Eagle Mountain - Woodfibre Gas Pipeline Project

BCER Waste Discharge Permit Weekly Report

Contents

Preamble

This weekly report for the British Columbia Energy Regulator (BCER) Waste Discharge Permit (BCER number PE-110163) for the FortisBC Eagle Mountain – Woodfibre Gas Pipeline (EGP) Project includes the results of water quality monitoring and sampling of the receiving 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 discharges during this reporting period
- 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	Discharge Rate (batch)	Discharge Volume (batch)	Results
BC Rail- No discharges						

*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	2024-09-16	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	2023-09-16	Yes *	Full set of lab sample results, photo and documentation are provided in Appendix B.

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

Receiving Environment Monitoring Details

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

Summary-Woodfibre

Site Activities

- The downstream sonde/data logger was removed July 16th as there was not enough water in the watercourse to log data. BCER was notified.
- The downstream sonde/data logger was reinstalled on August 23rd further downstream (not the permitted location), and removed on September 6th due to construction unrelated to EGP that was causing turbidity spikes. It was reinstalled September 19th at the same location as August 23rd, but there was observed to be work in proximity to the sonde location, the sonde data was not consistent and have peaks unrelated to discharge.
- Included in Appendix C is data from the Water Treatment Plant and data from using a YSI downstream while discharging to document receiving environment when there was no downstream sonde in place due to the dry conditions.

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	2024-09-16	Yes-Appendix C	94 m^3
Woodfibre	2024-09-17	Yes-Appendix C	290 m^3
Woodfibre	2024-09-18	Yes-Appendix C	145 m^3
Woodfibre	2024-09-19	Yes-Appendix C	241 m^3
Woodfibre	2024-09-20	Yes-Appendix C	353 m^3
Woodfibre	2024-09-21	Yes-Appendix C	309 m^3
Woodfibre	2024-09-22	Yes-Appendix C	378 m^3

*Max discharge is 1500m^3/day

Exceedances

None to report.

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

Woodfibre Upstream	2024-09-17	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	2024-09-17	No-Sonde Removed	Full set of lab sample results, photo and documentation are provided in Appendix D. Note that Sonde was removed on July 16th, 2024 due to dry conditions. Sonde was reinstalled at a lower location with water on August 22nd and removed on Sept 6th as WLNG was working in area. Reinstalled Sept 19th, 2024. Contractor used a YSI to do in situ readings during discharges and results are available in the appendix.

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

Receiving Environment Monitoring Details

- Visual sheen checks are conducted during discharges.
- 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

TRITON Environmental Consultants	Sample ID	Reviewed and signed off by:			Farshad Shafiei Ph.D., R.P.Bio.	SQU US1 (Upstream)	SQU DS1 (Downstream)	Sample or value notes	BCWQ FAL - Short Term	BCWQ FAL - Long Term	BCWQ MAL - Short Term	BCWQ MAL - Long Term
	LAB ID					VA24C4246-001	VA24C4246-002					
	Date Sampled					16-Sep-2024	16-Sep-2024					
	Time Sampled					9:09	9:37					
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	7.8	7.6		If natural pH < 6.5, no statisticaly significant decrease from background. No restriction in increase except in areas with unique flora or fauna. Unrestricted change permitted within range of 6.5 to 9.0. If natural pH > 9.0, no statistically significant increase from background. Refer to BC Water Quality Guidelines for more information.		Unrestricted change within this range (for protection of mollusc embryo development).	
Temperature (field)	°C	Max +/- from BKG 1°C [4]	-	Max +/- from BKG 1°C [4]	-	9.9	9.8		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 the Squamish River. 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. Refer to footnote 4 for background temperature range for the Squamish River. Calculation: US value +/- 1 = guideline range	
Conductivity (field)	µS/cm	-	-	-	-	48	41					
Turbidity (field)	NTU	Varies with background, see note Guideline = 102.7	Varies with background, see note Guideline = 117.4 5-week discrete sampling average = 116.6 (DS)	Varies with background, see note Guideline = 102.7	Varies with background, see note Guideline = 117.4 5-week discrete sampling average = 116.6 (DS)	93.4	107.9		Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.	Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.
Dissolved Oxygen (field)	mg/L	Varies with life stage, see note	Varies with life stage, see note	Varies with life stage, see note	Varies with life stage, see note	10.57	10.04		Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L. Refer to BC Water Quality Guidelines for more information.
General Parameters												
Hardness (as $CaCO_3$) (total)	mg/L	-	-	-	-	19.7	17.8					
Total Dissolved Solids	mg/L	-	-	-	-	49	44					
Total Suspended Solids	mg/L	Varies with background, see note Guideline = 115.5	Varies with background, see note Guideline = 112.3 5-week discrete sampling average = 93.88 (DS)	Varies with background, see note Guideline = 115.5	Varies with background, see note Guideline = 112.3 5-week discrete sampling average = 93.88 (DS)	105	82.1		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.	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 >	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	-	-	-	-	0.56	1.09			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	12.7	10.9	The upstreamand downstream locations have high sensitivity to acid inputs (i.e. low buffering capacity).		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 = 8.25	Varies with pH and temperature. See note. Guideline = 1.81	Varies with pH, temperature and salinity. See note. Guideline = 21	Varies with pH, temperature and salinity. See note. Guideline = 20	0.114	0.076		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	+/- 10% from BKG	+/- 10% from BKG	1.85	1.66				Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride expected at that time and depth.	Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride expected at that time and depth.
Fluoride	mg/L	Varies with hardness Guideline = 0.681	-	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	0.0208	0.0201					
Nitrite (as N)	mg/L	Varies with chloride. See note. Guideline = 0.06	Varies with chloride. 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	-	-	-	-	0.15	0.11					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.107	0.094			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	-	-	4.07	3.56			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 = 0.032 5-week field average = 4.68 (US), 4.65 (DS)	-	-	**3.2**	**2.7**	**Total Al exceeds the long-term BCWG for FAL at both upstream and downstream locations.** However, this should not be deemed a reportable exceedance because the background total Al concentration at the upstream location exceeds the BCWG too. Discharge from BCR has not begun yet, so the high concentration is not attributable to BCR construction activities and is likely a characteristic of the Squamish River and the local geology.		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 or DOC range, the minimum hardness or DOC will be applied in the calculation.		
Antimony (Sb)-Total	mg/L	0.25	0.074	-	-	< 0.00010	< 0.00010					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.00033	0.00033					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.0374	0.0344			Working guideline status		
Beryllium (Be)-Total	mg/L	-	0.00013	-	0.100	< 0.000100	< 0.000100			Working guideline status		Working guideline status
Bismuth (Bi)-Total	mg/L	-	-	-	-	< 0.00005	< 0.00005					
Boron (B)-Total	mg/L	-	1.2	-	1.2	< 0.010	< 0.010					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	0.000014	0.0000127					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	5.87	5.13					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.000104	0.00011					
Chromium (Cr) - Total	mg/L	-	-	-	-	0.00082	0.00086					
Chromium (Cr(III))-Total	mg/L	-	0.0089	-	0.056	0.00082	0.00086			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	-	-	0.00073	0.00077					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002	0.0041	0.0038	**Total Cu exceeds the short and long-term BCWG for MAL at both upstream and downstream locations.** However, this should not be deemed a reportable exceedance because the discharge from BCR has not begun and both US1 and DS1 have similar concentration. Therefore, the high total Cu concentration may be characteristic of the Squamish River and the local geology.				
Iron (Fe)-Total	mg/L	1	-	-	-	**1.58**	**1.55**	**Total Fe exceeds the short-term BCWG for FAL at both upstream and downstream locations.** However, this should not be deemed a reportable exceedance because the background total Fe concentration at the upstream location exceeds the BCWG too. Discharge from BCR has not begun yet, so the high concentration is not attributable to BCR construction activities and is likely a characteristic of the Squamish River and the local geology.				
Lead (Pb)-Total	mg/L	Varies with hardness. See Note. Guideline = 0.0103	Varies with hardness. See Note. Guideline = 0.0037	0.14	0.002	0.000386	0.00033		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	-	-	-	-	0.0020	0.0020					
Magnesium (Mg)-Total	mg/L	-	-	-	-	1.22	1.21					
Manganese (Mn)-Total	mg/L	Varies with hardness Guideline = 0.715	Varies with hardness Guideline = 0.768	-	-	0.0433	0.0456		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	-	-	0.000470	0.000442					
Nickel (Ni)-Total	mg/L	-	Varies with hardness Guideline = 0.025	-	0.0083	0.00103	0.00102			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	-	-	0.139	1.106			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	-	-	-	-	1.31	1.28					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00294	0.00292					
Selenium (Se)-Total	mg/L	-	0.002	-	0.002	< 0.000050	< 0.000050			Guideline for freshwater aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidelines for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on 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	-	-	-	-	8.61	7.42					
Silver (Ag)-Total	mg/L	Varies with hardness, see note Guideline = 0.0001	Varies with hardness, see note Guideline = 0.0015	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	-	-	-	-	3.01	2.53					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0552	0.0479					
Sulfur (S)-Total	mg/L	-	-	-	-	1.11	1.01					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.0008	-	-	< 0.000010	0.000011			30-day average, site-specific objective for the lower Columbia River, BC. Guideline is for reference only and does not apply to tnhe EGP site.		
Thorium (Th)-Total	mg/L	-	-	-	-	0.00011	< 0.00010					
Tin (Sn)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Titanium (Ti)-Total	mg/L	-	-	-	-	0.0943	0.100					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Total	mg/L	-	0.0085	-	-	0.000067	0.000069			Working guideline status		
Vanadium (V)-Total	mg/L	-	-	-	0.050	0.00473	0.00455					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	Guideline = 0.010 5-week field average = 0.00764 (US), 0.00964 (DS)	0.0054	*0.0064*	**Total Zn exceeds the long-term BCWG for MAL at the downstream location.** However, this should not be deemed a reportable exceedance because the discharge from BCR has not begun. Therefore, the high total Zn concentration may be characteristic of the Squamish River and the local geology.				
Zirconium (Zr)-Total	mg/L	-	-	-	-	0.00047	0.00038					
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0431	0.0527					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00015	< 0.00014					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.00487	0.00523					
Beryllium (Be)-Dissolved	mg/L	-	-	-	-	< 0.000100	< 0.000100					
Bismuth (Bi)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Boron (B)-Dissolved	mg/L	-	-	-	-	< 0.010	< 0.010					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note Guideline = 0.000110	Varies with hardness, see note Guideline = 0.000062	-	-	< 0.0000050	< 0.0000050		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	-	-	4.56	4.04	The upstream and downstream locations have high sensitivity to acid inputs (i.e. low buffering capacity).		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	-	-	-	-	0.000013	0.000011					
Chromium (Cr)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Cobalt (Co)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Copper (Cu)-Dissolved	mg/L	Guideline varies with other parameters, see note Guideline = 0.0012	Guideline varies with other parameters, see note Guideline = 0.0002 5-week field average = 0.0004 (US), 0.0004 (DS)	-	-	*0.00036*	*0.00042*	**Dissolved Cu exceeds the long-term BCWG for FAL at both the upstream and downstream locations.** However, this should not be deemed a reportable exceedance because the discharge from BCR has not begun full-time. So, the high concentration is not attributable to BCR construction activities and may be characteristic of the Squamish River and the local geology.	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	-	-	-	0.057	0.056					
Lead (Pb)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	0.0011	0.0011					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.576	0.514					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00596	0.00912					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.000460	0.000413					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.050	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	0.854	0.749					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00109	0.00103					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	4.02	3.28					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	2.06	1.76					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0298	0.0269					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	1.27	0.95					
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	-	-	-	-	0.00132	0.00190					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.000020	0.000020					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	0.00126	0.00097					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness Guideline = 0.009	Varies with pH, DOC, hardness Guideline = 0.0026 5-week field average = 0.0032 (US), 0.0013 (DS)	-	-	**0.0118**	0.0014	**Dissolved Zn exceeds the short-term and long-term BCWG for FAL at the upstream location.** However, this should not be deemed a reportable exceedance because this is the background site and the discharge from BCR has not yet begun. So, the high concentration is not attributable to BCR construction activities and may be characteristic of the Squamish River and the local geology.	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) - BCAWWQG - Freshwater Aquatic Life British Columbia Approved and Working Water Quality Guidelines (NOV 2023) - BCAWWQG - Marine Aquatic Life**										
Color Key:	**Exceeds both FAL and MAL Guidelines**	**Exceeds FAL Short term Guideline**	***Exceeds FAL Long term Guideline***	**Exceeds MAL Short term Guideline**	***Exceeds MAL Long term Guideline***							
Color Key:		**Exceeds Short and Long-Term Guideline**		**Exceeds MAL Short and Long-term Guidelines**								

[1]BC MOECCS. 2023. BC Water Qualtiy Guidelines for the Protection of Aquatic Life, Wildlife & Agriculture. Accessed from:
wqg_summary_aquaticlife_wildlife_agri.pdf (gov.bc.ca)
[2]BC MOECCS. 2021. BC Working Water Qualtiy Guidelines for the Protection of Aquatic Life, Widlife & Agriculture. Accessed from:
bc_env_working_water_quality_guidelines.pdf (gov.bc.ca)
[3]Note that long-term guidelines apply to averaged data to account for chronic impacts to aquatic life. Ideally, five samples collected at evenly spaced intervals over 30 days is considered to be the minimum number needed to calculate the long-term average of any parameter, though this may vary by parameter and site conditions. Long-term guidelines applied here are for reference only and may not indicate chronic impacts to aquatic life if exceedances occur in the short term.
[4]Background temperature ranges: Dec-Feb: 2.0-4.0C; Mar-Apr: 4.0-6.0C; May-June: 6.0-12.0C; Jul-Sept: 9.0-12.0C; Oct-Nov: 3.0-5.0
Reference: Triton Environmental Consulants Ltd. 2023. Memo - Background water quality values for the BC Rail Discharge to Squamish River
For guidelines dependent on other parameters, when hardness, pH or DOC are below the range stated in the guideline, the lowest value in the range is used to calculate the guideline.

Parameters Used to Calculate Guidelines

Analyte	Units	FAL-ST [1,2]	FAL-LT [1,2]	MAL-ST [1]	MAL-LT [1,2]	Values: SQU US1 (Upstream)	Values: SQU DS1 (Downstream)
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations				7.82	7.62
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations				9.9	9.8
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations				93.40	107.90
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				19.7	17.8
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations				0.56	1.09
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations				12.7	10.9
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations				1.85	1.66

BCR Site Receiving Environment Lab Documentation

ALS Canada Ltd.

right solutions. right partner.

CERTIFICATE OF ANALYSIS

Work Order	: **VA24C4246**	Page	: 1 of 6
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 16-Sep-2024 11:55
PO	: 11964-Task20-Phase3C-4C	Date Analysis Commenced	: 17-Sep-2024
C-O-C number	: ----	Issue Date	: 25-Sep-2024 09:09
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
		Metals, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Inorganics, Waterloo, Ontario
		Metals, Waterloo, Ontario
		Inorganics, Burnaby, British Columbia
		Administration, Burnaby, British Columbia
		Metals, 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*
-	no units
°C	degrees celsius
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

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

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DTC	*Dissolved concentration exceeds total. Results were confirmed by re-analysis.*

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US-1	SQU DS-1	----	----	----
					Client sampling date / time	16-Sep-2024 09:09	16-Sep-2024 09:37	----	----	----
						VA24C4246-001	VA24C4246-002	--------	--------	--------
						Result	Result	----	----	----
Field Tests										
Conductivity, field	----	EF001/VA	0.10	µS/cm		48.000	41.000	----	----	----
pH, field	----	EF001/VA	0.10	pH units		7.80	7.60	----	----	----
Temperature, field	----	EF001/VA	0.10	°C		9.90	9.80	----	----	----
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L		13.8	12.2	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L		19.7	17.8	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		49	44	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		105	82.1	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		12.7	10.9	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L		0.114	0.0762	----	----	----
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		1.85	1.66	----	----	----
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		0.0208	0.0201	----	----	----
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		0.150	0.110	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.107	0.0938	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		4.07	3.56	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L		0.56	1.09	----	----	----
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		3.20	2.70	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US-1	SQU DS-1	----	----	----
					Client sampling date / time	16-Sep-2024 09:09	16-Sep-2024 09:37	----	----	----
						VA24C4246-001	VA24C4246-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00033	0.00033	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.0374	0.0344	----	----	----
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		0.0000140	0.0000127	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		5.87	5.13	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000104	0.000110	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		0.00082	0.00086	----	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		0.00073	0.00077	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00405	0.00375	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		1.58	1.55	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000386	0.000330	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0020	0.0020	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		1.22	1.21	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.0433	0.0456	----	----	----
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		0.000470	0.000442	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		0.00103	0.00102	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		0.139	0.106	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		1.31	1.28	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00294	0.00292	----	----	----
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		8.61	7.42	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		3.01	2.53	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0552	0.0479	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		1.11	1.01	----	----	----
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	0.000011	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US-1	SQU DS-1	----	----	----
					Client sampling date / time	16-Sep-2024 09:09	16-Sep-2024 09:37	----	----	----
						VA24C4246-001	VA24C4246-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		0.00011	<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		0.0943	0.100	----	----	----
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		0.000067	0.000069	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		0.00473	0.00455	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		0.0054	0.0064	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		0.00047	0.00038	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0431	0.0527	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00015	0.00014	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00487	0.00523	----	----	----
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		<0.0000050	<0.0000050	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		4.56	4.04	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.000013	0.000011	----	----	----
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		0.00036	0.00042	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.057	0.056	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		0.0011	0.0011	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		0.576	0.514	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00956	0.00912	----	----	----
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		0.000460	0.000413	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SQU US-1	SQU DS-1	----	----	----
					Client sampling date / time	16-Sep-2024 09:09	16-Sep-2024 09:37	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C4246-001	VA24C4246-002	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
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		0.854	0.749	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00109	0.00103	----	----	----
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		4.02	3.28	----	----	----
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		2.06	1.76	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0298	0.0269	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		1.27	0.95	----	----	----
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		0.00132	0.00190	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.000020	0.000020	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		0.00126	0.00097	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0118 DTC	0.0014	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-		Field	Field	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Field	Field	----	----	----
Speciated Metals										
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/WT	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/WT	0.00050	mg/L		0.00082	0.00086	----	----	----

