6	0.000	1.7	25,662	Open	12.5	286
11/19/2024	2:30:00	6.9	0.786	4.3	25,664	Open	11.2	281
11/19/2024	2:45:00	6.6	0.786	2.7	25,676	Open	10	284
11/19/2024	3:00:00	6.5	0.971	3.3	25,689	Open	9.9	283
11/19/2024	3:15:00	6.5	0.953	4.3	25,704	Open	10	289
11/19/2024	3:30:00	6.4	0.956	4.3	25,718	Open	10	291
11/19/2024	3:45:00	6.4	0.983	3.5	25,733	Open	10	292
11/19/2024	4:00:00	6.3	0.000	2.6	25,738	Open	10.1	292
11/19/2024	4:15:00	6.3	0.000	2.5	25,738	Open	10.6	290
11/19/2024	4:30:00	6.3	0.000	2.6	25,738	Open	11.2	292
11/19/2024	4:45:00	6.3	0.000	2.2	25,738	Open	11.8	294
11/19/2024	5:00:00	6.3	0.000	1.7	25,738	Open	12.2	294
11/19/2024	5:15:00	6.3	0.000	1.5	25,738	Open	12.6	294
11/19/2024	5:30:00	6.3	0.533	3.8	25,738	Open	13.2	292

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/19/2024	5:45:00	6.5	0.794	7.7	25,747	Open	9.7	285
11/19/2024	6:00:00	6.5	0.677	25	25,747	Closed	10.3	287
11/19/2024	6:15:00	6.5	0.000	3	25,748	Open	10	283
11/19/2024	6:30:00	6.6	0.779	3	25,750	Open	9.9	283
11/19/2024	6:45:00	6.5	0.790	1.9	25,761	Open	9.5	288
11/19/2024	7:00:00	6.5	0.438	1.1	25,773	Open	9.5	288
11/19/2024	7:15:00	6.4	0.000	0.9	25,773	Open	10	287
11/19/2024	7:30:00	6.5	0.374	1.1	25,777	Open	9.7	287
11/19/2024	7:45:00	6.5	0.000	0.9	25,777	Open	10.1	285
11/19/2024	8:00:00	6.5	0.000	1	25,777	Open	10.8	287
11/19/2024	8:15:00	6.5	0.000	0.8	25,777	Open	11.3	286
11/19/2024	8:30:00	6.5	0.000	1.3	25,777	Open	11.5	286
11/19/2024	8:45:00	6.5	0.000	1	25,777	Open	11.6	288
11/19/2024	9:00:00	6.4	0.000	0.8	25,777	Open	11.7	288
11/19/2024	9:15:00	6.4	0.000	0.6	25,777	Open	12.1	287

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/19/2024	9:30:00	6.4	0.514	1.6	25,777	Open	12.1	288
11/19/2024	9:45:00	6.6	0.767	0.8	25,789	Open	9.6	284
11/19/2024	10:00:00	6.5	0.779	0.9	25,801	Open	9.5	283
11/19/2024	10:15:00	6.5	0.764	0.5	25,813	Open	9.6	286
11/19/2024	10:30:00	6.5	0.968	1	25,825	Open	9.6	283
11/19/2024	10:45:00	6.4	0.000	0.7	25,833	Open	9.7	286
11/19/2024	11:00:00	6.4	0.000	0.6	25,833	Open	9.9	286
11/19/2024	11:15:00	6.8	0.000	4.1	25,833	Open	10.5	287
11/19/2024	11:30:00	6.7	0.000	0	25,834	Open	12.5	283
11/19/2024	11:45:00	6.8	0.000	0	25,834	Open	12.5	287
11/19/2024	12:00:00	6.9	0.000	0	25,834	Open	12.7	288
11/19/2024	12:15:00	6.8	0.646	7.4	25,837	Open	9.5	282
11/19/2024	12:30:00	6.7	0.673	7.1	25,847	Open	9.5	279
11/19/2024	12:45:00	6.7	0.620	6.8	25,857	Open	9.6	282
11/19/2024	13:00:00	6.6	0.000	5.1	25,857	Open	10.2	284

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/19/2024	13:15:00	6.6	0.000	5	25,857	Open	10.6	286
11/19/2024	13:30:00	6.7	0.000	4.5	25,857	Open	11.2	282
11/19/2024	13:45:00	6.7	0.000	4.3	25,857	Open	11.8	281
11/19/2024	14:00:00	6.7	0.000	5.3	25,857	Open	12.4	288
11/19/2024	14:15:00	6.8	0.616	7.4	25,860	Open	10	282
11/19/2024	14:30:00	6.7	0.643	5.8	25,869	Open	9.9	282
11/19/2024	14:45:00	6.7	0.635	5.3	25,879	Open	10	281
11/19/2024	15:00:00	6.7	0.643	5.8	25,888	Open	9.9	278
11/19/2024	15:15:00	6.6	0.624	5.3	25,898	Open	10	281
11/19/2024	15:30:00	6.6	0.000	3.9	25,907	Open	10.1	281
11/19/2024	15:45:00	6.6	0.000	3.5	25,907	Open	10.7	282
11/19/2024	16:00:00	6.6	0.000	3.1	25,907	Open	11.3	281
11/19/2024	16:15:00	6.6	0.000	3.2	25,907	Open	11.8	282
11/19/2024	16:30:00	6.6	0.000	3.3	25,907	Open	12.4	281
11/19/2024	16:45:00	6.6	0.000	2.8	25,907	Open	13	281

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 18th to November 24th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **December 2, 2024**

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/19/2024	17:00:00	6.6	0.000	2.8	25,907	Open	13.3	283
11/19/2024	17:15:00	6.6	0.000	2.4	25,907	Open	13.8	283
11/19/2024	17:30:00	6.8	0.597	8.4	25,908	Open	13	281
11/19/2024	17:45:00	6.7	0.612	2.9	25,917	Open	10.2	283
11/19/2024	18:00:00	6.7	0.582	2.8	25,927	Open	10.2	283
11/19/2024	18:15:00	6.7	0.605	2.5	25,936	Open	10.2	283
11/19/2024	18:30:00	6.6	0.631	2.5	25,945	Open	10.2	282
11/19/2024	18:45:00	6.6	0.609	2.3	25,954	Open	10.2	282
11/19/2024	19:00:00	6.6	0.000	1.3	25,956	Open	10.6	284
11/19/2024	19:15:00	6.6	0.000	1.4	25,956	Open	11.3	283
11/19/2024	19:30:00	6.6	0.000	1.3	25,956	Open	11.9	283
11/19/2024	19:45:00	6.6	0.000	1	25,956	Open	12.4	283
11/19/2024	20:00:00	6.6	0.000	1.2	25,956	Open	12.9	282
11/19/2024	20:15:00	6.6	0.000	0.9	25,956	Open	13.4	283
11/19/2024	20:30:00	6.6	0.000	1.3	25,956	Open	13.5	284

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/19/2024	20:45:00	6.6	0.000	1.2	25,956	Open	13.7	283
11/19/2024	21:00:00	6.7	0.586	3.1	25,963	Open	9.9	282
11/19/2024	21:15:00	6.7	0.609	2	25,972	Open	10	282
11/19/2024	21:30:00	6.7	0.605	2.4	25,981	Open	10	282
11/19/2024	21:45:00	6.6	0.748	3.1	25,992	Open	9.9	281
11/19/2024	22:00:00	6.6	0.730	4.2	26,003	Open	9.9	281
11/19/2024	22:15:00	6.6	0.000	2.3	26,014	Open	9.9	279
11/19/2024	22:30:00	6.6	0.000	2.2	26,014	Open	10.4	281
11/19/2024	22:45:00	6.6	0.000	2.1	26,014	Open	11.2	279
11/19/2024	23:00:00	6.6	0.000	2.3	26,014	Open	11.5	279
11/19/2024	23:15:00	6.6	0.000	1.8	26,014	Open	11.7	278
11/19/2024	23:30:00	6.6	0.000	1.7	26,014	Open	12	278
11/19/2024	23:45:00	6.7	0.480	6.7	26,016	Open	11.2	277
11/20/2024	0:00:00	6.7	0.000	8.1	26,023	Open	9.6	276
11/20/2024	0:15:00	6.6	0.000	6.7	26,023	Open	9.6	276

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/20/2024	0:30:00	6.6	0.000	8.7	26,023	Open	9.6	278
11/20/2024	0:45:00	6.7	0.771	8.6	26,024	Open	9.9	278
11/20/2024	1:00:00	6.7	0.775	2.9	26,036	Open	9.5	277
11/20/2024	1:15:00	6.6	0.816	2	26,047	Open	9.8	278
11/20/2024	1:30:00	6.6	0.771	2.1	26,059	Open	9.8	274
11/20/2024	1:45:00	6.6	0.000	1.8	26,061	Open	9.9	277
11/20/2024	2:00:00	6.6	0.000	1.2	26,061	Open	10.2	279
11/20/2024	2:15:00	6.6	0.000	0.9	26,061	Open	10.7	276
11/20/2024	2:30:00	6.6	0.000	0.8	26,061	Open	11.4	275
11/20/2024	2:45:00	6.6	0.000	0.6	26,061	Open	12	272
11/20/2024	3:00:00	6.6	0.000	0.3	26,061	Open	12.6	276
11/20/2024	3:15:00	6.6	0.771	0.7	26,065	Open	15.1	276
11/20/2024	3:30:00	6.6	0.748	0.6	26,076	Open	15.4	279
11/20/2024	3:45:00	6.6	0.775	0.8	26,088	Open	15.5	278
11/20/2024	4:00:00	6.6	0.771	0.5	26,100	Open	15.6	277

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/20/2024	4:15:00	6.6	0.000	0.3	26,105	Open	15.9	279
11/20/2024	4:30:00	6.6	0.000	0.5	26,105	Open	16.2	276
11/20/2024	4:45:00	6.6	0.000	0.2	26,105	Open	16.5	276
11/20/2024	5:00:00	6.6	0.000	0	26,105	Open	16.8	276
11/20/2024	5:15:00	6.6	0.000	0	26,105	Open	17.1	276
11/20/2024	5:30:00	6.6	0.000	0	26,105	Open	17.3	276
11/20/2024	5:45:00	6.6	0.000	0	26,105	Open	17.6	276
11/20/2024	6:00:00	6.6	0.835	0.2	26,113	Open	19.2	273
11/20/2024	6:15:00	6.6	0.760	0	26,124	Open	19.3	274
11/20/2024	6:30:00	6.6	0.828	0.3	26,136	Open	19.4	276
11/20/2024	6:45:00	6.5	0.767	0	26,148	Open	19.5	276
11/20/2024	7:00:00	6.5	0.000	0	26,149	Open	19.5	276
11/20/2024	7:15:00	6.5	0.000	0	26,149	Open	19.5	276
11/20/2024	7:30:00	6.5	0.000	0	26,149	Open	19.5	278
11/20/2024	7:45:00	6.5	0.000	0	26,149	Open	19.5	278

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/20/2024	8:00:00	6.5	0.000	0	26,149	Open	19.6	277
11/20/2024	8:15:00	6.5	0.000	0	26,149	Open	19.6	278
11/20/2024	8:30:00	6.5	0.000	0	26,149	Open	19.6	276
11/20/2024	8:45:00	6.5	0.786	0	26,156	Open	19.4	277
11/20/2024	9:00:00	6.5	0.756	0.9	26,168	Open	10.4	281
11/20/2024	9:15:00	6.5	0.696	1.4	26,179	Open	10.1	284
11/20/2024	9:30:00	6.5	0.737	1.2	26,190	Open	10	283
11/20/2024	9:45:00	6.5	0.000	1.1	26,196	Open	10.7	288
11/20/2024	10:00:00	6.4	0.000	1.1	26,196	Open	11.2	289
11/20/2024	10:15:00	6.4	0.000	1	26,196	Open	11.7	289
11/20/2024	10:30:00	6.4	0.000	1.6	26,196	Open	12.2	290
11/20/2024	10:45:00	6.4	0.000	1.3	26,196	Open	12.4	287
11/20/2024	11:00:00	6.5	0.756	3.6	26,203	Open	9.6	288
11/20/2024	11:15:00	6.5	0.000	1.2	26,207	Open	9.9	288
11/20/2024	11:30:00	6.5	0.000	1.2	26,207	Open	10.4	288

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/20/2024	11:45:00	6.5	0.000	1.1	26,207	Open	10.7	288
11/20/2024	12:00:00	6.4	0.000	0.9	26,207	Open	10.9	290
11/20/2024	12:15:00	6.4	0.000	0.5	26,207	Open	11.4	288
11/20/2024	12:30:00	6.6	0.658	6.3	26,207	Closed	10	282
11/20/2024	12:45:00	6.5	0.748	0.7	26,217	Open	9.9	283
11/20/2024	13:00:00	6.5	0.767	0.6	26,228	Open	10	283
11/20/2024	13:15:00	6.5	0.767	0.3	26,240	Open	10.1	286
11/20/2024	13:30:00	6.4	0.000	0	26,242	Open	10.7	286
11/20/2024	13:45:00	6.4	0.000	0	26,242	Open	11.5	286
11/20/2024	14:00:00	6.4	0.000	0	26,242	Open	12.4	288
11/20/2024	14:15:00	6.4	0.000	0	26,242	Open	13.2	288
11/20/2024	14:30:00	6.4	0.000	0	26,242	Open	13.8	289
11/20/2024	14:45:00	6.6	0.767	0.1	26,249	Open	10.1	287
11/20/2024	15:00:00	6.5	0.745	0.6	26,261	Open	10.1	287
11/20/2024	15:15:00	6.5	0.756	1.7	26,272	Open	10.1	284

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/20/2024	15:30:00	6.5	0.737	2.2	26,283	Open	10.1	283
11/20/2024	15:45:00	6.5	0.000	1.6	26,287	Open	10.5	284
11/20/2024	16:00:00	6.5	0.000	1.4	26,287	Open	11.4	282
11/20/2024	16:15:00	6.5	0.000	1.3	26,287	Open	12.3	281
11/20/2024	16:30:00	6.4	0.000	1.1	26,287	Open	13.2	283
11/20/2024	16:45:00	6.4	0.000	1.1	26,287	Open	14	283
11/20/2024	17:00:00	6.4	0.000	0.9	26,287	Open	14.9	281
11/20/2024	17:15:00	6.6	0.726	9.1	26,291	Open	10.2	276
11/20/2024	17:30:00	6.6	0.733	6.5	26,302	Open	10.1	278
11/20/2024	17:45:00	6.5	0.737	6.6	26,313	Open	10.1	279
11/20/2024	18:00:00	6.5	0.707	6.5	26,323	Open	10.1	279
11/20/2024	18:15:00	6.5	0.000	4.9	26,326	Open	10.8	282
11/20/2024	18:30:00	6.5	0.000	4.9	26,326	Open	11.8	283
11/20/2024	18:45:00	6.4	0.000	4.8	26,326	Open	12.4	282
11/20/2024	19:00:00	6.4	0.000	4.5	26,326	Open	13.4	284

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/20/2024	19:15:00	6.4	0.000	4.2	26,326	Open	14.3	281
11/20/2024	19:30:00	6.6	0.718	7.3	26,330	Open	10.4	278
11/20/2024	19:45:00	6.5	0.703	4.7	26,340	Open	10.4	281
11/20/2024	20:00:00	6.5	0.707	5	26,351	Open	10.4	283
11/20/2024	20:15:00	6.5	0.707	4	26,361	Open	10.4	282
11/20/2024	20:30:00	6.5	0.703	4	26,372	Open	10.5	287
11/20/2024	20:45:00	6.4	0.000	3.1	26,378	Open	10.6	285
11/20/2024	21:00:00	6.4	0.000	3.1	26,378	Open	10.9	288
11/20/2024	21:15:00	6.4	0.000	2.8	26,378	Open	11.2	289
11/20/2024	21:30:00	6.4	0.000	2.9	26,378	Open	11.4	292
11/20/2024	21:45:00	6.4	0.000	2.7	26,378	Open	11.5	292
11/20/2024	22:00:00	6.4	0.000	2.5	26,378	Open	11.6	292
11/20/2024	22:15:00	6.4	0.000	2.1	26,378	Open	11.9	289
11/20/2024	22:30:00	6.5	0.726	5.7	26,381	Open	10.2	287
11/20/2024	22:45:00	6.5	0.730	35.9	26,387	Open	10.8	287

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/20/2024	23:00:00	6.5	0.741	5.3	26,398	Open	9.9	287
11/20/2024	23:15:00	6.5	0.730	4.9	26,409	Open	9.9	287
11/20/2024	23:30:00	6.5	0.748	5.1	26,421	Open	9.9	284
11/20/2024	23:45:00	6.4	0.000	4.3	26,430	Open	9.9	289
11/21/2024	0:00:00	6.4	0.000	3.9	26,430	Open	10.6	285
11/21/2024	0:15:00	6.4	0.000	3.6	26,430	Open	11.4	289
11/21/2024	0:30:00	6.4	0.000	3.4	26,430	Open	12.3	287
11/21/2024	0:45:00	6.4	0.000	3.4	26,430	Open	13.2	287
11/21/2024	1:00:00	6.4	0.714	4	26,437	Open	13.7	286
11/21/2024	1:15:00	6.4	0.000	3.8	26,447	Open	13.7	291
11/21/2024	1:30:00	6.4	0.000	3.2	26,447	Open	14	288
11/21/2024	1:45:00	6.4	0.000	3.3	26,447	Open	14.6	287
11/21/2024	2:00:00	6.4	0.000	3.1	26,447	Open	15.2	288
11/21/2024	2:15:00	6.4	0.000	2.9	26,447	Open	15.8	288
11/21/2024	2:30:00	6.4	0.000	2.9	26,447	Open	16.4	286

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/21/2024	2:45:00	6.5	0.707	5.9	26,458	Open	10.7	284
11/21/2024	3:00:00	6.5	0.692	7.4	26,468	Open	10.5	287
11/21/2024	3:15:00	6.4	0.257	7.5	26,478	Open	10.4	285
11/21/2024	3:30:00	6.4	0.000	9.4	26,487	Open	10.1	285
11/21/2024	3:45:00	6.4	0.000	9.2	26,487	Open	10.8	286
11/21/2024	4:00:00	6.4	0.000	9.1	26,487	Open	11.4	288
11/21/2024	4:15:00	6.4	0.000	8.7	26,487	Open	12.1	287
11/21/2024	4:30:00	6.4	0.000	8.4	26,487	Open	12.9	287
11/21/2024	4:45:00	6.4	0.000	8.1	26,487	Open	13.7	287
11/21/2024	5:00:00	6.4	0.000	8	26,487	Open	14.4	287
11/21/2024	5:15:00	6.5	0.733	15	26,489	Open	13.2	283
11/21/2024	5:30:00	6.5	0.696	30.1	26,497	Closed	10.2	281
11/21/2024	5:45:00	6.5	0.733	75.9	26,497	Closed	10.2	282
11/21/2024	6:00:00	6.4	0.000	34.8	26,497	Closed	10.1	281
11/21/2024	6:15:00	6.5	1.153	47.2	26,497	Closed	9.7	284

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 18th to November 24th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **December 2, 2024**

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/21/2024	6:30:00	6.5	1.126	47.6	26,497	Closed	9.8	285
11/21/2024	6:45:00	6.4	1.142	51.6	26,497	Closed	9.9	290
11/21/2024	7:00:00	6.3	0.000	36.7	26,497	Open	10.4	292
11/21/2024	7:15:00	6.3	0.000	35.9	26,497	Open	11.3	292
11/21/2024	7:30:00	6.4	0.000	43.6	26,498	Open	10.8	292
11/21/2024	7:45:00	6.4	0.000	41.8	26,498	Open	11.7	294
11/21/2024	8:00:00	6.4	0.000	39.3	26,498	Open	12.7	292
11/21/2024	8:15:00	6.4	0.000	39.8	26,498	Closed	13.8	294
11/21/2024	8:30:00	6.4	0.000	32.1	26,498	Closed	14.6	294
11/21/2024	8:45:00	6.3	0.000	35.3	26,498	Closed	15.3	288
11/21/2024	9:00:00	6.4	0.643	38.6	26,498	Closed	10.1	297
11/21/2024	9:15:00	6.4	0.386	25.3	26,498	Closed	10.3	307
11/21/2024	9:30:00	6.3	0.488	29.5	26,498	Closed	10.3	317
11/21/2024	9:45:00	6.3	0.525	25.8	26,498	Closed	10.1	322
11/21/2024	10:00:00	6.3	2.196	21.1	26,498	Closed	9.9	324

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 18th to November 24th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **December 2, 2024**

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/21/2024	10:15:00	6.2	0.329	20.8	26,498	Closed	10.1	326
11/21/2024	10:30:00	6.2	0.484	28	26,498	Closed	10.3	323
11/21/2024	10:45:00	6.2	0.480	25.3	26,498	Closed	10.5	325
11/21/2024	11:00:00	6.2	0.601	33.8	26,498	Closed	10.7	325
11/21/2024	11:15:00	6.2	0.635	18.6	26,498	Closed	10.8	325
11/21/2024	11:30:00	6.2	0.616	94.8	26,498	Closed	10.5	325
11/21/2024	11:45:00	6.2	0.609	261.4	26,498	Closed	10.6	326
11/21/2024	12:00:00	6.2	0.794	297.1	26,510	Open	10.7	327
11/21/2024	12:15:00	6.2	1.164	26	26,525	Open	10.3	327
11/21/2024	12:30:00	6.2	1.440	23	26,544	Open	10.3	329
11/21/2024	12:45:00	6.2	1.421	26.2	26,566	Open	10.4	328
11/21/2024	13:00:00	6.1	0.000	23.5	26,579	Open	10.7	327
11/21/2024	13:15:00	6.2	0.987	1.4	26,579	Open	13.7	327
11/21/2024	13:30:00	6.2	0.000	9.6	26,595	Open	10.5	325
11/21/2024	13:45:00	6.2	0.000	7.9	26,595	Open	10.8	329

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/21/2024	14:00:00	7.2	0.000	7.4	26,595	Open	12.4	114
11/21/2024	14:15:00	7.3	0.000	5.9	26,595	Open	13.2	114
11/21/2024	14:30:00	7.2	0.000	12	26,595	Open	13.6	113
11/21/2024	14:45:00	7.2	0.000	38.2	26,595	Open	14.1	116
11/21/2024	15:00:00	7.2	0.000	99.2	26,595	Open	15.2	117
11/21/2024	15:15:00	6.2	0.000	0	26,596	Open	16.2	117
11/21/2024	15:30:00	5.8	0.431	12	26,599	Open	11	314
11/21/2024	15:45:00	6.1	0.000	12.3	26,599	Open	11.2	324
11/21/2024	16:00:00	6	1.194	13.7	26,603	Open	10.4	322
11/21/2024	16:15:00	6	0.000	248.8	26,613	Open	10.8	325
11/21/2024	16:30:00	5.7	0.926	5.9	26,627	Open	10.6	323
11/21/2024	16:45:00	6	0.714	12.6	26,631	Open	12.6	315
11/21/2024	17:00:00	5.9	0.000	4.5	26,632	Open	11.6	320
11/21/2024	17:15:00	6.1	0.000	4.4	26,632	Open	12.7	320
11/21/2024	17:30:00	6.2	0.000	3.9	26,632	Open	13.6	322

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/21/2024	17:45:00	6.2	0.953	13.6	26,634	Open	13	312
11/21/2024	18:00:00	6	0.442	22.7	26,648	Open	10.9	320
11/21/2024	18:15:00	6	0.000	68.7	26,648	Open	12	320
11/21/2024	18:30:00	6.1	0.000	94.1	26,648	Open	13	319
11/21/2024	18:45:00	6	0.559	2.8	26,652	Open	11.2	320
11/21/2024	19:00:00	6	0.548	6.2	26,660	Open	11.1	323
11/21/2024	19:15:00	6	0.000	13.6	26,663	Open	11.6	320
11/21/2024	19:30:00	6	0.000	4.9	26,663	Open	12.7	319
11/21/2024	19:45:00	6	0.000	9.1	26,663	Open	13.8	320
11/21/2024	20:00:00	6.1	0.541	14.1	26,670	Open	11.3	319
11/21/2024	20:15:00	6	0.541	24.3	26,679	Open	11.2	319
11/21/2024	20:30:00	6	0.000	29.2	26,679	Open	11.9	320
11/21/2024	20:45:00	6	0.000	32.7	26,679	Open	12.6	319
11/21/2024	21:00:00	6.1	0.533	17.4	26,680	Open	13.1	320
11/21/2024	21:15:00	6	0.559	30.3	26,688	Open	10.5	321

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 18th to November 24th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **December 2, 2024**

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/21/2024	21:30:00	6	0.533	1.3	26,697	Open	10.4	323
11/21/2024	21:45:00	6	0.559	1.2	26,705	Open	10.3	324
11/21/2024	22:00:00	6	0.907	1.9	26,714	Open	10.2	324
11/21/2024	22:15:00	6	0.000	1.3	26,718	Open	10.5	323
11/21/2024	22:30:00	6	0.000	1.4	26,718	Open	11.5	323
11/21/2024	22:45:00	6	0.635	0	26,727	Open	10.7	321
11/21/2024	23:00:00	6	0.609	0	26,736	Open	10.8	322
11/21/2024	23:15:00	6	0.654	0	26,746	Open	10.9	320
11/21/2024	23:30:00	6	0.000	0	26,749	Open	11.4	320
11/21/2024	23:45:00	6	0.000	0	26,749	Open	12.4	320
11/22/2024	0:00:00	6	0.000	1.2	26,749	Open	13.1	318
11/22/2024	0:15:00	6	0.000	5.6	26,749	Open	13.5	321
11/22/2024	0:30:00	6	0.000	12.8	26,749	Open	14.2	320
11/22/2024	0:45:00	6	0.000	20.6	26,749	Open	14.8	318
11/22/2024	1:00:00	6	0.000	32	26,749	Open	15.3	319

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 18th to November 24th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **December 2, 2024**