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

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

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24C4246**	Page	: 1 of 14
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 16-Sep-2024 11:55
PO	: 11964-Task20-Phase3C-4C	Issue Date	: 25-Sep-2024 09:09
C-O-C number	: ----		
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU DS-1	E298	16-Sep-2024	17-Sep-2024	28 days	1 days	✓	18-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU US-1	E298	16-Sep-2024	17-Sep-2024	28 days	1 days	✓	18-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU DS-1	E235.Br-L	16-Sep-2024	17-Sep-2024	28 days	1 days	✓	17-Sep-2024	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU US-1	E235.Br-L	16-Sep-2024	17-Sep-2024	28 days	1 days	✓	17-Sep-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SQU DS-1	E235.Cl	16-Sep-2024	17-Sep-2024	28 days	1 days	✓	17-Sep-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SQU US-1	E235.Cl	16-Sep-2024	17-Sep-2024	28 days	1 days	✓	17-Sep-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE SQU DS-1	E235.F	16-Sep-2024	17-Sep-2024	28 days	1 days	✓	17-Sep-2024	28 days	1 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
SQU US-1	E235.F	16-Sep-2024	17-Sep-2024	28 days	1 days	✓	17-Sep-2024	28 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
SQU DS-1	E235.NO3-L	16-Sep-2024	17-Sep-2024	3 days	1 days	✓	17-Sep-2024	3 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
SQU US-1	E235.NO3-L	16-Sep-2024	17-Sep-2024	3 days	1 days	✓	17-Sep-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SQU DS-1	E235.NO2-L	16-Sep-2024	17-Sep-2024	3 days	1 days	✓	17-Sep-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
SQU US-1	E235.NO2-L	16-Sep-2024	17-Sep-2024	3 days	1 days	✓	17-Sep-2024	3 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SQU DS-1	E235.SO4	16-Sep-2024	17-Sep-2024	28 days	1 days	✓	17-Sep-2024	28 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SQU US-1	E235.SO4	16-Sep-2024	17-Sep-2024	28 days	1 days	✓	17-Sep-2024	28 days	1 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
SQU DS-1	E366	16-Sep-2024	17-Sep-2024	28 days	1 days	✓	18-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
SQU US-1	E366	16-Sep-2024	17-Sep-2024	28 days	1 days	✓	18-Sep-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 DS-1	E372-U	16-Sep-2024	17-Sep-2024	28 days	1 days	✓	17-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SQU US-1	E372-U	16-Sep-2024	17-Sep-2024	28 days	1 days	✓	17-Sep-2024	28 days	2 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SQU DS-1	E509	16-Sep-2024	22-Sep-2024	28 days	6 days	✓	22-Sep-2024	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SQU US-1	E509	16-Sep-2024	22-Sep-2024	28 days	6 days	✓	22-Sep-2024	28 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SQU DS-1	E421	16-Sep-2024	22-Sep-2024	180 days	6 days	✓	24-Sep-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SQU US-1	E421	16-Sep-2024	22-Sep-2024	180 days	6 days	✓	24-Sep-2024	180 days	8 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
SQU DS-1	EF001	16-Sep-2024	----	----	----		18-Sep-2024	----	2 days	
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
SQU US-1	EF001	16-Sep-2024	----	----	----		18-Sep-2024	----	2 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
SQU DS-1	E358-L	16-Sep-2024	17-Sep-2024	28 days	1 days	✓	17-Sep-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 US-1	E358-L	16-Sep-2024	17-Sep-2024	28 days	1 days	✓	17-Sep-2024	28 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
SQU DS-1	E290	16-Sep-2024	17-Sep-2024	14 days	1 days	✓	18-Sep-2024	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
SQU US-1	E290	16-Sep-2024	17-Sep-2024	14 days	1 days	✓	18-Sep-2024	14 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
SQU DS-1	E162	16-Sep-2024	----	----	----		21-Sep-2024	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
SQU US-1	E162	16-Sep-2024	----	----	----		21-Sep-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
SQU DS-1	E160	16-Sep-2024	----	----	----		21-Sep-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
SQU US-1	E160	16-Sep-2024	----	----	----		21-Sep-2024	7 days	5 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
SQU DS-1	E532	16-Sep-2024	----	----	----		18-Sep-2024	28 days	2 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
SQU US-1	E532	16-Sep-2024	----	----	----		18-Sep-2024	28 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
SQU DS-1	E508	16-Sep-2024	22-Sep-2024	28 days	6 days	✓	22-Sep-2024	28 days	6 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
SQU US-1	E508	16-Sep-2024	22-Sep-2024	28 days	6 days	✓	22-Sep-2024	28 days	6 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SQU DS-1	E420	16-Sep-2024	20-Sep-2024	180 days	5 days	✓	23-Sep-2024	180 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SQU US-1	E420	16-Sep-2024	20-Sep-2024	180 days	5 days	✓	23-Sep-2024	180 days	8 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
SQU DS-1	E395	16-Sep-2024	----	----	----		17-Sep-2024	7 days	1 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
SQU US-1	E395	16-Sep-2024	----	----	----		17-Sep-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	1655953	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	1655549	1	12	8.3	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1655959	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	1655958	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1666339	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1658637	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1655552	1	8	12.5	5.0	✓
Fluoride in Water by IC	E235.F	1655956	1	17	5.8	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1655961	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1655960	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1655957	1	17	5.8	5.0	✓
TDS by Gravimetry	E162	1664960	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1658556	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1666367	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1658450	2	20	10.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1655551	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1655548	1	10	10.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1655230	1	12	8.3	5.0	✓
TSS by Gravimetry	E160	1664950	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1655953	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	1655549	1	12	8.3	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1655959	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	1655958	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1666339	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1658637	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1655552	1	8	12.5	5.0	✓
Fluoride in Water by IC	E235.F	1655956	1	17	5.8	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1655961	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1655960	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1655957	1	17	5.8	5.0	✓
TDS by Gravimetry	E162	1664960	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1658556	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1666367	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1658450	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1655551	1	6	16.6	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1655548	1	10	10.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1655230	1	12	8.3	5.0	✓
TSS by Gravimetry	E160	1664950	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1655953	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	1655549	1	12	8.3	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1655959	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	1655958	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1666339	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1658637	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1655552	1	8	12.5	5.0	✓
Fluoride in Water by IC	E235.F	1655956	1	17	5.8	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1655961	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1655960	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1655957	1	17	5.8	5.0	✓
TDS by Gravimetry	E162	1664960	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1658556	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1666367	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1658450	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1655551	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1655548	1	10	10.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1655230	1	12	8.3	5.0	✓
TSS by Gravimetry	E160	1664950	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1655549	1	12	8.3	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1655959	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	1655958	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1666339	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1658637	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1655552	1	8	12.5	5.0	✓
Fluoride in Water by IC	E235.F	1655956	1	17	5.8	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1655961	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1655960	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1655957	1	17	5.8	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1658556	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1666367	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1658450	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1655551	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1655548	1	10	10.0	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Total Sulfide by Colourimetry (Automated Flow)	E395	1655230	1	12	8.3	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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 - Waterloo	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 - Waterloo	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine	EF001 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	: **VA24C4246**	Page	: 1 of 17
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	:
Address		Address	:
Telephone	: ----	Telephone	:
Project	: 11964	Date Samples Received	: 16-Sep-2024 11:55
PO	: 11964-Task20-Phase3C-4C	Date Analysis Commenced	: 17-Sep-2024
C-O-C number	: ----	Issue Date	: 25-Sep-2024 09:09
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Waterloo Inorganics, Waterloo, Ontario
		Waterloo Metals, Waterloo, Ontario
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Administration, Burnaby, British Columbia
		Vancouver Metals, 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: 1655953)											
VA24C4161-003	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	125	126	0.719%	20%	----
Physical Tests (QC Lot: 1664950)											
FJ2402778-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1664960)											
FJ2402778-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	173	166	6	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1655548)											
KS2403751-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0056	0.0050	0.0006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1655549)											
KS2403751-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0077	0.0052	0.0025	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1655551)											
VA24C4202-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.034	0.033	0.0007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1655956)											
KS2403729-001	Anonymous	Fluoride	16984-48-8	E235.F	0.400	mg/L	<0.400	<0.400	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1655957)											
KS2403729-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	6.00	mg/L	2610	2590	0.712%	20%	----
Anions and Nutrients (QC Lot: 1655958)											
KS2403729-001	Anonymous	Chloride	16887-00-6	E235.Cl	10.0	mg/L	37.4	36.8	0.68	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1655959)											
KS2403729-001	Anonymous	Bromide	24959-67-9	E235.Br-L	1.00	mg/L	<1.00	<1.00	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1655960)											
KS2403729-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0200	mg/L	<0.0200	<0.0200	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1655961)											
KS2403729-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1655552)											
VA24C4246-001	SQU US-1	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.56	0.59	0.04	Diff <2x LOR	----
Total Sulfides (QC Lot: 1655230)											
VA24C3826-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0075	mg/L	0.0385	0.0392	0.0006	Diff <2x LOR	----
Total Metals (QC Lot: 1658450)											
VA24C4068-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00097	0.00093	0.00004	Diff <2x LOR	----
VA24C4068-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0091	0.0094	0.0004	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: 1658450) - continued											
VA24C4068-001	Anonymous	Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00042	0.00041	0.000002	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0166	0.0168	1.43%	20%	----
		Beryllium, total	7440-41-7	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	12.3	12.4	0.730%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000018	0.000018	0.0000004	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.041	0.040	0.001	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	0.0020	0.0020	0.00003	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	3.67	3.71	1.28%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00719	0.00722	0.409%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000800	0.000790	1.28%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.00145	0.00137	0.00008	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	3.01	2.97	1.18%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00456	0.00447	1.93%	20%	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	0.12	0.11	0.01	Diff <2x LOR	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	2.83	2.68	5.31%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0998	0.0950	5.03%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	4.35	4.34	0.02	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.00035	0.00031	0.00004	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	0.000060	0.000056	0.000003	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: 1658450) - continued											
VA24C4068-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1666367)											
VA24C4231-003	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0000087	0.0000098	0.0000012	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1658637)											
VA24C4184-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00053	0.00056	0.00003	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0703	0.0709	0.902%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000794	0.0000827	4.09%	20%	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	112	112	0.0890%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00076	0.00078	0.00002	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00027	0.00027	0.000001	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.020	0.020	0.0006	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0069	0.0068	0.00006	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	31.5	31.6	0.321%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	1.51	1.53	1.53%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000816	0.000805	1.27%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00259	0.00263	0.00004	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.97	3.01	1.20%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00177	0.00161	0.00016	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	5.62	5.62	0.0251%	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	4.97	4.94	0.760%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.363	0.355	2.27%	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: 1658637) - continued											
VA24C4184-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	33.8	32.2	4.80%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00197	0.00194	1.71%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1666339)											
VA24C4203-010	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1658556)											
VA24C3960-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	0.00087	0.00091	0.00004	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: 1655953)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1664950)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1664960)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1655548)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1655549)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1655551)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1655956)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1655957)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1655958)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1655959)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1655960)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1655961)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1655552)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1655230)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1658450)						
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: 1658450) - continued						
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1666367)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1658637)						
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: 1658637) - 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: 1666339)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1658556)						
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: 1655953)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	102	85.0	115	----
Physical Tests (QCLot: 1664950)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	100	85.0	115	----
Physical Tests (QCLot: 1664960)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	111	85.0	115	----
Anions and Nutrients (QCLot: 1655548)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	94.2	80.0	120	----
Anions and Nutrients (QCLot: 1655549)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.7	85.0	115	----
Anions and Nutrients (QCLot: 1655551)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	88.5	75.0	125	----
Anions and Nutrients (QCLot: 1655956)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1655957)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1655958)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1655959)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 1655960)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1655961)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	----
Organic / Inorganic Carbon (QCLot: 1655552)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	96.5	80.0	120	----
Total Sulfides (QCLot: 1655230)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	99.5	80.0	120	----
Total Metals (QCLot: 1658450)									

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: 1658450) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	107	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	101	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	111	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	105	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	103	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	104	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	107	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	104	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	102	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	109	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	110	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	106	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	98.6	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	101	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	101	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	105	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	105	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	108	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	111	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	106	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	105	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	104	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	96.2	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	107	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	105	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	100	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	103	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	103	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	107	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	105	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: 1658450) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	108	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	104	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	103	80.0	120	----
Total Metals (QCLot: 1666367)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	94.4	80.0	120	----
Dissolved Metals (QCLot: 1658637)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	101	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	101	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	105	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	98.9	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	100	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	103	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	96.6	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	101	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	99.0	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	99.4	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	97.9	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	99.8	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.3	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	88.2	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	96.9	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	97.8	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	102	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	101	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	98.4	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	101	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.8	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	103	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	94.7	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	109	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	91.4	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	101	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	83.0	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: 1658637) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	97.3	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	97.9	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	95.8	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	97.9	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	95.7	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	97.4	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	97.3	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	99.9	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	95.9	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	98.4	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	95.0	80.0	120	----
Speciated Metals (QCLot: 1658556)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.025 mg/L	99.6	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: 1655548)										
KS2403751-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0482 mg/L	0.05 mg/L	96.4	70.0	130	----
Anions and Nutrients (QCLot: 1655549)										
KS2403751-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0994 mg/L	0.1 mg/L	99.4	75.0	125	----
Anions and Nutrients (QCLot: 1655551)										
VA24C4202-002	Anonymous	Nitrogen, total	7727-37-9	E366	0.355 mg/L	0.4 mg/L	88.8	70.0	130	----
Anions and Nutrients (QCLot: 1655956)										
VA24C4161-001	Anonymous	Fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1655957)										
VA24C4161-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1655958)										
VA24C4161-001	Anonymous	Chloride	16887-00-6	E235.Cl	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1655959)										
VA24C4161-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.500 mg/L	0.5 mg/L	99.9	75.0	125	----
Anions and Nutrients (QCLot: 1655960)										
VA24C4161-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.507 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1655961)										
VA24C4161-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.52 mg/L	2.5 mg/L	101	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1655552)										
VA24C4246-002	SQU DS-1	Carbon, dissolved organic [DOC]	----	E358-L	5.00 mg/L	5 mg/L	100	70.0	130	----
Total Sulfides (QCLot: 1655230)										
VA24C3826-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.221 mg/L	0.2 mg/L	110	75.0	125	----
Total Metals (QCLot: 1658450)										
VA24C4068-002	Anonymous	Aluminum, total	7429-90-5	E420	0.185 mg/L	0.2 mg/L	92.5	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0182 mg/L	0.02 mg/L	91.1	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Barium, total	7440-39-3	E420	0.0184 mg/L	0.02 mg/L	92.0	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00967 mg/L	0.01 mg/L	96.7	70.0	130	----
		Boron, total	7440-42-8	E420	0.104 mg/L	0.1 mg/L	104	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00379 mg/L	0.004 mg/L	94.7	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00947 mg/L	0.01 mg/L	94.7	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0394 mg/L	0.04 mg/L	98.6	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: 1658450) - continued										
VA24C4068-002	Anonymous	Cobalt, total	7440-48-4	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Copper, total	7440-50-8	E420	0.0195 mg/L	0.02 mg/L	97.5	70.0	130	----
		Iron, total	7439-89-6	E420	1.90 mg/L	2 mg/L	95.1	70.0	130	----
		Lead, total	7439-92-1	E420	0.0187 mg/L	0.02 mg/L	93.3	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0946 mg/L	0.1 mg/L	94.6	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0184 mg/L	0.02 mg/L	92.2	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0189 mg/L	0.02 mg/L	94.4	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	9.84 mg/L	10 mg/L	98.4	70.0	130	----
		Potassium, total	7440-09-7	E420	4.07 mg/L	4 mg/L	102	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0367 mg/L	0.04 mg/L	91.8	70.0	130	----
		Silicon, total	7440-21-3	E420	9.32 mg/L	10 mg/L	93.2	70.0	130	----
		Silver, total	7440-22-4	E420	0.00370 mg/L	0.004 mg/L	92.4	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	17.5 mg/L	20 mg/L	87.4	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0376 mg/L	0.04 mg/L	93.9	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00359 mg/L	0.004 mg/L	89.7	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		Tin, total	7440-31-5	E420	0.0182 mg/L	0.02 mg/L	91.1	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0382 mg/L	0.04 mg/L	95.4	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00383 mg/L	0.004 mg/L	95.8	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0972 mg/L	0.1 mg/L	97.2	70.0	130	----
		Zinc, total	7440-66-6	E420	0.375 mg/L	0.4 mg/L	93.7	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0374 mg/L	0.04 mg/L	93.5	70.0	130	----
Total Metals (QCLot: 1666367)										
VA24C4231-004	Anonymous	Mercury, total	7439-97-6	E508	0.0000923 mg/L	0 mg/L	92.3	70.0	130	----
Dissolved Metals (QCLot: 1658637)										
VA24C4184-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	3.83 mg/L	4 mg/L	95.7	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.384 mg/L	0.4 mg/L	95.9	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.414 mg/L	0.4 mg/L	103	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.386 mg/L	0.4 mg/L	96.6	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.737 mg/L	0.8 mg/L	92.1	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.195 mg/L	0.2 mg/L	97.4	70.0	130	----
		Boron, dissolved	7440-42-8	E421	1.82 mg/L	2 mg/L	91.1	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.0810 mg/L	0.08 mg/L	101	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.206 mg/L	0.2 mg/L	103	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.783 mg/L	0.8 mg/L	97.8	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.396 mg/L	0.4 mg/L	98.9	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: 1658637) - continued										
VA24C4184-002	Anonymous	Copper, dissolved	7440-50-8	E421	0.384 mg/L	0.4 mg/L	96.1	70.0	130	----
		Iron, dissolved	7439-89-6	E421	ND mg/L	----	ND	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.369 mg/L	0.4 mg/L	92.3	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	1.77 mg/L	2 mg/L	88.5	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	0.396 mg/L	0.4 mg/L	98.9	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.794 mg/L	0.8 mg/L	99.3	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	195 mg/L	200 mg/L	97.3	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	77.2 mg/L	80 mg/L	96.5	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.394 mg/L	0.4 mg/L	98.5	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.821 mg/L	0.8 mg/L	103	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	189 mg/L	200 mg/L	94.4	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.0777 mg/L	0.08 mg/L	97.2	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	40.0 mg/L	40 mg/L	99.9	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	0.787 mg/L	0.8 mg/L	98.4	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.0706 mg/L	0.08 mg/L	88.2	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.371 mg/L	0.4 mg/L	92.7	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.383 mg/L	0.4 mg/L	95.8	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.762 mg/L	0.8 mg/L	95.3	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.370 mg/L	0.4 mg/L	92.6	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.0731 mg/L	0.08 mg/L	91.4	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	1.98 mg/L	2 mg/L	98.9	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	7.72 mg/L	8 mg/L	96.4	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.801 mg/L	0.8 mg/L	100	70.0	130	----
Dissolved Metals (QCLot: 1666339)										
VA24C4203-011	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000953 mg/L	0 mg/L	95.3	70.0	130	----
Speciated Metals (QCLot: 1658556)										
VA24C3960-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0392 mg/L	0.04 mg/L	97.9	70.0	130	----

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17 -

Page 1 of

Report To	Contact and company name below will appear on the final report
Company:	Triton Environmental
Contact:	
Phone:	
	al report
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2
Email 3
Select Invoice
Email 1 or Fax
Email 2

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

Regular [R] X 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: 24-Sept-2024

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):	

Oil and Gas Required Fields (client use)

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

Analysis Request

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total metals + mercury	Dissolved metals + mercury	Total hexavalent chromium	Total trivalent chromium	TSS	TDS	Nutrients (ammonia, ammonium, total nitrogen, total phosphorus)	Total sulfide (low) (as H2S), Unionized Sulfide (low)	Anions scan (Br, Cl, F, NO2, NO3, SO4)	General parameters (alkalinity)	DOC				SAMPLES ON HOLD	Sample is hazardous (please provide further details	NUMBER OF CONTAINERS
					F	F					P	P			F/P						
	SQU US 1	16-Sep-24	9:09	Water	R	R	R	R	R	R	R	R	R	R	R					N	9
	pH: 7.8 cond: 48 µS/cm temp: 9.9 °C																				
	SQU DS 1	16-Sep-24	9:37	Water	R	R	R	R	R	R	R	R	R	R	R					N	9
	pH: 7.6 cond: 41 µS/cm temp: 9.8 °C																				
	~~Duplicate~~			~~Water~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~					~~N~~	~~9~~
	~~Field Blank~~			~~Water~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~					~~N~~	~~9~~
	~~Trip Blank~~			~~Water~~	~~R~~		~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	R						~~N~~	~~6~~

Environmental Division
Vancouver
Work Order Reference
VA24C4246

Telephone : +1 604 253 4188

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

The metals + mercury bottles did not have preservatives inside.

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			
				10			

RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 16 Sept 24	Time: 11:57	Received by:	Date:	Time:	Received by: CW	Date: Sep 16	Time: 1155

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY SEPT 2017 FRONT

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

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

BCR Site Receiving Environment Field Notes and Logs

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-9-16-Chycoski-D648C

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	09/16/2024	**Location:**	BC Rail Site
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.725177 -123.164347
Temperature(c):	Low 12 High 21	**Permit:**	AE 111824
Weather Conditions:	Clear	**Ground Conditions:**	Damp

Observations

Time: 09:37:00 **Flow Volume (visual):** moderate

Notes:

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

Samples Collected - Parameters

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

Logger Maintenance

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

Describe Logger Maintenance

Cleaned logger

Photos

Photo: 1

Location: SQU DS 1

Description: US view

Photo: 2

Location: SQU DS 1

Description: Across view

Photos

Photo: 3

Location: SQU DS 1

Description: DS view

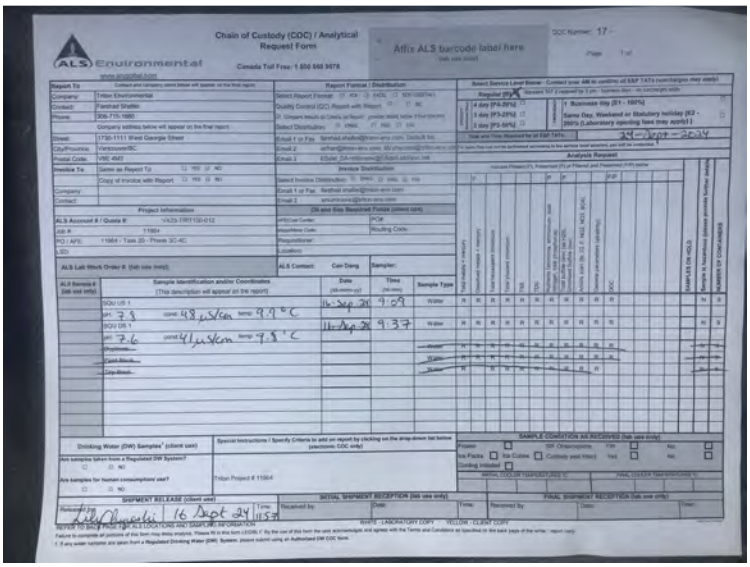

Photo: 4

Location: SQU DS 1

Description: Lab COC

Sign Off

Report Prepared By:	Lily Chycoski	**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

2024-9-16-Chycoski-77814

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	09/16/2024	**Location:**	BC Rail Site
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.726866 -123.163912
Temperature(c):	Low 12 High 21	**Permit:**	AE 111824
Weather Conditions:	Clear	**Ground Conditions:**	Damp

Observations

Time: 09:09:06 **Flow Volume (visual):** moderate

Notes: Logger was beached on boulders in river bed.
Metals and mercury samples didn't have preservatives in the bottles.

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:**	No
Nutrients	Yes	**VOC/VPH**	No		
DOC	Yes	**EPH, PAH, LEPH/HEPH**	No		
		Trout LC50	No		

Logger Maintenance

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

Describe Logger Maintenance

Cleaned logger

Photos

Photo: 1

Location: SQU US 1

Description: US view

Photo: 2

Location: SQU US 1

Description: Across view

Photos

Photo: 3

Location: SQU US 1

Description: DS view

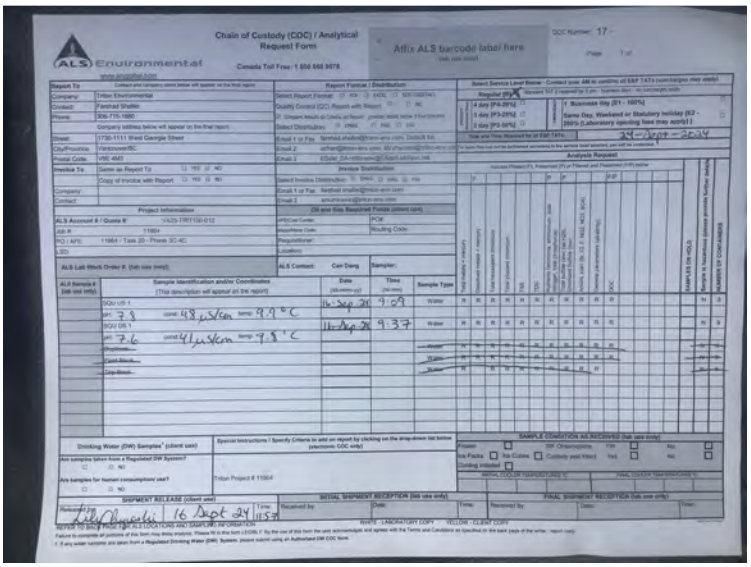

Photo: 4

Location: SQU US 1

Description: Lab COC

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Photos

Photo: 5

Location: SQU US 1

Description: Sonde was beached on rock when arriving onsite. Placed sonde back in river when finished cleaning.

Sign Off

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

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

Woodfibre Site Sample Analysis

TRITON	Sample ID	Reviewed and signed off by:			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					VA24C4468-001					
	Date Sampled					17-Sep-2024					
	Time Sampled					12:28					
Analyte	Units	FAL-ST [1,2]	FAL-LT [1,2]	MAL-ST [1]	MAL-LT [1,2]	Water					
						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	7.06		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	-	16.1 (5 weeks average 18.0)		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	-	-	-	-	171	Water treatment process has been increasing the Conductivity levels based on the levels seen at US1 site. Although this is not causing harm, but the treatment facility should be informed and asked to keep the levels like that of observed at US1.				
Turbidity (field)	NTU	Varies with background, see note US1 (background) guideline = 8.6	Varies with background, see note US1 (background) guideline = 3.84 5-week discrete sampling average = 5.0 (EOP)	Varies with background, see note US1 (background) guideline = 8.6	Varies with background, see note US1 (background) guideline = 3.84 5-week discrete sampling average = 5.0 (EOP)	**15.2**	Turbidity for WLNG EOP exceeds the short-term and long-term guidelines for BCWQ for FAL and MAL, if there was a >24 hours discharge duration at or above this turbidity level. It is not clear if the LT guidline applies to EOP considering the fact that it was from the EOP, not the DS location and that there was no continuous discharge throghout the past 30 days.	Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.	Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.
Dissolved Oxygen (field)	mg/L	Varies with life stage, see note	Varies with life stage, see note	Varies with life stage, see note	Varies with life stage, see note	-		Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L. Refer to BC Water Quality Guidelines for more information.
General Parameters											
Hardness (as $CaCO_3$) (total)	mg/L	-	-	-	-	59.7					
Total Dissolved Solids	mg/L	-	-	-	-	92					
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 = 4.76 (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 = 4.76 (EOP)	5.6		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	-	-	-	-	1.14			Long-term (30-day) median within 20% of background median [3]		
Total Phenols	mg/L	0.05	-	-	-	< 0.0010		Interim guideline		Interim guideline	
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	68.9	Water treatment process has been increasing the total Alkalinity levels based on the levels seen at US1 site. Although this is not causing harm, but the treatment facility should be informed and asked to keep the levels like that of observed at US1. The WLNG EOP sample has low sensitivity to acid inputs (i.e. high buffering capacity).		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. US1 (background) guideline = 17.1	Varies with pH and temperature. See note. US1 (background) guideline = 1.78	Varies with pH and temperature. See note. US1 (background) guideline = 58	Varies with pH, temperature and salinity. See note. US1 (background) guideline = 5.3	0.037		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	2.5				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 US1 (background) guideline = 0.408	-	1.5	-	0.233		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	0.0342					
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	-	-	0.0068		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	-	-	-	-	0.474					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.0072			Guideline is for lakes, refer to BCWQG 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. US1 (background) guideline = 218	-	-	6.67			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 = 0.157 5-week discrete sampling averages = EOP (0.118), US (0.090), DS (0.077)	-	-	0.284			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	-	-	0.00113					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.00153					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.017			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	0.022					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	0.0000483					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	22					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.000081					
Chromium (Cr) - Total	mg/L	-	-	-	-	< 0.00050					
Chromium (Cr(III))-Total	mg/L	-	0.0089	-	0.056	< 0.00050			Working guideline status		Working guideline status
Chromium (Cr(VI))-Total	mg/L	-	0.0025	-	0.0015	< 0.00050			Working guideline status		Working guideline status
Cobalt (Co)-Total	mg/L	0.11	0.004	-	-	0.00017					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002	0.00099					
Iron (Fe)-Total	mg/L	1	-	-	-	0.282					
Lead (Pb)-Total	mg/L	Varies with hardness. See Note. US1 (background) guideline = 0.004	Varies with hardness. See Note. US1 (background) guideline = 0.004 5-week discrete sampling averages = EOP (0.000128), US (0.00006), DS (0.00021)	0.14	0.002	0.000386		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	-	-	-	-	0.0114					
Magnesium (Mg)-Total	mg/L	-	-	-	-	1.16					
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 = EOP (0.02), US (0.0061), DS (0.013)	-	-	0.0335		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	-	-	0.0209					
Nickel (Ni)-Total	mg/L	-	Varies with hardness US1 (background) guideline = 0.025 5-week discrete sampling averages = EOP (0.00057), US (0.00099), DS (0.00072)	-	0.008	0.00084			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	-	-	< 0.050			Guideline only applies to lakes with salmonid species being the dominant fish species. Guideline is for reference only and does not apply to site.		
Potassium (K)-Total	mg/L	-	-	-	-	4.1					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00725					
Selenium (Se)-Total	mg/L	-	0.002	-	0.002	0.000094			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 guidleiens 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 guidleiens and sampling guidance.
Silicon (Si)-Total	mg/L	-	-	-	-	6.57					
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	< 0.000010		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	-	-	-	-	5.63					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0545					
Sulfur (S)-Total	mg/L	-	-	-	-	2.17					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.0008	-	-	0.000031			30-day average, site-specific objective for the lower Columbia River, BC. Guideline is for reference only and does not apply to the EGP site.		
Thorium (Th)-Total	mg/L	-	-	-	-	< 0.00010					
Tin (Sn)-Total	mg/L	-	-	-	-	< 0.00010					
Titanium (Ti)-Total	mg/L	-	-	-	-	0.0106					
Tungsten (W)-Total	mg/L	-	-	-	-	0.00056					
Uranium (U)-Total	mg/L	-	0.0085	-	-	0.0038			Working guideline status		
Vanadium (V)-Total	mg/L	-	-	-	0.050	< 0.00050					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	0.010	0.0095					
Zirconium (Zr)-Total	mg/L	-	-	-	-	< 0.00020					
Dissolved Metals											
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0356					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	0.00106					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00126					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.012					
Beryllium (Be)-Dissolved	mg/L	-	-	-	-	< 0.000100					
Bismuth (Bi)-Dissolved	mg/L	-	-	-	-	< 0.000050					
Boron (B)-Dissolved	mg/L	-	-	-	-	0.023					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note US1 (background) guideline = 0.000055	Varies with hardness, see note US1 (background) guideline = 0.000096	-	-	0.0000315		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	-	-	22.1	Water treatment process has been increasing the Ca levels based on the levels seen at US1 site. Although this is not causing harm, but the treatment facility should be informed and asked to keep the levels like that of observed at US1. The WLNG EOP sample has low sensitivity to acid inputs (i.e. high buffering capacity).		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	-	-	-	-	0.000039					
Chromium (Cr)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Cobalt (Co)-Dissolved	mg/L	-	-	-	-	0.00012					
Copper (Cu)-Dissolved	mg/L	Guideline varies with other parameters, see note US1 (background) guideline = 0.0019	Guideline varies with other parameters, see note US1 (background) guideline = 0.0009 5-week discrete sampling averages = EOP (0.0003), US1 (0.0011), DS1 (0.0007)	-	-	0.00034		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	-	-	-	0.012					
Lead (Pb)-Dissolved	mg/L	-	-	-	-	< 0.000050					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	0.0114					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	1.04					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.0267					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.0208					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	0.00069					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	3.45					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00622					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	0.000081					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	6.21					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	5.33					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0511					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	1.83					
Tellurium (Te)-Dissolved	mg/L	-	-	-	-	< 0.00020					
Thallium (Tl)-Dissolved	mg/L	-	-	-	-	0.00002					
Thorium (Th)-Dissolved	mg/L	-	-	-	-	< 0.00010					
Tin (Sn)-Dissolved	mg/L	-	-	-	-	< 0.00010					
Titanium (Ti)-Dissolved	mg/L	-	-	-	-	0.00044					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	0.00047					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.0037					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness US1 (background) guideline = 0.009	Varies with pH, DOC, hardness US1 (background) guideline = 0.0063 5-week discrete sampling average = EOP (0.0037), US1 (0.0016), DS1 (0.0026)	-	-	0.0053		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					
Volatile Organic Compounds											
Chlorobenzene	µg/L	-	-	-	-	< 0.50					
Chloromethane	µg/L	-	-	-	-	< 5.0					
Dichlorobenzene, 1,2-	µg/L	-	0.7	-	42	< 0.50			Working guideline status		Working guideline status
Dichlorobenzene, 1,3-	µg/L	-	150	-	-	< 0.50			Working guideline status		
Dichlorobenzene, 1,4-	µg/L	-	26	-	-	< 0.50			Working guideline status		
Dichloropropane, 1,2-	µg/L	-	-	-	-	< 0.50					
Dichloropropylene, cis+trans-1,3-	µg/L	-	-	-	-	< 0.75					
Dichloropropylene, cis-1,3-	µg/L	-	-	-	-	< 0.50					
Tetrachloroethane, 1,1,1,2-	µg/L	-	-	-	-	< 0.50					
Tetrachloroethane, 1,1,2,2-	µg/L	-	-	-	-	< 0.20					
Trichloroethane, 1,1,2-	µg/L	-	-	-	-	< 0.50					
Trichlorofluoromethane	µg/L	-	-	-	-	< 0.50					
Carbon tetrachloride	µg/L	-	-	-	-	< 0.50					
Chloroethane	µg/L	-	-	-	-	< 0.50					
Dichloroethane, 1,1-	µg/L	-	-	-	-	< 0.50					
Dichloroethane, 1,2-	µg/L	-	100	-	-	< 0.50			Working guideline status		
Dichloroethylene, 1,1-	µg/L	-	-	-	-	< 0.50					
Dichloroethylene, cis-1,2-	µg/L	-	-	-	-	< 0.50					
Dichloroethylene, trans-1,2-	µg/L	-	-	-	-	< 0.50					
Dichloromethane	µg/L	-	98.1	-	-	< 1.00			Working guideline status		
Dichloropropylene, trans-1,3-	µg/L	-		-	-	< 0.50					
Tetrachloroethylene	µg/L	-	110	-	-	1.21			Working guideline status		
Trichloroethane, 1,1,1-	µg/L	-	-	-	-	< 0.50					
Trichloroethylene	µg/L	-	21	-	-	< 0.50			Working guideline status		
Vinyl chloride	µg/L	-	-	-	-	< 0.40					
Benzene	µg/L	-	40	-	110	< 0.50			Interim guideline status		Interim guideline status
Ethylbenzene	µg/L	-	200	-	250	< 0.50			Interim guideline status		Interim guideline status
Methyl-tert-butyl ether [MTBE]	µg/L	3400	-	440	-	< 0.50					
Styrene	µg/L	-	72	-	-	0.5			Working guideline status		
Toluene	µg/L	-	0.5	-	-	< 0.40					
Xylene, m+p-	µg/L	-	-	-	-	< 0.40					
Xylene, o-	µg/L	-	-	-	-	< 0.30					
Xylenes, total	µg/L	-	30	-	-	< 0.50					
Bromodichloromethane	µg/L	-	-	-	-	< 0.50					
Bromoform	µg/L	-	-	-	-	< 0.50					
Chloroform	µg/L	-	1.8	-	-	< 0.50			Working guideline status		
Dibromochloromethane	µg/L	-	-	-	-	< 0.50					
Hydrocarbons											
EPH (C10-C19)	µg/L	-	-	-	-	< 250					
EPH (C19-C32)	µg/L	-	-	-	-	< 250					
VHw (C6-C10)	µg/L	-	-	-	-	< 100					
VPHw	µg/L	-	-	-	-	< 100					
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	µg/L	-	6	-	6	< 0.010					
Acenaphthylene	µg/L	-	-	-	-	< 0.010					
Acridine	µg/L	-	-	-	-	< 0.010					
Anthracene	µg/L	0.1	4	-	-	< 0.010					
Benz(a)anthracene	µg/L	0.1	0.1	-	-	< 0.010					
Benzo(a)pyrene	µg/L	-	0.01	-	0.01	< 0.0050					
Benzo(b+j)fluoranthene	µg/L	-	-	-	-	< 0.010					
Benzo(b+j+k)fluoranthene	µg/L	-	-	-	-	< 0.015					
Benzo(g,h,i)perylene	µg/L	-	-	-	-	< 0.010					
Benzo(k)fluoranthene	µg/L	-	-	-	-	< 0.010					
Chrysene	µg/L	-	-	-	0.1	< 0.010					
Dibenz(a,h)anthracene	µg/L	-	-	-	-	< 0.0050					
Fluoranthene	µg/L	0.2	4	-	-	< 0.010		Guideline is for phototoxic effects			
Fluorene	µg/L	-	12	-	-	< 0.010					
Indeno(1,2,3-c,d)pyrene	µg/L	-	-	-	-	< 0.010					
Methylnaphthalene, 1-	µg/L	-	-	-	1	0.083					Guideline is for total methylated napthalene and is presented here for reference.
Methylnaphthalene, 2-	µg/L	-	-	-	1	0.065					Guideline is for total methylated napthalene and is presented here for reference.
Naphthalene	µg/L	-	1	-	1	< 0.050					
Phenanthrene	µg/L	-	0.3	-	-	< 0.020					
Pyrene	µg/L	0.02	-	-	-	< 0.010					
Quinoline	µg/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) - BCAWWQG - Freshwater Aquatic Life** **British Columbia Approved and Working Water Quality Guidelines (NOV 2023) - BCAWWQG - Marine Aquatic Life**									
Color Key:	**Exceeds both FAL and MAL Guidelines**	**Exceeds FAL Short term Guideline**	***Exceeds FAL Long term Guideline***	**Exceeds MAL Short term Guideline**	***Exceeds MAL Long term Guideline***						
Color Key:		**Exceeds FAL Short and Long-Term Guideline**		**Exceeds MAL Short and Long-term Guidelines**							

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

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

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

[4]Background temperature ranges: Dec-Feb: 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	WLNG US 17-Sep-2024
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations	7.06	7.19
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations	16.1 (5 weeks average 18.0)	13.8
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations	15.20	0.61
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	59.7	10
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations	1.14	1.94
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations	68.9	10.1
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations	2.5	0.76
Total Suspended Solids	mg/L	Laboratory tested total suspended solids tested at the lab used in guideline calculations	5.6	< 3.0

RESULTS OF RAINBOW TROUT LC50 MULTI-CONCENTRATION

Client : 4800 Triton Environmental Consultants Ltd., Vancouver Job Number: C473372

Client Project Name & Number: 11964-TASK 40-PHASE 3C-4C

Test Result:

96 hrs LC50 % vol/vol (95% CL): >100 (N/A) Statistical Method: Visual

Sample Name : WLNG EOP

Description:	Cloudy white, translucent			Sample Number:	CVQ878-01
Sample Collected:	Sep 17, 2024 12:28 PM	Sampling Method :	N/A	Site Collection:	N/A
Sample Collected By:	N/A	Volume Received:	4 x 10CB	Avg Temp Arrival:	14 °C Storage: 2-6°C
Sample Received:	Sep 17, 2024 04:51 PM	pH:	7.4	Dissolved Oxygen:	10.0 mg/L
Analysis Start :	Sep 19, 2024 11:50 AM	Temperature :	14 °C	Sample Conductance:	158 µS/cm

Concentration	Temperature (°C)	Temperature (°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	pH	pH	Conductivity (uS/cm)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)
% vol/vol	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	96 hrs	96 hrs
0	15	15	10.2	9.9	7.7	7.5	58	0	0	0
6.25	15	15	10.2	9.7	7.7	7.5	64	0	0	0
12.5	15	15	10.2	9.3	7.6	7.4	71	0	0	0
25	15	15	10.2	9.7	7.5	7.6	83	0	0	0
50	14	15	10.1	9.8	7.5	7.8	106	0	0	0
100	14	15	10.0	9.8	7.4	7.9	158	0	0	0

Comments : All fish appeared and behaved normally at 24 hours, 48 hours, 72 hours, and 96 hours into testing.