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/22/2024	1:15:00	6	0.000	53	26,749	Open	15.8	319
11/22/2024	1:30:00	6	0.000	0	26,749	Open	16.4	317
11/22/2024	1:45:00	6	0.000	0	26,749	Open	16.9	317
11/22/2024	2:00:00	6.1	0.654	0.5	26,756	Open	10.9	314
11/22/2024	2:15:00	6.1	0.635	3.4	26,765	Open	10.9	309
11/22/2024	2:30:00	6.2	0.624	6	26,775	Open	10.9	302
11/22/2024	2:45:00	6.2	0.654	9.5	26,784	Open	10.9	297
11/22/2024	3:00:00	6.2	0.000	10.8	26,790	Open	11	296
11/22/2024	3:15:00	6.2	0.000	11.3	26,790	Open	11.8	296
11/22/2024	3:30:00	6.2	0.000	4.9	26,790	Open	12.4	296
11/22/2024	3:45:00	6.2	0.639	10.3	26,798	Open	10.5	286
11/22/2024	4:00:00	6.3	0.000	36.6	26,805	Open	10.4	281
11/22/2024	4:15:00	6.4	1.005	14.7	26,817	Open	10.1	275
11/22/2024	4:30:00	6.4	0.000	12	26,819	Open	10.6	274
11/22/2024	4:45:00	6.4	0.000	11.2	26,819	Open	11.6	273

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 18th to November 24th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **December 2, 2024**

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/22/2024	5:00:00	6.4	0.000	10.3	26,819	Open	12.5	274
11/22/2024	5:15:00	6.4	0.000	9.4	26,819	Open	13.4	272
11/22/2024	5:30:00	6.4	0.000	9.3	26,819	Open	13.8	273
11/22/2024	5:45:00	6.4	0.000	9.1	26,819	Open	13.9	273
11/22/2024	6:00:00	6.5	1.138	12.5	26,819	Closed	10.1	117
11/22/2024	6:15:00	6.6	1.134	11	26,834	Open	10.2	116
11/22/2024	6:30:00	6.6	0.000	8.8	26,840	Open	10.7	116
11/22/2024	6:45:00	6.6	0.000	8.3	26,840	Open	11.7	264
11/22/2024	7:00:00	6.6	0.000	8	26,840	Open	12.6	266
11/22/2024	7:15:00	6.6	0.000	7.7	26,840	Open	13.6	261
11/22/2024	7:30:00	6.6	0.926	7.9	26,854	Open	10.4	118
11/22/2024	7:45:00	6.7	0.900	10.6	26,868	Open	10.5	118
11/22/2024	8:00:00	6.7	0.862	12	26,881	Open	10.5	118
11/22/2024	8:15:00	6.8	0.847	14.4	26,894	Open	10.6	118
11/22/2024	8:30:00	6.8	0.832	18.6	26,907	Open	10.6	118

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 18th to November 24th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **December 2, 2024**

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/22/2024	8:45:00	6.8	0.000	19.8	26,907	Open	11	116
11/22/2024	9:00:00	6.8	0.000	22.1	26,907	Open	11.7	117
11/22/2024	9:15:00	6.8	0.000	24.4	26,907	Open	12.7	118
11/22/2024	9:30:00	6.8	0.000	10.6	26,907	Open	13.7	255
11/22/2024	9:45:00	6.8	0.000	10.9	26,907	Open	14.3	252
11/22/2024	10:00:00	6.8	0.000	10.6	26,907	Open	14.4	251
11/22/2024	10:15:00	6.6	0.635	13.2	26,913	Open	12.4	115
11/22/2024	10:30:00	6.8	0.627	16.4	26,922	Open	10.3	115
11/22/2024	10:45:00	6.8	0.605	10.8	26,931	Open	10.4	116
11/22/2024	11:00:00	6.9	0.586	13.8	26,940	Open	10.4	115
11/22/2024	11:15:00	6.9	0.000	11.7	26,948	Open	10.3	114
11/22/2024	11:30:00	6.9	0.000	9	26,948	Open	10.6	114
11/22/2024	11:45:00	6.9	0.000	8.1	26,948	Open	11.1	115
11/22/2024	12:00:00	6.9	0.000	7.6	26,948	Open	11.8	116
11/22/2024	12:15:00	6.9	0.000	7.6	26,948	Open	12.6	116

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 18th to November 24th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **December 2, 2024**

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/22/2024	12:30:00	6.9	0.000	6.7	26,948	Open	13.4	116
11/22/2024	12:45:00	6.9	0.000	6.6	26,948	Open	13.9	116
11/22/2024	13:00:00	6.9	0.000	8	26,948	Open	14.6	251
11/22/2024	13:15:00	6.9	0.000	7.2	26,948	Open	15.3	250
11/22/2024	13:30:00	6.8	0.609	2.5	26,955	Open	10.9	118
11/22/2024	13:45:00	6.9	0.616	0.7	26,964	Open	10.9	118
11/22/2024	14:00:00	7	0.575	0.6	26,973	Open	10.8	118
11/22/2024	14:15:00	7	0.559	0.9	26,982	Open	10.8	118
11/22/2024	14:30:00	7	0.000	2.4	26,989	Open	10.9	118
11/22/2024	14:45:00	7	0.000	2.3	26,989	Open	11.8	118
11/22/2024	15:00:00	7	0.000	2.7	26,989	Open	13	118
11/22/2024	15:15:00	7	0.000	1.1	26,989	Open	14	119
11/22/2024	15:30:00	7	0.000	0.5	26,989	Open	14.9	119
11/22/2024	15:45:00	7	0.000	0.2	26,989	Open	15.7	119
11/22/2024	16:00:00	7	0.654	0.8	26,991	Open	16.4	119

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/22/2024	16:15:00	6.9	0.000	6.5	26,994	Open	11.5	119
11/22/2024	16:30:00	6.9	0.000	16.9	26,994	Open	12.5	119
11/22/2024	16:45:00	6.9	0.000	24.4	26,994	Open	13.5	119
11/22/2024	17:00:00	6.9	0.000	2.8	26,994	Closed	14.4	120
11/22/2024	17:15:00	7	0.703	0	27,003	Open	10.8	118
11/22/2024	17:30:00	7	0.669	0.9	27,008	Open	11	118
11/22/2024	17:45:00	7	0.000	0	27,015	Open	11	119
11/22/2024	18:00:00	7	0.000	0	27,015	Open	12	119
11/22/2024	18:15:00	7	0.696	0	27,022	Open	10.7	119
11/22/2024	18:30:00	7.1	0.680	0.1	27,032	Open	10.7	118
11/22/2024	18:45:00	7.1	0.680	1.7	27,042	Open	10.7	119
11/22/2024	19:00:00	7.1	0.000	2.3	27,043	Open	11.6	119
11/22/2024	19:15:00	7.1	0.000	0.9	27,043	Open	12.7	119
11/22/2024	19:30:00	7.1	0.000	0	27,043	Open	13.8	119
11/22/2024	19:45:00	7.1	0.000	0.4	27,043	Open	14.6	119

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/22/2024	20:00:00	7.1	0.680	3.9	27,048	Open	10.7	119
11/22/2024	20:15:00	7.1	0.665	0	27,058	Open	10.7	118
11/22/2024	20:30:00	7.2	0.711	0	27,069	Open	10.5	116
11/22/2024	20:45:00	7.2	0.711	0.7	27,080	Open	10.4	116
11/22/2024	21:00:00	7.2	0.696	2.3	27,090	Open	10.2	114
11/22/2024	21:15:00	7.2	0.000	4.1	27,100	Open	10.2	114
11/22/2024	21:30:00	7.2	0.000	5.2	27,100	Open	10.5	114
11/22/2024	21:45:00	7.2	0.000	1.7	27,100	Open	10.8	114
11/22/2024	22:00:00	7.2	0.000	1.6	27,100	Open	11.1	113
11/22/2024	22:15:00	7.2	0.000	1.6	27,100	Open	11.3	113
11/22/2024	22:30:00	7.2	0.000	1.8	27,100	Open	11.5	113
11/22/2024	22:45:00	7.1	0.756	13.1	27,101	Open	11.2	113
11/22/2024	23:00:00	7.1	0.639	26.1	27,107	Open	10	114
11/22/2024	23:15:00	7.2	0.620	1.4	27,117	Open	10	114
11/22/2024	23:30:00	7.2	0.631	1.4	27,126	Open	10	114

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/22/2024	23:45:00	7.2	0.639	1.9	27,136	Open	10.1	114
11/23/2024	0:00:00	7.3	0.620	1.2	27,145	Open	10.1	114
11/23/2024	0:15:00	7.3	0.000	0.1	27,150	Open	10.4	116
11/23/2024	0:30:00	7.2	0.000	0.1	27,150	Open	11.2	116
11/23/2024	0:45:00	7.2	0.000	0.1	27,150	Open	12	116
11/23/2024	1:00:00	7.2	0.000	0.1	27,150	Open	12.8	118
11/23/2024	1:15:00	7.2	0.000	0	27,150	Open	13.6	118
11/23/2024	1:30:00	7.2	0.000	0	27,150	Open	14.5	118
11/23/2024	1:45:00	7.2	0.000	0	27,150	Open	15.2	119
11/23/2024	2:00:00	7.2	0.000	0	27,150	Open	15.8	119
11/23/2024	2:15:00	7.2	0.000	0	27,150	Open	16.4	119
11/23/2024	2:30:00	7.2	0.000	0	27,150	Open	17	241
11/23/2024	2:45:00	7.2	0.000	0	27,150	Open	17.3	243
11/23/2024	3:00:00	7.1	0.597	0	27,153	Open	11	119
11/23/2024	3:15:00	7.2	0.620	0	27,162	Open	10.8	119

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/23/2024	3:30:00	7.2	0.624	0	27,171	Open	10.8	118
11/23/2024	3:45:00	7.3	0.616	0	27,180	Open	10.7	119
11/23/2024	4:00:00	7.3	0.586	0.7	27,190	Open	10.8	116
11/23/2024	4:15:00	7.3	0.858	0.6	27,202	Open	10.5	116
11/23/2024	4:30:00	7.3	0.900	0	27,215	Open	10.7	118
11/23/2024	4:45:00	7.4	0.000	0	27,220	Open	11.2	118
11/23/2024	5:00:00	7.3	0.000	0	27,220	Open	12.1	118
11/23/2024	5:15:00	7.3	0.000	0	27,221	Open	11.9	119
11/23/2024	5:30:00	7.3	0.858	0	27,231	Open	10.6	117
11/23/2024	5:45:00	7.4	0.907	0	27,245	Open	10.5	114
11/23/2024	6:00:00	7.4	0.922	0	27,259	Open	10.5	114
11/23/2024	6:15:00	7.4	0.000	0.7	27,270	Open	10.5	113
11/23/2024	6:30:00	7.4	0.000	1	27,270	Open	11.2	117
11/23/2024	6:45:00	7.4	0.000	1.8	27,270	Open	12	117
11/23/2024	7:00:00	7.4	0.000	3.8	27,270	Open	13	118

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 18th to November 24th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **December 2, 2024**

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/23/2024	7:15:00	7.3	0.215	1.2	27,274	Open	10.8	118
11/23/2024	7:30:00	7.3	0.000	1.1	27,274	Open	11.5	118
11/23/2024	7:45:00	7.3	0.000	0	27,274	Open	12.4	119
11/23/2024	8:00:00	7.3	0.000	0	27,274	Open	13.3	119
11/23/2024	8:15:00	7.3	0.000	0	27,274	Open	14.2	119
11/23/2024	8:30:00	7.3	0.866	1.1	27,279	Open	11	119
11/23/2024	8:45:00	7.3	0.000	0	27,289	Open	11.2	119
11/23/2024	9:00:00	7.3	0.000	0	27,289	Open	12	119
11/23/2024	9:15:00	7.3	0.000	0	27,289	Open	13	119
11/23/2024	9:30:00	7.3	0.854	0	27,295	Open	10.8	119
11/23/2024	9:45:00	7.4	0.832	0	27,307	Open	10.8	119
11/23/2024	10:00:00	7.4	0.843	0	27,320	Open	10.9	119
11/23/2024	10:15:00	7.4	0.000	0	27,331	Open	10.9	119
11/23/2024	10:30:00	7.4	0.000	0	27,331	Open	11.9	119
11/23/2024	10:45:00	7.4	0.000	0	27,331	Open	12.9	119

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 18th to November 24th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **December 2, 2024**

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/23/2024	11:00:00	7.4	0.000	0	27,331	Open	13.9	119
11/23/2024	11:15:00	7.4	0.000	0	27,331	Open	14.8	120
11/23/2024	11:30:00	7.4	0.000	0	27,331	Open	15.6	119
11/23/2024	11:45:00	7.4	0.000	0	27,331	Open	16.3	121
11/23/2024	12:00:00	7.3	0.828	15.2	27,333	Open	13.3	121
11/23/2024	12:15:00	7.4	0.847	0	27,342	Open	11.3	119
11/23/2024	12:30:00	7.4	0.877	0	27,355	Open	11.4	119
11/23/2024	12:45:00	7.4	0.869	0	27,368	Open	11.2	119
11/23/2024	13:00:00	7.5	0.847	0	27,381	Open	11.2	119
11/23/2024	13:15:00	7.4	0.000	0	27,382	Open	12	119
11/23/2024	13:30:00	7.4	0.000	0	27,382	Open	13.1	119
11/23/2024	13:45:00	7.4	0.000	0	27,382	Open	14.1	119
11/23/2024	14:00:00	7.4	0.000	0	27,382	Open	15	120
11/23/2024	14:15:00	7.4	0.000	0	27,382	Open	15.9	121
11/23/2024	14:30:00	7.4	0.000	0	27,382	Open	16.6	120

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/23/2024	14:45:00	7.4	0.000	0	27,382	Open	17.3	121
11/23/2024	15:00:00	7.4	0.000	0	27,382	Open	17.9	121
11/23/2024	15:15:00	7.4	0.869	0	27,390	Open	11.5	121
11/23/2024	15:30:00	7.4	0.885	4.8	27,403	Open	11.4	119
11/23/2024	15:45:00	7.4	0.869	0	27,414	Open	12.3	119
11/23/2024	16:00:00	7.5	0.873	0	27,427	Open	11.4	119
11/23/2024	16:15:00	7.5	0.000	0	27,434	Open	11.7	119
11/23/2024	16:30:00	7.5	0.000	0	27,434	Open	12.8	119
11/23/2024	16:45:00	7.5	0.000	0	27,434	Open	13.9	119
11/23/2024	17:00:00	7.4	0.000	0	27,434	Open	14.9	119
11/23/2024	17:15:00	7.4	0.000	0	27,434	Open	15.9	120
11/23/2024	17:30:00	7.4	0.000	0	27,434	Open	16.7	121
11/23/2024	17:45:00	7.4	0.000	0	27,434	Open	17.4	121
11/23/2024	18:00:00	7.4	0.801	0	27,436	Open	18.1	121
11/23/2024	18:15:00	7.4	0.873	0	27,449	Open	11.4	119

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/23/2024	18:30:00	7.5	0.885	0	27,462	Open	11.3	119
11/23/2024	18:45:00	7.5	0.854	0	27,472	Open	12	119
11/23/2024	19:00:00	7.5	0.000	0	27,477	Open	11.7	119
11/23/2024	19:15:00	7.5	0.000	0	27,477	Open	12.8	119
11/23/2024	19:30:00	7.5	0.000	0	27,477	Open	13.9	119
11/23/2024	19:45:00	7.5	0.000	0	27,477	Open	14.8	119
11/23/2024	20:00:00	7.5	0.000	0	27,477	Open	15.7	119
11/23/2024	20:15:00	7.4	0.000	0	27,477	Open	16.5	121
11/23/2024	20:30:00	7.4	0.000	8	27,482	Open	11.2	118
11/23/2024	20:45:00	7.4	0.851	5.3	27,490	Open	10.8	116
11/23/2024	21:00:00	7.5	0.873	0	27,503	Open	10.6	114
11/23/2024	21:15:00	7.5	0.869	0	27,516	Open	10.5	114
11/23/2024	21:30:00	7.5	0.900	0	27,529	Open	10.5	113
11/23/2024	21:45:00	7.5	0.000	0	27,533	Open	10.8	114
11/23/2024	22:00:00	7.5	0.484	22.7	27,533	Open	11.7	117

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 18th to November 24th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **December 2, 2024**

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/23/2024	22:15:00	7.5	0.873	0	27,545	Open	10.7	116
11/23/2024	22:30:00	7.5	0.000	0	27,558	Open	10.6	116
11/23/2024	22:45:00	7.5	0.000	0	27,558	Open	11	114
11/23/2024	23:00:00	7.5	0.809	31.8	27,559	Open	11.5	113
11/23/2024	23:15:00	7.5	0.000	0	27,571	Open	10.5	115
11/23/2024	23:30:00	7.5	0.000	0	27,571	Open	11	114
11/23/2024	23:45:00	7.5	0.000	0	27,571	Open	11.5	115
11/24/2024	0:00:00	7.5	0.000	0	27,571	Open	12.2	116
11/24/2024	0:15:00	7.5	0.000	0	27,571	Open	13	116
11/24/2024	0:30:00	7.5	0.000	0	27,571	Open	13.7	119
11/24/2024	0:45:00	7.5	0.000	0	27,571	Open	14.5	118
11/24/2024	1:00:00	7.5	0.000	0	27,571	Open	15.2	119
11/24/2024	1:15:00	7.4	0.873	0	27,573	Open	12.2	119
11/24/2024	1:30:00	7.5	0.877	0	27,586	Open	10.9	118
11/24/2024	1:45:00	7.5	0.869	2.5	27,600	Open	10.9	118

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/24/2024	2:00:00	7.5	0.847	0	27,613	Open	10.9	118
11/24/2024	2:15:00	7.5	0.805	16.8	27,621	Open	11.4	117
11/24/2024	2:30:00	7.6	0.835	0	27,634	Open	10.7	116
11/24/2024	2:45:00	7.5	0.000	0	27,637	Open	11.1	116
11/24/2024	3:00:00	7.5	0.000	0	27,637	Open	12	118
11/24/2024	3:15:00	7.5	0.000	0	27,637	Open	12.9	118
11/24/2024	3:30:00	7.5	0.000	0	27,637	Open	13.8	118
11/24/2024	3:45:00	7.5	0.000	0	27,637	Open	14.3	116
11/24/2024	4:00:00	7.5	0.000	0	27,637	Open	14.7	117
11/24/2024	4:15:00	7.5	0.000	0	27,637	Open	15.3	118
11/24/2024	4:30:00	7.5	0.000	0	27,637	Open	15.9	119
11/24/2024	4:45:00	7.5	0.000	0	27,637	Open	16.5	118
11/24/2024	5:00:00	7.5	0.000	0	27,637	Open	16.8	119
11/24/2024	5:15:00	7.5	0.881	0	27,643	Open	10.9	119
11/24/2024	5:30:00	7.5	0.136	8.2	27,648	Open	11.2	116

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 18th to November 24th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **December 2, 2024**

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/24/2024	5:45:00	7.5	0.896	0	27,661	Open	10.7	117
11/24/2024	6:00:00	7.6	0.922	0	27,675	Open	10.7	116
11/24/2024	6:15:00	7.6	0.000	0	27,685	Open	11	118
11/24/2024	6:30:00	7.6	0.000	0	27,685	Open	11.8	118
11/24/2024	6:45:00	7.5	0.000	0	27,685	Open	12.8	118
11/24/2024	7:00:00	7.5	0.885	0	27,689	Open	10.9	118
11/24/2024	7:15:00	7.6	0.877	0	27,702	Open	10.8	119
11/24/2024	7:30:00	7.6	0.000	0	27,713	Open	11.1	119
11/24/2024	7:45:00	7.6	0.000	0	27,713	Open	12	119
11/24/2024	8:00:00	7.6	0.000	0	27,713	Open	13	119
11/24/2024	8:15:00	7.5	0.000	0	27,713	Open	14	119
11/24/2024	8:30:00	7.5	0.000	0	27,713	Open	14.9	119
11/24/2024	8:45:00	7.5	0.000	0	27,713	Open	15.7	119
11/24/2024	9:00:00	7.5	0.000	0	27,713	Open	16.3	119
11/24/2024	9:15:00	7.5	0.000	0	27,713	Open	16.9	119

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Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/24/2024	9:30:00	7.5	0.000	0	27,713	Open	17.5	120
11/24/2024	9:45:00	7.5	0.903	0	27,717	Open	11.3	119
11/24/2024	10:00:00	7.5	0.911	0	27,730	Open	10.9	120
11/24/2024	10:15:00	7.6	0.885	0	27,744	Open	10.9	118
11/24/2024	10:30:00	7.6	0.900	0	27,757	Open	10.9	119
11/24/2024	10:45:00	7.6	0.000	0	27,761	Open	11.5	119
11/24/2024	11:00:00	7.6	0.000	0	27,761	Open	12.6	119
11/24/2024	11:15:00	7.6	0.000	0.2	27,761	Open	13.7	119
11/24/2024	11:30:00	7.6	0.000	1.1	27,761	Open	14.7	119
11/24/2024	11:45:00	7.6	0.000	1.9	27,761	Open	15.5	119
11/24/2024	12:00:00	7.5	0.000	0	27,761	Open	15.9	117
11/24/2024	12:15:00	7.5	0.000	0	27,761	Open	15.9	116
11/24/2024	12:30:00	7.5	0.000	0	27,761	Open	15.9	114
11/24/2024	12:45:00	7.5	0.911	0	27,772	Open	10.6	114
11/24/2024	13:00:00	7.6	0.915	0	27,785	Open	10.6	116

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Data Date Range	**November 18th to November 24th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **December 2, 2024**

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/24/2024	13:15:00	7.6	0.900	2.3	27,799	Open	10.8	116
11/24/2024	13:30:00	7.6	0.000	4.7	27,808	Open	11	117
11/24/2024	13:45:00	7.6	0.000	6.5	27,808	Open	11.9	117
11/24/2024	14:00:00	7.6	0.000	0	27,808	Open	12.8	118
11/24/2024	14:15:00	7.6	0.000	2.5	27,808	Open	13.7	118
11/24/2024	14:30:00	7.6	0.000	7.4	27,808	Open	14.7	119
11/24/2024	14:45:00	7.6	0.000	15.1	27,808	Open	15.5	119
11/24/2024	15:00:00	7.6	0.000	34.1	27,808	Open	20.3	245
11/24/2024	15:15:00	7.5	0.000	47.9	27,808	Open	20.6	243
11/24/2024	15:30:00	7.5	0.000	3.7	27,809	Open	12.3	120
11/24/2024	15:45:00	7.5	0.858	2.3	27,820	Open	11.3	119
11/24/2024	16:00:00	7.6	0.877	11.7	27,833	Open	11.3	118
11/24/2024	16:15:00	7.6	0.000	0	27,842	Open	11.8	119
11/24/2024	16:30:00	7.6	0.000	0	27,842	Open	12.7	118
11/24/2024	16:45:00	7.5	0.000	9.8	27,842	Open	13.8	119

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**November 18th to November 24th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **December 2, 2024**

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/24/2024	17:00:00	7.5	0.000	37.7	27,842	Open	14.8	119
11/24/2024	17:15:00	7.6	0.000	0.4	27,842	Open	17.9	121
11/24/2024	17:30:00	7.4	0.000	15.7	27,842	Open	19.6	121
11/24/2024	17:45:00	7.5	0.854	0	27,850	Open	11.4	122
11/24/2024	18:00:00	7.6	0.896	2.2	27,863	Open	11.3	119
11/24/2024	18:15:00	7.6	0.873	10.9	27,873	Open	11.5	119
11/24/2024	18:30:00	7.6	0.862	6	27,886	Open	11.2	119
11/24/2024	18:45:00	7.6	0.000	5.3	27,889	Open	11.9	119
11/24/2024	19:00:00	7.6	0.000	6.1	27,889	Open	13	119
11/24/2024	19:15:00	7.6	0.000	8.2	27,889	Open	14.1	119
11/24/2024	19:30:00	7.6	0.000	11.6	27,889	Open	15.1	119
11/24/2024	19:45:00	7.6	0.000	15.4	27,889	Open	15.9	119
11/24/2024	20:00:00	7.6	0.000	0	27,889	Open	16.7	121
11/24/2024	20:15:00	7.5	0.820	3	27,890	Open	13.2	120
11/24/2024	20:30:00	7.6	0.843	0	27,903	Open	11	119

Date	Time	Discharge pH	Discharge Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/24/2024	20:45:00	7.6	0.854	0	27,916	Open	10.8	119
11/24/2024	21:00:00	7.6	0.854	0	27,929	Open	10.7	118
11/24/2024	21:15:00	7.6	0.832	0	27,939	Open	11	118
11/24/2024	21:30:00	7.6	0.000	0	27,940	Open	11.7	119
11/24/2024	21:45:00	7.6	0.000	0	27,940	Open	12.8	119
11/24/2024	22:00:00	7.6	0.000	0	27,940	Open	13.8	119
11/24/2024	22:15:00	7.6	0.816	0	27,948	Open	11.1	119
11/24/2024	22:30:00	7.6	0.858	0	27,960	Open	10.9	119
11/24/2024	22:45:00	7.6	0.000	0	27,968	Open	11.1	119
11/24/2024	23:00:00	7.6	0.000	0	27,968	Open	11.6	119
11/24/2024	23:15:00	7.6	0.000	0	27,968	Open	12	118
11/24/2024	23:30:00	7.6	0.000	0	27,968	Open	12.3	118
11/24/2024	23:45:00	7.6	0.000	0.8	27,968	Open	12.7	117

Photos:

Photo 1: No visible sheen observed in the WTP water, November 18th

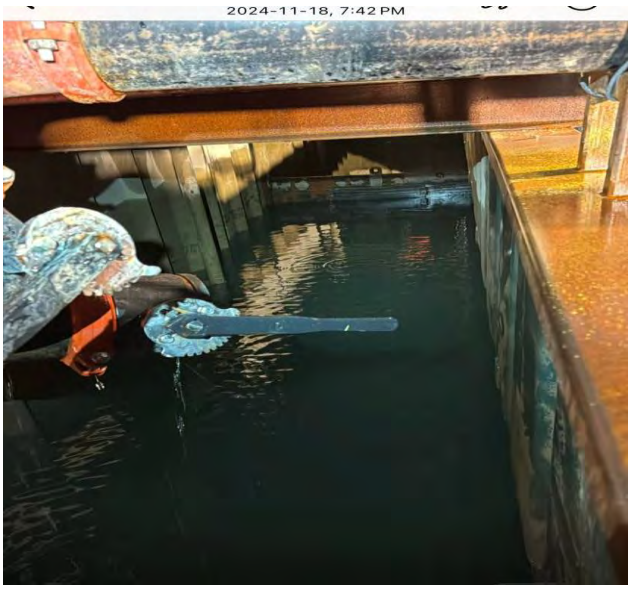



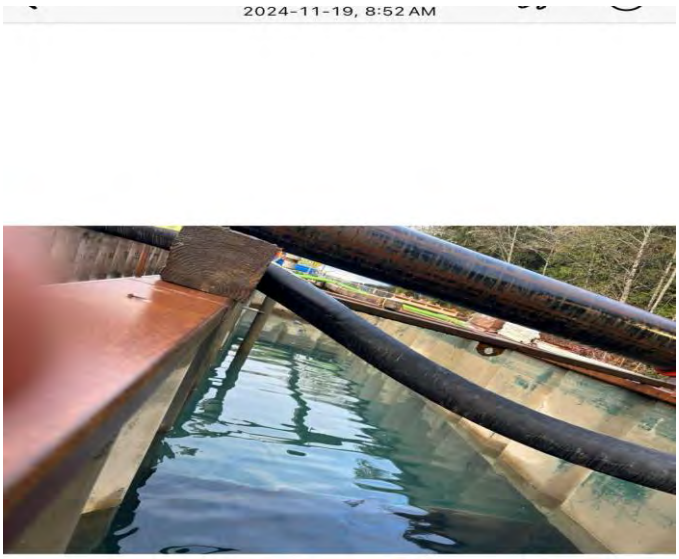
Photo 2: No visible sheen observed in the WTP water, November 19th