Culture/Control/Dilution Water Burnaby Municipal Dechlorinated Water

Hardness: 21 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 :	30 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 :	0.4 ± 0.1 g	Length (Mean) +- SD :	3.70 ± 0.31 cm
Culture Water Renewal :	≥ 1L/min/kg fish	Weight (Range) :	0.2 – 0.6 g	Length (Range) :	3.20 – 4.20 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

Reference chemical: Zinc Test Date: Sep 05, 2024

Test Endpoint 96 hrs LC50 (95% confidence interval) : 0.21 (0.16, 0.28)mg/L Statistical Method : Probit

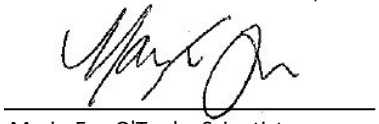
Historical Mean LC50 (warning limits) : 0.18 (0.11, 0.29) mg/L Concentration : 0,0.04,0.08,0.16,0.32,0.64 mg/L

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 : Guilherme De Faria Silva Naves, Melanie Mazziotti, Ryan Colman



Verified By : Marie-Eve O'Toole, Scientist Date: Oct 02, 2024 02:16 PM

Woodfibre Site Sample Lab Documentation

ALS Canada Ltd.

right solutions. right partner.

CERTIFICATE OF ANALYSIS

Work Order	: **VA24C4468**	Page	: 1 of 11
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact	:	Account Manager	
Address	:	Address	
Telephone	:	Telephone	
Project	:	Date Samples Received	: 17-Sep-2024 17:30
PO	: 11964-Task 30-Phase 3C-4C	Date Analysis Commenced	: 18-Sep-2024
C-O-C number	: ----	Issue Date	: 27-Sep-2024 06:42
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
		Metals, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Organics, Burnaby, British Columbia
		Inorganics, Edmonton, Alberta
		Metals, Burnaby, British Columbia
		Organics, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Inorganics, Waterloo, Ontario
		Metals, Waterloo, Ontario
		Administration, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		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*
-	no units
°C	degrees celsius
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

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

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: WLNG EOP	----	----	----	----
					Client sampling date / time: 17-Sep-2024 12:28	----	----	----	----
					VA24C4468-001	--------	--------	--------	--------
					Result	----	----	----	----
Field Tests									
Conductivity, field	----	EF001/VA	0.10	µS/cm	171.00	----	----	----	----
pH, field	----	EF001/VA	0.10	pH units	7.06	----	----	----	----
Temperature, field	----	EF001/VA	0.10	°C	16.1	----	----	----	----
Physical Tests									
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	59.5	----	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	59.7	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	92	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	5.6	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	68.9	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0370	----	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	----	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	2.50	----	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.233	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.0342	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	0.0068	----	----	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.474	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0072	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	6.67	----	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	1.14	----	----	----	----
Total Sulfides									
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	----	----	----	----
Sulfide, un-ionized (as H2S), from total	7783-06-4	EC395/VA	0.0015	mg/L	<0.0015	----	----	----	----
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	----	----	----	----
Total Metals									
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.284	----	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	0.00113	----	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: WLNG EOP	----	----	----	----
					Client sampling date / time: 17-Sep-2024 12:28	----	----	----	----
					VA24C4468-001	--------	--------	--------	--------
					Result	----	----	----	----
Total Metals									
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	0.00153	----	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.0170	----	----	----	----
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L	<0.000100	----	----	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	----	----	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L	0.022	----	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	0.0000483	----	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	22.0	----	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000081	----	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L	<0.00050	----	----	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L	0.00017	----	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L	0.00099	----	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L	0.282	----	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L	0.000386	----	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	0.0114	----	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	1.16	----	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.0335	----	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.0209	----	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L	0.00084	----	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L	<0.050	----	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	4.10	----	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.00725	----	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	0.000094	----	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	6.57	----	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	----	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L	5.63	----	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	0.0545	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	2.17	----	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	<0.00020	----	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	0.000031	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	17-Sep-2024 12:28	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C4468-001	--------	--------	--------	--------
						Result	----	----	----	----
Total Metals										
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		<0.00010	----	----	----	----
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		<0.00010	----	----	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		0.0106	----	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		0.00056	----	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.00380	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		<0.00050	----	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		0.0095	----	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	----	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0356	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		0.00106	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00126	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.0120	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L		<0.000100	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		<0.000050	----	----	----	----
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		0.023	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		0.0000315	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		22.1	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.000039	----	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		<0.00050	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		0.00012	----	----	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		0.00034	----	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.012	----	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		0.0114	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		1.04	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.0267	----	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.0208	----	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		0.00069	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	17-Sep-2024 12:28	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C4468-001	--------	--------	--------	--------
						Result	----	----	----	----
Dissolved Metals										
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		3.45	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00622	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		0.000081	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		6.21	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		5.33	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0511	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		1.83	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		0.000020	----	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00010	----	----	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	----	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		0.00044	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		0.00047	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.00370	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		<0.00050	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0053	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00020	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-		Laboratory	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Laboratory	----	----	----	----
Speciated Metals										
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/WT	0.00050	mg/L		<0.00050	----	----	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/WT	0.00050	mg/L		<0.00050	----	----	----	----
Aggregate Organics										
Phenols, total (4AAP)	----	E562/EO	0.0010	mg/L		<0.0010	----	----	----	----
Volatile Organic Compounds										
Chlorobenzene	108-90-7	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Chloromethane	74-87-3	E611C/VA	5.0	µg/L		<5.0	----	----	----	----
Dichlorobenzene, 1,2-	95-50-1	E611C/VA	0.50	µg/L		<0.50	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	17-Sep-2024 12:28	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C4468-001	--------	--------	--------	--------
						Result	----	----	----	----
Volatile Organic Compounds										
Dichlorobenzene, 1,3-	541-73-1	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichlorobenzene, 1,4-	106-46-7	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloropropane, 1,2-	78-87-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloropropylene, cis+trans-1,3-	542-75-6	E611C/VA	0.75	µg/L		<0.75	----	----	----	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C/VA	0.20	µg/L		<0.20	----	----	----	----
Trichloroethane, 1,1,2-	79-00-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Trichlorofluoromethane	75-69-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Volatile Organic Compounds [Drycleaning]										
Carbon tetrachloride	56-23-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Chloroethane	75-00-3	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethane, 1,1-	75-34-3	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethane, 1,2-	107-06-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethylene, 1,1-	75-35-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethylene, cis-1,2-	156-59-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethylene, trans-1,2-	156-60-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloromethane	75-09-2	E611C/VA	1.0	µg/L		<1.0	----	----	----	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Tetrachloroethylene	127-18-4	E611C/VA	0.50	µg/L		1.21	----	----	----	----
Trichloroethane, 1,1,1-	71-55-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Trichloroethylene	79-01-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Vinyl chloride	75-01-4	E611C/VA	0.40	µg/L		<0.40	----	----	----	----
Volatile Organic Compounds [Fuels]										
Benzene	71-43-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Ethylbenzene	100-41-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Styrene	100-42-5	E611C/VA	0.50	µg/L		0.50	----	----	----	----
Toluene	108-88-3	E611C/VA	0.40	µg/L		<0.40	----	----	----	----
Xylene, m+p-	179601-23-1	E611C/VA	0.40	µg/L		<0.40	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	17-Sep-2024 12:28	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C4468-001	--------	--------	--------	--------
						Result	----	----	----	----
Volatile Organic Compounds [Fuels]										
Xylene, o-	95-47-6	E611C/VA	0.30	µg/L		<0.30	----	----	----	----
Xylenes, total	1330-20-7	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Volatile Organic Compounds [THMs]										
Bromodichloromethane	75-27-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Bromoform	75-25-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Chloroform	67-66-3	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dibromochloromethane	124-48-1	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Hydrocarbons										
EPH (C10-C19)	----	E601A/VA	250	µg/L		<250	----	----	----	----
EPH (C19-C32)	----	E601A/VA	250	µg/L		<250	----	----	----	----
VHw (C6-C10)	----	E581.VH+F1/VA	100	µg/L		<100	----	----	----	----
HEPHw	----	EC600A/VA	250	µg/L		<250	----	----	----	----
LEPHw	----	EC600A/VA	250	µg/L		<250	----	----	----	----
VPHw	----	EC580A/VA	100	µg/L		<100	----	----	----	----
Hydrocarbons Surrogates										
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	1.0	%		81.9	----	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%		92.3	----	----	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%		98.9	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611C/VA	1.0	%		99.7	----	----	----	----
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	83-32-9	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Acenaphthylene	208-96-8	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Acridine	260-94-6	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Anthracene	120-12-7	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Benz(a)anthracene	56-55-3	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Benzo(a)pyrene	50-32-8	E641A/VA	0.0050	µg/L		<0.0050	----	----	----	----
Benzo(b+j)fluoranthene	n/a	E641A/VA	0.010	µg/L		<0.010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	17-Sep-2024 12:28	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C4468-001	--------	--------	--------	--------
						Result	----	----	----	----
Polycyclic Aromatic Hydrocarbons										
Benzo(b+j+k)fluoranthene	n/a	E641A/VA	0.015	µg/L		<0.015	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Benzo(k)fluoranthene	207-08-9	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Chrysene	218-01-9	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	E641A/VA	0.0050	µg/L		<0.0050	----	----	----	----
Fluoranthene	206-44-0	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Fluorene	86-73-7	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Methylnaphthalene, 1-	90-12-0	E641A/VA	0.010	µg/L		0.083	----	----	----	----
Methylnaphthalene, 2-	91-57-6	E641A/VA	0.010	µg/L		0.065	----	----	----	----
Naphthalene	91-20-3	E641A/VA	0.050	µg/L		<0.050	----	----	----	----
Phenanthrene	85-01-8	E641A/VA	0.020	µg/L		<0.020	----	----	----	----
Pyrene	129-00-0	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Quinoline	91-22-5	E641A/VA	0.050	µg/L		<0.050	----	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Chrysene-d12	1719-03-5	E641A/VA	0.1	%		90.9	----	----	----	----
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%		101	----	----	----	----
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%		97.5	----	----	----	----
Glycols										
Diethylene glycol	111-46-6	E680E/VA	5.0	mg/L		<5.0	----	----	----	----
Ethylene glycol	107-21-1	E680E/VA	5.0	mg/L		<5.0	----	----	----	----
Propylene glycol, 1,2-	57-55-6	E680E/VA	5.0	mg/L		<5.0	----	----	----	----
Triethylene glycol	112-27-6	E680E/VA	5.0	mg/L		<5.0	----	----	----	----
Glycols, total (EG+DEG+PG)	----	E680E/VA	10	mg/L		<10	----	----	----	----
Glycols Surrogates										
Propanediol, 1,3-	504-63-2	E680E/VA	1.0	%		101	----	----	----	----

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

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

ALS Canada Ltd.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24C4468**	Page	: 1 of 14
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project	: 11964	Date Samples Received	: 17-Sep-2024 17:30
PO	: 11964-Task 30-Phase 3C-4C	Issue Date	: 27-Sep-2024 06:42
C-O-C number	: ----		
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

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

Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) WLNG EOP	E562	17-Sep-2024	21-Sep-2024	28 days	4 days	✓	21-Sep-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG EOP	E298	17-Sep-2024	22-Sep-2024	28 days	5 days	✓	24-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG EOP	E235.Br-L	17-Sep-2024	19-Sep-2024	28 days	2 days	✓	19-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG EOP	E235.Cl	17-Sep-2024	19-Sep-2024	28 days	2 days	✓	19-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG EOP	E235.F	17-Sep-2024	19-Sep-2024	28 days	2 days	✓	19-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG EOP	E235.NO3-L	17-Sep-2024	19-Sep-2024	3 days	2 days	✓	19-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG EOP	E235.NO2-L	17-Sep-2024	19-Sep-2024	3 days	2 days	✓	19-Sep-2024	3 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG EOP	E235.SO4	17-Sep-2024	19-Sep-2024	28 days	2 days	✓	19-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WLNG EOP	E366	17-Sep-2024	22-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) WLNG EOP	E372-U	17-Sep-2024	22-Sep-2024	28 days	5 days	✓	23-Sep-2024	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved) WLNG EOP	E509	17-Sep-2024	25-Sep-2024	28 days	8 days	✓	25-Sep-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) WLNG EOP	E421	17-Sep-2024	18-Sep-2024	180 days	1 days	✓	19-Sep-2024	180 days	2 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved) WLNG EOP	EF001	17-Sep-2024	----	----	----		20-Sep-2024	----	3 days	
Glycols : Glycols (4 analytes) by GC-FID										
Glass vial WLNG EOP	E680E	17-Sep-2024	19-Sep-2024	7 days	2 days	✓	20-Sep-2024	40 days	1 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) WLNG EOP	E601A	17-Sep-2024	25-Sep-2024	14 days	8 days	✓	25-Sep-2024	40 days	0 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate) WLNG EOP	E581.VH+F1	17-Sep-2024	24-Sep-2024	14 days	7 days	✓	24-Sep-2024	14 days	7 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) WLNG EOP	E358-L	17-Sep-2024	22-Sep-2024	28 days	5 days	✓	22-Sep-2024	28 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WLNG EOP	E290	17-Sep-2024	19-Sep-2024	14 days	2 days	✓	20-Sep-2024	14 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE WLNG EOP	E162	17-Sep-2024	----	----	----		23-Sep-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WLNG EOP	E160	17-Sep-2024	----	----	----		23-Sep-2024	7 days	6 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate) WLNG EOP	E641A	17-Sep-2024	25-Sep-2024	14 days	8 days	✓	25-Sep-2024	40 days	0 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide) WLNG EOP	E532	17-Sep-2024	----	----	----		20-Sep-2024	28 days	3 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved) WLNG EOP	E508	17-Sep-2024	25-Sep-2024	28 days	8 days	✓	25-Sep-2024	28 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) WLNG EOP	E420	17-Sep-2024	23-Sep-2024	180 days	6 days	✓	25-Sep-2024	180 days	8 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) WLNG EOP	E395	17-Sep-2024	----	----	----		19-Sep-2024	7 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
WLNG EOP	E611C	17-Sep-2024	24-Sep-2024	14 days	7 days	✓	24-Sep-2024	14 days	7 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	1661013	1	10	10.0	5.0	✓
Ammonia by Fluorescence	E298	1666174	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1661018	1	5	20.0	5.0	✓
Chloride in Water by IC	E235.Cl	1661016	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1671933	1	1	100.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1658588	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1666175	1	5	20.0	5.0	✓
Fluoride in Water by IC	E235.F	1661017	1	8	12.5	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1661246	1	2	50.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1661019	1	13	7.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1661020	1	13	7.6	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1665391	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1661015	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1668040	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1662683	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1671218	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1664010	1	18	5.5	5.0	✓
Total Nitrogen by Colourimetry	E366	1666176	1	12	8.3	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1666177	1	7	14.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1660216	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	1668031	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1668642	1	19	5.2	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1668643	1	7	14.2	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1661013	1	10	10.0	5.0	✓
Ammonia by Fluorescence	E298	1666174	1	17	5.8	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1671111	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1661018	1	5	20.0	5.0	✓
Chloride in Water by IC	E235.Cl	1661016	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1671933	1	1	100.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1658588	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1666175	1	5	20.0	5.0	✓
Fluoride in Water by IC	E235.F	1661017	1	8	12.5	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1661246	1	2	50.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1661019	1	13	7.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1661020	1	13	7.6	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
PAHs in Water by Hexane LVI GC-MS	E641A	1671112	1	14	7.1	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1665391	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1661015	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1668040	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1662683	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1671218	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1664010	1	18	5.5	5.0	✓
Total Nitrogen by Colourimetry	E366	1666176	1	12	8.3	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1666177	1	7	14.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1660216	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	1668031	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1668642	1	19	5.2	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1668643	1	7	14.2	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1661013	1	10	10.0	5.0	✓
Ammonia by Fluorescence	E298	1666174	1	17	5.8	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1671111	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1661018	1	5	20.0	5.0	✓
Chloride in Water by IC	E235.Cl	1661016	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1671933	1	1	100.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1658588	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1666175	1	5	20.0	5.0	✓
Fluoride in Water by IC	E235.F	1661017	1	8	12.5	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1661246	1	2	50.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1661019	1	13	7.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1661020	1	13	7.6	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1671112	1	14	7.1	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1665391	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1661015	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1668040	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1662683	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1671218	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1664010	1	18	5.5	5.0	✓
Total Nitrogen by Colourimetry	E366	1666176	1	12	8.3	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1666177	1	7	14.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1660216	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	1668031	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1668642	1	19	5.2	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1668643	1	7	14.2	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)							
Ammonia by Fluorescence	E298	1666174	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1661018	1	5	20.0	5.0	✓
Chloride in Water by IC	E235.Cl	1661016	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1671933	0	1	0.0	5.0	✗
Dissolved Metals in Water by CRC ICPMS	E421	1658588	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1666175	1	5	20.0	5.0	✓
Fluoride in Water by IC	E235.F	1661017	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1661019	1	13	7.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1661020	1	13	7.6	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1665391	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1661015	1	18	5.5	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1662683	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1671218	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1664010	1	18	5.5	5.0	✓
Total Nitrogen by Colourimetry	E366	1666176	1	12	8.3	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1666177	1	7	14.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1660216	1	3	33.3	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1668642	1	19	5.2	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1668643	1	7	14.2	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 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 - Waterloo	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.
Phenols (4AAP) in Water by Colorimetry	E562 ALS Environmental - Edmonton	Water	EPA 9066	This automated method is based on the distillation of phenol and subsequent reaction of the distillate with alkaline ferricyanide ($K_3Fe(CN)_6$) and 4-amino-antipyrine (4-AAP) to form a red complex which is measured colorimetrically.
VH and F1 by Headspace GC-FID	E581.VH+F1 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 $CaCO_3$), 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.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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 - Waterloo	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
VPH: VH-BTEX-Styrene	EC580A 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
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.
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.
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.

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QUALITY CONTROL REPORT

Work Order	: **VA24C4468**	Page	: 1 of 23
Client	: Triton Environmental Consultants Ltd.	Laboratory	
Contact		Account Manager	
Address		Address	: Burnaby, British Columbia Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: 11964	Date Samples Received	: 17-Sep-2024 17:30
PO	: 11964-Task 30-Phase 3C-4C	Date Analysis Commenced	: 18-Sep-2024
C-O-C number	: ----	Issue Date	: 27-Sep-2024 06:42
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- 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 Organics, Burnaby, British Columbia
		Edmonton Inorganics, Edmonton, Alberta
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Organics, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Waterloo Inorganics, Waterloo, Ontario
		Waterloo Metals, Waterloo, Ontario
		Vancouver Administration, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		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: 1661013)											
VA24C4552-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	7.8	7.7	0.1	Diff <2x LOR	----
Physical Tests (QC Lot: 1668031)											
FJ2402818-003	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	4.0	5.2	1.2	Diff <2x LOR	----
Physical Tests (QC Lot: 1668040)											
FJ2402818-003	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	1190	1130	5.60%	20%	----
Anions and Nutrients (QC Lot: 1661015)											
VA24C4468-001	WLNG EOP	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	6.67	6.63	0.600%	20%	----
Anions and Nutrients (QC Lot: 1661016)											
VA24C4468-001	WLNG EOP	Chloride	16887-00-6	E235.Cl	0.50	mg/L	2.50	2.50	0.009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1661017)											
VA24C4468-001	WLNG EOP	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.233	0.231	0.536%	20%	----
Anions and Nutrients (QC Lot: 1661018)											
VA24C4468-001	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: 1661019)											
VA24C4468-001	WLNG EOP	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0342	0.0327	0.0015	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1661020)											
VA24C4468-001	WLNG EOP	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0068	0.0069	0.00003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1666174)											
VA24C4468-001	WLNG EOP	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0370	0.0372	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1666176)											
VA24C4470-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.300	mg/L	7.63	7.76	1.62%	20%	----
Anions and Nutrients (QC Lot: 1666177)											
VA24C4468-001	WLNG EOP	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0072	0.0072	0.00009	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1666175)											
VA24C4468-001	WLNG EOP	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.14	1.16	0.02	Diff <2x LOR	----
Total Sulfides (QC Lot: 1660216)											
VA24C4468-001	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: 1664010)											
KS2403720-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0100	mg/L	0.0178	0.0156	0.0022	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 1664010) - continued											
KS2403720-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00412	0.00407	1.19%	20%	----
		Barium, total	7440-39-3	E420	0.0200	mg/L	0.0339	0.0328	0.00119	Diff <2x LOR	----
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.100	mg/L	0.126	0.125	0.0004	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	55.2	54.5	1.36%	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	0.00200	mg/L	<0.00200	<0.00200	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00010	0.00011	0.000006	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00100	mg/L	0.00954	0.00915	0.00039	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.030	mg/L	<0.030	<0.030	0	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0017	0.0017	0.00004	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.100	mg/L	45.9	44.6	2.74%	20%	----
		Manganese, total	7439-96-5	E420	0.00200	mg/L	0.00565	0.00545	0.00020	Diff <2x LOR	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00444	0.00438	1.47%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.00148	0.00140	0.00007	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	0.777	0.755	2.92%	20%	----
		Potassium, total	7440-09-7	E420	0.100	mg/L	4.35	4.43	1.93%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00163	0.00150	0.00012	Diff <2x LOR	----
		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	14.1	13.7	2.72%	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	2.00	mg/L	108	105	2.42%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	1.65	1.64	0.846%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	12.2	11.8	2.82%	20%	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	0.00023	0.00022	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	0.00030	mg/L	0.00071	0.00059	0.00012	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	0.000100	mg/L	0.00638	0.00631	1.13%	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: 1664010) - continued											
KS2403720-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.0313	0.0309	1.16%	20%	----
		Zinc, total	7440-66-6	E420	0.0500	mg/L	0.0917	0.0884	0.0034	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	0.00032	0.00030	0.00002	Diff <2x LOR	----
Total Metals (QC Lot: 1671218)											
FJ2402799-005	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1658588)											
YL2401483-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0049	0.0048	0.0001	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00038	0.00037	0.000008	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00067	0.00060	0.00007	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0341	0.0332	2.67%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.922	0.959	3.91%	20%	----
		Cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	<0.0000100	<0.0000100	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	269	273	1.52%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000127	0.000127	0.0934%	20%	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00048	0.00048	0.000002	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00152	0.00150	0.00002	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.021	0.021	0.00002	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0734	0.0734	0.000270%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	69.9	70.8	1.16%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0341	0.0331	2.90%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0549	0.0552	0.438%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0232	0.0233	0.444%	20%	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	12.4	12.5	0.878%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.0281	0.0281	0.146%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000329	0.000302	0.000028	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.70	4.68	0.370%	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	266	267	0.518%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	5.53	5.47	1.14%	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: 1658588) - continued											
YL2401483-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	141	142	0.934%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	0.00029	0.00033	0.00003	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000032	0.000032	0.0000001	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	0.00060	0.00061	0.000006	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0187	0.0198	5.72%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1671933)											
VA24C4468-001	WLNG EOP	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1662683)											
HA2402244-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 1665391)											
SK2405139-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1668643)											
VA24C4468-001	WLNG EOP	Benzene	71-43-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Carbon tetrachloride	56-23-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloromethane	74-87-3	E611C	5.0	µg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Volatile Organic Compounds (QC Lot: 1668643) - continued											
VA24C4468-001	WLNG EOP	Dichloroethylene, trans-1,2-	156-60-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E611C	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Styrene	100-42-5	E611C	0.50	µg/L	0.50	<0.50	0.005	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	1.21	1.17	0.04	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: 1668642)											
VA24C4468-001	WLNG EOP	VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----
Glycols (QC Lot: 1661246)											
VA24C4468-001	WLNG EOP	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: 1661013)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1668031)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1668040)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1661015)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1661016)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1661017)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1661018)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1661019)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1661020)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1666174)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1666176)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1666177)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1666175)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1660216)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1664010)						
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: 1664010) - continued						
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1671218)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1658588)						
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: 1658588) - 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: 1671933)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1662683)						
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	<0.00050	----
Aggregate Organics (QCLot: 1665391)						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
Volatile Organic Compounds (QCLot: 1668643)						
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1668643) - continued						
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	<0.50	----
Styrene	100-42-5	E611C	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	<0.20	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	<0.50	----
Toluene	108-88-3	E611C	0.4	µg/L	<0.40	----
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	<0.50	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	<0.50	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	<0.50	----
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	<0.50	----
Vinyl chloride	75-01-4	E611C	0.4	µg/L	<0.40	----
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	<0.40	----
Xylene, o-	95-47-6	E611C	0.3	µg/L	<0.30	----
Hydrocarbons (QCLot: 1668642)						
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----
Hydrocarbons (QCLot: 1671111)						
EPH (C10-C19)	----	E601A	250	µg/L	<250	----
EPH (C19-C32)	----	E601A	250	µg/L	<250	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1671112)						
Acenaphthene	83-32-9	E641A	0.01	µg/L	<0.010	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	<0.010	----
Acridine	260-94-6	E641A	0.01	µg/L	<0.010	----
Anthracene	120-12-7	E641A	0.01	µg/L	<0.010	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	<0.010	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	<0.0050	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	<0.010	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	<0.010	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	<0.010	----
Chrysene	218-01-9	E641A	0.01	µg/L	<0.010	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	<0.0050	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	<0.010	----
Fluorene	86-73-7	E641A	0.01	µg/L	<0.010	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	<0.010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1671112) - continued						
Naphthalene	91-20-3	E641A	0.05	µg/L	<0.050	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	<0.020	----
Pyrene	129-00-0	E641A	0.01	µg/L	<0.010	----
Quinoline	91-22-5	E641A	0.05	µg/L	<0.050	----
Glycols (QCLot: 1661246)						
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: 1661013)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	100	85.0	115	----
Physical Tests (QCLot: 1668031)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	87.3	85.0	115	----
Physical Tests (QCLot: 1668040)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1661015)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1661016)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1661017)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1661018)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1661019)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1661020)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1666174)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1666176)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1666177)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	92.7	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1666175)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	101	80.0	120	----
Total Sulfides (QCLot: 1660216)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	102	80.0	120	----
Total Metals (QCLot: 1664010)									

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: 1664010) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	104	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	100	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	108	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	99.3	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	97.8	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	95.5	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	109	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	102	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	102	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	101	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	108	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	99.3	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	99.9	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	104	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	105	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	101	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	106	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	106	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	106	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	92.2	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	105	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	103	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	95.6	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	103	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	98.2	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	97.3	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	100	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	96.4	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	96.2	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 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
Total Metals (QCLot: 1664010) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	110	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	99.1	80.0	120	----
Total Metals (QCLot: 1671218)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	92.6	80.0	120	----
Dissolved Metals (QCLot: 1658588)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	102	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	100	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	99.9	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	96.9	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	103	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	92.2	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	98.7	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	99.9	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	97.4	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	101	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	99.4	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	99.7	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	98.5	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	98.3	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	99.2	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	99.9	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	105	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	93.1	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	95.4	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	97.9	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	105	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	93.9	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	99.7	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	99.7	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	88.9	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: 1658588) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	96.8	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	97.9	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.1	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	99.6	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	101	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	94.1	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	98.1	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	97.4	80.0	120	----
Speciated Metals (QCLot: 1662683)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.025 mg/L	95.8	80.0	120	----
Aggregate Organics (QCLot: 1665391)									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	95.2	85.0	115	----
Volatile Organic Compounds (QCLot: 1668643)									
Benzene	71-43-2	E611C	0.5	µg/L	100 µg/L	94.0	70.0	130	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	100 µg/L	95.6	70.0	130	----
Bromoform	75-25-2	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	100 µg/L	91.9	70.0	130	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	100 µg/L	98.3	70.0	130	----
Chloroethane	75-00-3	E611C	0.5	µg/L	100 µg/L	99.2	60.0	140	----
Chloroform	67-66-3	E611C	0.5	µg/L	100 µg/L	97.0	70.0	130	----
Chloromethane	74-87-3	E611C	5	µg/L	100 µg/L	85.4	60.0	140	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	100 µg/L	98.9	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	100 µg/L	97.3	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	100 µg/L	96.8	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	100 µg/L	99.2	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	100 µg/L	96.8	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	100 µg/L	99.6	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	100 µg/L	87.6	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	100 µg/L	94.3	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	100 µg/L	87.6	70.0	130	----

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
Volatile Organic Compounds (QCLot: 1668643) - continued									
Dichloromethane	75-09-2	E611C	1	µg/L	100 µg/L	95.5	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	100 µg/L	100	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	100 µg/L	98.1	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	100 µg/L	100	70.0	130	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	100 µg/L	98.7	70.0	130	----
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	97.1	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	100 µg/L	98.1	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	100 µg/L	96.2	70.0	130	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	100 µg/L	93.0	70.0	130	----
Toluene	108-88-3	E611C	0.4	µg/L	100 µg/L	96.0	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	100 µg/L	95.0	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	100 µg/L	99.3	70.0	130	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	100 µg/L	94.4	70.0	130	----
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	100 µg/L	89.7	60.0	140	----
Vinyl chloride	75-01-4	E611C	0.4	µg/L	100 µg/L	87.7	60.0	140	----
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	200 µg/L	99.4	70.0	130	----
Xylene, o-	95-47-6	E611C	0.3	µg/L	100 µg/L	98.3	70.0	130	----
Hydrocarbons (QCLot: 1668642)									
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	87.8	70.0	130	----
Hydrocarbons (QCLot: 1671111)									
EPH (C10-C19)	----	E601A	250	µg/L	6490 µg/L	114	70.0	130	----
EPH (C19-C32)	----	E601A	250	µg/L	3360 µg/L	115	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1671112)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.5 µg/L	120	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.5 µg/L	125	60.0	130	----
Acridine	260-94-6	E641A	0.01	µg/L	0.5 µg/L	123	60.0	130	----
Anthracene	120-12-7	E641A	0.01	µg/L	0.5 µg/L	129	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.5 µg/L	112	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	0.5 µg/L	117	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	0.5 µg/L	116	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.5 µg/L	130	60.0	130	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	0.5 µg/L	118	60.0	130	----
Chrysene	218-01-9	E641A	0.01	µg/L	0.5 µg/L	122	60.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1671112) - continued									
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	0.5 µg/L	113	60.0	130	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	0.5 µg/L	128	60.0	130	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.5 µg/L	122	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.5 µg/L	102	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.5 µg/L	114	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.5 µg/L	122	60.0	130	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.5 µg/L	123	50.0	130	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	0.5 µg/L	128	60.0	130	----
Pyrene	129-00-0	E641A	0.01	µg/L	0.5 µg/L	125	60.0	130	----
Quinoline	91-22-5	E641A	0.05	µg/L	0.5 µg/L	111	60.0	130	----
Glycols (QCLot: 1661246)									
Diethylene glycol	111-46-6	E680E	5	mg/L	25 mg/L	107	70.0	130	----
Ethylene glycol	107-21-1	E680E	5	mg/L	25 mg/L	107	70.0	130	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	25 mg/L	108	70.0	130	----
Triethylene glycol	112-27-6	E680E	5	mg/L	25 mg/L	107	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: 1661015)										
VA24C4535-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	103 mg/L	100 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1661016)										
VA24C4535-001	Anonymous	Chloride	16887-00-6	E235.Cl	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1661017)										
VA24C4535-001	Anonymous	Fluoride	16984-48-8	E235.F	1.01 mg/L	1 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1661018)										
VA24C4535-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.516 mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1661019)										
VA24C4535-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.55 mg/L	2.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1661020)										
VA24C4535-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.515 mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1666174)										
VA24C4470-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1666176)										
VA24C4470-002	Anonymous	Nitrogen, total	7727-37-9	E366	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1666177)										
VA24C4470-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0474 mg/L	0.05 mg/L	94.8	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1666175)										
VA24C4659-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	5.05 mg/L	5 mg/L	101	70.0	130	----
Total Sulfides (QCLot: 1660216)										
VA24C4571-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.206 mg/L	0.2 mg/L	103	75.0	125	----
Total Metals (QCLot: 1664010)										
VA24C4014-001	Anonymous	Aluminum, total	7429-90-5	E420	0.195 mg/L	0.2 mg/L	97.5	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0190 mg/L	0.02 mg/L	94.8	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0207 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	0.0373 mg/L	0.04 mg/L	93.3	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00932 mg/L	0.01 mg/L	93.2	70.0	130	----
		Boron, total	7440-42-8	E420	ND mg/L	----	ND	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00384 mg/L	0.004 mg/L	96.0	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00974 mg/L	0.01 mg/L	97.4	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0384 mg/L	0.04 mg/L	96.1	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: 1664010) - continued										
VA24C4014-001	Anonymous	Cobalt, total	7440-48-4	E420	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		Copper, total	7440-50-8	E420	0.0187 mg/L	0.02 mg/L	93.5	70.0	130	----
		Iron, total	7439-89-6	E420	1.90 mg/L	2 mg/L	95.1	70.0	130	----
		Lead, total	7439-92-1	E420	0.0187 mg/L	0.02 mg/L	93.5	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0917 mg/L	0.1 mg/L	91.7	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	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0387 mg/L	0.04 mg/L	96.7	70.0	130	----
		Phosphorus, total	7723-14-0	E420	9.46 mg/L	10 mg/L	94.6	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	----	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0189 mg/L	0.02 mg/L	94.3	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0420 mg/L	0.04 mg/L	105	70.0	130	----
		Silicon, total	7440-21-3	E420	8.96 mg/L	10 mg/L	89.6	70.0	130	----
		Silver, total	7440-22-4	E420	0.00377 mg/L	0.004 mg/L	94.3	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	----	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	ND mg/L	----	ND	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0397 mg/L	0.04 mg/L	99.2	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00366 mg/L	0.004 mg/L	91.4	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0196 mg/L	0.02 mg/L	98.2	70.0	130	----
		Tin, total	7440-31-5	E420	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0375 mg/L	0.04 mg/L	93.6	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0183 mg/L	0.02 mg/L	91.7	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	0.0985 mg/L	0.1 mg/L	98.5	70.0	130	----
		Zinc, total	7440-66-6	E420	0.390 mg/L	0.4 mg/L	97.5	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0389 mg/L	0.04 mg/L	97.2	70.0	130	----
Total Metals (QCLot: 1671218)										
KS2403720-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000962 mg/L	0 mg/L	96.2	70.0	130	----
Dissolved Metals (QCLot: 1658588)										
VA24C4468-001	WLNG EOP	Aluminum, dissolved	7429-90-5	E421	0.193 mg/L	0.2 mg/L	96.5	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0387 mg/L	0.04 mg/L	96.9	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00953 mg/L	0.01 mg/L	95.3	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.086 mg/L	0.1 mg/L	86.0	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00379 mg/L	0.004 mg/L	94.7	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00944 mg/L	0.01 mg/L	94.4	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0377 mg/L	0.04 mg/L	94.4	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1658588) - continued										
VA24C4468-001	WLNG EOP	Copper, dissolved	7440-50-8	E421	0.0188 mg/L	0.02 mg/L	93.8	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.89 mg/L	2 mg/L	94.5	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0189 mg/L	0.02 mg/L	94.3	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0951 mg/L	0.1 mg/L	95.1	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	ND mg/L	----	ND	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0378 mg/L	0.04 mg/L	94.5	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	9.56 mg/L	10 mg/L	95.6	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.58 mg/L	4 mg/L	89.5	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0178 mg/L	0.02 mg/L	89.1	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0381 mg/L	0.04 mg/L	95.2	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.53 mg/L	10 mg/L	95.3	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00396 mg/L	0.004 mg/L	99.1	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	18.8 mg/L	20 mg/L	94.0	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0396 mg/L	0.04 mg/L	99.1	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00378 mg/L	0.004 mg/L	94.4	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0201 mg/L	0.02 mg/L	101	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0188 mg/L	0.02 mg/L	94.2	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0382 mg/L	0.04 mg/L	95.4	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00396 mg/L	0.004 mg/L	99.1	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0954 mg/L	0.1 mg/L	95.4	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.368 mg/L	0.4 mg/L	91.9	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
Speciated Metals (QCLot: 1662683)										
HA2402244-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----
Aggregate Organics (QCLot: 1665391)										
SK2405139-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0203 mg/L	0.02 mg/L	101	75.0	125	----
Volatile Organic Compounds (QCLot: 1668643)										
VA24C4565-017	Anonymous	Benzene	71-43-2	E611C	96.0 µg/L	100 µg/L	96.0	60.0	140	----
		Bromodichloromethane	75-27-4	E611C	97.8 µg/L	100 µg/L	97.8	60.0	140	----
		Bromoform	75-25-2	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Carbon tetrachloride	56-23-5	E611C	94.4 µg/L	100 µg/L	94.4	60.0	140	----
		Chlorobenzene	108-90-7	E611C	100 µg/L	100 µg/L	100	60.0	140	----
		Chloroethane	75-00-3	E611C	97.3 µg/L	100 µg/L	97.3	50.0	150	----
		Chloroform	67-66-3	E611C	99.4 µg/L	100 µg/L	99.4	60.0	140	----
		Chloromethane	74-87-3	E611C	79.8 µg/L	100 µg/L	79.8	50.0	150	----
		Dibromochloromethane	124-48-1	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	99.6 µg/L	100 µg/L	99.6	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	96.9 µg/L	100 µg/L	96.9	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: 1668643) - continued										
VA24C4565-017	Anonymous	Dichlorobenzene, 1,4-	106-46-7	E611C	99.3 µg/L	100 µg/L	99.3	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611C	97.8 µg/L	100 µg/L	97.8	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611C	99.2 µg/L	100 µg/L	99.2	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611C	88.3 µg/L	100 µg/L	88.3	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	95.6 µg/L	100 µg/L	95.6	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611C	88.1 µg/L	100 µg/L	88.1	60.0	140	----
		Dichloromethane	75-09-2	E611C	95.0 µg/L	100 µg/L	95.0	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	100 µg/L	100 µg/L	100	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Ethylbenzene	100-41-4	E611C	100 µg/L	100 µg/L	100	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	105 µg/L	100 µg/L	105	60.0	140	----
		Styrene	100-42-5	E611C	99.9 µg/L	100 µg/L	99.9	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	96.2 µg/L	100 µg/L	96.2	60.0	140	----
		Tetrachloroethylene	127-18-4	E611C	93.5 µg/L	100 µg/L	93.5	60.0	140	----
		Toluene	108-88-3	E611C	96.7 µg/L	100 µg/L	96.7	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	97.6 µg/L	100 µg/L	97.6	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	100 µg/L	100 µg/L	100	60.0	140	----
		Trichloroethylene	79-01-6	E611C	97.0 µg/L	100 µg/L	97.0	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611C	89.5 µg/L	100 µg/L	89.5	50.0	150	----
		Vinyl chloride	75-01-4	E611C	83.7 µg/L	100 µg/L	83.7	50.0	150	----
		Xylene, m+p-	179601-23-1	E611C	204 µg/L	200 µg/L	102	60.0	140	----
		Xylene, o-	95-47-6	E611C	101 µg/L	100 µg/L	101	60.0	140	----
Hydrocarbons (QCLot: 1668642)										
VA24C4565-016	Anonymous	VHw (C6-C10)	----	E581.VH+F1	5000 µg/L	6310 µg/L	79.3	60.0	140	----