Photo 3: No visible sheen observed in the WTP water, November 20th

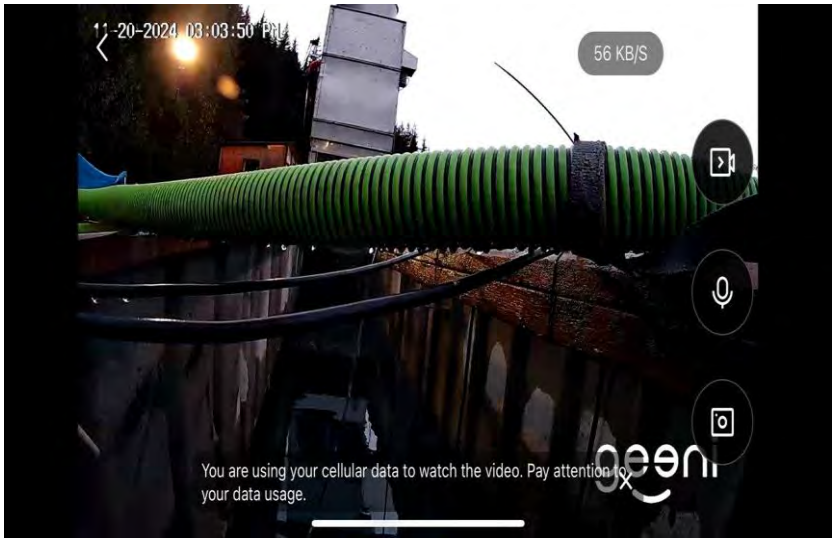



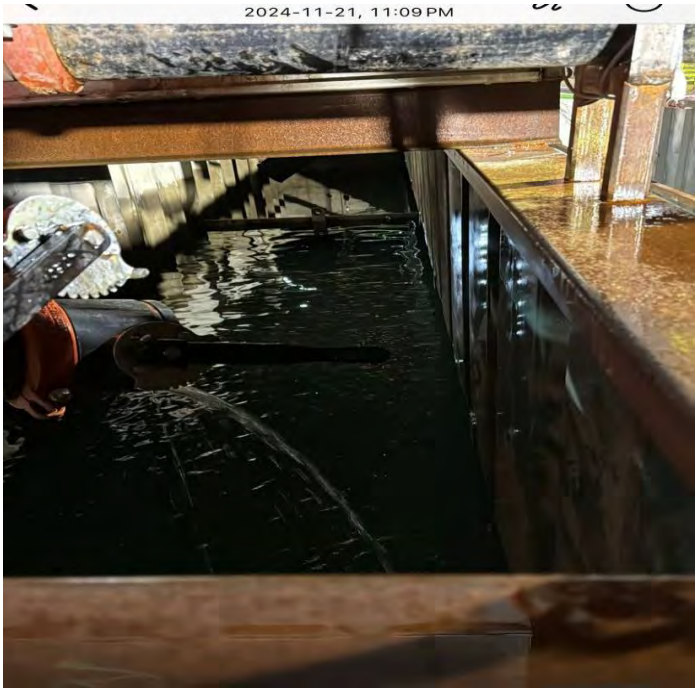
Photo 4: No visible sheen observed in the WTP water, November 21st


Photo 5: No visible sheen observed in the WTP water, November 22nd

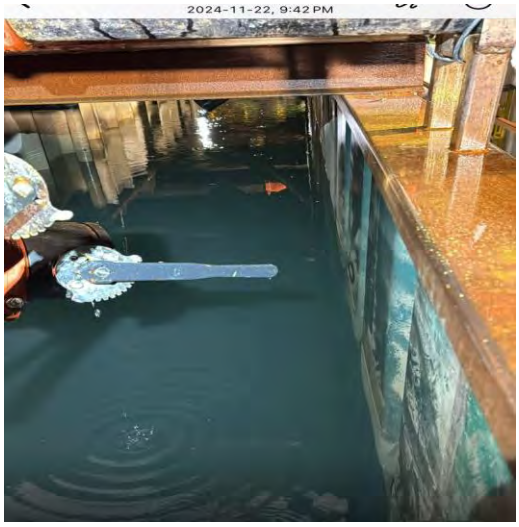



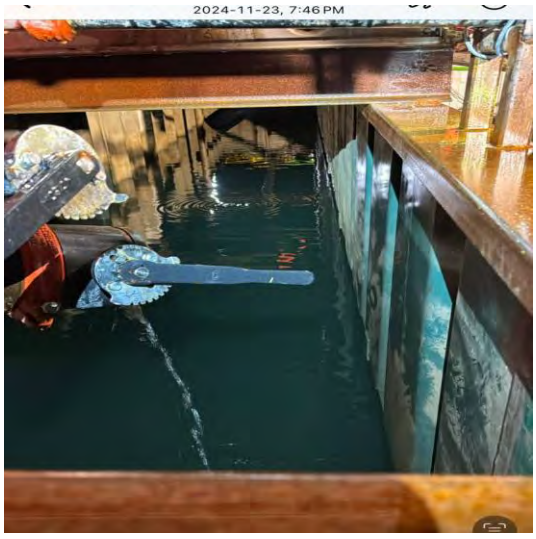
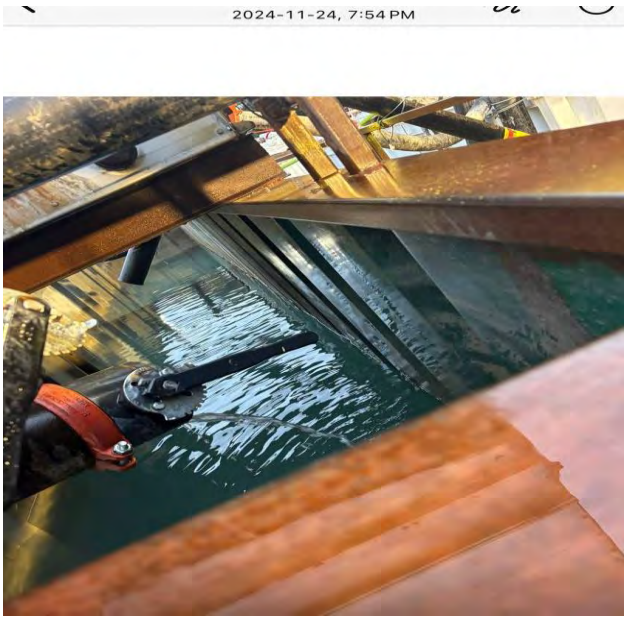
Photo 6: No visible sheen observed in the WTP water, November 23rd


Photo 7: No visible sheen observed in the WTP water, November 24th



FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-11-19-Rysdale-7D8AE

Project Component:	Tunnel	**Site Name:**	WLNG Treatment Discharge
Inspection Date:	11/19/2024	**Location:**	WLNG
Triton QP:	Aaron Rysdale	**Latitude/Longitude:**	49.66941 -123.249819
Temperature(c):	Low 1 High 5	**Permit:**	PE 110136
Weather Conditions:	Overcast	**Ground Conditions:**	Wet

Observations

Time: 11:14:51 **Flow Volume (visual):** N/A

Notes: 2nd turbidity taken before sampling, result 7.78.
Filter clogged quickly with coagulating polymer, dissolved mercury was filtered and preserved, dissolved metal not filtered or preserved, dissolved nutrients had preservatives flushed and not filtered.

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	Yes		

Logger Maintenance

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

Describe Logger Maintenance

Photos

Photo: 1

Location: WLNG EOP

Description: Discharge sampling point

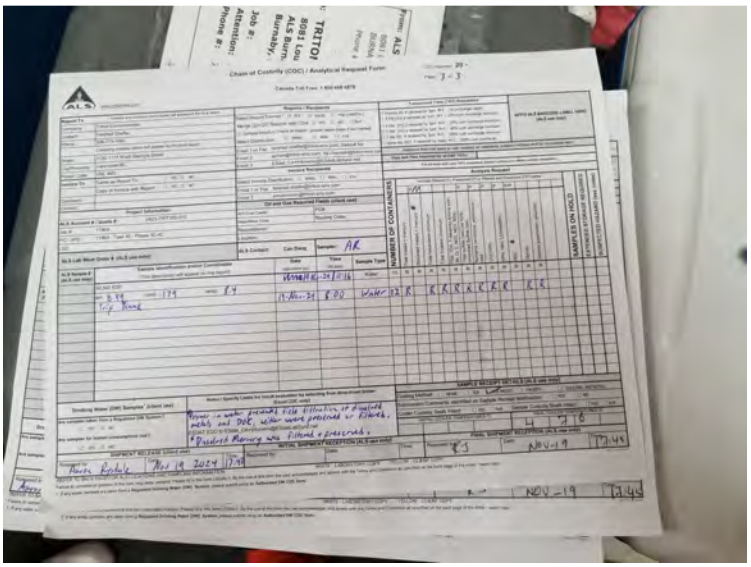


Photo: 2

Location:

Description: Sample COC

Photos

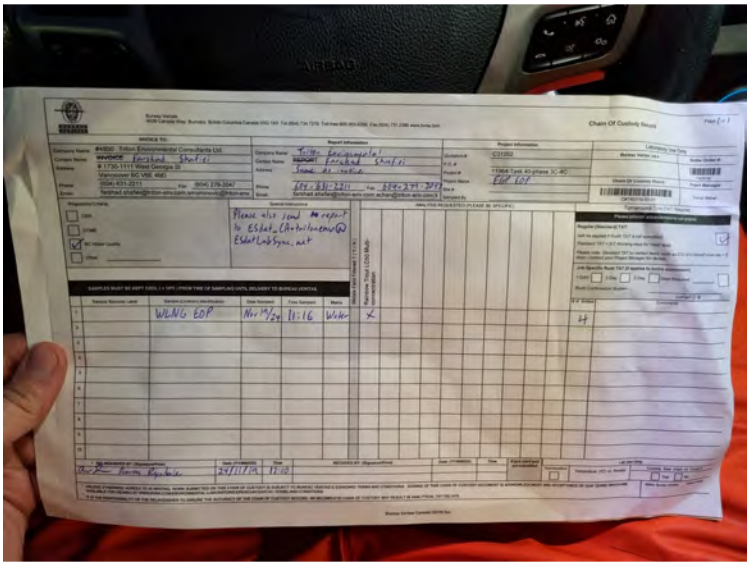


Photo: 3

Location:

Description: LC50 sample COC

Sign Off

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

Appendix D: Woodfibre Site Receiving Environment Documentation

Woodfibre Site Receiving Environment Sample Analysis

TRITON	Sample ID	Reviewed and signed off by:	College of Applied Biologists – Farshad Shafiei RPBio 3781 CAB		Farshad Shafiei Ph.D., R.P.Bio.	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					VA24D1384-001	VA24D1384-002					
	Date Sampled					19-Nov-2024	19-Nov-2024					
	Time Sampled					12:26	12:06					
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	7.36	7.33		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	Short-term daily temperature guideline is 19°C for streams with unknown fish distribution Max +/- from BKG 1°C [4]	-	Short-term daily temperature guideline is 19°C for streams with unknown fish distribution Max +/- from BKG 1°C [4]	-	6.2	6.4		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 temperature change not to exceed 0.5°C hourly. treams with unknown fish distribution.	
Conductivity (field)	uS/cm	-	-	-	-	40	32					
Turbidity (field)	NTU	Varies with background, see note Guideline = 12.0	Varies with background, see note Guideline = 4.26 5-week discrete sampling average = 1.68 (DS)	Varies with background, see note Guideline = 12.0	Varies with background, see note Guideline = 4.26 5-week discrete sampling average = 1.68 (DS)	4.02	3.67		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.
General Parameters												
Hardness (as $CaCO_3$) (total)	mg/L	-	-	-	-	12.1	9.53					
Total Dissolved Solids	mg/L	-	-	-	-	32	25					
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	< 3.0		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. 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 druation 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 druation 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	-	-	-	-	2.93	2.59			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	7.9	6.6			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 = 15	Varies with pH and temperature. See note. Guideline = 1.86	Varies with pH and temperature. See note. Guideline = 777	Varies with pH, temperature and salinity. See note. Guideline = 12.0	< 0.0050	< 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	1.16	1.08				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
Fluoride	mg/L	Varies with hardness Guideline =0.485	-	1.5	-	< 0.020	< 0.020		Guideline has interim status. 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	0.111	0.0676					
Nitrite (as N)	mg/L	Varies with chloride. Table 27B, see note. Guideline = 0.06	Varies with chloride. Table 27B, see note. Guideline = 0.02	-	-	< 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	-	-	-	-	0.178	0.116					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.127	0.0657			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	-	-	6.3	4.6			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 = 0.104 5-week field average = 0.184 (US), 0.196 (DS)	-	-	0.136	0.248			Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated with the following equation: Guideline = (EXP((0.645 * LN(DOC)) + (2.255 * LN(hardness)) + (1.995 * pH) + (-0.284 * (LN(hardness) * pH))-9.898)/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	0.00038	0.00025					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.00377	0.00379			Working guideline status		
Beryllium (Be)-Total	mg/L	-	0.00013	-	0.100	< 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	-	1.2	< 0.010	< 0.010					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	0.0000079	0.0000065					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	3.47	2.89					
Cesium (Cs)-Total	mg/L	-	-	-	-	< 0.00001	< 0.00001					
Chromium (Cr) - Total	mg/L	-	-	-	-	< 0.0005	< 0.0005					
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	-	-	< 0.0001	< 0.0001					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002 5-week field averages = 0.00151 (US), 0.00108 (DS)	0.00137	0.00096					
Iron (Fe)-Total	mg/L	1	-	-	-	0.055	0.04					
Lead (Pb)-Total	mg/L	-	-	0.14	0.002 5-week field averages = 0.000102 (US), 0.00009 (DS)	< 0.000050	< 0.000050		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*on(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*on(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	-	-	-	-	0.845	0.562					
Manganese (Mn)-Total	mg/L	Varies with hardness Guideline = 0.82	Varies with hardness Guideline = 0.77	-	-	0.00262	0.0023		Guideline varies with hardness. The guideline is calculated using the following equation: Guideline = (0.0044 * hardness + 0.605) 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: 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	-	-	0.000504	0.000639					
Nickel (Ni)-Total	mg/L	-	-	-	0.0083	0.00072	0.00055			Working guideline status. Guideline varies with hardness. Refer to BC Water Quality Guidelines for more information. Hardness 0 ≤ 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	-	-	0.122	0.074			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	-	-	-	-	0.582	0.376					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00038	0.00034					
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 more information on guideliens and sampling guidance
Silicon (Si)-Total	mg/L	-	-	-	-	3.74	3.62					
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	< 0.000010	< 0.000010		Varies with hardness Guideline ranges: Hardness ≤ 100: 0.0001 Hardness > 100: 0.003	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	-	-	-	-	1.97	1.49					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0137	0.0121					
Sulfur (S)-Total	mg/L	-	-	-	-	1.88	1.28					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.00003 5-week field average = <0.000010 (US), 0.00001 (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	-	-	-	-	0.00201	0.00144					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Total	mg/L	0.0165	0.0075	-	-	0.000166	0.000174			Working guideline status		
Vanadium (V)-Total	mg/L	-	0.06	-	0.005	< 0.00050	< 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	-	-	-	-	< 0.00020	< 0.00020					
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0814	0.164					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	< 0.0001	< 0.0001					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00032	0.00023					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.00307	0.00324					
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 = 0.000067	Varies with hardness, see note Guideline = 0.000037	-	-	0.0000061	< 0.000005		Guideline is hardness dependent. Guideline is appilcable to water hardness between 7.0 and 455 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 guiedeline 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	-	-	3.42	2.87			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					
Chromium (Cr(III))-Dissolved	mg/L	-	-	-	-	-	-					
Chromium (Cr(VI))-Dissolved	mg/L	-	-	-	-	-	-					
Cobalt (Co)-Dissolved	mg/L	-	-	-	-	< 0.0001	< 0.0001					
Copper (Cu)-Dissolved	mg/L	Guideline varies with other parameters, see note Guideline = 0.0036	Guideline varies with other parameters, see note Guideline = 0.0006 5-week field average = 0.00116 (US), 0.00083 (DS)	-	-	0.0012	0.00087		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	-	-	-	0.023	0.021					
Lead (Pb)-Dissolved	mg/L	-	Guideline varies with DOC and hardness Guideline: 0.00233 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((0.514*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	-	-	-	-	0.745	0.51					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00126	0.00131					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.000494	0.000585					
Nickel (Ni)-Dissolved	mg/L	Guideline varies with pH, temperature, DOC, and hardness Guideline: 0.0205	Guideline varies with pH, temperature, DOC, and hardness Guideline: 0.00142 5-week field average = 0.000534 (US), 0.000506 (DS)	-	-	0.00067	0.00053		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	-	-	-	-	0.111	0.062					
Potassium (K)-Dissolved	mg/L	-	-	-	-	0.582	0.389					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00035	0.00031					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	< 0.00005	< 0.00005					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	3.49	3.42					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	1.88	1.54					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0134	0.0118					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	1.66	1.2					
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	-	-	-	-	0.0004	0.00041					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.000159	0.000153					
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 = 0.0046 5-week field average = 0.0015 (US), 0.0026 (DS)	-	-	0.0012	0.004		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)/2/1000) 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)/2/1000) Guideline only applies to water with pH between 6.5 and 8.13, DOC between 0.3 and 22.9 mg/L, anmd 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)										
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 & Agriculture. Accessed from: wqg_summary_aquaticlife_wildlife_agri.pdf (gov.bc.ca)

[2]BC MOECCS. 2021. BC Working Water Quality 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: 0.3-8.0C; 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)	Values: EAS DS 1 (Downstream)
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations	7.36	7.33
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations	6.2	6.4
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations	4.02	3.67
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	12.1	9.53
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations	2.93	2.59
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations	7.9	6.6
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations	1.16	1.08

Woodfibre Site Receiving Environment Lab Documentation

CERTIFICATE OF ANALYSIS

Work Order	:	**VA24D1384**		
Client	:		Laboratory	
Contact	:		Account Manager	
Address	:		Address	
Telephone	:	----	Telephone	
Project	:	11964	Date Samples Received	: 19-Nov-2024 17:45
PO	:	11964-Task20-Phase3C-4C	Date Analysis Commenced	: 20-Nov-2024
C-O-C number	:	----	Issue Date	: 27-Nov-2024 13:01
Sampler	:	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
°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.

Analytical Results

Sub-Matrix: Water (Matrix: Water)			Client sample ID		WLNG US1	WLNG DS1	----	----	----
			Client sampling date / time		19-Nov-2024 12:26	19-Nov-2024 12:06	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24D1384-001	VA24D1384-002	----	----	----
					Result	Result	----	----	----
Field Tests									
Conductivity, field	----	EF001/VA	0.10	µS/cm	40.000	32.000	----	----	----
pH, field	----	EF001/VA	0.10	pH units	7.30	7.33	----	----	----
Temperature, field	----	EF001/VA	0.10	°C	6.20	6.40	----	----	----
Physical Tests									
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	11.6	9.27	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	12.1	9.53	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	32	25	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	7.9	6.6	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	<0.0050	<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	1.16	1.08	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	<0.020	<0.020	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.111	0.0676	----	----	----
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	0.178	0.116	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.127	0.0657	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	6.30	4.60	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	2.93	2.59	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US1	WLNG DS1	----	----	----
					Client sampling date / time	19-Nov-2024 12:26	19-Nov-2024 12:06	----	----	----
						VA24D1384-001	VA24D1384-002	----	----	----
						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		0.136	0.248	----	----	----
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		0.00038	0.00025	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.00377	0.00379	----	----	----
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		0.0000079	0.0000065	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		3.47	2.89	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		<0.00050	<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		0.00137	0.00096	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.055	0.040	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		0.845	0.562	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US1	WLNG DS1	----	----	----
					Client sampling date / time	19-Nov-2024 12:26	19-Nov-2024 12:06	----	----	----
						VA24D1384-001	VA24D1384-002	----	----	----
						Result	Result	----	----	----
Total Metals										
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.00262	0.00230	----	----	----
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		0.000504	0.000639	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		0.00072	0.00055	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		0.122	0.074	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		0.582	0.376	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00038	0.00034	----	----	----
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		3.74	3.62	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		1.97	1.49	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0137	0.0121	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		1.88	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		0.00201	0.00144	----	----	----
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		0.000166	0.000174	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG US1	WLNG DS1	----	----	----
					Client sampling date / time	19-Nov-2024 12:26	19-Nov-2024 12:06	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24D1384-001	VA24D1384-002	----	----	----
						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		0.0814	0.164	----	----	----
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		0.00032	0.00023	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00307	0.00324	----	----	----
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		0.0000061	<0.0000050	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		3.42	2.87	----	----	----
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		0.00120	0.00087	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.023	0.021	----	----	----
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		0.745	0.510	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00126	0.00131	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US1	WLNG DS1	----	----	----
					Client sampling date / time	19-Nov-2024 12:26	19-Nov-2024 12:06	----	----	----
						VA24D1384-001	VA24D1384-002	----	----	----
						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		0.000494	0.000585	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		0.00067	0.00053	----	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		0.111	0.062	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		0.582	0.389	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00035	0.00031	----	----	----
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		3.49	3.42	----	----	----
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		1.88	1.54	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0134	0.0118	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		1.66	1.20	----	----	----
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		0.00040	0.00041	----	----	----
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		0.000159	0.000153	----	----	----
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		0.0012	0.0040	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG US1	WLNG DS1	----	----	----
					Client sampling date / time	19-Nov-2024 12:26	19-Nov-2024 12:06	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24D1384-001	VA24D1384-002	----	----	----
						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/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----