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 -

Page of

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Report To	Contact and company name below will appear on the final report
Company:	Triton Environmental
Contact:	
Phone:	
Street:	
City/Province:	Vancouver/BC
Postal Code:	V6E 4M3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	
Contact:	

Reports / Recipients

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

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

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

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Turnaround Time (TAT) Requested

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

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

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

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

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

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

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

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm 2024

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

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	VA23-TRIT100-012	AFE/Cost Center:	PO#
Job #:	11964	Major/Minor Code:	Routing Code:
PO / AFE:	11964 - Task 30 - Phase 3C-4C	Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (ALS use only):		ALS Contact: Can Dang	Sampler:

Analysis Request

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

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Total metals + mercury (F)	Dissolved metals + mercury (F)	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) (P*)	Nutrients (ammonia, ammonium, total nitrogen, total phosphorus, phenols) (P)	VOC/VPH (P)	EPH, PAH, LEPH/HEPH (P)	DOC (F/P)	Glycols	General parameters (alkalinity)			SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	WLNG EOP	17-Sep-24	12:28	Water	15	R	R	R	R	R	R	R	R	R	R	R	R					
	pH: 7.06 cond: 171 µS/cm temp: 16.1°C																					
	~~Duplicate~~			~~Water~~	~~15~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~					

Environmental Division
Vancouver
Work Order Reference
VA24C4468

Telephone : +1 604 253 4188

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

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

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

Dissolved metals, mercury, and nutrients not field filtered. Preservatives were rinsed out.

ESDAT EDD to ESdat_CA+tritonenv@ESdatLabSync.net

SAMPLE RECEIPT DETAILS (ALS use only)

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

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

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

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				12			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by:	Date: 17 Sept 24	Time: 17:21	Received by:	Date:	Time:	Received by: RJ	Date: Sep-17	Time: 17:30

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

AUG 2020 FRONT

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

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

Woodfibre Site WTP Discharge Field Notes and Logs

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-9-17-Chycoski-8A027

Project Component:	Tunnel	**Site Name:**	WLNG Treatment Discharge
Inspection Date:	09/17/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.669178 -123.248156
Temperature(c):	Low 13 High 18	**Permit:**	PE 110136
Weather Conditions:	Overcast	**Ground Conditions:**	Dry

Observations

Time: 12:28:00 **Flow Volume (visual):** N/A

Notes: Dissolved bottles were not field filtered. Preservatives were rinsed out.

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:**	No
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

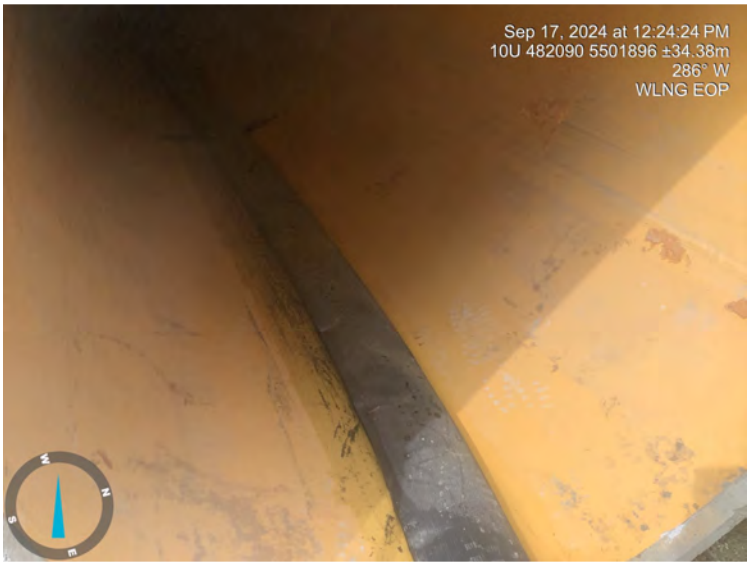

Photo: 1

Location: WLNG EOP

Description: US view

Photo: 2

Location: WLNG EOP

Description: Across view

Photos

Photo: 3

Location: WLNG EOP

Description: DS view

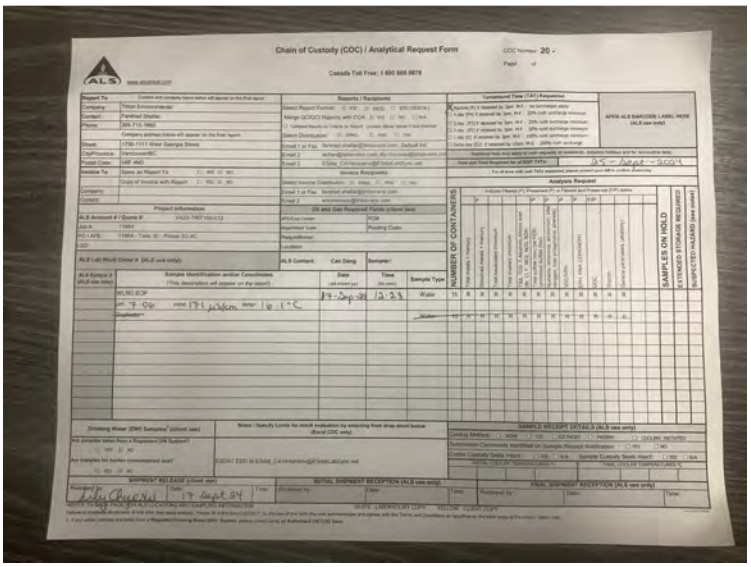

Photo: 4

Location: WLNG EOP

Description: Lab COC

2024-9-17-Chycoski-8A027

Photos

Photo: 5

Location: WLNG EOP

Description: LC50 lab COC

Sign Off

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

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Table of Contents:

Appendices:

1. Executive Summary and Field Notes:

The discharged water consistently remained within regulatory guidelines. The turbidity as measured in NTUs met both short-term and long-term standards. Other key parameters including temperature, pH, salinity, conductivity, and oxidation-reduction potential (ORP), were monitored throughout the discharge process and remained within the prescribed limits. All relevant parameters were measured using YSI instruments and WTP probes. The total discharge volume up to September 16th was 5738 m³.

Daily Volume Summary:

Table 1: Discharge Volumes Daily Summary

Date	Location	Volume (m3)	Comments
September 16	WoodFibre (WF)	94	None
September 17	WF	290	None
September 18	WF	145	None
September 19	WF	241	None
September 20	WF	353	None
September 21	WF	309	None
September 22	WF	378	None
	Total	1810	None

2. Discharge Parameter Summary:

Table 2: Discharge Parameter Summary

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/16/2024	3:45:00	7.1	0.04	1.7	5741.02	16.3	264
9/16/2024	4:00:00	7.1	0.04	1.5	5747.11	16.3	266
9/16/2024	4:15:00	7.1	0.04	0.9	5753.07	16.3	268
9/16/2024	7:30:00	7.6	0.03	4.4	5759.14	16.8	269
9/16/2024	7:45:00	7.6	0.03	4.2	5762.97	17.2	271
9/16/2024	8:00:00	7.5	0.00	3.6	5766.38	17.6	271
9/16/2024	8:15:00	7.5	0.03	4.5	5767.42	17.9	270
9/16/2024	8:30:00	7.5	0.03	3.9	5771.50	18.2	271
9/16/2024	8:45:00	7.5	0.03	3.7	5775.79	18.5	271
9/16/2024	9:00:00	7.5	0.00	3.8	5780.34	18.9	269
9/16/2024	9:15:00	7.5	0.04	3.9	5784.11	19	271
9/16/2024	9:30:00	7.5	0.04	3.6	5790.20	19.3	271
9/16/2024	9:45:00	7.5	0.04	3.5	5796.35	19.7	271
9/16/2024	10:00:00	7.5	0.00	3.7	5802.49	19.9	271
9/16/2024	10:15:00	7.5	0.04	3.8	5807.48	20	271
9/16/2024	10:30:00	7.6	0.04	3.7	5813.60	20.2	272
9/16/2024	10:45:00	7.7	0.04	3.5	5819.69	20.4	273
9/16/2024	11:00:00	7.8	0.03	1.3	5825.44	15.6	264
9/16/2024	11:15:00	7.8	0.04	1.8	5830.94	16	264
9/17/2024	4:45:00	7.2	0.05	23.1	5843.68	15.8	269

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/17/2024	5:00:00	7.2	0.05	13.2	5850.89	16	269
9/17/2024	5:15:00	7.3	0.04	12.9	5852.44	16.1	271
9/17/2024	5:30:00	7.3	0.04	12.9	5858.02	16.5	271
9/17/2024	5:45:00	7.3	0.00	12.9	5859.90	17	269
9/17/2024	7:45:00	7.0	0.02	12.4	5861.32	20	271
9/17/2024	8:00:00	7.0	0.03	12.7	5865.37	20.1	271
9/17/2024	8:15:00	7.0	0.04	11.8	5871.31	20.2	271
9/17/2024	8:30:00	7.0	0.04	13.3	5877.40	20.3	271
9/17/2024	8:45:00	7.0	0.03	12.9	5882.69	20.3	273
9/17/2024	9:00:00	7.6	0.06	21.7	5890.45	19.8	271
9/17/2024	11:30:00	7.3	0.04	17.1	5902.35	15.7	271
9/17/2024	11:45:00	7.2	0.04	17.4	5907.77	15.6	267
9/17/2024	12:00:00	7.1	0.04	17.5	5913.21	15.5	268
9/17/2024	12:15:00	7.1	0.05	17.6	5920.00	15.5	266
9/17/2024	12:30:00	7.1	0.04	16.9	5926.77	15.5	268
9/17/2024	12:45:00	7.1	0.04	15.7	5933.57	15.5	270
9/17/2024	13:00:00	7.2	0.06	13.9	5941.08	15.6	267
9/17/2024	13:15:00	7.3	0.06	13.3	5950.55	15.5	267
9/17/2024	13:30:00	7.3	0.06	11.5	5959.99	15.5	265
9/17/2024	13:45:00	7.3	0.05	25.6	5968.99	15.5	263
9/17/2024	14:00:00	7.1	0.06	9.5	5978.40	15.5	263
9/17/2024	14:15:00	7.2	0.08	7.6	5988.62	15.4	265
9/17/2024	14:30:00	7.3	0.05	6.3	5999.61	15.3	259
9/17/2024	14:45:00	7.3	0.04	4.6	6006.36	15.3	262
9/17/2024	15:00:00	7.2	0.04	3.3	6013.16	15.3	262

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/17/2024	15:15:00	7.1	0.04	2.4	6019.97	15.3	262
9/17/2024	15:30:00	7.1	0.04	2.0	6026.73	15.3	262
9/17/2024	15:45:00	7.2	0.04	1.5	6033.54	15.3	262
9/17/2024	16:00:00	7.2	0.04	1.3	6040.34	15.3	262
9/17/2024	16:15:00	7.3	0.04	0.9	6047.11	15.3	263
9/17/2024	16:30:00	7.3	0.04	0.8	6053.91	15.3	262
9/17/2024	16:45:00	7.2	0.04	0.6	6060.72	15.2	260
9/17/2024	17:00:00	7.2	0.04	0.6	6067.48	15.2	264
9/17/2024	17:15:00	7.1	0.04	0.6	6074.27	15.2	264
9/17/2024	17:30:00	7.1	0.04	0.6	6080.94	15.2	264
9/17/2024	17:45:00	7.1	0.04	0.6	6087.61	15.2	263
9/17/2024	18:00:00	7.2	0.04	0.6	6094.20	15.1	263
9/17/2024	18:15:00	7.2	0.04	0.8	6100.67	15	263
9/17/2024	18:30:00	7.2	0.04	2.2	6107.30	15	262
9/17/2024	18:45:00	7.3	0.04	4.5	6112.71	14.9	261
9/17/2024	22:45:00	7.4	0.03	6.2	6114.10	14.9	264
9/17/2024	23:00:00	7.3	0.03	6.0	6118.83	15.2	264
9/17/2024	23:45:00	7.4	0.04	9.4	6122.58	16.3	264
9/18/2024	0:00:00	7.2	0.03	7.3	6125.19	14.7	264
9/18/2024	0:15:00	7.2	0.03	7.5	6129.27	14.7	266
9/18/2024	0:45:00	7.1	0.03	9.4	6134.93	14.6	267
9/18/2024	1:00:00	7.1	0.03	6.9	6139.42	14.7	267
9/18/2024	1:15:00	7.1	0.03	6.9	6144.22	14.7	264
9/18/2024	1:30:00	7.1	0.03	7.4	6149.29	14.8	264
9/18/2024	1:45:00	7.1	0.03	8.3	6154.34	14.8	265

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/18/2024	2:00:00	7.2	0.03	9.7	6159.41	14.8	265
9/18/2024	2:15:00	7.2	0.03	8.7	6164.28	14.8	263
9/18/2024	2:30:00	7.2	0.03	8.8	6169.14	14.8	264
9/18/2024	2:45:00	7.1	0.04	7.1	6172.46	14.8	262
9/18/2024	3:00:00	7.2	0.04	6.9	6177.91	14.8	264
9/18/2024	3:15:00	7.3	0.04	7.8	6183.35	14.8	264
9/18/2024	3:30:00	7.4	0.02	6.4	6188.59	14.8	264
9/18/2024	3:45:00	7.3	0.04	4.7	6193.94	14.8	264
9/18/2024	4:00:00	7.3	0.04	4.8	6199.39	14.7	264
9/18/2024	4:15:00	7.3	0.04	4.9	6204.83	14.7	264
9/18/2024	4:30:00	7.3	0.04	4.8	6210.24	14.6	263
9/18/2024	4:45:00	7.3	0.03	6.0	6215.65	14.5	263
9/18/2024	5:00:00	7.0	0.02	3.5	6218.07	14.6	266
9/18/2024	5:15:00	7.0	0.02	5.6	6221.45	14.5	266
9/18/2024	5:30:00	7.2	0.02	6.6	6224.85	14.5	262
9/18/2024	5:45:00	7.3	0.03	9.2	6228.71	14.5	264
9/18/2024	6:00:00	7.3	0.03	9.5	6232.77	14.4	264
9/18/2024	6:15:00	7.0	0.03	11.1	6236.86	14.5	266
9/18/2024	6:30:00	7.4	0.02	10.3	6239.46	14.9	264
9/18/2024	6:45:00	7.2	0.02	14.6	6243.41	14.4	264
9/18/2024	10:15:00	7.1	0.03	9.0	6248.24	15.1	265
9/18/2024	10:30:00	7.1	0.03	12.6	6252.97	15.2	264
9/18/2024	10:45:00	7.4	0.03	19.2	6257.74	15.3	266
9/18/2024	11:00:00	7.1	0.03	32.0	6262.50	15.5	264
9/18/2024	23:45:00	7.1	0.04	6.3	6267.72	15.9	268