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

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24D1384**	Page	: 1 of 15
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project	: 11964	Date Samples Received	: 19-Nov-2024 17:45
PO	: 11964-Task20-Phase3C-4C	Issue Date	: 27-Nov-2024 13:01
C-O-C number	: ----		
Sampler	: 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 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)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Anions and Nutrients	QC-MRG7-1776617 001	----	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0061 B mg/L	0.005 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
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG DS1	E298	19-Nov-2024	20-Nov-2024	28 days	1 days	✓	20-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG US1	E298	19-Nov-2024	20-Nov-2024	28 days	1 days	✓	20-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG DS1	E235.Br-L	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	21-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG US1	E235.Br-L	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	21-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG DS1	E235.Cl	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	21-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG US1	E235.Cl	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	21-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG DS1	E235.F	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	21-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 : Fluoride in Water by IC										
HDPE WLNG US1	E235.F	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	21-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG DS1	E235.NO3-L	19-Nov-2024	21-Nov-2024	3 days	2 days	✓	21-Nov-2024	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG US1	E235.NO3-L	19-Nov-2024	21-Nov-2024	3 days	2 days	✓	21-Nov-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG DS1	E235.NO2-L	19-Nov-2024	21-Nov-2024	3 days	2 days	✓	21-Nov-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG US1	E235.NO2-L	19-Nov-2024	21-Nov-2024	3 days	2 days	✓	21-Nov-2024	3 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG DS1	E235.SO4	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	21-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG US1	E235.SO4	19-Nov-2024	21-Nov-2024	28 days	2 days	✓	21-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WLNG DS1	E366	19-Nov-2024	20-Nov-2024	28 days	1 days	✓	21-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WLNG US1	E366	19-Nov-2024	20-Nov-2024	28 days	1 days	✓	21-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)										
WLNG US1	E372-U	19-Nov-2024	20-Nov-2024	28 days	1 days	✓	21-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WLNG DS1	E372-U	19-Nov-2024	20-Nov-2024	28 days	1 days	✓	21-Nov-2024	28 days	2 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
WLNG DS1	E509	19-Nov-2024	22-Nov-2024	28 days	3 days	✓	22-Nov-2024	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
WLNG US1	E509	19-Nov-2024	22-Nov-2024	28 days	3 days	✓	22-Nov-2024	28 days	3 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
WLNG DS1	E421	19-Nov-2024	21-Nov-2024	180 days	2 days	✓	22-Nov-2024	180 days	3 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
WLNG US1	E421	19-Nov-2024	21-Nov-2024	180 days	2 days	✓	22-Nov-2024	180 days	3 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 DS1	EF001	19-Nov-2024	----	----	----		20-Nov-2024	----	1 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 US1	EF001	19-Nov-2024	----	----	----		20-Nov-2024	----	1 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
WLNG DS1	E358-L	19-Nov-2024	20-Nov-2024	28 days	1 days	✓	20-Nov-2024	28 days	1 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) WLNG US1	E358-L	19-Nov-2024	20-Nov-2024	28 days	1 days	✓	20-Nov-2024	28 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WLNG DS1	E290	19-Nov-2024	21-Nov-2024	14 days	2 days	✓	21-Nov-2024	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WLNG US1	E290	19-Nov-2024	21-Nov-2024	14 days	2 days	✓	21-Nov-2024	14 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE WLNG DS1	E162	19-Nov-2024	----	----	----		25-Nov-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE WLNG US1	E162	19-Nov-2024	----	----	----		25-Nov-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WLNG DS1	E160	19-Nov-2024	----	----	----		25-Nov-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WLNG US1	E160	19-Nov-2024	----	----	----		25-Nov-2024	7 days	6 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
Opaque HDPE - total (sodium hydroxide) WLNG DS1	E532	19-Nov-2024	----	----	----		19-Nov-2024	28 days	0 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
Opaque HDPE - total (sodium hydroxide) WLNG US1	E532	19-Nov-2024	----	----	----		19-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
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) WLNG DS1	E508	19-Nov-2024	22-Nov-2024	28 days	3 days	✓	22-Nov-2024	28 days	3 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) WLNG US1	E508	19-Nov-2024	22-Nov-2024	28 days	3 days	✓	22-Nov-2024	28 days	3 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) WLNG DS1	E420	19-Nov-2024	24-Nov-2024	180 days	5 days	✓	26-Nov-2024	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) WLNG US1	E420	19-Nov-2024	24-Nov-2024	180 days	5 days	✓	26-Nov-2024	180 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) WLNG DS1	E395	19-Nov-2024	----	----	----		20-Nov-2024	7 days	1 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) WLNG US1	E395	19-Nov-2024	----	----	----		20-Nov-2024	7 days	1 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1776626	1	10	10.0	5.0	✓
Ammonia by Fluorescence	E298	1775768	1	3	33.3	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1776622	1	9	11.1	5.0	✓
Chloride in Water by IC	E235.Cl	1776618	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1779227	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1775143	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1775764	1	3	33.3	5.0	✓
Fluoride in Water by IC	E235.F	1776621	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1776619	1	12	8.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1776620	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1776617	1	12	8.3	5.0	✓
TDS by Gravimetry	E162	1782601	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1774433	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1779221	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1775131	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1775770	1	2	50.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1775766	1	3	33.3	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1775322	1	4	25.0	5.0	✓
TSS by Gravimetry	E160	1782597	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1776626	1	10	10.0	5.0	✓
Ammonia by Fluorescence	E298	1775768	1	3	33.3	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1776622	1	9	11.1	5.0	✓
Chloride in Water by IC	E235.Cl	1776618	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1779227	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1775143	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1775764	1	3	33.3	5.0	✓
Fluoride in Water by IC	E235.F	1776621	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1776619	1	12	8.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1776620	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1776617	1	12	8.3	5.0	✓
TDS by Gravimetry	E162	1782601	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1774433	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1779221	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1775131	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1775770	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*
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1775766	1	3	33.3	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1775322	1	4	25.0	5.0	✓
TSS by Gravimetry	E160	1782597	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1776626	1	10	10.0	5.0	✓
Ammonia by Fluorescence	E298	1775768	1	3	33.3	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1776622	1	9	11.1	5.0	✓
Chloride in Water by IC	E235.Cl	1776618	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1779227	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1775143	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1775764	1	3	33.3	5.0	✓
Fluoride in Water by IC	E235.F	1776621	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1776619	1	12	8.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1776620	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1776617	1	12	8.3	5.0	✓
TDS by Gravimetry	E162	1782601	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1774433	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1779221	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1775131	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1775770	1	2	50.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1775766	1	3	33.3	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1775322	1	4	25.0	5.0	✓
TSS by Gravimetry	E160	1782597	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1775768	1	3	33.3	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1776622	1	9	11.1	5.0	✓
Chloride in Water by IC	E235.Cl	1776618	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1779227	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1775143	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1775764	1	3	33.3	5.0	✓
Fluoride in Water by IC	E235.F	1776621	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1776619	1	12	8.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1776620	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1776617	1	12	8.3	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1774433	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1779221	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1775131	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1775770	1	2	50.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1775766	1	3	33.3	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Total Sulfide by Colourimetry (Automated Flow)	E395	1775322	1	4	25.0	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 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 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 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of 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 ALS Environmental - Vancouver	Water	Chinchilla Scientific Nitrate Method, 2011	Following digestion, total nitrogen is is determined colourimetrically using a discrete analyzer utilizing the vanadium chloride reduction method. This method of analysis is approved under US EPA 40 CFR Part 136 (May 2021).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated 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 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Hexavalent Chromium (Cr VI) by IC	E532 ALS Environmental - Vancouver	Water	APHA 3500-Cr C (Ion Chromatography)	Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection. Results are based on an un-filtered, field-preserved sample.
Dissolved Hardness (Calculated)	EC100 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 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 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 ALS Environmental - Vancouver	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine	EF001 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 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Nitrogen in water	EP366 ALS Environmental - Vancouver	Water	APHA 4500-P J (mod)	Samples for total nitrogen analysis are digested using a heated persulfate digestion. Nitrogen compounds are converted to nitrate in this digestion.
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.

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

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **VA24D1384**	Page	: 1 of 17
Client		Laboratory	
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project	: 11964	Date Samples Received	: 19-Nov-2024 17:45
PO	: 11964-Task20-Phase3C-4C	Date Analysis Commenced	: 19-Nov-2024
C-O-C number	: ----	Issue Date	: 27-Nov-2024 13:01
Sampler	: 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*
Angelo Salandanan	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Maya Urquhart	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
Monica Ko	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, 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: 1776626)											
VA24D1404-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	2.6	2.1	0.5	Diff <2x LOR	----
Physical Tests (QC Lot: 1782597)											
KS2404911-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1782601)											
KS2404911-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	144	143	1	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1775766)											
VA24D1099-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1775768)											
VA24D1099-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.227	0.228	0.218%	20%	----
Anions and Nutrients (QC Lot: 1775770)											
VA24D1384-001	WLNG US1	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.178	0.176	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1776617)											
VA24D1384-001	WLNG US1	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	6.30	6.33	0.391%	20%	----
Anions and Nutrients (QC Lot: 1776618)											
VA24D1384-001	WLNG US1	Chloride	16887-00-6	E235.Cl	0.50	mg/L	1.16	1.15	0.007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1776619)											
VA24D1384-001	WLNG US1	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.111	0.109	1.65%	20%	----
Anions and Nutrients (QC Lot: 1776620)											
VA24D1384-001	WLNG US1	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: 1776621)											
VA24D1384-001	WLNG US1	Fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1776622)											
VA24D1384-001	WLNG US1	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1775764)											
VA24D1099-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.63	3.96	0.33	Diff <2x LOR	----
Total Sulfides (QC Lot: 1775322)											
VA24D1381-001	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: 1775131)											
VA24D1285-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0323	0.0334	3.23%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 1775131) - continued											
VA24D1285-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.00313	0.00314	0.231%	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	0.0000062	0.0000066	0.0000004	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	7.51	7.64	1.72%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.148	0.150	1.29%	20%	----
		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	0.00244	0.00244	0.372%	20%	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	0.212	0.216	2.03%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00196	0.00199	1.49%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000190	0.000171	0.000018	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	0.154	0.155	0.001	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00025	0.00025	0.000004	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	1.67	1.63	2.45%	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	1.75	1.89	7.42%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0127	0.0130	2.34%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000010	<0.000010	0.00000007	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: 1775131) - continued											
VA24D1285-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	0.0033	0.0032	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: 1779221)											
VA24D1326-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1775143)											
VA24D1370-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.479	0.495	3.25%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00012	0.00012	0.000003	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00213	0.00210	1.18%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00284	0.00277	2.50%	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	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.010	<0.010	0.0003	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	0.0000244	0.0000262	0.0000017	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	3.74	3.74	0.140%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000028	0.000028	0.0000008	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	0.00089	0.00095	0.00006	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00037	0.00037	0.000004	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00048	0.00055	0.00007	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.855	0.889	3.93%	20%	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.00116	0.00116	0.118%	20%	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0015	0.0014	0.00005	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	3.64	3.75	2.79%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0137	0.0140	2.32%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000066	0.000072	0.000006	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00109	0.00111	0.00002	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.300	mg/L	<0.300	<0.300	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.089	0.090	0.001	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00028	0.00031	0.00002	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.51	3.56	1.48%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.80	3.86	1.69%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0379	0.0387	2.05%	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: 1775143) - continued											
VA24D1370-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	4.64	4.50	0.14	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00040	0.00035	0.00005	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	0.0100	mg/L	0.0136	0.0135	0.00014	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	0.000169	0.000170	0.614%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	0.00241	0.00248	0.00007	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0024	0.0027	0.0003	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1779227)											
VA24D1384-001	WLNG US1	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1774433)											
VA24D1211-001	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: 1776626)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1782597)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1782601)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1775766)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1775768)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1775770)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1776617)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1776618)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1776619)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	# 0.0061	B
Anions and Nutrients (QCLot: 1776620)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1776621)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1776622)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Organic / Inorganic Carbon (QCLot: 1775764)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1775322)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1775131)						
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: 1775131) - 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	MBRR
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: 1779221)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1775143)						
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: 1775143) - 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: 1779227)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1774433)						
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	<0.00050	----

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.*
MBRR	*Initial MB for this submission had positive results for flagged analyte (data not shown). Low level samples were repeated with new QC (2nd MB results shown). High level results (>5x initial MB level) and non-detect results were reported and are defensible*

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: 1776626)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1782597)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	102	85.0	115	----
Physical Tests (QCLot: 1782601)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	92.2	85.0	115	----
Anions and Nutrients (QCLot: 1775766)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	91.8	80.0	120	----
Anions and Nutrients (QCLot: 1775768)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 1775770)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	91.4	75.0	125	----
Anions and Nutrients (QCLot: 1776617)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 1776618)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	98.8	90.0	110	----
Anions and Nutrients (QCLot: 1776619)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	98.7	90.0	110	----
Anions and Nutrients (QCLot: 1776620)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.3	90.0	110	----
Anions and Nutrients (QCLot: 1776621)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.0	90.0	110	----
Anions and Nutrients (QCLot: 1776622)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	107	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1775764)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	97.6	80.0	120	----
Total Sulfides (QCLot: 1775322)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	108	80.0	120	----
Total Metals (QCLot: 1775131)									

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: 1775131) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	98.4	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	104	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	103	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	99.1	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	105	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	105	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	102	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	99.4	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	99.6	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	99.5	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	102	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	107	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	99.8	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	99.6	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	103	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	96.6	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	99.5	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	96.3	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	92.2	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	104	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	98.7	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	101	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	99.3	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	98.5	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	100	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1775131) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	100	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	96.9	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Total Metals (QCLot: 1779221)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	95.3	80.0	120	----
Dissolved Metals (QCLot: 1775143)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	93.7	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	100	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	94.6	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	97.5	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	98.4	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	95.0	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	97.9	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	97.9	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	100	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	98.5	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	94.9	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	99.1	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	96.4	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	96.9	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	93.2	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	98.1	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	96.2	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	102	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	92.6	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	97.1	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	103	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	93.2	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	100	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	88.7	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: 1775143) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	101	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	93.5	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	99.4	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	96.8	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	95.4	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	96.8	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	95.9	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	91.2	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	98.7	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	96.3	80.0	120	----
Speciated Metals (QCLot: 1774433)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.25 mg/L	100	80.0	120	----

Matrix Spike (MS) Report

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

Sub-Matrix: **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: 1775766)										
VA24D1384-001	WLNG US1	Phosphorus, total	7723-14-0	E372-U	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1775768)										
VA24D1384-001	WLNG US1	Ammonia, total (as N)	7664-41-7	E298	0.0965 mg/L	0.1 mg/L	96.5	75.0	125	----
Anions and Nutrients (QCLot: 1775770)										
VA24D1384-002	WLNG DS1	Nitrogen, total	7727-37-9	E366	0.374 mg/L	0.4 mg/L	93.4	70.0	130	----
Anions and Nutrients (QCLot: 1776617)										
VA24D1384-002	WLNG DS1	Sulfate (as SO4)	14808-79-8	E235.SO4	103 mg/L	100 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1776618)										
VA24D1384-002	WLNG DS1	Chloride	16887-00-6	E235.Cl	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1776619)										
VA24D1384-002	WLNG DS1	Nitrate (as N)	14797-55-8	E235.NO3-L	2.56 mg/L	2.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1776620)										
VA24D1384-002	WLNG DS1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.512 mg/L	0.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1776621)										
VA24D1384-002	WLNG DS1	Fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1776622)										
VA24D1384-002	WLNG DS1	Bromide	24959-67-9	E235.Br-L	0.558 mg/L	0.5 mg/L	112	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1775764)										
VA24D1384-001	WLNG US1	Carbon, dissolved organic [DOC]	----	E358-L	5.09 mg/L	5 mg/L	102	70.0	130	----
Total Sulfides (QCLot: 1775322)										
VA24D1381-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.196 mg/L	0.2 mg/L	98.0	75.0	125	----
Total Metals (QCLot: 1775131)										
VA24D1285-002	Anonymous	Aluminum, total	7429-90-5	E420	0.196 mg/L	0.2 mg/L	97.8	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		Barium, total	7440-39-3	E420	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0377 mg/L	0.04 mg/L	94.2	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00970 mg/L	0.01 mg/L	97.0	70.0	130	----
		Boron, total	7440-42-8	E420	0.089 mg/L	0.1 mg/L	88.8	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00408 mg/L	0.004 mg/L	102	70.0	130	----
		Calcium, total	7440-70-2	E420	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	0.0392 mg/L	0.04 mg/L	98.0	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: 1775131) - continued										
VA24D1285-002	Anonymous	Cobalt, total	7440-48-4	E420	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		Copper, total	7440-50-8	E420	ND mg/L	----	ND	70.0	130	----
		Iron, total	7439-89-6	E420	1.97 mg/L	2 mg/L	98.4	70.0	130	----
		Lead, total	7439-92-1	E420	0.0194 mg/L	0.02 mg/L	96.9	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0942 mg/L	0.1 mg/L	94.2	70.0	130	----
		Magnesium, total	7439-95-4	E420	0.993 mg/L	1 mg/L	99.3	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0200 mg/L	0.02 mg/L	99.8	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0194 mg/L	0.02 mg/L	97.3	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0398 mg/L	0.04 mg/L	99.5	70.0	130	----
		Phosphorus, total	7723-14-0	E420	9.97 mg/L	10 mg/L	99.7	70.0	130	----
		Potassium, total	7440-09-7	E420	3.82 mg/L	4 mg/L	95.6	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0200 mg/L	0.02 mg/L	99.8	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0358 mg/L	0.04 mg/L	89.4	70.0	130	----
		Silicon, total	7440-21-3	E420	9.54 mg/L	10 mg/L	95.4	70.0	130	----
		Silver, total	7440-22-4	E420	0.00392 mg/L	0.004 mg/L	98.0	70.0	130	----
		Sodium, total	7440-23-5	E420	1.88 mg/L	2 mg/L	94.1	70.0	130	----
		Strontium, total	7440-24-6	E420	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		Sulfur, total	7704-34-9	E420	19.5 mg/L	20 mg/L	97.6	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0412 mg/L	0.04 mg/L	103	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00382 mg/L	0.004 mg/L	95.4	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0182 mg/L	0.02 mg/L	90.8	70.0	130	----
		Tin, total	7440-31-5	E420	0.0191 mg/L	0.02 mg/L	95.3	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0387 mg/L	0.04 mg/L	96.7	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00384 mg/L	0.004 mg/L	96.0	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0991 mg/L	0.1 mg/L	99.1	70.0	130	----
		Zinc, total	7440-66-6	E420	0.404 mg/L	0.4 mg/L	101	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----
Total Metals (QCLot: 1779221)										
VA24D1327-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000991 mg/L	0 mg/L	99.1	70.0	130	----
Dissolved Metals (QCLot: 1775143)										
VA24D1370-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.188 mg/L	0.2 mg/L	94.3	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0199 mg/L	0.02 mg/L	99.3	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0192 mg/L	0.02 mg/L	96.1	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0396 mg/L	0.04 mg/L	98.9	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00898 mg/L	0.01 mg/L	89.8	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.095 mg/L	0.1 mg/L	94.9	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00398 mg/L	0.004 mg/L	99.4	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.0101 mg/L	0.01 mg/L	101	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0393 mg/L	0.04 mg/L	98.3	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1775143) - continued										
VA24D1370-002	Anonymous	Copper, dissolved	7440-50-8	E421	0.0189 mg/L	0.02 mg/L	94.6	70.0	130	----
		Iron, dissolved	7439-89-6	E421	ND mg/L	----	ND	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0197 mg/L	0.02 mg/L	98.7	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0953 mg/L	0.1 mg/L	95.3	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	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0385 mg/L	0.04 mg/L	96.2	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	10.3 mg/L	10 mg/L	103	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.85 mg/L	4 mg/L	96.3	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0361 mg/L	0.04 mg/L	90.2	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	ND mg/L	----	ND	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00330 mg/L	0.004 mg/L	82.4	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	17.3 mg/L	20 mg/L	86.7	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0339 mg/L	0.04 mg/L	84.8	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00393 mg/L	0.004 mg/L	98.3	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0185 mg/L	0.02 mg/L	92.5	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	ND mg/L	----	ND	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0191 mg/L	0.02 mg/L	95.5	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00397 mg/L	0.004 mg/L	99.3	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0967 mg/L	0.1 mg/L	96.7	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.390 mg/L	0.4 mg/L	97.6	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
Dissolved Metals (QCLot: 1779227)										
VA24D1384-002	WLNG DS1	Mercury, dissolved	7439-97-6	E509	0.0000974 mg/L	0 mg/L	97.4	70.0	130	----
Speciated Metals (QCLot: 1774433)										
VA24D1211-002	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.256 mg/L	0.25 mg/L	102	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17 -

Report To	Contact and company name below will appear on the final report
Company:	
Contact:	
Phone:	
Street:	
City/Province:	
Postal Code:	

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
farshad.shafiei@triton-env.com Default list

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

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

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

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): D1384

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 mer	Dissolved metals + mercury (F)	Total hexavalent chromium	Total trivalent chromium	TSS	TDS	Nutrients (ammonia, ammonium, total nitrogen, total phosphorus) (P)	Total sulfide (low) (as H2S), Unionized Sulfide (low) (P)	Anions scan (Br, Cl, F, NO2, NO3, SO4)	General parameters (alkalinity)	DOC (F/P)	SAMPLES ON HOLD	Sample is hazardous (please provide further detail)	NUMBER OF CONTAINERS
	WLNG US 1	19-Nov-24	12:26	Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 7.36 cond: 40 ms/cm temp: 6.2°C	↓	↓															
	WLNG DS 1	↓	12:06	Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 7.33 cond: 32 ms/cm temp: 6.4°C	↓	↓															

Environmental Division Vancouver
Work Order Reference
VA24D1384
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 (el

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			
				4	7	6	

SHIPMENT RELEASE (client use)

Released by: Nov 19 2024 Time: 17:40

Received by: Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: RJ Date: NOV-19 Time: 17:4

RE 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

2024-11-19-Rysdale-7EE72

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	11/19/2024	**Location:**	WLNG
Triton QP:	Aaron Rysdale	**Latitude/Longitude:**	49.66918 -123.248166
Temperature(c):	Low 1 High 5	**Permit:**	PE 110136
Weather Conditions:	Overcast	**Ground Conditions:**	Wet

Observations

Time: 12:04:09 **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 upstream

Photo: 2

Location: EAS DS1

Description: Sampling site

Photos

Photo: 3

Location: EAS DS1

Description: Facing downstream towards sonde location

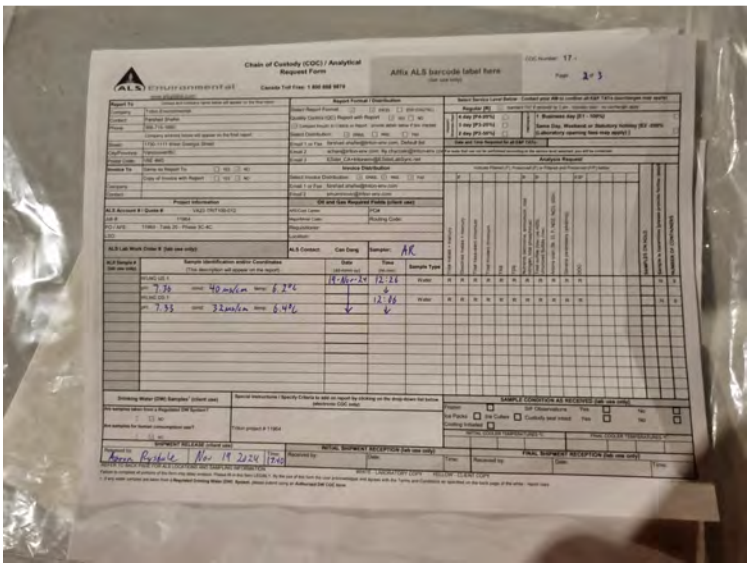


Photo: 4

Location:

Description: Sample 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

2024-11-19-Rysdale-76E1B

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	11/19/2024	**Location:**	WLNG
Triton QP:	Aaron Rysdale	**Latitude/Longitude:**	49.669455 -123.25087
Temperature(c):	Low 1 High 5	**Permit:**	PE 110136
Weather Conditions:	Overcast	**Ground Conditions:**	Wet

Observations

Time: 12:26:21 **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 US1

Description: Facing upstream

Photo: 2

Location: EAS US1

Description: Sampling site/sonde location

Photos

Photo: 3

Location: EAS US1

Description: Facing downstream

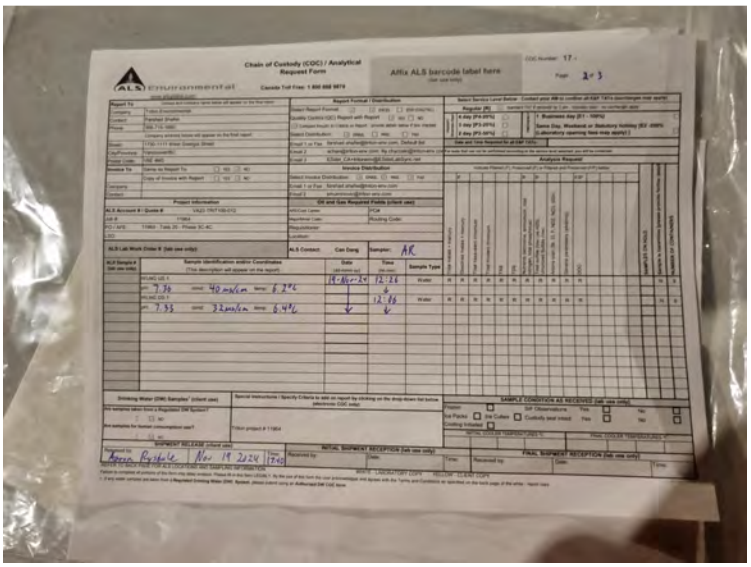


Photo: 4

Location:

Description: Sample COC

Sign Off

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

Woodfibre Plant site 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)
11/18/2024 0:00	7.4	21.1	0.0	6.9	11.0	7.3	11/18/2024 0:00	9.2	75.7		7.6	10.3	7.3
11/18/2024 0:15	7.7	36.9	0.0	7.2	10.9	6.7	11/18/2024 0:15	9.2	74.2		7.6	10.3	5.1
11/18/2024 0:30	7.5	21.5	0.0	6.9	10.9	6.9	11/18/2024 0:30	9.2	70.2		7.6	10.3	12.1
11/18/2024 0:45	7.4	21.1	0.0	6.9	10.9	6.7	11/18/2024 0:45	9.2	68.3		7.6	10.3	4.8
11/18/2024 1:00	7.4	21.0	0.0	6.8	11.0	6.9	11/18/2024 1:00	9.2	66.0		7.6	10.3	7.3
11/18/2024 1:15	7.4	20.9	0.0	6.8	11.0	6.9	11/18/2024 1:15	9.2	65.0		7.5	10.3	5.8
11/18/2024 1:30	7.4	20.9	0.0	6.8	11.0	7.0	11/18/2024 1:30	9.2	61.5		7.5	10.3	7.0
11/18/2024 1:45	7.4	20.9	0.0	6.8	11.0	6.9	11/18/2024 1:45	9.2	61.3		7.5	10.3	6.0
11/18/2024 2:00	7.4	21.0	0.0	6.8	11.0	7.4	11/18/2024 2:00	9.2	57.6		7.5	10.3	9.0
11/18/2024 2:15	7.4	20.9	0.0	6.8	11.0	11.8	11/18/2024 2:15	9.2	56.9		7.4	10.3	8.1
11/18/2024 2:30	7.4	20.9	0.0	6.8	11.0	7.1	11/18/2024 2:30	9.3	53.1		7.4	10.3	8.7
11/18/2024 2:45	7.4	21.1	0.0	6.8	11.0	7.2	11/18/2024 2:45	9.3	51.0		7.4	10.2	6.3
11/18/2024 3:00	7.6	38.9	0.0	7.2	10.9	7.1	11/18/2024 3:00	9.3	48.2		7.3	10.3	7.1
11/18/2024 3:15	7.6	40.3	0.0	7.3	10.9	7.4	11/18/2024 3:15	9.3	47.2		7.4	10.2	7.7
11/18/2024 3:30	7.6	39.0	0.0	7.3	10.9	8.0	11/18/2024 3:30	9.3	45.1		7.4	10.3	6.5
11/18/2024 3:45	7.6	40.7	0.0	7.3	10.9	12.6	11/18/2024 3:45	9.3	43.6		7.3	10.2	6.8
11/18/2024 4:00	7.6	41.6	0.0	7.3	10.9	8.9	11/18/2024 4:00	9.3	40.4		7.2	10.2	5.6
11/18/2024 4:15	7.3	27.2	0.0	7.1	11.0	8.2	11/18/2024 4:15	9.3	38.8		7.2	10.2	4.1
11/18/2024 4:30	7.4	36.3	0.0	7.2	10.9	8.5	11/18/2024 4:30	9.3	37.0		7.2	10.3	6.2
11/18/2024 4:45	7.2	25.5	0.0	7.0	11.0	8.0	11/18/2024 4:45	9.3	37.0		7.2	10.2	5.1
11/18/2024 5:00	7.2	25.0	0.0	6.9	11.0	7.7	11/18/2024 5:00	9.3	35.9		7.2	10.2	4.8
11/18/2024 5:15	7.4	41.5	0.0	7.2	11.0	8.6	11/18/2024 5:15	9.3	35.9		7.3	10.2	2.7
11/18/2024 5:30	7.4	36.3	0.0	7.3	10.9	7.5	11/18/2024 5:30	9.3	34.7		7.2	10.2	4.4
11/18/2024 5:45	7.2	25.0	0.0	6.9	11.0	7.8	11/18/2024 5:45	9.3	34.0		7.2	10.2	3.6
11/18/2024 6:00	7.1	24.6	0.0	6.9	11.1	7.2	11/18/2024 6:00	9.3	32.6		7.2	10.2	6.0
11/18/2024 6:15	7.1	24.3	0.0	6.9	11.1	7.2	11/18/2024 6:15	9.3	31.9		7.1	10.2	2.0
11/18/2024 6:30	7.4	42.6	0.0	7.2	11.0	7.7	11/18/2024 6:30	9.3	32.3		7.2	10.2	2.7
11/18/2024 6:45	7.1	24.3	0.0	6.9	11.1	9.1	11/18/2024 6:45	9.3	32.5		7.2	10.2	2.4
11/18/2024 7:00	7.1	23.8	0.0	6.9	11.1	7.4	11/18/2024 7:00	9.3	31.4		7.2	10.3	1.2
11/18/2024 7:15	7.1	23.6	0.0	6.9	11.1	8.2	11/18/2024 7:15	9.3	33.4		7.0	10.2	5.8
11/18/2024 7:30	7.1	23.5	0.0	6.9	11.1	7.2	11/18/2024 7:30	9.3	36.0		7.3	10.2	6.4
11/18/2024 7:45	7.1	23.4	0.0	6.9	11.1	7.3	11/18/2024 7:45	9.3	38.8		7.3	10.2	9.7
11/18/2024 8:00	7.0	23.2	0.0	6.9	11.1	6.8	11/18/2024 8:00	9.3	37.8		7.3	10.3	12.1
11/18/2024 8:15	7.0	23.0	0.0	6.9	11.1	7.1	11/18/2024 8:15	9.3	38.2		7.2	10.2	11.2
11/18/2024 8:30	7.2	40.6	0.0	7.1	11.1	7.2	11/18/2024 8:30	9.4	35.0		7.2	10.2	15.8
11/18/2024 8:45	7.3	42.4	0.0	7.3	11.0	7.2	11/18/2024 8:45	9.4	32.8		7.2	10.2	13.2
11/18/2024 9:00	7.4	42.6	0.0	7.3	11.0	7.3	11/18/2024 9:00	9.4	30.0		7.1	10.3	7.5
11/18/2024 9:15	7.4	42.4	0.0	7.3	11.0	7.3	11/18/2024 9:15	9.5	28.3		7.0	10.2	6.3
11/18/2024 9:30	7.4	42.5	0.0	7.3	11.0	7.6	11/18/2024 9:30	9.5	26.5		7.0	10.3	5.0
11/18/2024 9:45	7.1	23.5	0.0	7.0	11.1	6.9	11/18/2024 9:45	9.5	25.4		6.9	10.2	6.3
11/18/2024 10:00	7.1	22.5	0.0	6.9	11.1	7.2	11/18/2024 10:00	9.5	24.1		7.0	10.2	3.6
11/18/2024 10:15	7.2	22.3	0.0	6.9	11.1	6.9	11/18/2024 10:15	9.5	23.9		7.0	10.2	3.1
11/18/2024 10:30	7.2	22.3	0.0	6.9	11.1	7.0	11/18/2024 10:30	9.6	23.0		7.1	10.2	2.2
11/18/2024 10:45	7.2	22.1	0.0	6.9	11.1	6.9	11/18/2024 10:45	9.6	22.8		7.1	10.2	1.6
11/18/2024 11:00	7.2	22.0	0.0	6.9	11.1	7.2	11/18/2024 11:00	9.6	21.8		7.0	10.2	1.2
11/18/2024 11:15	7.3	22.0	0.0	6.9	11.1	7.1	11/18/2024 11:15	9.6	22.1		7.0	10.2	0.6
11/18/2024 11:30	7.3	21.8	0.0	6.9	11.0	7.0	11/18/2024 11:30	9.6	21.8		7.0	10.2	1.1
11/18/2024 11:45	7.6	36.8	0.0	7.2	11.0	7.2	11/18/2024 11:45	9.6	21.5		7.0	10.2	1.2
11/18/2024 12:00	7.8	42.3	0.0	7.3	10.9	7.6	11/18/2024 12:00	9.6	20.9		7.1	10.2	0.4
11/18/2024 12:15	7.8	42.4	0.0	7.3	10.9	7.6	11/18/2024 12:15	9.6	21.3		7.1	10.2	0.7
11/18/2024 12:30	7.9	42.6	0.0	7.3	10.9	8.0	11/18/2024 12:30	9.6	20.9		7.0	10.2	0.4
11/18/2024 12:45	7.6	23.8	0.0	7.1	11.0	7.1	11/18/2024 12:45	9.6	21.0		7.1	10.2	1.6
11/18/2024 13:00	7.6	22.9	0.0	6.9	11.0	7.0	11/18/2024 13:00	9.6	20.9		7.0	10.2	7.2
11/18/2024 13:15	7.6	22.4	0.0	6.9	11.0	7.4	11/18/2024 13:15	9.6	21.1		7.1	10.2	0.9
11/18/2024 13:30	7.6	22.2	0.0	6.9	11.0	7.2	11/18/2024 13:30	9.7	20.8		7.1	10.2	0.9
11/18/2024 13:45	7.5	22.2	0.0	6.9	11.0	7.2	11/18/2024 13:45	9.6	20.8		7.1	10.2	2.0
11/18/2024 14:00	7.5	22.6	0.0	6.9	11.0	7.2	11/18/2024 14:00	9.6	20.4		7.1	10.2	1.5
11/18/2024 14:15	7.8	41.6	0.0	7.2	10.9	8.2	11/18/2024 14:15	9.6	20.7		7.1	10.2	0.4
11/18/2024 14:30	7.8	42.5	0.0	7.3	10.9	8.1	11/18/2024 14:30	9.6	20.3		7.1	10.2	0.8
11/18/2024 14:45	7.7	42.7	0.0	7.3	10.9	8.4	11/18/2024 14:45	9.6	20.6		7.1	10.2	1.8
11/18/2024 15:00	7.6	42.9	0.0	7.3	11.0	8.4	11/18/2024 15:00	9.6	20.5		7.0	10.2	0.5
11/18/2024 15:15	7.6	43.3	0.0	7.3	11.0	8.9	11/18/2024 15:15	9.6	20.6		7.1	10.2	0.2
11/18/2024 15:30	7.2	24.8	0.0	7.0	11.1	7.4	11/18/2024 15:30	9.6	20.5		7.1	10.2	0.3
11/18/2024 15:45	7.1	24.1	0.0	6.9	11.1	8.0	11/18/2024 15:45	9.5	20.6		7.1	10.2	0.3
11/18/2024 16:00	7.1	24.0	0.0	6.9	11.1	7.7	11/18/2024 16:00	9.5	20.5		7.0	10.2	0.4
11/18/2024 16:15	7.1	24.2	0.0	6.9	11.1	8.6	11/18/2024 16:15	9.5	20.6		7.1	10.2	0.2
11/18/2024 16:30	7.1	24.2	0.0	6.9	11.1	7.6	11/18/2024 16:30	9.5	20.5		7.0	10.2	0.4
11/18/2024 16:45	7.1	23.8	0.0	6.9	11.1	8.1	11/18/2024 16:45	9.5	20.6		7.1	10.2	0.7
11/18/2024 17:00	7.0	23.6	0.0	6.9	11.1	7.7	11/18/2024 17:00	9.5	20.7		7.0	10.2	0.3
11/18/2024 17:15	7.0	23.8	0.0	6.9	11.1	7.6	11/18/2024 17:15	9.5	21.2		7.0	10.2	0.5
11/18/2024 17:30	7.3	42.7	0.0	7.2	11.1	9.3	11/18/2024 17:30	9.5	21.5		7.1	10.2	0.2
11/18/2024 17:45	7.0	25.3	0.0	7.0	11.1	7.5	11/18/2024 17:45	9.4	23.0		7.1	10.2	0.4
11/18/2024 18:00	7.3	46.2	0.0	7.2	11.1	8.4	11/18/2024 18:00	9.4	27.3		7.2	10.3	0.6
11/18/2024 18:15	7.3	47.1	0.0	7.3	11.0	9.3	11/18/2024 18:15	9.4	29.3		7.2	10.3	2.9
11/18/2024 18:30	7.3	47.4	0.0	7.3	11.0	8.9	11/18/2024 18:30	9.3	31.7		7.3	10.3	1.4
11/18/2024 18:45	7.3	47.6	0.0	7.3	11.1	8.7	11/18/2024 18:45	9.3	33.8		7.3	10.3	1.6
11/18/2024 19:00	7.3	48.0	0.0	7.3	11.1	9.2	11/18/2024 19:00	9.3	35.7		7.3	10.3	1.2
11/18/2024 19:15	6.9	25.4	0.0	7.1	11.2	7.4	11/18/2024 19:15	9.2	37.9		7.3	10.3	2.1
11/18/2024 19:30	7.2	47.2	0.0	7.2	11.1	11.9	11/18/2024 19:30	9.2	42.2		7.4	10.3	1.7
11/18/2024 19:45	7.0	29.6	0.0	7.3	11.1	7.7	11/18/2024 19:45	9.2	47.3		7.4	10.3	6.2
11/18/2024 20:00	6.8	24.0	0.0	7.0	11.2	7.7	11/18/2024 20:00	9.2	46.6		7.4	10.3	3.2
11/18/2024 20:15	6.8	23.4	0.0	6.9	11.2	7.2	11/18/2024 20:15	9.2	45.5		7.4	10.3	3.7
11/18/2024 20:30	6.8	23.1	0.0	6.9	11.2	7.4	11/18/2024 20:30	9.2	43.3		7.4	10.3	1.7
11/18/2024 20:45	6.8	23.0	0.0	6.9	11.2	7.3	11/18/2024 20:45	9.2	41.3		7.4	10.3	2.2
11/18/2024 21:00	6.8	22.6	0.0	6.9	11.2	7.6	11/18/2024 21:00	9.2	38.6		7.3	10.3	2.7
11/18/2024 21:15	6.7	22.6	0.0	6.9	11.2	7.2	11/18/2024 21:15	9.2	37.4		7.3	10.3	1.6
11/18/2024 21:30	7.0	39.6	0.0	7.1	11.2	7.9	11/18/2024 21:30	9.2	35.8		7.3	10.3	1.6
11/18/2024 21:45	7.0	44.8	0.0	7.0	11.2	12.4	11/18/2024 21:45	9.2	35.0		7.3	10.3	1.8
11/18/2024 22:00	7.2	51.7	0.0	7.2	11.1	10.1	11/18/2024 22:00	9.2	35.2		7.3	10.3	1.1
11/18/2024 22:15	6.8	25.8	0.0	7.2	11.2	7.6	11/18/2024 22:15	9.2	37.5		7.3	10.3	1.4
11/18/2024 22:30	6.7	23.8	0.0	7.0	11.2	7.5	11/18/2024 22:30	9.2	39.8		7.4	10.3	5.0
11/18/2024 22:45	7.0	45.9	0.0	6.9	11.2	8.9	11/18/2024 22:45	9.1	40.7		7.4	10.3	2.3
11/18/2024 23:00	6.8	25.8	0.0	7.2	11.2	7.8	11/18/2024 23:00	9.1	38.8		7.3	10.4	1.7
11/18/2024 23:15	6.7	22.8	0.0	7.0	11.2	7.6	11/18/2024 23:15	9.1	37.8		7.3	10.3	1.0
11/18/2024 23:30	6.8	41.2	0.0	6.8	11.2	11.3	11/18/2024 23:30	9.1	36.4		7.3	10.3	0.8

11/18/2024 23:45	7.1	53.1	0.0	7.1	11.1	9.4	11/18/2024 23:45	9.1	37.8	7.3	10.3	1.3
11/19/2024 0:00	6.8	24.7	0.0	7.1	11.2	7.8	11/19/2024 0:00	9.1	38.1	7.3	10.3	1.9
11/19/2024 0:15	6.7	22.6	0.0	7.0	11.2	7.6	11/19/2024 0:15	9.0	40.5	7.4	10.4	2.1
11/19/2024 0:30	6.7	22.2	0.0	6.9	11.2	7.2	11/19/2024 0:30	9.0	41.8	7.4	10.4	3.4
11/19/2024 0:45	6.7	22.0	0.0	6.9	11.2	7.1	11/19/2024 0:45	9.0	41.6	7.4	10.4	2.5
11/19/2024 1:00	6.6	22.0	0.0	6.9	11.2	7.0	11/19/2024 1:00	9.0	39.4	7.3	10.4	2.4
11/19/2024 1:15	6.6	21.8	0.0	6.9	11.3	7.0	11/19/2024 1:15	9.0	38.3	7.4	10.4	2.2
11/19/2024 1:30	6.6	26.0	0.0	6.8	11.3	8.4	11/19/2024 1:30	9.0	37.1	7.3	10.4	2.0
11/19/2024 1:45	7.0	54.4	0.0	7.0	11.2	8.5	11/19/2024 1:45	9.0	36.6	7.3	10.4	2.8
11/19/2024 2:00	7.0	56.5	0.0	7.1	11.2	10.0	11/19/2024 2:00	9.0	36.0	7.3	10.4	3.2
11/19/2024 2:15	6.9	58.1	0.0	7.1	11.2	29.2	11/19/2024 2:15	9.0	35.9	7.3	10.4	1.3
11/19/2024 2:30	6.8	59.2	0.0	7.1	11.2	45.8	11/19/2024 2:30	9.0	34.4	7.3	10.4	2.7
11/19/2024 2:45	6.7	59.6	0.0	7.1	11.2	32.2	11/19/2024 2:45	9.0	33.4	7.3	10.4	1.7
11/19/2024 3:00	6.3	33.3	0.0	7.2	11.4	49.1	11/19/2024 3:00	9.0	32.1	7.3	10.4	1.2
11/19/2024 3:15	6.2	28.3	0.0	7.1	11.4	42.0	11/19/2024 3:15	9.0	32.9	7.3	10.4	1.3
11/19/2024 3:30	6.1	27.7	0.0	7.1	11.4	24.9	11/19/2024 3:30	9.0	33.2	7.3	10.4	1.9
11/19/2024 3:45	6.1	29.1	0.0	7.0	11.4	21.2	11/19/2024 3:45	9.0	33.1	7.3	10.4	1.4
11/19/2024 4:00	6.0	30.9	0.0	7.0	11.4	32.1	11/19/2024 4:00	9.0	31.7	7.2	10.4	1.5
11/19/2024 4:15	6.0	30.4	0.0	7.0	11.4	31.3	11/19/2024 4:15	9.0	31.1	7.3	10.4	1.1
11/19/2024 4:30	6.0	28.5	0.0	7.0	11.4	25.3	11/19/2024 4:30	9.0	29.4	7.2	10.4	3.1
11/19/2024 4:45	6.4	54.7	0.0	7.0	11.4	16.6	11/19/2024 4:45	9.0	28.6	7.2	10.4	4.7
11/19/2024 5:00	6.1	32.8	0.0	7.1	11.4	12.6	11/19/2024 5:00	9.0	27.2	7.2	10.4	1.5
11/19/2024 5:15	6.1	32.6	0.0	7.1	11.4	12.7	11/19/2024 5:15	9.0	26.4	7.2	10.4	0.7
11/19/2024 5:30	6.0	32.0	0.0	7.0	11.5	15.8	11/19/2024 5:30	9.0	25.3	7.2	10.4	2.8
11/19/2024 5:45	6.4	59.0	0.0	7.0	11.3	13.8	11/19/2024 5:45	9.0	24.9	7.2	10.4	0.7
11/19/2024 6:00	6.5	58.5	0.0	7.0	11.3	11.6	11/19/2024 6:00	9.0	24.2	7.2	10.4	0.4
11/19/2024 6:15	6.0	29.9	0.0	7.1	11.4	10.6	11/19/2024 6:15	9.0	23.8	7.1	10.4	0.3
11/19/2024 6:30	6.3	49.8	0.0	6.9	11.4	11.3	11/19/2024 6:30	9.0	23.1	7.1	10.4	0.3
11/19/2024 6:45	6.0	32.0	0.0	7.1	11.4	10.8	11/19/2024 6:45	9.0	23.0	7.1	10.4	2.0
11/19/2024 7:00	6.0	31.6	0.0	7.1	11.4	9.7	11/19/2024 7:00	9.0	22.1	7.0	10.4	0.7
11/19/2024 7:15	6.0	30.9	0.0	7.0	11.4	9.7	11/19/2024 7:15	9.0	22.2	7.1	10.4	1.3
11/19/2024 7:30	6.0	30.3	0.0	7.0	11.4	8.4	11/19/2024 7:30	9.0	21.8	7.1	10.4	1.0
11/19/2024 7:45	6.0	30.1	0.0	7.0	11.4	6.3	11/19/2024 7:45	9.0	21.7	7.1	10.4	0.3
11/19/2024 8:00	6.1	29.8	0.0	7.0	11.4	6.6	11/19/2024 8:00	9.0	21.2	7.1	10.4	1.3
11/19/2024 8:15	6.1	29.6	0.0	7.0	11.4	6.8	11/19/2024 8:15	9.0	21.3	7.1	10.4	0.5
11/19/2024 8:30	6.1	29.5	0.0	7.0	11.4	7.7	11/19/2024 8:30	9.0	20.9	7.1	10.4	0.3
11/19/2024 8:45	6.5	59.8	0.0	7.0	11.3	9.0	11/19/2024 8:45	9.0	20.9	7.1	10.4	0.2
11/19/2024 9:00	6.6	59.9	0.0	7.1	11.3	9.2	11/19/2024 9:00	9.0	20.6	7.0	10.4	0.7
11/19/2024 9:15	6.7	59.9	0.0	7.1	11.3	9.1	11/19/2024 9:15	9.1	20.9	7.1	10.4	0.4
11/19/2024 9:30	6.7	59.7	0.0	7.1	11.3	7.9	11/19/2024 9:30	9.1	20.6	7.1	10.4	0.3
11/19/2024 9:45	6.5	42.6	0.0	7.2	11.2	7.2	11/19/2024 9:45	9.1	20.5	7.1	10.4	0.3
11/19/2024 10:00	6.3	30.0	0.0	7.1	11.4	6.4	11/19/2024 10:00	9.1	20.2	7.1	10.4	0.5
11/19/2024 10:15	6.3	29.2	0.0	7.1	11.4	5.8	11/19/2024 10:15	9.1	20.1	7.1	10.4	0.4
11/19/2024 10:30	6.4	36.9	0.0	7.0	11.3	6.5	11/19/2024 10:30	9.1	20.0	7.1	10.4	0.3
11/19/2024 10:45	6.3	29.2	0.0	7.1	11.4	5.4	11/19/2024 10:45	9.1	20.0	7.1	10.4	0.4
11/19/2024 11:00	6.3	29.0	0.0	7.0	11.4	5.7	11/19/2024 11:00	9.2	19.8	7.0	10.4	0.6
11/19/2024 11:15	6.5	49.7	0.0	6.9	11.4	8.0	11/19/2024 11:15	9.2	19.9	7.1	10.4	0.4
11/19/2024 11:30	6.8	56.9	0.0	7.0	11.3	8.1	11/19/2024 11:30	9.2	19.7	7.0	10.4	0.7
11/19/2024 11:45	6.8	57.2	0.0	7.1	11.2	7.6	11/19/2024 11:45	9.2	20.0	7.1	10.4	1.2
11/19/2024 12:00	6.4	31.9	0.0	7.2	11.3	5.4	11/19/2024 12:00	9.2	20.4	7.0	10.4	1.2
11/19/2024 12:15	6.4	31.1	0.0	7.1	11.3	5.9	11/19/2024 12:15	9.2	20.9	7.1	10.4	2.7
11/19/2024 12:30	6.4	31.5	0.0	7.1	11.3	5.6	11/19/2024 12:30	9.3	21.9	7.1	10.4	1.5
11/19/2024 12:45	6.4	31.7	0.0	7.1	11.3	5.8	11/19/2024 12:45	9.3	21.8	7.1	10.4	3.1
11/19/2024 13:00	6.4	32.1	0.0	7.0	11.3	5.5	11/19/2024 13:00	9.3	21.3	7.1	10.4	1.2
11/19/2024 13:15	6.6	48.1	0.0	6.9	11.3	13.8	11/19/2024 13:15	9.3	21.8	7.1	10.4	1.5
11/19/2024 13:30	6.9	59.1	0.0	7.1	11.2	8.5	11/19/2024 13:30	9.3	21.9	7.1	10.4	1.2
11/19/2024 13:45	6.9	59.5	0.0	7.1	11.2	9.9	11/19/2024 13:45	9.3	23.4	7.2	10.3	1.9
11/19/2024 14:00	6.9	59.6	0.0	7.1	11.2	9.2	11/19/2024 14:00	9.3	23.4	7.1	10.4	2.2
11/19/2024 14:15	6.9	59.6	0.0	7.1	11.1	9.5	11/19/2024 14:15	9.3	23.7	7.1	10.4	1.5
11/19/2024 14:30	6.9	59.4	0.0	7.1	11.1	9.5	11/19/2024 14:30	9.3	23.9	7.2	10.4	2.1
11/19/2024 14:45	6.5	34.0	0.0	7.2	11.2	5.6	11/19/2024 14:45	9.3	23.9	7.1	10.4	1.5
11/19/2024 15:00	6.5	32.5	0.0	7.1	11.3	5.4	11/19/2024 15:00	9.3	23.7	7.1	10.4	1.1
11/19/2024 15:15	6.5	31.8	0.0	7.1	11.3	5.3	11/19/2024 15:15	9.3	23.7	7.1	10.4	0.7
11/19/2024 15:30	6.4	31.2	0.0	7.1	11.3	5.1	11/19/2024 15:30	9.3	23.4	7.2	10.4	1.0
11/19/2024 15:45	6.4	30.7	0.0	7.1	11.3	5.7	11/19/2024 15:45	9.3	23.5	7.2	10.3	0.9
11/19/2024 16:00	6.4	30.3	0.0	7.0	11.3	5.7	11/19/2024 16:00	9.3	23.1	7.1	10.3	0.6
11/19/2024 16:15	6.4	29.9	0.0	7.0	11.3	5.1	11/19/2024 16:15	9.2	23.2	7.1	10.4	0.4
11/19/2024 16:30	6.4	30.3	0.0	7.0	11.3	5.5	11/19/2024 16:30	9.2	23.0	7.1	10.3	0.5
11/19/2024 16:45	6.8	56.4	0.0	7.0	11.1	7.0	11/19/2024 16:45	9.2	22.9	7.1	10.4	0.5
11/19/2024 17:00	6.8	56.5	0.0	7.1	11.1	6.7	11/19/2024 17:00	9.2	22.8	7.1	10.4	0.4
11/19/2024 17:15	6.9	56.9	0.0	7.1	11.1	7.5	11/19/2024 17:15	9.2	22.8	7.1	10.4	0.7
11/19/2024 17:30	6.9	56.9	0.0	7.1	11.1	8.0	11/19/2024 17:30	9.2	22.5	7.0	10.4	1.4
11/19/2024 17:45	6.9	56.7	0.0	7.1	11.1	8.1	11/19/2024 17:45	9.2	23.4	7.2	10.3	0.4
11/19/2024 18:00	6.5	31.3	0.0	7.2	11.2	5.6	11/19/2024 18:00	9.1	23.8	7.2	10.4	0.9
11/19/2024 18:15	6.4	28.8	0.0	7.1	11.2	5.2	11/19/2024 18:15	9.1	24.5	7.1	10.4	2.1
11/19/2024 18:30	6.4	25.5	0.0	7.0	11.2	7.5	11/19/2024 18:30	9.1	24.3	7.2	10.4	0.7
11/19/2024 18:45	6.4	26.5	0.0	6.9	11.2	5.8	11/19/2024 18:45	9.1	24.9	7.2	10.4	0.9
11/19/2024 19:00	6.4	26.2	0.0	6.9	11.2	4.0	11/19/2024 19:00	9.1	25.1	7.2	10.4	11.6
11/19/2024 19:15	6.4	25.9	0.0	6.9	11.2	5.8	11/19/2024 19:15	9.1	26.4	7.2	10.3	0.4
11/19/2024 19:30	6.4	25.7	0.0	6.9	11.2	3.9	11/19/2024 19:30	9.1	26.5	7.2	10.4	0.5
11/19/2024 19:45	6.4	26.5	0.0	6.9	11.2	3.8	11/19/2024 19:45	9.1	27.5	7.2	10.4	2.8
11/19/2024 20:00	6.8	56.0	0.0	7.0	11.1	6.0	11/19/2024 20:00	9.0	27.1	7.2	10.4	0.9
11/19/2024 20:15	6.9	55.5	0.0	7.0	11.1	7.3	11/19/2024 20:15	9.0	28.0	7.2	10.4	0.5
11/19/2024 20:30	6.9	55.3	0.0	7.1	11.0	6.4	11/19/2024 20:30	9.0	29.1	7.2	10.4	0.7
11/19/2024 20:45	7.0	58.9	0.0	7.1	11.0	6.6	11/19/2024 20:45	9.0	31.2	7.2	10.4	2.9
11/19/2024 21:00	7.0	59.8	0.0	7.1	11.0	6.5	11/19/2024 21:00	9.0	32.0	7.3	10.4	0.8
11/19/2024 21:15	7.0	60.2	0.0	7.1	11.0	6.9	11/19/2024 21:15	9.0	33.8	7.3	10.4	1.9
11/19/2024 21:30	6.5	29.9	0.0	7.1	11.2	6.2	11/19/2024 21:30	9.0	34.4	7.3	10.4	3.7
11/19/2024 21:45	6.5	28.8	0.0	7.0	11.2	4.6	11/19/2024 21:45	8.9	35.1	7.3	10.4	1.0
11/19/2024 22:00	6.5	28.3	0.0	7.0	11.2	5.1	11/19/2024 22:00	8.9	36.2	7.3	10.4	1.3
11/19/2024 22:15	6.4	28.3	0.0	7.0	11.2	4.4	11/19/2024 22:15	8.9	41.1	7.4	10.4	3.8
11/19/2024 22:30	6.4	28.5	0.0	6.9	11.2	9.3	11/19/2024 22:30	8.8	44.5	7.4	10.4	10.5
11/19/2024 22:45	6.5	47.0	0.0	6.8	11.2	7.4	11/19/2024 22:45	8.8	46.4	7.4	10.4	9.0
11/19/2024 23:00	6.6	41.0	0.0	7.1	11.1	6.3	11/19/2024 23:00	8.8	44.4	7.4	10.4	6.4
11/19/2024 23:15	6.4	30.6	0.0	7.0	11.2	5.1	11/19/2024 23:15	8.8	42.8	7.4	10.4	4.0
11/19/2024 23:30	6.4	30.5	0.0	7.0	11.2	5.0	11/19/2024 23:30	8.8	40.7	7.4	10.4	3.7
11/19/2024 23:45	6.4	31.1	0.0	7.0	11.2	5.2	11/19/2024 23:45	8.8	39.6	7.4	10.4	4.0
11/20/2024 0:00	6.8	60.4	0.0	7.1	11.1	7.3	11/20/2024 0:00	8.8	38.4	7.4	10.4	4.8
11/20/2024 0:15	6.9	60.6	0.0	7.1	11.1	6.6	11/20/2024 0:15	8.8	39.3	7.3	10.4	4.3
11/20/2024 0:30	6.9	61.0	0.0	7.1	11.1	6.4	11/20/2024 0:30	8.8	39.7	7.4	10.4	8.8
11/20/2024 0:45	6.4	32.5	0.0	7.2	11.2	4.8	11/20/2024 0:45	8.8	39.8	7.3	10.4	5.3