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/19/2024	0:00:00	7.1	0.04	6.1	6273.13	16.1	269
9/19/2024	0:15:00	7.1	0.03	6.2	6278.58	16.3	271
9/19/2024	0:30:00	7.1	0.04	5.8	6284.02	16.5	271
9/19/2024	0:45:00	7.1	0.04	5.9	6289.43	16.7	273
9/19/2024	1:00:00	7.1	0.03	4.9	6294.88	16.8	273
9/19/2024	1:15:00	7.1	0.03	5.2	6300.32	16.9	271
9/19/2024	1:30:00	7.0	0.03	4.8	6305.73	17.1	271
9/19/2024	1:45:00	7.0	0.03	4.7	6311.17	17.2	271
9/19/2024	4:45:00	7.3	0.03	10.8	6316.27	15.2	262
9/19/2024	5:00:00	7.0	0.03	7.9	6321.17	15.2	266
9/19/2024	5:15:00	7.3	0.03	7.6	6326.29	15.2	264
9/19/2024	5:30:00	7.0	0.03	8.2	6331.68	15.2	266
9/19/2024	5:45:00	7.2	0.03	8.9	6337.09	15.2	266
9/19/2024	6:00:00	7.1	0.03	8.3	6342.45	15.2	267
9/19/2024	6:15:00	7.1	0.03	8.5	6347.85	15.2	266
9/19/2024	6:30:00	7.3	0.03	7.9	6353.19	15.3	264
9/19/2024	6:45:00	7.1	0.03	8.3	6358.43	15.3	264
9/19/2024	7:00:00	7.4	0.02	8.8	6363.72	15.3	263
9/19/2024	7:15:00	7.2	0.03	32.7	6365.02	15.4	262
9/19/2024	7:30:00	7.0	0.03	9.1	6365.89	15.3	267
9/19/2024	7:45:00	7.4	0.03	6.8	6370.66	15.3	262
9/19/2024	8:00:00	7.0	0.03	7.1	6375.42	15.3	263
9/19/2024	8:15:00	7.2	0.03	7.5	6380.16	15.3	263
9/19/2024	8:30:00	7.1	0.03	7.4	6384.92	15.3	265
9/19/2024	8:45:00	7.1	0.03	8.0	6389.68	15.2	267

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/19/2024	9:00:00	7.3	0.03	8.4	6394.42	15.2	262
9/19/2024	9:15:00	7.0	0.03	8.9	6399.18	15.3	266
9/19/2024	9:30:00	7.4	0.03	10.7	6404.01	15.3	264
9/19/2024	9:45:00	7.1	0.03	7.6	6409.38	15.3	263
9/19/2024	10:00:00	7.1	0.03	13.5	6414.77	15.8	265
9/19/2024	10:15:00	7.3	0.03	14.8	6420.17	15.6	265
9/19/2024	10:30:00	7.0	0.03	14.5	6425.52	15.7	264
9/19/2024	10:45:00	7.3	0.03	15.9	6430.90	15.7	265
9/19/2024	11:00:00	7.2	0.03	17.5	6436.22	15.7	262
9/19/2024	11:15:00	7.0	0.03	22.4	6441.40	15.8	262
9/19/2024	11:30:00	7.3	0.03	43.9	6446.74	15.7	262
9/19/2024	14:30:00	7.2	0.03	16.6	6455.20	16.8	262
9/19/2024	15:15:00	7.1	0.03	11.9	6458.32	17.1	266
9/19/2024	15:30:00	7.2	0.03	12.9	6463.08	17.2	266
9/19/2024	15:45:00	7.3	0.03	18.5	6467.81	17.3	264
9/19/2024	16:00:00	7.0	0.03	24.4	6472.57	17.5	268
9/19/2024	16:15:00	7.3	0.03	34.2	6477.33	17.5	264
9/19/2024	16:30:00	7.1	0.03	53.9	6482.07	17.6	266
9/19/2024	22:45:00	7.2	0.03	33.7	6486.99	16.2	269
9/19/2024	23:00:00	6.9	0.04	15.7	6492.42	15.8	269
9/19/2024	23:15:00	7.3	0.04	10.2	6498.52	15.8	268
9/19/2024	23:30:00	7.1	0.04	6.5	6503.96	15.6	268
9/19/2024	23:45:00	7.2	0.04	5.7	6509.41	15.6	266
9/20/2024	0:00:00	7.2	0.04	5.8	6514.85	15.5	266
9/20/2024	0:15:00	7.1	0.04	6.8	6520.26	15.5	266

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/20/2024	0:30:00	7.3	0.04	8.3	6525.71	15.5	264
9/20/2024	0:45:00	7.1	0.04	9.2	6531.15	15.5	267
9/20/2024	1:00:00	7.4	0.04	11.4	6536.56	15.4	265
9/20/2024	1:15:00	7.2	0.04	10.5	6542.00	15.6	264
9/20/2024	1:30:00	7.0	0.01	11.9	6543.85	15.7	268
9/20/2024	1:45:00	7.3	0.03	20.2	6548.65	15.2	264
9/20/2024	2:00:00	7.1	0.03	16.1	6553.42	15.1	264
9/20/2024	2:15:00	7.2	0.03	20.4	6558.68	15.1	266
9/20/2024	2:30:00	7.4	0.03	18.3	6563.58	15.1	262
9/20/2024	2:45:00	7.3	0.01	22.9	6567.84	15.8	263
9/20/2024	3:30:00	7.4	0.03	14.5	6570.88	15.1	263
9/20/2024	3:45:00	7.3	0.03	11.5	6574.96	15.5	261
9/20/2024	4:00:00	7.3	0.03	10.3	6579.02	15.8	262
9/20/2024	4:15:00	7.3	0.03	9.7	6583.10	16.1	261
9/20/2024	4:30:00	7.3	0.03	10.4	6587.18	16.4	262
9/20/2024	4:45:00	7.3	0.03	12.4	6591.16	16.6	263
9/20/2024	5:00:00	7.3	0.03	11.3	6595.25	16.8	263
9/20/2024	5:15:00	7.3	0.03	11.6	6599.33	17	261
9/20/2024	5:30:00	7.3	0.03	11.3	6603.39	17.2	261
9/20/2024	5:45:00	7.3	0.03	11.6	6607.47	17.3	261
9/20/2024	6:00:00	7.3	0.03	11.1	6611.55	17.4	262
9/20/2024	6:15:00	7.3	0.03	11.6	6615.61	17.6	263
9/20/2024	6:30:00	7.3	0.03	10.7	6619.69	17.6	262
9/20/2024	6:45:00	7.3	0.03	10.0	6623.61	17.8	261
9/20/2024	8:00:00	7.2	0.03	13.4	6625.10	14.7	255

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/20/2024	8:15:00	7.2	0.03	10.8	6629.87	15.1	255
9/20/2024	8:30:00	7.2	0.03	9.8	6634.60	15.5	256
9/20/2024	8:45:00	7.2	0.03	10.6	6639.37	15.8	256
9/20/2024	9:00:00	7.2	0.03	8.0	6644.13	16.1	256
9/20/2024	9:15:00	7.2	0.03	9.3	6648.87	16.5	257
9/20/2024	9:30:00	7.1	0.03	8.6	6653.63	16.7	257
9/20/2024	9:45:00	7.1	0.03	8.1	6658.39	17	255
9/20/2024	10:00:00	7.1	0.03	7.7	6663.13	17.2	255
9/20/2024	10:15:00	7.1	0.03	7.8	6667.89	17.5	256
9/20/2024	10:30:00	7.1	0.03	8.2	6672.65	17.7	255
9/20/2024	10:45:00	7.1	0.03	9.1	6677.39	17.9	255
9/20/2024	11:00:00	7.1	0.03	8.9	6682.15	18.1	255
9/20/2024	11:15:00	7.1	0.03	7.8	6686.91	18.3	255
9/20/2024	11:30:00	7.1	0.03	7.9	6691.65	18.4	253
9/20/2024	11:45:00	7.1	0.03	7.8	6696.41	18.6	254
9/20/2024	12:00:00	7.1	0.03	8.0	6701.18	18.8	254
9/20/2024	12:15:00	7.1	0.03	7.7	6705.91	18.9	253
9/20/2024	12:30:00	7.1	0.03	7.7	6710.68	19	254
9/20/2024	12:45:00	7.1	0.03	7.5	6715.44	19.2	256
9/20/2024	13:00:00	7.1	0.03	7.6	6720.17	19.4	256
9/20/2024	13:15:00	7.1	0.03	7.4	6724.94	19.6	254
9/20/2024	13:30:00	7.1	0.03	7.3	6729.70	19.8	256
9/20/2024	13:45:00	7.2	0.03	9.4	6734.44	20.1	118
9/20/2024	14:00:00	7.2	0.03	6.2	6739.20	20.3	118
9/20/2024	16:00:00	7.1	0.04	15.7	6746.59	17.8	255

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/20/2024	16:15:00	7.4	0.03	16.6	6752.02	17.7	253
9/20/2024	16:30:00	7.0	0.03	16.7	6757.24	17.7	256
9/20/2024	16:45:00	7.3	0.03	17.2	6762.31	17.6	255
9/20/2024	17:00:00	7.1	0.04	16.6	6767.74	17.5	254
9/20/2024	17:15:00	7.2	0.04	18.2	6773.18	17.5	254
9/20/2024	17:30:00	7.2	0.03	20.9	6778.59	17.4	254
9/20/2024	20:15:00	7.4	0.04	6.7	6789.77	16	257
9/20/2024	20:30:00	7.0	0.04	3.0	6795.19	15.9	256
9/20/2024	20:45:00	7.2	0.04	2.6	6800.63	15.8	259
9/20/2024	21:00:00	7.3	0.04	3.4	6806.07	15.8	256
9/20/2024	21:15:00	7.0	0.04	3.9	6811.48	15.6	258
9/20/2024	21:30:00	7.3	0.03	4.5	6816.92	15.5	256
9/20/2024	21:45:00	7.1	0.03	4.6	6822.34	15.4	259
9/20/2024	22:00:00	7.1	0.03	5.7	6827.73	15.3	259
9/20/2024	22:15:00	7.3	0.03	6.5	6833.11	15.3	255
9/20/2024	22:30:00	7.0	0.03	9.5	6838.48	15.2	259
9/20/2024	22:45:00	7.2	0.03	10.7	6843.87	15.1	259
9/20/2024	23:00:00	7.3	0.04	11.6	6849.28	15	256
9/20/2024	23:15:00	7.0	0.03	14.1	6854.76	14.9	259
9/20/2024	23:30:00	7.3	0.03	13.9	6860.10	14.8	256
9/21/2024	0:15:00	7.3	0.03	16.3	6862.38	14.5	256
9/21/2024	0:30:00	7.0	0.04	23.6	6867.74	14.4	259
9/21/2024	0:45:00	7.2	0.03	25.4	6873.19	14.2	259
9/21/2024	1:45:00	7.3	0.03	10.7	6876.45	14	254
9/21/2024	2:00:00	7.4	0.03	8.3	6881.43	14.3	254

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/21/2024	2:15:00	7.3	0.03	7.7	6886.44	14.5	254
9/21/2024	2:30:00	7.3	0.03	7.9	6891.46	14.6	254
9/21/2024	2:45:00	7.3	0.03	7.2	6896.52	14.8	254
9/21/2024	3:00:00	7.3	0.03	6.4	6901.67	14.9	254
9/21/2024	3:15:00	7.3	0.03	6.8	6906.71	15	254
9/21/2024	3:30:00	7.3	0.03	6.8	6911.75	15.1	254
9/21/2024	3:45:00	7.3	0.03	6.5	6916.71	15.2	254
9/21/2024	4:00:00	7.3	0.03	6.2	6921.77	15.3	254
9/21/2024	4:15:00	7.3	0.03	6.1	6926.89	15.3	254
9/21/2024	4:30:00	7.3	0.03	5.8	6931.85	15.3	254
9/21/2024	4:45:00	7.3	0.03	6.3	6936.83	15.4	254
9/21/2024	5:00:00	7.3	0.03	6.8	6941.81	15.4	254
9/21/2024	5:15:00	7.3	0.03	6.5	6946.83	15.4	254
9/21/2024	5:30:00	7.3	0.03	6.6	6951.85	15.4	254
9/21/2024	5:45:00	7.3	0.03	6.9	6956.92	15.4	254
9/21/2024	6:45:00	7.3	0.03	9.1	6965.26	13.9	255
9/21/2024	7:00:00	7.2	0.00	8.2	6966.05	14	255
9/21/2024	8:30:00	7.1	0.03	7.4	6969.93	13.8	263
9/21/2024	8:45:00	7.3	0.03	7.7	6974.02	14	259
9/21/2024	9:00:00	7.2	0.03	8.4	6978.10	14.2	256
9/21/2024	9:15:00	7.0	0.03	6.7	6982.16	14.2	256
9/21/2024	9:30:00	7.1	0.03	7.1	6986.24	14.4	256
9/21/2024	9:45:00	7.2	0.03	6.4	6990.32	14.8	258
9/21/2024	10:00:00	7.3	0.03	6.2	6994.38	15.1	256
9/21/2024	10:15:00	7.3	0.03	7.1	6998.47	15.4	255

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/21/2024	10:30:00	7.3	0.03	6.0	7002.55	16	255
9/21/2024	10:45:00	7.3	0.03	6.0	7006.61	16.4	255
9/21/2024	11:00:00	7.1	0.03	5.5	7010.69	16.7	255
9/21/2024	11:15:00	7.0	0.03	5.8	7014.77	16.9	255
9/21/2024	11:30:00	7.0	0.03	5.2	7018.83	17.2	255
9/21/2024	11:45:00	7.0	0.03	5.3	7022.91	17.5	253
9/21/2024	12:00:00	7.0	0.03	5.0	7027.00	17.7	252
9/21/2024	12:15:00	7.0	0.03	5.1	7031.06	18	252
9/21/2024	12:30:00	7.0	0.03	4.7	7035.14	18.2	254
9/21/2024	12:45:00	7.0	0.03	5.1	7039.22	18.3	253
9/21/2024	13:00:00	7.0	0.03	4.6	7043.28	18.5	253
9/21/2024	13:15:00	7.0	0.03	4.5	7047.36	18.6	253
9/21/2024	13:30:00	7.0	0.03	4.6	7051.45	18.8	253
9/21/2024	13:45:00	7.0	0.03	4.4	7055.51	19	254
9/21/2024	14:00:00	7.0	0.03	4.3	7059.59	19.1	254
9/21/2024	14:15:00	7.0	0.03	4.4	7063.67	19.3	253
9/21/2024	14:30:00	7.0	0.03	4.4	7067.75	19.5	254
9/21/2024	14:45:00	7.0	0.03	4.0	7071.81	19.6	254
9/21/2024	15:00:00	7.0	0.03	4.0	7075.90	19.8	252
9/21/2024	15:15:00	7.0	0.03	4.1	7079.98	20	254
9/21/2024	15:45:00	7.5	0.03	14.8	7083.82	17.1	252
9/21/2024	16:00:00	7.4	0.03	10.7	7088.44	16.5	252
9/21/2024	17:45:00	7.4	0.03	9.4	7093.25	16	256
9/21/2024	18:00:00	7.4	0.03	9.0	7097.34	16.5	254
9/21/2024	18:15:00	7.3	0.03	9.3	7101.42	16.9	254

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/21/2024	18:30:00	7.3	0.03	6.5	7105.48	17.4	254
9/21/2024	18:45:00	7.3	0.03	8.6	7109.56	17.7	252
9/21/2024	19:00:00	7.3	0.03	6.0	7113.64	18	252
9/21/2024	19:15:00	7.3	0.03	5.4	7117.70	18.3	252
9/21/2024	19:30:00	7.3	0.03	4.7	7121.78	18.6	254
9/21/2024	19:45:00	7.3	0.03	4.5	7125.87	18.8	254
9/21/2024	20:00:00	7.3	0.03	3.3	7129.93	19	252
9/21/2024	20:15:00	7.3	0.03	3.7	7134.03	19.1	252
9/21/2024	20:30:00	7.3	0.03	4.7	7138.11	19.3	253
9/21/2024	20:45:00	7.3	0.03	5.8	7142.17	19.4	254
9/21/2024	21:00:00	7.3	0.03	4.7	7146.25	19.4	253
9/21/2024	22:15:00	7.2	0.03	28.3	7152.05	16.8	261
9/21/2024	22:30:00	7.2	0.03	21.4	7157.39	17.1	262
9/21/2024	22:45:00	7.2	0.03	24.4	7162.68	17.4	262
9/21/2024	23:00:00	7.2	0.03	16.9	7167.96	17.6	259
9/21/2024	23:45:00	7.3	0.03	14.4	7170.80	14.7	251
9/22/2024	0:00:00	7.3	0.03	13.7	7176.18	15.1	253
9/22/2024	0:15:00	7.2	0.03	12.1	7181.58	15.6	253
9/22/2024	0:30:00	7.2	0.03	10.2	7186.97	16	255
9/22/2024	0:45:00	7.2	0.03	8.1	7192.36	16.4	253
9/22/2024	1:00:00	7.2	0.03	8.1	7197.75	16.7	255
9/22/2024	1:15:00	7.2	0.04	6.9	7203.14	17	255
9/22/2024	1:30:00	7.2	0.04	6.3	7208.53	17.2	254
9/22/2024	1:45:00	7.2	0.03	5.7	7213.96	17.4	255
9/22/2024	2:00:00	7.2	0.03	6.1	7219.37	17.6	255

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/22/2024	2:15:00	7.2	0.03	6.0	7224.74	17.8	257
9/22/2024	2:30:00	7.2	0.03	5.6	7230.13	17.9	257
9/22/2024	2:45:00	7.2	0.03	7.5	7235.54	18.1	257
9/22/2024	3:00:00	7.2	0.04	7.7	7240.94	18.3	257
9/22/2024	3:15:00	7.2	0.03	6.7	7246.35	18.5	254
9/22/2024	3:30:00	7.2	0.03	6.6	7251.76	18.6	255
9/22/2024	4:15:00	7.3	0.03	18.8	7257.75	14.2	114
9/22/2024	4:30:00	7.4	0.03	15.3	7262.49	14.6	114
9/22/2024	4:45:00	7.4	0.03	13.8	7267.25	15.1	250
9/22/2024	5:00:00	7.3	0.03	10.7	7271.99	15.5	250
9/22/2024	5:15:00	7.3	0.03	8.4	7276.75	15.9	250
9/22/2024	5:30:00	7.3	0.03	7.1	7281.52	16.2	250
9/22/2024	5:45:00	7.3	0.03	5.8	7286.25	16.5	255
9/22/2024	6:00:00	7.3	0.03	5.0	7291.02	16.7	252
9/22/2024	6:15:00	7.3	0.03	6.2	7295.78	16.8	251
9/22/2024	6:30:00	7.3	0.03	6.4	7300.51	16.9	251
9/22/2024	6:45:00	7.3	0.03	7.6	7305.28	17	253
9/22/2024	7:00:00	7.3	0.03	6.3	7310.04	17.1	253
9/22/2024	7:15:00	7.3	0.03	5.6	7314.78	17.3	253
9/22/2024	7:30:00	7.3	0.03	5.2	7319.54	17.5	253
9/22/2024	7:45:00	7.3	0.03	5.1	7324.30	17.8	253
9/22/2024	8:00:00	6.9	0.03	26.0	7327.69	14.3	256
9/22/2024	9:15:00	7.4	0.02	12.2	7330.27	13.7	114
9/22/2024	9:30:00	7.0	0.02	10.5	7333.78	13.7	255
9/22/2024	9:45:00	7.1	0.02	9.7	7337.32	13.7	255