11/20/2024 1:00	6.4	32.5	0.0	7.1	11.2	5.8	11/20/2024 1:00	8.8	39.1	7.3	10.5	9.0
11/20/2024 1:15	6.4	32.6	0.0	7.0	11.2	5.4	11/20/2024 1:15	8.8	40.4	7.3	10.4	8.9
11/20/2024 1:30	6.4	32.4	0.0	7.0	11.2	5.4	11/20/2024 1:30	8.7	39.6	7.3	10.4	15.5
11/20/2024 1:45	6.3	33.3	0.0	7.0	11.2	5.3	11/20/2024 1:45	8.7	39.4	7.3	10.4	12.3
11/20/2024 2:00	6.3	34.7	0.0	7.0	11.2	6.2	11/20/2024 2:00	8.7	36.0	7.3	10.5	10.7
11/20/2024 2:15	6.4	59.2	0.0	6.9	11.2	13.6	11/20/2024 2:15	8.7	34.6	7.2	10.4	10.9
11/20/2024 2:30	6.7	64.9	0.0	7.1	11.1	7.8	11/20/2024 2:30	8.8	33.2	7.3	10.4	8.3
11/20/2024 2:45	6.7	66.3	0.0	7.1	11.1	11.2	11/20/2024 2:45	8.8	32.0	7.3	10.4	9.6
11/20/2024 3:00	6.6	67.1	0.0	7.2	11.1	8.6	11/20/2024 3:00	8.8	30.1	7.2	10.4	7.7
11/20/2024 3:15	6.2	44.0	0.0	7.3	11.2	7.8	11/20/2024 3:15	8.8	29.2	7.1	10.4	9.2
11/20/2024 3:30	6.2	44.7	0.0	7.2	11.3	7.5	11/20/2024 3:30	8.8	28.1	7.1	10.4	8.2
11/20/2024 3:45	6.1	45.5	0.0	7.1	11.3	11.3	11/20/2024 3:45	8.8	27.8	7.2	10.4	7.2
11/20/2024 4:00	6.1	45.8	0.0	7.2	11.3	15.3	11/20/2024 4:00	8.9	26.7	7.2	10.4	5.8
11/20/2024 4:15	6.2	45.8	0.0	7.1	11.3	24.8	11/20/2024 4:15	8.9	25.5	7.1	10.4	4.7
11/20/2024 4:30	6.2	44.8	0.0	7.1	11.3	26.0	11/20/2024 4:30	8.9	24.4	7.1	10.4	6.6
11/20/2024 4:45	6.2	44.0	0.0	7.1	11.3	25.1	11/20/2024 4:45	8.9	24.5	7.1	10.4	3.3
11/20/2024 5:00	6.5	66.7	0.0	7.1	11.2	20.4	11/20/2024 5:00	8.9	23.9	7.1	10.4	3.4
11/20/2024 5:15	6.6	65.8	0.0	7.1	11.2	20.6	11/20/2024 5:15	8.9	25.0	7.1	10.4	3.9
11/20/2024 5:30	6.7	65.1	0.0	7.1	11.1	16.5	11/20/2024 5:30	8.9	25.5	7.0	10.4	4.4
11/20/2024 5:45	6.7	64.2	0.0	7.1	11.1	15.3	11/20/2024 5:45	8.9	24.9	7.1	10.4	4.5
11/20/2024 6:00	6.4	38.8	0.0	7.2	11.2	11.3	11/20/2024 6:00	8.9	23.7	7.1	10.3	3.9
11/20/2024 6:15	6.4	36.9	0.0	7.1	11.2	9.9	11/20/2024 6:15	8.9	23.5	7.1	10.3	3.4
11/20/2024 6:30	6.4	35.4	0.0	7.0	11.2	8.9	11/20/2024 6:30	8.9	22.8	7.1	10.4	2.5
11/20/2024 6:45	6.4	34.0	0.0	7.0	11.2	8.4	11/20/2024 6:45	8.9	23.4	7.1	10.3	3.0
11/20/2024 7:00	6.4	33.8	0.0	7.0	11.2	6.9	11/20/2024 7:00	8.9	25.1	7.0	10.4	8.5
11/20/2024 7:15	6.4	34.1	0.0	7.0	11.2	8.1	11/20/2024 7:15	8.8	26.6	7.2	10.4	14.1
11/20/2024 7:30	6.4	34.5	0.0	7.0	11.2	6.9	11/20/2024 7:30	8.9	26.3	7.1	10.4	10.4
11/20/2024 7:45	6.7	58.1	0.0	7.0	11.1	13.9	11/20/2024 7:45	8.9	25.9	7.1	10.4	8.7
11/20/2024 8:00	6.8	59.1	0.0	7.0	11.1	14.7	11/20/2024 8:00	8.9	24.0	7.1	10.4	8.5
11/20/2024 8:15	6.8	57.7	0.0	7.1	11.1	11.8	11/20/2024 8:15	8.9	22.9	7.1	10.4	5.5
11/20/2024 8:30	6.8	57.0	0.0	7.0	11.1	10.8	11/20/2024 8:30	8.9	21.9	7.1	10.4	4.1
11/20/2024 8:45	6.5	35.9	0.0	7.1	11.2	12.7	11/20/2024 8:45	8.9	21.3	7.1	10.3	7.4
11/20/2024 9:00	6.5	35.8	0.0	7.0	11.2	14.1	11/20/2024 9:00	8.9	20.7	7.0	10.4	6.9
11/20/2024 9:15	6.5	31.7	0.0	7.0	11.2	15.1	11/20/2024 9:15	8.9	20.4	7.0	10.4	2.6
11/20/2024 9:30	6.5	31.4	0.0	7.0	11.3	9.7	11/20/2024 9:30	8.9	20.4	7.0	10.4	7.3
11/20/2024 9:45	6.5	31.8	0.0	6.9	11.2	8.8	11/20/2024 9:45	8.9	21.7	7.1	10.4	7.3
11/20/2024 10:00	6.8	53.8	0.0	7.0	11.2	14.3	11/20/2024 10:00	8.9	21.5	7.0	10.4	4.8
11/20/2024 10:15	6.6	33.3	0.0	7.1	11.2	11.7	11/20/2024 10:15	8.9	21.3	7.1	10.4	6.7
11/20/2024 10:30	6.6	32.1	0.0	7.0	11.2	11.2	11/20/2024 10:30	8.9	20.8	7.0	10.4	2.5
11/20/2024 10:45	6.6	31.2	0.0	7.0	11.2	12.6	11/20/2024 10:45	8.9	20.6	7.1	10.3	2.3
11/20/2024 11:00	6.6	30.5	0.0	7.0	11.2	14.0	11/20/2024 11:00	8.9	19.8	7.1	10.4	4.0
11/20/2024 11:15	6.6	31.5	0.0	6.9	11.2	16.6	11/20/2024 11:15	8.9	19.9	7.1	10.3	1.9
11/20/2024 11:30	6.7	40.0	0.0	6.9	11.2	17.7	11/20/2024 11:30	8.9	19.2	7.0	10.4	2.7
11/20/2024 11:45	6.9	53.0	0.0	7.0	11.1	22.6	11/20/2024 11:45	8.9	20.0	7.0	10.3	5.7
11/20/2024 12:00	7.0	53.0	0.0	7.0	11.1	22.8	11/20/2024 12:00	8.9	19.9	7.0	10.4	10.2
11/20/2024 12:15	7.0	52.5	0.0	7.0	11.1	24.7	11/20/2024 12:15	8.9	22.0	7.1	10.4	14.9
11/20/2024 12:30	6.8	32.7	0.0	7.1	11.2	27.9	11/20/2024 12:30	8.9	23.7	7.1	10.4	25.7
11/20/2024 12:45	6.8	31.7	0.0	7.0	11.2	24.9	11/20/2024 12:45	8.9	25.5	7.2	10.4	19.6
11/20/2024 13:00	6.8	30.7	0.0	7.0	11.2	25.3	11/20/2024 13:00	8.9	25.8	7.1	10.4	32.8
11/20/2024 13:15	6.9	30.3	0.0	6.9	11.2	14.2	11/20/2024 13:15	8.9	26.1	7.1	10.4	35.2
11/20/2024 13:30	6.9	31.4	0.0	7.0	11.2	21.6	11/20/2024 13:30	8.9	25.9	7.2	10.4	35.9
11/20/2024 13:45	7.1	49.3	0.0	7.0	11.1	25.1	11/20/2024 13:45	8.9	27.2	7.2	10.4	26.8
11/20/2024 14:00	7.1	48.8	0.0	7.0	11.1	17.7	11/20/2024 14:00	8.9	25.4	7.2	10.4	45.5
11/20/2024 14:15	7.2	48.3	0.0	7.0	11.1	26.6	11/20/2024 14:15	8.9	25.7	7.2	10.4	72.6
11/20/2024 14:30	7.2	47.7	0.0	7.0	11.1	19.2	11/20/2024 14:30	8.9	24.5	7.1	10.4	62.5
11/20/2024 14:45	7.0	28.7	0.0	7.1	11.1	15.8	11/20/2024 14:45	8.9	24.0	7.2	10.4	70.4
11/20/2024 15:00	7.0	28.0	0.0	7.0	11.1	11.5	11/20/2024 15:00	8.9	22.7	7.2	10.4	38.2
11/20/2024 15:15	7.0	27.9	0.0	6.9	11.1	15.6	11/20/2024 15:15	8.9	21.7	7.1	10.3	26.3
11/20/2024 15:30	7.0	27.8	0.0	6.9	11.1	16.7	11/20/2024 15:30	8.9	22.0	7.1	10.4	26.3
11/20/2024 15:45	7.0	27.2	0.0	6.9	11.1	15.9	11/20/2024 15:45	8.9	22.8	7.1	10.4	36.1
11/20/2024 16:00	7.1	34.2	0.0	6.9	11.1	15.8	11/20/2024 16:00	8.9	22.8	7.1	10.4	43.2
11/20/2024 16:15	7.2	41.6	0.0	6.9	11.1	19.8	11/20/2024 16:15	8.9	24.3	7.2	10.3	60.3
11/20/2024 16:30	7.3	45.0	0.0	6.9	11.0	16.9	11/20/2024 16:30	8.9	25.3	7.2	10.4	79.6
11/20/2024 16:45	7.3	44.8	0.0	6.9	11.0	15.4	11/20/2024 16:45	8.9	26.3	7.2	10.4	89.9
11/20/2024 17:00	7.3	44.7	0.0	7.0	11.0	15.9	11/20/2024 17:00	8.9	25.7	7.1	10.4	65.8
11/20/2024 17:15	7.1	26.7	0.0	7.0	11.1	8.9	11/20/2024 17:15	8.9	24.7	7.1	10.4	37.4
11/20/2024 17:30	7.1	25.9	0.0	6.9	11.1	7.4	11/20/2024 17:30	8.9	23.2	7.1	10.4	25.5
11/20/2024 17:45	7.1	25.1	0.0	6.9	11.1	7.8	11/20/2024 17:45	8.9	22.1	7.0	10.4	18.8
11/20/2024 18:00	7.1	24.9	0.0	6.9	11.1	6.7	11/20/2024 18:00	8.9	21.2	7.0	10.4	15.4
11/20/2024 18:15	7.1	25.1	0.0	6.9	11.1	7.1	11/20/2024 18:15	8.9	22.0	7.1	10.4	15.9
11/20/2024 18:30	7.3	43.9	0.0	6.9	11.1	7.6	11/20/2024 18:30	8.9	21.0	7.0	10.4	10.6
11/20/2024 18:45	7.3	44.5	0.0	6.9	11.0	16.4	11/20/2024 18:45	8.9	20.5	7.0	10.4	11.2
11/20/2024 19:00	7.4	44.6	0.0	6.9	11.0	13.2	11/20/2024 19:00	9.0	19.3	7.0	10.4	5.3
11/20/2024 19:15	7.4	44.9	0.0	6.9	11.0	13.6	11/20/2024 19:15	9.0	19.1	7.0	10.4	5.9
11/20/2024 19:30	7.4	45.1	0.0	6.9	11.0	13.5	11/20/2024 19:30	9.0	18.4	7.0	10.4	4.5
11/20/2024 19:45	7.2	25.0	0.0	7.0	11.1	6.0	11/20/2024 19:45	9.0	18.3	7.0	10.4	3.2
11/20/2024 20:00	7.1	24.0	0.0	6.9	11.1	5.8	11/20/2024 20:00	9.0	17.7	7.0	10.4	4.1
11/20/2024 20:15	7.1	23.5	0.0	6.9	11.1	5.1	11/20/2024 20:15	8.9	18.0	7.0	10.4	2.0
11/20/2024 20:30	7.1	23.3	0.0	6.9	11.1	6.2	11/20/2024 20:30	8.9	17.4	7.0	10.4	3.0
11/20/2024 20:45	7.1	23.1	0.0	6.8	11.1	4.9	11/20/2024 20:45	8.9	17.8	7.0	10.4	3.9
11/20/2024 21:00	7.1	22.9	0.0	6.8	11.1	5.2	11/20/2024 21:00	8.9	17.4	7.0	10.4	1.2
11/20/2024 21:15	7.1	23.3	0.0	6.8	11.1	4.9	11/20/2024 21:15	8.9	17.6	7.0	10.4	1.2
11/20/2024 21:30	7.3	46.3	0.0	6.8	11.1	10.7	11/20/2024 21:30	8.9	17.8	7.1	10.4	2.5
11/20/2024 21:45	7.3	38.7	0.0	6.8	11.1	11.5	11/20/2024 21:45	8.9	19.4	7.0	10.4	15.6
11/20/2024 22:00	7.4	46.6	0.0	6.8	11.0	8.8	11/20/2024 22:00	8.9	19.5	7.1	10.4	6.3
11/20/2024 22:15	7.4	46.8	0.0	6.8	11.0	9.4	11/20/2024 22:15	8.9	20.0	7.1	10.4	3.3
11/20/2024 22:30	7.4	46.9	0.0	6.8	11.0	10.4	11/20/2024 22:30	8.9	19.5	7.1	10.4	3.9
11/20/2024 22:45	7.4	46.3	0.0	6.8	11.0	8.5	11/20/2024 22:45	8.8	19.7	7.1	10.4	2.1
11/20/2024 23:00	7.2	23.9	0.0	6.9	11.1	5.8	11/20/2024 23:00	8.8	19.1	7.1	10.4	2.8
11/20/2024 23:15	7.2	23.2	0.0	6.9	11.1	5.7	11/20/2024 23:15	8.8	19.3	7.1	10.4	3.1
11/20/2024 23:30	7.2	22.6	0.0	6.8	11.1	4.8	11/20/2024 23:30	8.8	18.9	7.1	10.5	1.0
11/20/2024 23:45	7.2	22.4	0.0	6.8	11.1	4.9	11/20/2024 23:45	8.8	19.3	6.9	10.4	2.7
11/21/2024 0:00	7.4	47.4	0.0	6.8	11.0	8.4	11/21/2024 0:00	8.8	19.4	7.1	10.4	1.7
11/21/2024 0:15	7.4	47.6	0.0	6.8	11.0	8.9	11/21/2024 0:15	8.8	19.6	7.0	10.4	1.6
11/21/2024 0:30	7.2	22.4	0.0	6.9	11.1	6.9	11/21/2024 0:30	8.8	19.7	7.1	10.5	2.0
11/21/2024 0:45	7.1	22.2	0.0	6.9	11.1	5.5	11/21/2024 0:45	8.8	21.1	7.0	10.4	1.3
11/21/2024 1:00	7.1	22.1	0.0	6.8	11.1	5.6	11/21/2024 1:00	8.7	21.1	7.1	10.5	1.9
11/21/2024 1:15	7.1	22.3	0.0	6.8	11.1	4.8	11/21/2024 1:15	8.7	21.7	7.1	10.5	1.8
11/21/2024 1:30	7.1	23.2	0.0	6.8	11.1	4.6	11/21/2024 1:30	8.7	21.9	7.2	10.5	1.5
11/21/2024 1:45	7.4	48.7	0.0	6.8	11.0	8.7	11/21/2024 1:45	8.7	22.5	7.2	10.5	2.4
11/21/2024 2:00	7.4	48.6	0.0	6.8	11.0	6.9	11/21/2024 2:00	8.7	22.8	7.2	10.5	3.4

11/21/2024 2:15	7.5	48.6	0.0	6.8	11.0	9.0	11/21/2024 2:15	8.7	23.5		7.2	10.4	2.7
11/21/2024 2:30	7.4	48.5	0.0	6.8	11.0	9.7	11/21/2024 2:30	8.7	23.2		7.2	10.5	4.8
11/21/2024 2:45	7.2	23.6	0.0	7.0	11.1	5.1	11/21/2024 2:45	8.7	23.1		7.1	10.5	2.3
11/21/2024 3:00	7.1	22.8	0.0	6.9	11.1	4.8	11/21/2024 3:00	8.7	22.7		7.2	10.5	2.0
11/21/2024 3:15	7.1	22.2	0.0	6.8	11.1	4.9	11/21/2024 3:15	8.7	22.4		7.1	10.5	1.3
11/21/2024 3:30	7.1	22.1	0.0	6.8	11.1	5.3	11/21/2024 3:30	8.7	21.8		7.2	10.5	2.1
11/21/2024 3:45	7.1	21.9	0.0	6.8	11.1	4.8	11/21/2024 3:45	8.7	21.8		7.0	10.5	2.2
11/21/2024 4:00	7.1	22.9	0.0	6.8	11.1	4.9	11/21/2024 4:00	8.7	21.0		7.1	10.5	4.9
11/21/2024 4:15	7.2	30.7	0.0	6.7	11.1	7.7	11/21/2024 4:15	8.7	20.9		7.1	10.5	1.6
11/21/2024 4:30	7.4	41.4	0.0	6.8	11.0	10.0	11/21/2024 4:30	8.7	20.1		7.1	10.5	11.0
11/21/2024 4:45	7.3	29.1	0.0	6.9	11.1	6.8	11/21/2024 4:45	8.7	19.8		7.1	10.5	2.6
11/21/2024 5:00	7.2	23.3	0.0	7.0	11.1	5.7	11/21/2024 5:00	8.7	19.2		7.1	10.5	1.2
11/21/2024 5:15	7.3	50.3	0.0	6.7	11.1	16.2	11/21/2024 5:15	8.7	19.7		7.1	10.5	3.9
11/21/2024 5:30	7.5	54.5	0.0	6.8	11.0	16.6	11/21/2024 5:30	8.7	20.4		7.1	10.5	6.6
11/21/2024 5:45	7.5	55.4	0.0	6.7	11.0	16.4	11/21/2024 5:45	8.7	20.8		7.1	10.5	5.3
11/21/2024 6:00	7.2	24.1	0.0	7.0	11.1	5.4	11/21/2024 6:00	8.7	20.5		7.0	10.5	2.2
11/21/2024 6:15	7.1	23.1	0.0	6.9	11.1	5.0	11/21/2024 6:15	8.7	20.4		6.9	10.5	2.9
11/21/2024 6:30	7.1	22.7	0.0	6.9	11.1	4.9	11/21/2024 6:30	8.7	20.0		7.1	10.6	3.4
11/21/2024 6:45	7.1	22.1	0.0	6.9	11.1	5.0	11/21/2024 6:45	8.7	19.5		7.1	10.5	1.2
11/21/2024 7:00	7.1	21.8	0.0	6.9	11.1	4.7	11/21/2024 7:00	8.7	18.9		7.0	10.5	2.6
11/21/2024 7:15	7.1	21.7	0.0	6.8	11.1	4.4	11/21/2024 7:15	8.7	18.7		7.1	10.5	1.4
11/21/2024 7:30	7.1	21.6	0.0	6.8	11.1	4.4	11/21/2024 7:30	8.7	17.8		7.1	10.5	0.9
11/21/2024 7:45	7.1	21.5	0.0	6.8	11.1	4.5	11/21/2024 7:45	8.7	17.6		7.0	10.5	1.5
11/21/2024 8:00	7.1	21.6	0.0	6.8	11.2	4.6	11/21/2024 8:00	8.7	17.1		7.1	10.5	1.7
11/21/2024 8:15	7.1	21.8	0.0	6.8	11.1	4.7	11/21/2024 8:15	8.7	17.0		7.0	10.5	3.3
11/21/2024 8:30	7.1	21.4	0.0	6.8	11.2	5.1	11/21/2024 8:30	8.7	16.5		7.0	10.5	3.3
11/21/2024 8:45	7.1	21.4	0.0	6.8	11.2	4.8	11/21/2024 8:45	8.7	16.6		7.0	10.5	1.6
11/21/2024 9:00	7.1	21.4	0.0	6.8	11.1	4.7	11/21/2024 9:00	8.7	16.3		6.9	10.5	0.7
11/21/2024 9:15	7.1	21.4	0.0	6.8	11.1	4.3	11/21/2024 9:15	8.7	16.2		7.0	10.5	0.7
11/21/2024 9:30	7.1	21.4	0.0	6.8	11.1	4.7	11/21/2024 9:30	8.7	16.0		7.0	10.5	0.6
11/21/2024 9:45	7.2	21.3	0.0	6.9	11.1	4.6	11/21/2024 9:45	8.7	16.0		7.0	10.5	0.4
11/21/2024 10:00	7.2	21.5	0.0	6.8	11.1	5.5	11/21/2024 10:00	8.7	15.6		7.0	10.6	0.9
11/21/2024 10:15	7.2	21.4	0.0	6.8	11.1	4.4	11/21/2024 10:15	8.7	15.8		7.0	10.5	0.8
11/21/2024 10:30	7.2	21.3	0.0	6.8	11.1	5.1	11/21/2024 10:30	8.7	15.5		6.9	10.5	2.8
11/21/2024 10:45	7.2	21.3	0.0	6.8	11.1	4.8	11/21/2024 10:45	8.7	15.7		7.0	10.5	1.0
11/21/2024 11:00	7.7	62.7	0.0	6.4	11.0	9.8	11/21/2024 11:00	8.7	15.2		6.9	10.6	1.0
11/21/2024 11:15	7.8	74.5	0.0	6.4	11.0	9.9	11/21/2024 11:15	8.8	15.4		7.0	10.5	2.5
11/21/2024 11:30	7.8	77.6	0.0	6.4	10.9	10.1	11/21/2024 11:30	8.8	15.2		7.0	10.5	4.7
11/21/2024 11:45	7.9	77.8	0.0	6.5	10.9	9.0	11/21/2024 11:45	8.8	15.3		7.0	10.5	3.5
11/21/2024 12:00	7.7	44.5	0.0	6.7	11.0	7.9	11/21/2024 12:00	8.8	15.1		6.8	10.5	2.4
11/21/2024 12:15	7.4	23.3	0.0	7.0	11.1	5.4	11/21/2024 12:15	8.9	15.0	0.0	6.9	10.5	2.1
11/21/2024 12:30	7.8	62.4	0.0	6.5	10.9	14.8	11/21/2024 12:30	8.9	15.1	0.0	6.9	10.5	3.4
11/21/2024 12:45	7.5	22.1	0.0	7.0	11.1	5.1	11/21/2024 12:45	8.9	15.0	0.0	6.8	10.5	3.0
11/21/2024 13:00	7.5	21.7	0.0	7.0	11.0	5.2	11/21/2024 13:00	8.9	15.0	0.0	6.9	10.5	4.6
11/21/2024 13:15	7.5	21.4	0.0	6.9	11.0	4.6	11/21/2024 13:15	8.9	14.9	0.0	6.8	10.5	2.7
11/21/2024 13:30	7.5	21.3	0.0	7.0	11.0	4.5	11/21/2024 13:30	8.9	14.8	0.0	6.9	10.5	2.1
11/21/2024 13:45	7.5	21.2	0.0	6.9	11.0	4.9	11/21/2024 13:45	8.9	14.8	0.0	6.9	10.5	1.3
11/21/2024 14:00	7.5	21.2	0.0	6.9	11.0	5.4	11/21/2024 14:00		14.7	0.0	6.8	10.5	1.2
11/21/2024 14:15	7.5	21.7	0.0	6.9	11.0	4.6	11/21/2024 14:15	8.9	14.7	0.0	6.9	10.5	1.4
11/21/2024 14:30	7.7	45.5	0.0	6.8	11.0	8.4	11/21/2024 14:30	8.9	14.7	0.0	6.8	10.5	1.9
11/21/2024 14:45	7.5	21.3	0.0	6.9	11.0	4.7	11/21/2024 14:45	8.9	14.7	0.0	6.8	10.5	1.1
11/21/2024 15:00	7.6	41.3	0.0	6.7	11.0	8.4	11/21/2024 15:00	8.9	14.9	0.0	6.8	10.5	2.2
11/21/2024 15:15	7.7	33.8	0.0	6.7	11.0	7.6	11/21/2024 15:15	8.9	15.0	0.0	6.8	10.5	1.1
11/21/2024 15:30	7.9	63.9	0.0	6.5	10.9	9.7	11/21/2024 15:30	8.8	15.7	0.0	6.9	10.5	1.6
11/21/2024 15:45	7.5	21.9	0.0	7.0	11.0	13.7	11/21/2024 15:45	8.8	16.0	0.0	6.9	10.5	6.1
11/21/2024 16:00	7.5	21.7	0.0	7.0	11.0	5.6	11/21/2024 16:00	8.8	15.7	0.0	6.9	10.5	3.5
11/21/2024 16:15	7.5	21.4	0.0	6.9	11.0	4.6	11/21/2024 16:15	8.7	15.6	0.0	6.9	10.5	2.2
11/21/2024 16:30	7.5	21.3	0.0	7.0	11.0	4.5	11/21/2024 16:30	8.7	15.4	0.0	6.9	10.5	1.7
11/21/2024 16:45	7.5	21.3	0.0	7.0	11.0	4.6	11/21/2024 16:45	8.7	15.5	0.0	6.9	10.6	1.0
11/21/2024 17:00	7.9	70.7	0.0	6.5	10.9	6.1	11/21/2024 17:00	8.7	15.3	0.0	6.9	10.6	1.1
11/21/2024 17:15	7.5	21.7	0.0	7.0	11.0	4.4	11/21/2024 17:15	8.6	15.3	0.0	6.8	10.6	0.7
11/21/2024 17:30	7.4	22.0	0.0	7.0	11.0	4.5	11/21/2024 17:30	8.6	15.2	0.0	6.8	10.6	0.8
11/21/2024 17:45	7.7	56.8	0.0	6.6	11.0	7.1	11/21/2024 17:45	8.6	15.1	0.0	6.9	10.6	11.7
11/21/2024 18:00	7.8	58.0	0.0	6.6	10.9	8.1	11/21/2024 18:00	8.5	15.1	0.0	6.8	10.6	0.8
11/21/2024 18:15	7.5	23.8	0.0	7.0	11.0	5.2	11/21/2024 18:15	8.5	15.0	0.0	6.9	10.6	0.6
11/21/2024 18:30	7.4	22.7	0.0	7.0	11.0	4.9	11/21/2024 18:30	8.5	14.9	0.0	6.8	10.6	0.9
11/21/2024 18:45	7.4	23.5	0.0	7.0	11.0	4.8	11/21/2024 18:45	8.5	14.9	0.0	6.8	10.6	0.7
11/21/2024 19:00	7.8	58.9	0.0	6.6	10.9	7.7	11/21/2024 19:00	8.5	14.8	0.0	6.9	10.6	0.6
11/21/2024 19:15	7.8	59.2	0.0	6.6	10.9	6.0	11/21/2024 19:15	8.5	14.8	0.0	6.7	10.6	0.5
11/21/2024 19:30	7.5	23.4	0.0	7.0	11.0	4.7	11/21/2024 19:30	8.4	14.7	0.0	6.8	10.6	0.3
11/21/2024 19:45	7.4	23.2	0.0	7.0	11.1	4.9	11/21/2024 19:45	8.4	14.6	0.0	6.7	10.6	0.8
11/21/2024 20:00	7.4	24.0	0.0	7.0	11.0	5.5	11/21/2024 20:00	8.4	14.6	0.0	6.8	10.6	0.5
11/21/2024 20:15	7.8	59.7	0.0	6.6	10.9	6.4	11/21/2024 20:15	8.3	14.5	0.0	6.8	10.7	0.5
11/21/2024 20:30	7.8	59.8	0.0	6.6	11.0	7.2	11/21/2024 20:30	8.3	14.5	0.0	6.8	10.7	0.6
11/21/2024 20:45	7.8	60.0	0.0	6.7	10.9	6.4	11/21/2024 20:45	8.3	14.5	0.0	6.9	10.7	0.6
11/21/2024 21:00	7.8	60.4	0.0	6.7	10.9	9.2	11/21/2024 21:00	8.3	14.4	0.0	6.8	10.7	0.2
11/21/2024 21:15	7.5	24.1	0.0	7.1	11.0	6.2	11/21/2024 21:15	8.3	14.4	0.0	6.8	10.7	0.3
11/21/2024 21:30	7.4	22.6	0.0	7.1	11.1	6.3	11/21/2024 21:30	8.3	14.2	0.0	6.9	10.7	0.5
11/21/2024 21:45	7.8	63.2	0.0	6.7	11.0	6.0	11/21/2024 21:45	8.3	14.3	0.0	6.8	10.7	0.4
11/21/2024 22:00	7.8	63.5	0.0	6.7	11.0	6.9	11/21/2024 22:00	8.3	14.3	0.0	6.8	10.7	2.1
11/21/2024 22:15	7.8	63.6	0.0	6.7	10.9	7.7	11/21/2024 22:15	8.3	14.2	0.0	6.9	10.7	0.3
11/21/2024 22:30	7.4	23.6	0.0	7.1	11.0	5.1	11/21/2024 22:30	8.3	14.2	0.0	6.9	10.7	0.5
11/21/2024 22:45	7.3	21.8	0.0	7.1	11.1	5.2	11/21/2024 22:45	8.2	14.1	0.0	6.8	10.7	0.3
11/21/2024 23:00	7.3	21.5	0.0	7.1	11.1	5.5	11/21/2024 23:00	8.2	14.2	0.0	6.8	10.7	0.3
11/21/2024 23:15	7.2	21.3	0.0	7.1	11.1	5.0	11/21/2024 23:15	8.2	14.0	0.0	6.8	10.7	0.2
11/21/2024 23:30	7.2	21.2	0.0	7.1	11.1	4.7	11/21/2024 23:30	8.2	14.1	0.0	6.8	10.7	0.3
11/21/2024 23:45	7.2	21.1	0.0	7.1	11.1	4.7	11/21/2024 23:45	8.2	14.0	0.0	6.8	10.7	0.5
11/22/2024 0:00	7.1	21.1	0.0	7.0	11.1	4.8	11/22/2024 0:00	8.2	14.0	0.0	6.9	10.7	0.4
11/22/2024 0:15	7.1	21.1	0.0	7.0	11.1	5.1	11/22/2024 0:15	8.1	13.9	0.0	6.8	10.7	1.3
11/22/2024 0:30	7.1	21.7	0.0	7.0	11.1	4.9	11/22/2024 0:30	8.1	13.8	0.0	6.8	10.7	0.4
11/22/2024 0:45	7.1	22.6	0.0	7.0	11.1	8.7	11/22/2024 0:45	8.1	13.9	0.0	6.8	10.7	0.4
11/22/2024 1:00	7.4	64.4	0.0	6.6	11.0	6.2	11/22/2024 1:00	8.1	13.8	0.0	6.8	10.7	0.3
11/22/2024 1:15	7.5	61.4	0.0	6.7	11.0	8.0	11/22/2024 1:15	8.1	13.8	0.0	6.9	10.7	0.2
11/22/2024 1:30	7.5	60.0	0.0	6.8	11.0	11.3	11/22/2024 1:30	8.1	13.7	0.0	6.8	10.7	1.3
11/22/2024 1:45	7.5	59.2	0.0	6.9	11.0	8.9	11/22/2024 1:45	8.1	13.7	0.0	6.8	10.7	0.5
11/22/2024 2:00	7.4	41.1	0.0	7.0	11.0	8.2	11/22/2024 2:00	8.0	13.6	0.0	6.9	10.7	0.4
11/22/2024 2:15	7.0	22.5	0.0	7.1	11.1	4.8	11/22/2024 2:15	8.0	13.6	0.0	6.7	10.8	0.7
11/22/2024 2:30	7.0	21.8	0.0	7.1	11.1	5.0	11/22/2024 2:30	8.0	13.6	0.0	6.8	10.8	0.3
11/22/2024 2:45	7.4	58.3	0.0	6.9	11.0	8.6	11/22/2024 2:45	8.0	13.5	0.0	6.8	10.8	0.5
11/22/2024 3:00	7.4	54.2	0.0	7.0	11.0	27.0	11/22/2024 3:00	8.0	13.4	0.0	6.8	10.8	0.2
11/22/2024 3:15	7.5	64.4	0.0	7.0	11.0	14.7	11/22/2024 3:15	8.0	13.5	0.0	6.8	10.8	0.1

11/22/2024 3:30	7.0	24.0	0.0	7.2	11.1	5.0	11/22/2024 3:30	8.0	13.5	0.0	6.9	10.8	0.3
11/22/2024 3:45	7.0	22.5	0.0	7.1	11.1	5.0	11/22/2024 3:45	8.0	13.4	0.0	6.8	10.8	3.3
11/22/2024 4:00	6.9	21.7	0.0	7.1	11.1	5.5	11/22/2024 4:00		13.5	0.0	6.9	10.8	0.2
11/22/2024 4:15	6.9	21.3	0.0	7.1	11.1	4.9	11/22/2024 4:15	8.0	13.4	0.0	6.8	10.8	0.4
11/22/2024 4:30	6.9	21.0	0.0	7.1	11.1	4.8	11/22/2024 4:30	8.0	13.4	0.0	6.9	10.8	1.0
11/22/2024 4:45	6.9	21.3	0.0	7.0	11.1	5.1	11/22/2024 4:45	8.0	13.4	0.0	6.8	10.8	0.1
11/22/2024 5:00	7.4	63.1	0.0	7.0	11.0	10.2	11/22/2024 5:00	7.9	13.3	0.0	6.9	10.8	0.4
11/22/2024 5:15	7.5	62.5	0.0	7.1	10.9	9.3	11/22/2024 5:15	7.9	13.2	0.0	6.8	10.8	0.2
11/22/2024 5:30	7.1	24.1	0.0	7.2	11.0	6.2	11/22/2024 5:30	7.9	13.4	0.0	6.8	10.8	0.5
11/22/2024 5:45	6.9	21.4	0.0	7.1	11.1	5.0	11/22/2024 5:45	7.9	13.2	0.0	6.9	10.8	0.4
11/22/2024 6:00	6.9	21.2	0.0	7.1	11.1	5.0	11/22/2024 6:00	7.9	13.2	0.0	6.8	10.8	0.3
11/22/2024 6:15	6.9	22.2	0.0	7.1	11.1	4.9	11/22/2024 6:15	7.8	13.3	0.0	6.7	10.8	0.3
11/22/2024 6:30	7.5	61.4	0.0	7.0	10.9	10.5	11/22/2024 6:30	7.8	13.2	0.0	6.8	10.8	0.2
11/22/2024 6:45	7.5	56.8	0.0	7.1	10.9	8.3	11/22/2024 6:45	7.8	13.2	0.0	6.8	10.8	1.0
11/22/2024 7:00	7.5	56.1	0.0	7.2	10.9	9.3	11/22/2024 7:00	7.8	13.1	0.0	6.8	10.8	0.3
11/22/2024 7:15	7.5	55.6	0.0	7.2	10.9	9.7	11/22/2024 7:15	7.8	13.1	0.0	6.8	10.8	0.2
11/22/2024 7:30	7.5	54.9	0.0	7.2	10.9	8.6	11/22/2024 7:30	7.8	13.1	0.0	6.8	10.8	0.2
11/22/2024 7:45	7.1	22.4	0.0	7.3	11.0	5.2	11/22/2024 7:45	7.9	13.0	0.0	6.8	10.8	0.2
11/22/2024 8:00	7.0	21.6	0.0	7.2	11.0	5.2	11/22/2024 8:00	7.8	13.1	0.0	6.8	10.8	0.3
11/22/2024 8:15	7.0	21.2	0.0	7.1	11.1	4.9	11/22/2024 8:15	7.9	13.1	0.0	6.9	10.8	0.2
11/22/2024 8:30	7.0	21.0	0.0	7.1	11.0	5.8	11/22/2024 8:30	7.9	13.0	0.0	6.8	10.8	0.3
11/22/2024 8:45	7.0	20.9	0.0	7.1	11.0	5.1	11/22/2024 8:45	7.9	13.0	0.0	6.8	10.8	0.2
11/22/2024 9:00	7.0	20.8	0.0	7.0	11.0	4.8	11/22/2024 9:00	7.9	12.9	0.0	6.8	10.8	0.2
11/22/2024 9:15	7.4	52.7	0.0	7.0	10.9	8.7	11/22/2024 9:15	7.9	12.9	0.0	6.8	10.8	0.2
11/22/2024 9:30	7.5	52.3	0.0	7.1	10.9	8.4	11/22/2024 9:30	7.9	12.9	0.0	6.8	10.8	0.1
11/22/2024 9:45	7.6	52.2	0.0	7.2	10.9	9.1	11/22/2024 9:45	8.0	12.9	0.0	6.9	10.8	0.3
11/22/2024 10:00	7.6	51.9	0.0	7.2	10.9	9.5	11/22/2024 10:00	8.0	12.9	0.0	6.9	10.8	0.3
11/22/2024 10:15	7.6	51.6	0.0	7.3	10.9	8.2	11/22/2024 10:15	8.0	12.8	0.0	6.9	10.8	0.6
11/22/2024 10:30	7.2	22.6	0.0	7.3	11.0	5.9	11/22/2024 10:30	8.1	12.8	0.0	6.8	10.8	0.1
11/22/2024 10:45	7.2	22.3	0.0	7.2	11.0	5.3	11/22/2024 10:45	8.1	12.8	0.0	6.8	10.8	0.2
11/22/2024 11:00	7.2	22.2	0.0	7.1	11.0	5.5	11/22/2024 11:00	8.1	12.8	0.0	6.8	10.8	0.2
11/22/2024 11:15	7.2	22.1	0.0	7.1	11.0	6.0	11/22/2024 11:15	8.2	12.7	0.0	6.8	10.8	0.2
11/22/2024 11:30	7.2	21.8	0.0	7.1	11.0	6.4	11/22/2024 11:30	8.2	12.7	0.0	6.8	10.7	0.2
11/22/2024 11:45	7.2	21.6	0.0	7.0	11.0	6.1	11/22/2024 11:45	8.2	12.7	0.0	6.9	10.7	0.2
11/22/2024 12:00	7.2	21.5	0.0	7.0	11.0	6.6	11/22/2024 12:00	8.2	12.6	0.0	6.8	10.7	0.2
11/22/2024 12:15	7.2	21.6	0.0	7.0	11.0	6.3	11/22/2024 12:15	8.3	12.6	0.0	6.9	10.7	0.1
11/22/2024 12:30	7.6	52.1	0.0	7.1	10.9	9.8	11/22/2024 12:30	8.3	12.5	0.0	6.8	10.7	0.5
11/22/2024 12:45	7.6	54.1	0.0	7.2	10.9	11.6	11/22/2024 12:45	8.3	12.5	0.0	6.7	10.7	0.2
11/22/2024 13:00	7.6	54.6	0.0	7.3	10.9	17.8	11/22/2024 13:00	8.4	12.5	0.0	6.8	10.7	0.2
11/22/2024 13:15	7.6	55.5	0.0	7.3	10.9	30.0	11/22/2024 13:15	8.4	12.5	0.0	6.7	10.7	0.3
11/22/2024 13:30	7.6	56.2	0.0	7.3	10.9	19.7	11/22/2024 13:30	8.4	12.5	0.0	6.8	10.7	0.3
11/22/2024 13:45	7.2	33.0	0.0	7.3	11.0	34.1	11/22/2024 13:45	8.4	12.4	0.0	6.8	10.7	0.2
11/22/2024 14:00	7.2	31.9	0.0	7.2	11.0	27.3	11/22/2024 14:00	8.4	12.4	0.0	6.8	10.7	0.6
11/22/2024 14:15	7.2	31.2	0.0	7.1	11.0	31.8	11/22/2024 14:15	8.4	12.4	0.0	6.8	10.7	0.4
11/22/2024 14:30	7.2	30.9	0.0	7.1	11.0	35.7	11/22/2024 14:30	8.3	12.4	0.0	6.7	10.7	0.7
11/22/2024 14:45	7.2	31.6	0.0	7.1	11.0	30.7	11/22/2024 14:45	8.4	12.4	0.0	6.8	10.7	0.2
11/22/2024 15:00	7.2	37.8	0.0	7.1	11.0	32.1	11/22/2024 15:00	8.3	12.4	0.0	6.9	10.7	0.1
11/22/2024 15:15	7.3	33.3	0.0	7.2	10.9	29.7	11/22/2024 15:15	8.3	12.4	0.0	6.8	10.7	0.5
11/22/2024 15:30	7.2	31.0	0.0	7.1	11.0	25.9	11/22/2024 15:30	8.3	12.4	0.0	6.8	10.7	0.2
11/22/2024 15:45	7.2	30.7	0.0	7.1	11.0	15.8	11/22/2024 15:45	8.2	12.4	0.0	6.8	10.7	0.2
11/22/2024 16:00	7.2	30.4	0.0	7.1	11.0	14.0	11/22/2024 16:00	8.2	12.4	0.0	6.9	10.7	0.3
11/22/2024 16:15	7.7	59.6	0.0	7.1	10.8	11.0	11/22/2024 16:15	8.2	12.4	0.0	6.7	10.7	0.2
11/22/2024 16:30	7.5	52.0	0.0	7.2	10.9	10.0	11/22/2024 16:30	8.1	12.4	0.0	6.8	10.8	0.6
11/22/2024 16:45	7.6	45.8	0.0	7.3	10.8	9.8	11/22/2024 16:45	8.1	12.4	0.0	6.8	10.8	0.3
11/22/2024 17:00	7.2	32.8	0.0	7.2	11.0	8.6	11/22/2024 17:00	8.0	12.5	0.0	6.7	10.8	0.2
11/22/2024 17:15	7.6	58.8	0.0	7.2	10.8	9.9	11/22/2024 17:15	8.0	12.6	0.0	6.8	10.8	0.3
11/22/2024 17:30	7.7	58.5	0.0	7.3	10.8	10.0	11/22/2024 17:30	7.9	12.4	0.0	6.8	10.8	0.1
11/22/2024 17:45	7.7	58.1	0.0	7.3	10.8	9.0	11/22/2024 17:45	7.9	12.6	0.0	6.8	10.8	0.1
11/22/2024 18:00	7.3	32.1	0.0	7.3	11.0	8.6	11/22/2024 18:00	7.9	12.5	0.0	6.8	10.8	0.2
11/22/2024 18:15	7.2	31.2	0.0	7.2	11.0	6.9	11/22/2024 18:15	7.8	12.5	0.0	6.9	10.8	0.1
11/22/2024 18:30	7.2	30.8	0.0	7.1	11.0	6.6	11/22/2024 18:30	7.8	12.5	0.0	6.7	10.9	0.2
11/22/2024 18:45	7.2	30.4	0.0	7.1	11.0	6.9	11/22/2024 18:45	7.8	12.4	0.0	6.9	10.9	0.3
11/22/2024 19:00	7.6	56.3	0.0	7.1	10.9	7.0	11/22/2024 19:00	7.8	12.4	0.0	6.8	10.8	0.2
11/22/2024 19:15	7.7	57.1	0.0	7.3	10.8	6.1	11/22/2024 19:15	7.8	12.5	0.0	6.8	10.8	0.1
11/22/2024 19:30	7.7	57.4	0.0	7.3	10.8	6.9	11/22/2024 19:30	7.8	12.4	0.0	6.8	10.8	0.1
11/22/2024 19:45	7.7	57.5	0.0	7.4	10.8	7.1	11/22/2024 19:45	7.8	12.4	0.0	6.9	10.9	0.1
11/22/2024 20:00	7.8	57.6	0.0	7.4	10.8	7.5	11/22/2024 20:00	7.7	12.5	0.0	6.8	10.9	0.1
11/22/2024 20:15	7.8	57.5	0.0	7.4	10.8	6.2	11/22/2024 20:15	7.7	12.4	0.0	6.9	10.8	0.3
11/22/2024 20:30	7.3	30.7	0.0	7.4	10.9	5.7	11/22/2024 20:30	7.7	12.4	0.0	6.7	10.9	0.2
11/22/2024 20:45	7.2	30.1	0.0	7.2	11.0	5.5	11/22/2024 20:45	7.7	12.4	0.0	6.9	10.9	0.3
11/22/2024 21:00	7.2	29.8	0.0	7.1	11.0	5.7	11/22/2024 21:00	7.7	12.5	0.0	6.8	10.9	0.2
11/22/2024 21:15	7.2	29.6	0.0	7.1	11.0	5.5	11/22/2024 21:15	7.7	12.4	0.0	6.9	10.9	0.8
11/22/2024 21:30	7.2	30.2	0.0	7.1	11.0	5.4	11/22/2024 21:30	7.7	12.3	0.0	6.8	10.9	0.2
11/22/2024 21:45	7.2	30.5	0.0	7.0	10.9	5.2	11/22/2024 21:45	7.7	12.3	0.0	6.8	10.9	0.1
11/22/2024 22:00	7.6	53.3	0.0	7.1	10.9	22.4	11/22/2024 22:00	7.6	12.4	0.0	6.8	10.9	0.3
11/22/2024 22:15	7.7	56.4	0.0	7.3	10.8	7.1	11/22/2024 22:15	7.6	12.3	0.0	6.7	10.9	0.3
11/22/2024 22:30	7.8	56.4	0.0	7.3	10.8	6.1	11/22/2024 22:30	7.6	12.3	0.0	6.8	10.9	0.2
11/22/2024 22:45	7.8	56.5	0.0	7.3	10.8	6.1	11/22/2024 22:45	7.6	12.3	0.0	6.7	10.9	0.3
11/22/2024 23:00	7.8	56.7	0.0	7.4	10.8	5.8	11/22/2024 23:00	7.6	12.3	0.0	6.7	10.9	0.2
11/22/2024 23:15	7.6	36.1	0.0	7.4	10.9	5.3	11/22/2024 23:15	7.6	12.3	0.0	6.7	10.9	0.2
11/22/2024 23:30	7.5	31.6	0.0	7.2	10.9	5.4	11/22/2024 23:30	7.6	12.2	0.0	6.7	10.9	0.7
11/22/2024 23:45	7.5	30.9	0.0	7.2	10.9	5.8	11/22/2024 23:45	7.6	12.2	0.0	6.7	10.9	1.0
11/23/2024 0:00	7.4	31.0	0.0	7.1	10.9	5.3	11/23/2024 0:00	7.5	12.2	0.0	6.8	10.9	0.2
11/23/2024 0:15	7.5	30.8	0.0	7.1	10.9	5.1	11/23/2024 0:15	7.5	12.3	0.0	6.6	10.9	0.1
11/23/2024 0:30	7.4	30.5	0.0	7.0	10.9	5.2	11/23/2024 0:30	7.5	12.2	0.0	6.8	10.9	0.1
11/23/2024 0:45	7.5	30.1	0.0	7.0	10.9	5.0	11/23/2024 0:45	7.5	12.2	0.0	6.7	10.9	0.1
11/23/2024 1:00	7.5	29.9	0.0	7.0	10.9	5.1	11/23/2024 1:00	7.5	12.2	0.0	6.9	10.9	0.1
11/23/2024 1:15	7.4	29.7	0.0	7.0	10.9	5.0	11/23/2024 1:15	7.5	12.2	0.0	6.7	10.9	0.1
11/23/2024 1:30	7.5	29.5	0.0	7.0	10.9	5.6	11/23/2024 1:30	7.5	12.2	0.0	6.8	10.9	0.2
11/23/2024 1:45	7.5	29.4	0.0	7.0	10.9	5.5	11/23/2024 1:45	7.5	12.3	0.0	6.8	10.9	0.3
11/23/2024 2:00	7.7	51.1	0.0	6.9	10.9	5.8	11/23/2024 2:00	7.5	12.2	0.0	6.8	10.9	0.1
11/23/2024 2:15	7.9	55.1	0.0	7.2	10.8	6.8	11/23/2024 2:15	7.4	12.1	0.0	6.7	10.9	0.1
11/23/2024 2:30	7.9	55.0	0.0	7.3	10.8	5.6	11/23/2024 2:30	7.4	12.1	0.0	6.7	10.9	0.9
11/23/2024 2:45	8.0	56.2	0.0	7.3	10.8	5.9	11/23/2024 2:45	7.4	12.1	0.0	6.7	10.9	0.2
11/23/2024 3:00	8.0	61.0	0.0	7.4	10.7	6.5	11/23/2024 3:00	7.4	12.1	0.0	6.9	10.9	0.3
11/23/2024 3:15	8.0	62.3	0.0	7.4	10.8	9.0	11/23/2024 3:15	7.4	12.0	0.0	6.7	10.9	0.2
11/23/2024 3:30	8.1	61.9	0.0	7.4	10.7	7.4	11/23/2024 3:30	7.4	12.0	0.0	6.8	10.9	0.8
11/23/2024 3:45	7.8	38.8	0.0	7.5	10.8	5.9	11/23/2024 3:45	7.4	12.1	0.0	6.7	10.9	0.2
11/23/2024 4:00	7.6	35.0	0.0	7.3	10.9	9.2	11/23/2024 4:00	7.4	12.0	0.0	6.8	10.9	0.4
11/23/2024 4:15	7.6	36.4	0.0	7.2	10.9	5.9	11/23/2024 4:15	7.4	12.0	0.0	6.7	10.9	0.3
11/23/2024 4:30	8.0	62.4	0.0	7.3	10.8	9.3	11/23/2024 4:30	7.4	12.1	0.0	6.8	10.9	0.1

11/23/2024 4:45	8.1	62.8	0.0	7.4	10.7	6.5	11/23/2024 4:45	7.4	12.1	0.0	6.8	10.9	1.0
11/23/2024 5:00	8.1	62.7	0.0	7.4	10.7	6.6	11/23/2024 5:00	7.4	12.1	0.0	6.8	10.9	0.2
11/23/2024 5:15	8.1	62.2	0.0	7.4	10.7	6.1	11/23/2024 5:15	7.4	12.2	0.0	6.7	10.9	0.1
11/23/2024 5:30	7.7	35.3	0.0	7.4	10.8	6.0	11/23/2024 5:30	7.4	12.3	0.0	6.8	10.9	0.2
11/23/2024 5:45	7.6	34.7	0.0	7.2	10.9	6.0	11/23/2024 5:45	7.4	12.3	0.0	6.7	10.9	0.3
11/23/2024 6:00	7.6	34.8	0.0	7.2	10.9	6.3	11/23/2024 6:00	7.4	12.1	0.0	6.8	10.9	0.1
11/23/2024 6:15	7.9	56.2	0.0	7.1	10.8	6.5	11/23/2024 6:15	7.4	12.1	0.0	6.8	10.9	0.1
11/23/2024 6:30	7.6	34.2	0.0	7.2	10.8	6.5	11/23/2024 6:30	7.4	10.8	0.0	6.7	10.9	0.1
11/23/2024 6:45	7.6	33.8	0.0	7.1	10.9	6.0	11/23/2024 6:45	7.4	12.2	0.0	6.8	10.9	0.7
11/23/2024 7:00	7.6	33.6	0.0	7.1	10.9	5.5	11/23/2024 7:00	7.4	12.1	0.0	6.7	10.9	0.4
11/23/2024 7:15	7.6	33.2	0.0	7.1	10.9	5.1	11/23/2024 7:15	7.4	12.0	0.0	6.8	10.9	0.1
11/23/2024 7:30	7.8	52.7	0.0	7.0	10.8	5.2	11/23/2024 7:30	7.3	12.3	0.0	6.8	10.9	0.3
11/23/2024 7:45	8.1	59.6	0.0	7.3	10.7	5.2	11/23/2024 7:45	7.3	12.2	0.0	6.7	10.9	0.2
11/23/2024 8:00	7.7	32.8	0.0	7.2	10.9	5.4	11/23/2024 8:00		12.4	0.0	6.8	10.9	0.5
11/23/2024 8:15	7.6	32.7	0.0	7.1	10.9	5.9	11/23/2024 8:15	7.4	12.5	0.0	6.8	10.9	0.2
11/23/2024 8:30	8.0	57.4	0.0	7.1	10.8	6.7	11/23/2024 8:30	7.4	12.7	0.0	6.8	10.9	0.4
11/23/2024 8:45	8.2	59.9	0.0	7.3	10.7	5.4	11/23/2024 8:45	7.4	12.9	0.0	6.8	10.9	0.4
11/23/2024 9:00	8.2	60.2	0.0	7.4	10.7	5.5	11/23/2024 9:00	7.4	12.9	0.0	6.9	10.9	0.1
11/23/2024 9:15	8.2	60.7	0.0	7.4	10.7	7.9	11/23/2024 9:15	7.4	12.9	0.0	6.8	10.9	0.2
11/23/2024 9:30	7.8	33.9	0.0	7.4	10.8	6.7	11/23/2024 9:30	7.4	12.8	0.0	6.8	10.9	0.2
11/23/2024 9:45	7.7	33.5	0.0	7.2	10.8	8.9	11/23/2024 9:45	7.4	12.7	0.0	6.8	10.9	0.3
11/23/2024 10:00	7.7	33.1	0.0	7.2	10.9	7.5	11/23/2024 10:00	7.4	12.8	0.0	6.8	10.9	0.3
11/23/2024 10:15	7.8	33.1	0.0	7.1	10.9	10.9	11/23/2024 10:15	7.5	12.6	0.0	6.7	10.9	0.1
11/23/2024 10:30	7.8	32.9	0.0	7.1	10.8	10.5	11/23/2024 10:30	7.5	12.8	0.0	6.8	10.9	0.3
11/23/2024 10:45	7.8	32.8	0.0	7.1	10.8	12.5	11/23/2024 10:45	7.5	13.0	0.0	6.7	10.9	0.2
11/23/2024 11:00	7.8	33.6	0.0	7.1	10.8	15.5	11/23/2024 11:00	7.5	13.5	0.0	6.7	10.8	0.4
11/23/2024 11:15	8.1	53.8	0.0	7.2	10.8	15.1	11/23/2024 11:15	7.5	13.9	0.0	6.8	10.9	0.2
11/23/2024 11:30	8.4	62.0	0.0	7.4	10.7	14.0	11/23/2024 11:30	7.5	14.2	0.0	6.8	10.8	0.2
11/23/2024 11:45	8.4	63.0	0.0	7.4	10.7	9.5	11/23/2024 11:45	7.5	14.6	0.0	6.8	10.9	0.3
11/23/2024 12:00	8.4	63.3	0.0	7.5	10.7	9.2	11/23/2024 12:00	7.4	15.7	0.0	6.9	10.9	1.0
11/23/2024 12:15	8.0	35.7	0.0	7.4	10.8	13.3	11/23/2024 12:15	7.4	16.6	0.0	6.9	10.9	0.8
11/23/2024 12:30	8.0	34.4	0.0	7.2	10.8	12.8	11/23/2024 12:30	7.4	17.4	0.0	6.8	10.9	1.0
11/23/2024 12:45	8.0	33.8	0.0	7.2	10.8	10.9	11/23/2024 12:45	7.4	18.2	0.0	6.9	10.9	1.5
11/23/2024 13:00	8.0	33.4	0.0	7.1	10.8	11.3	11/23/2024 13:00	7.3	19.0	0.0	7.0	10.9	2.1
11/23/2024 13:15	8.0	33.0	0.0	7.1	10.8	9.3	11/23/2024 13:15	7.3	19.7	0.0	7.0	10.9	2.4
11/23/2024 13:30	8.0	32.7	0.0	7.0	10.8	12.0	11/23/2024 13:30	7.3	20.5	0.0	7.0	10.9	2.7
11/23/2024 13:45	8.0	32.5	0.0	7.1	10.8	9.7	11/23/2024 13:45	7.3	21.7	0.0	7.0	10.9	3.3
11/23/2024 14:00	8.0	32.7	0.0	7.0	10.8	10.4	11/23/2024 14:00	7.2	22.4	0.0	7.0	10.9	3.8
11/23/2024 14:15	8.5	60.7	0.0	7.2	10.7	11.4	11/23/2024 14:15	7.2	22.6	0.0	7.0	10.9	6.8
11/23/2024 14:30	8.5	61.7	0.0	7.4	10.6	10.3	11/23/2024 14:30	7.2	23.7	0.0	7.1	10.9	5.7
11/23/2024 14:45	8.4	54.6	0.0	7.4	10.7	9.1	11/23/2024 14:45	7.2	26.2	0.0	7.1	10.9	6.8
11/23/2024 15:00	8.5	61.2	0.0	7.4	10.7	8.5	11/23/2024 15:00	7.2	28.8	0.0	7.2	10.9	11.3
11/23/2024 15:15	8.3	45.5	0.0	7.5	10.7	11.8	11/23/2024 15:15	7.2	31.5	0.0	7.2	10.9	19.0
11/23/2024 15:30	7.9	33.2	0.0	7.3	10.8	12.8	11/23/2024 15:30	7.1	33.5	0.0	7.3	10.9	14.4
11/23/2024 15:45	7.8	41.8	0.0	7.2	10.8	23.9	11/23/2024 15:45	7.1	34.5	0.0	7.2	10.9	14.5
11/23/2024 16:00	7.8	45.5	0.0	7.2	10.9	54.9	11/23/2024 16:00	7.1	34.5	0.0	7.2	10.9	12.0
11/23/2024 16:15	7.7	47.0	0.0	7.2	10.9	66.7	11/23/2024 16:15	7.1	35.6	0.0	7.2	10.9	9.4
11/23/2024 16:30	7.7	48.0	0.0	7.2	10.9	36.7	11/23/2024 16:30	7.1	37.1	0.0	7.2	10.9	10.8
11/23/2024 16:45	7.7	48.6	0.0	7.2	10.9	28.7	11/23/2024 16:45	7.1	37.3	0.0	7.3	10.9	9.0
11/23/2024 17:00	7.6	49.1	0.0	7.2	10.9	24.4	11/23/2024 17:00		36.6	0.0	7.2	10.9	9.5
11/23/2024 17:15	8.1	69.2	0.0	7.4	10.8	12.4	11/23/2024 17:15	7.1	35.3	0.0	7.3	10.9	7.1
11/23/2024 17:30	8.1	68.6	0.0	7.4	10.8	15.8	11/23/2024 17:30	7.1	34.3	0.0	7.2	10.9	6.4
11/23/2024 17:45	8.0	62.3	0.0	7.5	10.8	13.4	11/23/2024 17:45	7.1	32.6	0.0	7.2	10.9	5.4
11/23/2024 18:00	7.7	46.7	0.0	7.5	10.9	13.6	11/23/2024 18:00	7.1	32.5	0.0	7.2	10.9	5.0
11/23/2024 18:15	7.6	45.3	0.0	7.3	10.9	10.0	11/23/2024 18:15	7.1	31.8	0.0	7.1	10.9	4.0
11/23/2024 18:30	7.6	44.1	0.0	7.2	10.9	8.3	11/23/2024 18:30	7.1	31.1	0.0	7.2	10.9	3.4
11/23/2024 18:45	7.5	43.0	0.0	7.2	10.9	7.7	11/23/2024 18:45	7.1	31.0	0.0	7.2	10.9	3.0
11/23/2024 19:00	7.5	41.8	0.0	7.2	10.9	6.8	11/23/2024 19:00	7.1	29.8	0.0	7.1	10.9	2.2
11/23/2024 19:15	7.5	41.7	0.0	7.1	11.0	6.4	11/23/2024 19:15	7.2	29.3	0.0	7.1	10.9	3.7
11/23/2024 19:30	7.9	62.8	0.0	7.2	10.8	7.1	11/23/2024 19:30	7.2	28.9	0.0	7.2	10.9	2.4
11/23/2024 19:45	7.9	63.5	0.0	7.3	10.9	10.3	11/23/2024 19:45	7.2	28.3	0.0	7.2	10.8	2.2
11/23/2024 20:00	8.0	64.9	0.0	7.4	10.8	5.9	11/23/2024 20:00	7.2	27.3	0.0	7.1	10.8	2.5
11/23/2024 20:15	8.0	64.6	0.0	7.4	10.8	6.6	11/23/2024 20:15	7.3	27.0	0.0	7.1	10.8	1.6
11/23/2024 20:30	8.0	63.9	0.0	7.5	10.8	5.4	11/23/2024 20:30	7.3	25.9	0.0	7.1	10.8	1.5
11/23/2024 20:45	7.6	41.8	0.0	7.4	10.9	5.8	11/23/2024 20:45	7.3	25.3	0.0	7.1	10.8	1.7
11/23/2024 21:00	7.5	40.0	0.0	7.3	11.0	4.2	11/23/2024 21:00	7.3	25.0	0.0	7.0	10.8	2.1
11/23/2024 21:15	8.0	61.5	0.0	7.4	10.8	5.1	11/23/2024 21:15	7.3	25.0	0.0	7.1	10.8	1.3
11/23/2024 21:30	8.0	61.1	0.0	7.4	10.8	5.7	11/23/2024 21:30	7.3	24.7	0.0	7.1	10.8	3.1
11/23/2024 21:45	7.5	37.4	0.0	7.3	11.0	5.9	11/23/2024 21:45	7.3	23.9	0.0	7.1	10.8	1.6
11/23/2024 22:00	7.5	38.5	0.0	7.2	11.0	6.2	11/23/2024 22:00	7.3	23.2	0.0	7.0	10.8	1.1
11/23/2024 22:15	7.9	62.3	0.0	7.3	10.9	6.1	11/23/2024 22:15	7.4	22.7	0.0	7.0	10.8	1.0
11/23/2024 22:30	7.5	40.1	0.0	7.2	11.0	6.6	11/23/2024 22:30	7.4	22.0	0.0	7.0	10.8	0.8
11/23/2024 22:45	7.4	38.8	0.0	7.2	11.0	9.5	11/23/2024 22:45	7.4	21.7	0.0	7.1	10.8	0.9
11/23/2024 23:00	7.4	38.4	0.0	7.1	11.0	6.6	11/23/2024 23:00	7.4	21.0	0.0	7.1	10.8	0.8
11/23/2024 23:15	7.4	37.6	0.0	7.1	11.0	5.9	11/23/2024 23:15	7.4	20.3	0.0	7.1	10.8	0.6
11/23/2024 23:30	7.4	36.6	0.0	7.1	11.0	6.8	11/23/2024 23:30	7.4	20.4	0.0	6.9	10.7	0.7
11/23/2024 23:45	7.4	37.8	0.0	7.1	11.0	6.1	11/23/2024 23:45	7.4	20.2	0.0	7.0	10.7	2.6
11/24/2024 0:00	7.4	37.6	0.0	7.1	11.0	6.5	11/24/2024 0:00	7.5	20.4	0.0	7.0	10.8	0.7
11/24/2024 0:15	7.4	37.8	0.0	7.1	11.0	4.9	11/24/2024 0:15	7.5	20.2	0.0	6.9	10.7	0.8
11/24/2024 0:30	7.9	59.1	0.0	7.3	10.9	6.1	11/24/2024 0:30	7.5	20.6	0.0	7.0	10.7	0.8
11/24/2024 0:45	7.9	59.2	0.0	7.4	10.9	6.5	11/24/2024 0:45	7.5	20.2	0.0	7.0	10.7	4.4
11/24/2024 1:00	7.9	60.8	0.0	7.4	10.9	6.2	11/24/2024 1:00	7.5	20.1	0.0	6.9	10.7	0.6
11/24/2024 1:15	7.7	46.9	0.0	7.4	10.9	7.2	11/24/2024 1:15	7.5	20.2	0.0	6.9	10.7	1.3
11/24/2024 1:30	7.9	61.4	0.0	7.4	10.9	6.4	11/24/2024 1:30	7.5	19.9	0.0	7.0	10.7	1.4
11/24/2024 1:45	7.5	39.7	0.0	7.4	11.0	7.3	11/24/2024 1:45	7.6	20.0	0.0	7.0	10.7	16.8
11/24/2024 2:00	7.4	38.9	0.0	7.2	11.0	6.6	11/24/2024 2:00	7.6	19.9	0.0	6.9	10.7	0.5
11/24/2024 2:15	7.4	38.6	0.0	7.1	11.0	5.9	11/24/2024 2:15	7.6	19.4	0.0	6.9	10.7	0.6
11/24/2024 2:30	7.4	37.9	0.0	7.1	11.0	7.1	11/24/2024 2:30	7.6	18.7	0.0	7.1	10.7	0.7
11/24/2024 2:45	7.4	37.2	0.0	7.1	11.0	8.1	11/24/2024 2:45	7.6	19.0	0.0	6.9	10.7	0.5
11/24/2024 3:00	7.4	36.5	0.0	7.1	11.0	8.6	11/24/2024 3:00	7.7	19.0	0.0	7.0	10.7	0.5
11/24/2024 3:15	7.4	36.0	0.0	7.0	11.0	7.0	11/24/2024 3:15	7.7	18.8	0.0	7.0	10.7	0.4
11/24/2024 3:30	7.4	35.5	0.0	7.0	11.0	6.5	11/24/2024 3:30	7.7	18.4	0.0	6.9	10.7	0.3
11/24/2024 3:45	7.4	35.0	0.0	7.0	11.0	6.5	11/24/2024 3:45	7.7	19.5	0.0	7.0	10.7	0.5
11/24/2024 4:00	7.4	35.0	0.0	7.0	11.0	6.2	11/24/2024 4:00	7.7	19.6	0.0	7.0	10.6	0.8
11/24/2024 4:15	7.7	56.1	0.0	7.0	11.0	5.5	11/24/2024 4:15	7.8	19.0	0.0	7.0	10.6	0.5
11/24/2024 4:30	7.6	41.5	0.0	7.3	10.9	5.3	11/24/2024 4:30	7.8	18.9	0.0	7.0	10.6	0.6
11/24/2024 4:45	7.8	58.3	0.0	7.3	10.9	5.6	11/24/2024 4:45	7.8	18.9	0.0	7.0	10.6	0.3
11/24/2024 5:00	7.9	58.4	0.0	7.4	10.9	4.9	11/24/2024 5:00	7.8	18.8	0.0	7.0	10.6	1.4
11/24/2024 5:15	7.8	49.3	0.0	7.4	10.9	5.5	11/24/2024 5:15	7.8	18.6	0.0	7.0	10.6	0.2
11/24/2024 5:30	7.4	33.4	0.0	7.2	11.0	6.4	11/24/2024 5:30	7.8	18.5	0.0	6.9	10.6	1.0
11/24/2024 5:45	7.3	32.3	0.0	7.1	11.0	6.7	11/24/2024 5:45	7.8	18.4	0.0	6.9	10.6	0.3

11/24/2024 6:00	7.6	51.7	0.0	7.0	11.0	7.1	11/24/2024 6:00	7.8	18.4	0.0	6.9	10.7	0.2
11/24/2024 6:15	7.8	56.7	0.0	7.3	10.9	6.5	11/24/2024 6:15	7.8	18.2	0.0	6.9	10.6	0.4
11/24/2024 6:30	7.8	52.6	0.0	7.4	10.9	5.3	11/24/2024 6:30	7.8	18.0	0.0	7.0	10.6	0.4
11/24/2024 6:45	7.3	30.5	0.0	7.2	11.0	5.2	11/24/2024 6:45	7.8	17.7	0.0	6.9	10.6	0.4
11/24/2024 7:00	7.3	30.0	0.0	7.1	11.0	5.8	11/24/2024 7:00	7.8	17.6	0.0	7.0	10.7	0.4
11/24/2024 7:15	7.3	29.7	0.0	7.0	11.1	5.1	11/24/2024 7:15	7.8	17.5	0.0	7.0	10.6	2.9
11/24/2024 7:30	7.3	29.5	0.0	7.0	11.0	5.1	11/24/2024 7:30	7.8	17.4	0.0	6.9	10.7	0.2
11/24/2024 7:45	7.3	29.3	0.0	7.0	11.0	5.9	11/24/2024 7:45	7.8	17.0	0.0	6.9	10.7	1.1
11/24/2024 8:00	7.3	29.0	0.0	7.0	11.0	6.2	11/24/2024 8:00	7.8	17.0	0.0	6.9	10.7	0.6
11/24/2024 8:15	7.3	28.8	0.0	7.0	11.0	5.6	11/24/2024 8:15	7.8	16.8	0.0	6.9	10.7	0.4
11/24/2024 8:30	7.3	28.9	0.0	7.0	11.1	5.6	11/24/2024 8:30	7.8	16.8	0.0	6.9	10.6	1.6
11/24/2024 8:45	7.5	46.1	0.0	7.0	11.0	5.3	11/24/2024 8:45	7.8	16.6	0.0	6.8	10.6	0.5
11/24/2024 9:00	7.8	55.9	0.0	7.3	10.9	5.2	11/24/2024 9:00	7.8	16.4	0.0	6.9	10.6	1.2
11/24/2024 9:15	7.8	56.1	0.0	7.4	10.9	5.6	11/24/2024 9:15	7.8	16.3	0.0	7.0	10.7	0.1
11/24/2024 9:30	7.9	56.3	0.0	7.4	10.9	7.6	11/24/2024 9:30	7.8	16.2	0.0	6.9	10.6	0.8
11/24/2024 9:45	7.4	29.7	0.0	7.4	11.0	12.3	11/24/2024 9:45	7.9	16.1	0.0	6.9	10.7	0.2
11/24/2024 10:00	7.3	28.8	0.0	7.1	11.0	12.0	11/24/2024 10:00	7.9	16.2	0.0	6.8	10.6	0.2
11/24/2024 10:15	7.4	28.4	0.0	7.0	11.1	20.6	11/24/2024 10:15	7.9	16.0	0.0	6.8	10.7	0.5
11/24/2024 10:30	7.4	28.2	0.0	7.0	11.0	20.3	11/24/2024 10:30	7.9	15.8	0.0	6.9	10.6	0.7
11/24/2024 10:45	7.4	28.0	0.0	7.0	11.0	30.0	11/24/2024 10:45	7.9	15.9	0.0	7.0	10.6	0.2
11/24/2024 11:00	7.5	27.7	0.0	6.9	11.0	22.9	11/24/2024 11:00	7.9	15.8	0.0	6.9	10.6	0.2
11/24/2024 11:15	7.5	27.5	0.0	7.0	11.0	22.5	11/24/2024 11:15	8.0	15.7	0.0	6.8	10.6	0.4
11/24/2024 11:30	7.5	28.0	0.0	7.0	11.0	27.3	11/24/2024 11:30	8.0	15.5	0.0	6.9	10.6	0.3
11/24/2024 11:45	8.0	55.7	0.0	7.2	10.9	14.3	11/24/2024 11:45	8.0	15.4	0.0	6.9	10.6	0.2
11/24/2024 12:00	8.1	56.2	0.0	7.3	10.8	15.2	11/24/2024 12:00	8.0	15.4	0.0	6.9	10.6	0.3
11/24/2024 12:15	8.2	56.3	0.0	7.4	10.8	13.4	11/24/2024 12:15	8.0	15.2	0.0	6.8	10.6	0.3
11/24/2024 12:30	8.1	50.7	0.0	7.4	10.8	12.1	11/24/2024 12:30	8.0	15.4	0.0	6.8	10.6	0.2
11/24/2024 12:45	7.7	26.7	0.0	7.2	10.9	11.2	11/24/2024 12:45	8.0	15.2	0.0	6.8	10.6	0.2
11/24/2024 13:00	7.7	27.2	0.0	7.1	11.0	12.1	11/24/2024 13:00	8.0	15.2	0.0	6.9	10.6	0.4
11/24/2024 13:15	7.7	26.6	0.0	7.0	10.9	12.8	11/24/2024 13:15	8.0	15.1	0.0	6.8	10.6	0.2
11/24/2024 13:30	7.7	26.1	0.0	7.0	10.9	12.3	11/24/2024 13:30	8.0	15.0	0.0	6.8	10.6	0.2
11/24/2024 13:45	7.7	25.9	0.0	6.9	10.9	10.4	11/24/2024 13:45	8.0	15.0	0.0	6.9	10.6	0.5
11/24/2024 14:00	7.7	25.7	0.0	6.9	10.9	10.8	11/24/2024 14:00	8.0	15.0	0.0	6.9	10.6	0.1
11/24/2024 14:15	7.7	25.6	0.0	7.0	10.9	8.3	11/24/2024 14:15	8.0	15.1	0.0	6.9	10.6	0.2
11/24/2024 14:30	7.7	26.2	0.0	6.9	10.9	7.0	11/24/2024 14:30	8.0	14.9	0.0	6.8	10.6	0.8
11/24/2024 14:45	8.3	56.0	0.0	7.2	10.8	7.0	11/24/2024 14:45	8.0	15.0	0.0	6.9	10.6	0.3
11/24/2024 15:00	8.3	56.5	0.0	7.4	10.8	6.6	11/24/2024 15:00	8.0	14.8	0.0	6.9	10.6	3.2
11/24/2024 15:15	8.2	47.3	0.0	7.5	10.8	6.1	11/24/2024 15:15	8.0	14.9	0.0	6.9	10.6	0.2
11/24/2024 15:30	7.7	25.8	0.0	7.2	10.9	6.4	11/24/2024 15:30	8.0	14.8	0.0	6.9	10.6	0.2
11/24/2024 15:45	7.7	25.5	0.0	7.1	10.9	8.9	11/24/2024 15:45	8.0	15.0	0.0	6.9	10.6	0.7
11/24/2024 16:00	7.7	25.4	0.0	7.0	10.9	6.0	11/24/2024 16:00	7.9	15.7	0.0	6.9	10.6	0.6
11/24/2024 16:15	7.6	25.2	0.0	7.0	11.0	5.9	11/24/2024 16:15	7.9	16.5	0.0	6.9	10.6	0.3
11/24/2024 16:30	7.6	25.9	0.0	7.0	11.0	6.1	11/24/2024 16:30	7.9	16.5	0.0	6.9	10.6	0.2
11/24/2024 16:45	8.1	55.6	0.0	7.1	10.9	5.4	11/24/2024 16:45	7.8	16.7	0.0	6.8	10.6	0.3
11/24/2024 17:00	8.2	57.0	0.0	7.3	10.8	6.5	11/24/2024 17:00	7.8	16.7	0.0	6.9	10.6	0.3
11/24/2024 17:15	8.1	49.8	0.0	7.4	10.9	5.8	11/24/2024 17:15	7.8	16.5	0.0	6.9	10.6	0.2
11/24/2024 17:30	8.2	56.9	0.0	7.4	10.8	5.8	11/24/2024 17:30	7.8	16.3	0.0	6.9	10.6	0.7
11/24/2024 17:45	7.7	28.1	0.0	7.4	11.0	5.7	11/24/2024 17:45	7.8	16.1	0.0	6.9	10.6	0.3
11/24/2024 18:00	7.6	26.3	0.0	7.2	11.0	5.8	11/24/2024 18:00	7.7	16.1	0.0	7.0	10.7	0.1
11/24/2024 18:15	7.5	25.7	0.0	7.1	11.0	6.1	11/24/2024 18:15	7.7	16.2	0.0	6.9	10.7	1.5
11/24/2024 18:30	7.5	25.2	0.0	7.0	11.0	5.6	11/24/2024 18:30	7.7	16.0	0.0	6.8	10.7	0.6
11/24/2024 18:45	7.5	25.0	0.0	7.1	11.0	5.3	11/24/2024 18:45	7.7	16.1	0.0	6.9	10.7	0.2
11/24/2024 19:00	7.5	25.3	0.0	7.0	11.0	5.4	11/24/2024 19:00	7.6	15.8	0.0	6.9	10.7	0.1
11/24/2024 19:15	7.5	26.5	0.0	7.0	11.0	5.4	11/24/2024 19:15	7.6	16.0	0.0	6.9	10.7	0.1
11/24/2024 19:30	8.0	56.7	0.0	7.3	10.9	6.8	11/24/2024 19:30	7.6	15.7	0.0	6.9	10.7	0.4
11/24/2024 19:45	8.0	57.1	0.0	7.4	10.9	5.2	11/24/2024 19:45	7.6	15.9	0.0	6.9	10.7	0.1
11/24/2024 20:00	8.0	57.2	0.0	7.4	10.9	4.9	11/24/2024 20:00	7.6	15.7	0.0	6.9	10.7	1.1
11/24/2024 20:15	7.9	49.6	0.0	7.5	10.9	5.1	11/24/2024 20:15	7.6	15.5	0.0	6.9	10.7	0.2
11/24/2024 20:30	7.5	27.7	0.0	7.4	11.0	5.5	11/24/2024 20:30	7.6	15.7	0.0	6.9	10.7	0.1
11/24/2024 20:45	7.4	26.0	0.0	7.2	11.0	6.3	11/24/2024 20:45	7.6	15.7	0.0	6.9	10.7	0.1
11/24/2024 21:00	7.4	25.2	0.0	7.1	11.0	5.3	11/24/2024 21:00	7.5	15.3	0.0	6.8	10.7	0.2
11/24/2024 21:15	7.7	48.1	0.0	7.2	10.9	5.1	11/24/2024 21:15	7.5	15.6	0.0	6.9	10.7	0.1
11/24/2024 21:30	7.9	56.8	0.0	7.4	10.9	5.1	11/24/2024 21:30	7.5	15.3	0.0	6.9	10.7	0.3
11/24/2024 21:45	7.8	47.5	0.0	7.5	10.9	5.5	11/24/2024 21:45	7.5	15.3	0.0	6.8	10.8	0.4
11/24/2024 22:00	7.3	26.4	0.0	7.3	11.0	5.4	11/24/2024 22:00	7.5	15.3	0.0	6.9	10.8	0.2
11/24/2024 22:15	7.3	25.3	0.0	7.1	11.1	5.1	11/24/2024 22:15	7.4	15.2	0.0	6.9	10.8	0.2
11/24/2024 22:30	7.2	24.7	0.0	7.0	11.1	5.0	11/24/2024 22:30	7.4	15.3	0.0	6.9	10.8	0.8
11/24/2024 22:45	7.2	24.4	0.0	7.0	11.1	8.1	11/24/2024 22:45	7.4	15.3	0.0	6.9	10.8	0.5
11/24/2024 23:00	7.2	24.2	0.0	6.9	11.1	5.2	11/24/2024 23:00	7.4	15.0	0.0	6.8	10.8	0.3