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/22/2024	10:00:00	7.3	0.03	10.4	7341.14	13.7	114
9/22/2024	10:15:00	7.3	0.03	8.7	7345.36	14.3	116
9/22/2024	10:30:00	7.0	0.03	11.1	7350.12	14.3	253
9/22/2024	10:45:00	7.1	0.03	11.3	7354.86	14.5	255
9/22/2024	11:00:00	7.3	0.03	9.3	7359.59	14.7	257
9/22/2024	11:15:00	7.4	0.03	8.2	7364.35	14.9	116
9/22/2024	11:30:00	7.1	0.03	8.8	7369.11	14.9	252
9/22/2024	11:45:00	7.0	0.03	10.1	7373.82	14.8	255
9/22/2024	13:15:00	7.2	0.03	10.0	7378.15	14.1	115
9/22/2024	13:30:00	7.3	0.03	9.3	7382.84	14.1	115
9/22/2024	13:45:00	7.0	0.03	9.3	7386.92	14.1	257
9/22/2024	14:00:00	7.1	0.03	9.3	7390.98	14.1	258
9/22/2024	14:15:00	7.4	0.03	8.7	7395.06	14.1	114
9/22/2024	14:30:00	7.1	0.03	8.9	7399.14	14.2	258
9/22/2024	14:45:00	7.0	0.03	9.0	7403.20	14.2	260
9/22/2024	15:00:00	7.3	0.03	7.7	7407.28	14.3	257
9/22/2024	15:15:00	7.2	0.03	8.6	7411.37	14.3	258
9/22/2024	15:30:00	7.0	0.03	8.5	7415.43	14.3	262
9/22/2024	15:45:00	7.2	0.03	8.5	7419.51	14.4	257
9/22/2024	16:00:00	7.3	0.03	9.6	7423.59	14.4	257
9/22/2024	16:15:00	7.0	0.03	11.5	7427.65	14.4	265
9/22/2024	16:30:00	7.1	0.03	12.3	7431.73	14.4	264
9/22/2024	16:45:00	7.4	0.03	14.6	7435.82	14.4	259
9/22/2024	17:00:00	7.1	0.03	17.5	7439.88	14.4	265
9/22/2024	17:15:00	7.0	0.03	19.8	7443.96	14.4	267

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/22/2024	17:30:00	7.3	0.03	18.8	7448.04	14.4	262
9/22/2024	17:45:00	7.3	0.03	17.5	7452.10	14.4	263
9/22/2024	18:00:00	7.0	0.03	16.4	7456.18	14.3	268
9/22/2024	18:15:00	7.1	0.03	15.7	7460.26	14.3	268
9/22/2024	18:30:00	7.4	0.03	13.0	7464.32	14.3	265
9/22/2024	18:45:00	7.1	0.03	11.5	7468.41	14.3	268
9/22/2024	19:00:00	7.0	0.03	10.6	7472.49	14.3	267
9/22/2024	19:15:00	7.2	0.03	9.6	7476.62	14.4	266
9/22/2024	19:30:00	7.4	0.03	12.4	7480.80	14.6	265
9/22/2024	19:45:00	7.1	0.03	8.5	7484.97	14.6	265
9/22/2024	20:00:00	7.0	0.03	8.4	7489.14	14.7	267
9/22/2024	20:15:00	7.2	0.03	10.3	7493.42	14.7	267
9/22/2024	20:30:00	7.4	0.03	10.8	7497.79	14.7	263
9/22/2024	20:45:00	7.2	0.12	28.8	7502.31	14.9	263
9/22/2024	21:00:00	7.1	0.03	14.7	7508.12	15.5	265
9/22/2024	21:45:00	7.1	0.03	12.4	7511.73	14.7	259
9/22/2024	22:00:00	7.1	0.03	9.0	7516.49	15.6	262
9/22/2024	22:15:00	7.2	0.03	6.5	7521.23	15.5	260
9/22/2024	22:30:00	7.3	0.03	4.2	7525.97	15.9	262
9/22/2024	22:45:00	7.2	0.03	3.6	7530.67	16.3	260
9/22/2024	23:00:00	7.2	0.03	3.4	7535.36	16.6	260
9/22/2024	23:15:00	7.2	0.03	2.7	7540.11	17	258
9/22/2024	23:30:00	7.2	0.03	1.6	7544.80	17.3	260
9/22/2024	23:45:00	7.2	0.03	1.3	7549.46	17.5	262

Table 3. In-Situ Parameters

Date	Time	Temperature (°C)	DO (mg/L)	Conductivity (uS/cm)	Salinity (ppt)	ORP (mV)	Visible Sheen
9/16/2024	08:35:32AM	14.7	9.68	148.9	0.07	218.8	No
9/17/2024	11:27:58AM	14.9	9.37	210.4	0.10	161.6	No
9/18/2024	09:58:03AM	15.3	10.00	147.8	0.07	189.1	No
9/19/2024	02:24:31PM	18.0	9.68	148.5	0.07	147.8	No
9/20/2024	09:00:52PM	15.6	10.03	138.7	0.07	127.5	No
9/21/2024	12:55:06PM	14.7	10.25	132.5	0.06	125.3	No
9/22/2024	09:31:06AM	13.7	10.63	135.8	0.06	131.6	No

3. Calibration Log:

Table 4. Calibration Log

Date	Unit	pH	Conductivity/Temp.	Salinity	NTU
9/17/2024	YSI	✓	✓	✓	✓
9/13/2024	WTP	✓	N/A	N/A	✓

APPENDIX A: WTP LOG

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/16/2024	0:00:00	7.1	0.020	2.1	5738.58	Open	Closed	17.9	277
9/16/2024	0:15:00	7.1	0.000	2.2	5738.58	Open	Closed	17.8	279
9/16/2024	0:30:00	7.1	0.024	2.1	5738.58	Open	Closed	17.8	279
9/16/2024	0:45:00	7.1	0.017	2.2	5738.58	Open	Closed	17.7	277
9/16/2024	1:00:00	7.1	0.019	2.4	5738.58	Open	Closed	17.6	276
9/16/2024	1:15:00	7.4	0.000	40	5738.58	Open	Closed	16.2	272
9/16/2024	1:30:00	7.4	0.000	38.9	5738.58	Open	Closed	16.3	267
9/16/2024	1:45:00	7.3	0.029	32	5738.58	Open	Closed	16.2	266
9/16/2024	2:00:00	7.2	0.048	30.7	5738.58	Open	Closed	16.2	266
9/16/2024	2:15:00	7.2	0.038	0.9	5738.58	Open	Closed	16.3	266
9/16/2024	2:30:00	7	0.000	25.1	5738.58	Open	Closed	16.3	266
9/16/2024	2:45:00	7	0.000	22.6	5738.58	Open	Closed	16.3	266
9/16/2024	3:00:00	7	0.039	19	5738.58	Open	Closed	16.3	266
9/16/2024	3:15:00	7	0.037	24.2	5738.58	Open	Closed	16.3	268

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/16/2024	3:30:00	7	0.000	24.2	5738.58	Open	Closed	16.3	266
9/16/2024	3:45:00	7.1	0.039	1.7	5741.02	Closed	Open	16.3	264
9/16/2024	4:00:00	7.1	0.040	1.5	5747.11	Closed	Open	16.3	266
9/16/2024	4:15:00	7.1	0.039	0.9	5753.07	Closed	Open	16.3	268
9/16/2024	4:30:00	7.4	0.038	17.1	5757.55	Open	Closed	14.9	269
9/16/2024	4:45:00	7.5	0.028	16.4	5757.55	Open	Closed	14.9	271
9/16/2024	5:00:00	7.1	0.074	24.8	5757.55	Open	Closed	14.8	277
9/16/2024	5:15:00	7.3	0.079	20.8	5757.55	Open	Closed	14.7	272
9/16/2024	5:30:00	7.5	0.078	18.1	5757.55	Open	Closed	14.7	267
9/16/2024	5:45:00	7.6	0.000	15.1	5757.55	Open	Closed	14.6	266
9/16/2024	6:00:00	7.5	0.024	15	5757.55	Open	Closed	14.9	266
9/16/2024	6:15:00	7.5	0.040	12.9	5757.55	Open	Closed	15.3	266
9/16/2024	6:30:00	7.5	0.037	12.2	5757.55	Open	Closed	16	267
9/16/2024	6:45:00	7.6	0.038	6.7	5757.55	Open	Closed	15.9	266
9/16/2024	7:00:00	7.6	0.000	5.8	5757.55	Open	Closed	16.5	268

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/16/2024	7:15:00	7.6	0.050	4.8	5757.84	Open	Closed	17	267
9/16/2024	7:30:00	7.6	0.026	4.4	5759.14	Closed	Open	16.8	269
9/16/2024	7:45:00	7.6	0.028	4.2	5762.97	Closed	Open	17.2	271
9/16/2024	8:00:00	7.5	0.000	3.6	5766.38	Closed	Open	17.6	271
9/16/2024	8:15:00	7.5	0.026	4.5	5767.42	Closed	Open	17.9	270
9/16/2024	8:30:00	7.5	0.026	3.9	5771.50	Closed	Open	18.2	271
9/16/2024	8:45:00	7.5	0.033	3.7	5775.79	Closed	Open	18.5	271
9/16/2024	9:00:00	7.5	0.000	3.8	5780.34	Closed	Open	18.9	269
9/16/2024	9:15:00	7.5	0.042	3.9	5784.11	Closed	Open	19	271
9/16/2024	9:30:00	7.5	0.042	3.6	5790.20	Closed	Open	19.3	271
9/16/2024	9:45:00	7.5	0.043	3.5	5796.35	Closed	Open	19.7	271
9/16/2024	10:00:00	7.5	0.000	3.7	5802.49	Closed	Open	19.9	271
9/16/2024	10:15:00	7.5	0.040	3.8	5807.48	Closed	Open	20	271
9/16/2024	10:30:00	7.6	0.039	3.7	5813.60	Closed	Open	20.2	272
9/16/2024	10:45:00	7.7	0.040	3.5	5819.69	Closed	Open	20.4	273

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/16/2024	11:00:00	7.8	0.029	1.3	5825.44	Closed	Open	15.6	264
9/16/2024	11:15:00	7.8	0.039	1.8	5830.94	Closed	Open	16	264
9/16/2024	11:30:00	7.7	0.000	1.6	5833.21	Open	Closed	16.7	266
9/16/2024	11:45:00	-0.4	0.000	16.4	5833.21	Open	Closed	18.5	271
9/16/2024	12:00:00	-0.4	0.028	5.8	5833.21	Open	Closed	16.3	264
9/16/2024	12:15:00	7.7	0.000	12.6	5833.21	Open	Closed	17.1	268
9/16/2024	12:30:00	7.7	0.040	61.1	5833.21	Open	Closed	16.3	266
9/16/2024	12:45:00	7.6	0.029	53.1	5833.21	Open	Closed	16.8	271
9/16/2024	13:00:00	7.1	0.028	94.4	5833.21	Open	Closed	17	274
9/16/2024	13:15:00	7.3	0.000	175.7	5833.21	Open	Closed	16.7	276
9/16/2024	13:30:00	7.2	0.026	187.5	5833.21	Open	Closed	17.4	276
9/16/2024	13:45:00	7.4	0.000	136.3	5833.21	Open	Closed	17	274
9/16/2024	14:00:00	7.3	0.000	119.9	5833.21	Open	Closed	17.7	278
9/16/2024	14:15:00	7.1	0.030	168.8	5833.21	Open	Closed	17.1	276
9/16/2024	14:30:00	7.1	0.042	145.4	5833.21	Open	Closed	17.5	278

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/16/2024	14:45:00	7.3	0.047	126	5833.21	Open	Closed	17.5	279
9/16/2024	15:00:00	7.1	0.052	116.1	5833.21	Open	Closed	17.4	277
9/16/2024	15:15:00	7.3	0.051	140.1	5833.21	Open	Closed	17.5	277
9/16/2024	15:30:00	7.2	0.069	180.5	5833.21	Open	Closed	17.6	276
9/16/2024	15:45:00	7.3	0.060	263	5833.21	Open	Closed	17.6	277
9/16/2024	16:00:00	7.2	0.059	270.6	5833.21	Open	Closed	17.7	276
9/16/2024	16:15:00	7.3	0.045	409.2	5833.33	Open	Closed	17.8	277
9/16/2024	16:30:00	7.1	0.033	220.5	5833.33	Open	Closed	17.8	279
9/16/2024	16:45:00	7.3	0.033	217.4	5833.33	Open	Closed	17.8	276
9/16/2024	17:00:00	7	0.034	190.2	5833.33	Open	Closed	17.9	281
9/16/2024	17:15:00	7.1	0.028	337.8	5833.33	Open	Closed	17.9	278
9/16/2024	17:30:00	7.1	0.036	181.9	5833.33	Open	Closed	17.9	283
9/16/2024	17:45:00	7.3	0.035	165.9	5833.33	Open	Closed	17.9	276
9/16/2024	18:00:00	7.1	0.035	136.1	5833.33	Open	Closed	17.9	279
9/16/2024	18:15:00	7.1	0.034	151.8	5833.33	Open	Closed	17.9	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	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/16/2024	18:30:00	7.3	0.034	164.4	5833.33	Open	Closed	17.8	274
9/16/2024	18:45:00	7.1	0.028	235.6	5833.33	Open	Closed	17.8	281
9/16/2024	19:00:00	7.2	0.027	210.6	5833.33	Open	Closed	17.8	274
9/16/2024	19:15:00	7.3	0.000	149.3	5833.33	Open	Closed	17.8	274
9/16/2024	19:30:00	7	0.022	159.8	5833.33	Open	Closed	17.7	277
9/16/2024	19:45:00	7.1	0.022	142.1	5833.33	Open	Closed	17.7	278
9/16/2024	20:00:00	7.3	0.000	106.3	5833.33	Open	Closed	17.8	272
9/16/2024	20:15:00	7.1	0.020	109.4	5833.33	Open	Closed	17.7	272
9/16/2024	20:30:00	7	0.021	101.9	5833.33	Open	Closed	17.6	275
9/16/2024	20:45:00	7.2	0.000	100.8	5833.33	Open	Closed	17.6	277
9/16/2024	21:00:00	7.2	0.000	101	5833.33	Open	Closed	17.8	276
9/16/2024	21:15:00	7.4	0.017	355.6	5833.33	Open	Closed	17.7	277
9/16/2024	21:30:00	7.2	0.020	90.6	5833.33	Open	Closed	17.3	271
9/16/2024	21:45:00	7.2	0.016	31.4	5833.33	Open	Closed	17.1	271
9/16/2024	22:00:00	7.1	0.000	38	5833.33	Open	Closed	17.3	274

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/16/2024	22:15:00	7.1	0.023	30.6	5833.33	Open	Closed	17.4	276
9/16/2024	22:30:00	7.2	0.025	131.2	5833.33	Open	Closed	17.3	274
9/16/2024	22:45:00	7.3	0.000	43.7	5833.33	Open	Closed	16.9	269
9/16/2024	23:00:00	7.3	0.000	38.3	5833.33	Open	Closed	17	274
9/16/2024	23:15:00	7.3	0.000	38.6	5833.33	Open	Closed	17	274
9/16/2024	23:30:00	7.2	0.023	38.5	5833.33	Open	Closed	17.1	276
9/16/2024	23:45:00	7	0.000	36.6	5833.33	Open	Closed	17.2	277
9/17/2024	0:00:00	7	0.023	38.4	5833.33	Open	Closed	17.3	277
9/17/2024	0:15:00	7.1	0.026	20	5833.33	Open	Closed	17.3	277
9/17/2024	0:30:00	7.2	0.026	16.3	5833.33	Open	Closed	17.3	276
9/17/2024	0:45:00	7.5	0.056	27	5833.33	Open	Closed	16.7	268
9/17/2024	1:00:00	7.2	0.028	9.7	5833.33	Open	Closed	16.4	267
9/17/2024	1:15:00	7	0.028	8.2	5833.33	Open	Closed	16.6	276
9/17/2024	1:30:00	7.2	0.041	8.4	5833.33	Open	Closed	16.9	276
9/17/2024	1:45:00	7.2	0.000	7.8	5833.33	Open	Closed	17.4	274

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/17/2024	2:00:00	7.3	0.016	11.4	5833.33	Open	Closed	16.3	267
9/17/2024	2:15:00	7.1	0.015	10.8	5833.33	Open	Closed	16.5	272
9/17/2024	2:30:00	6.9	0.000	10.3	5833.33	Open	Closed	17	276
9/17/2024	2:45:00	7.1	0.025	10.2	5833.33	Open	Closed	17.4	277
9/17/2024	3:00:00	7.3	0.000	11.9	5833.33	Open	Closed	16.9	274
9/17/2024	3:15:00	7.1	0.022	12	5833.33	Open	Closed	17.8	272
9/17/2024	3:30:00	7	0.030	12.1	5833.33	Open	Closed	17.7	269
9/17/2024	3:45:00	7	0.028	11.2	5833.33	Open	Closed	17.2	271
9/17/2024	4:00:00	7.2	0.028	10.8	5833.33	Open	Closed	16.4	269
9/17/2024	4:15:00	7.1	0.029	12.4	5833.33	Open	Closed	17.7	271
9/17/2024	4:30:00	7.3	0.055	89.4	5837.92	Closed	Open	18.3	271
9/17/2024	4:45:00	7.2	0.049	23.1	5843.68	Closed	Open	15.8	269
9/17/2024	5:00:00	7.2	0.046	13.2	5850.89	Closed	Open	16	269
9/17/2024	5:15:00	7.3	0.037	12.9	5852.44	Closed	Open	16.1	271
9/17/2024	5:30:00	7.3	0.038	12.9	5858.02	Closed	Open	16.5	271

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/17/2024	5:45:00	7.3	0.000	12.9	5859.90	Closed	Open	17	269
9/17/2024	6:00:00	7.3	0.033	12.8	5861.27	Open	Closed	17.4	271
9/17/2024	6:15:00	7	0.017	14.2	5861.27	Open	Closed	18.6	271
9/17/2024	6:30:00	7	0.016	13.4	5861.27	Open	Closed	19	273
9/17/2024	6:45:00	7	0.025	13.6	5861.27	Open	Closed	19.2	272
9/17/2024	7:00:00	7	0.000	13.2	5861.27	Open	Closed	19.5	271
9/17/2024	7:15:00	7	0.014	13.6	5861.27	Open	Closed	19.6	271
9/17/2024	7:30:00	7	0.013	12.1	5861.27	Open	Closed	19.8	273
9/17/2024	7:45:00	7	0.020	12.4	5861.32	Closed	Open	20	271
9/17/2024	8:00:00	7	0.034	12.7	5865.37	Closed	Open	20.1	271
9/17/2024	8:15:00	7	0.040	11.8	5871.31	Closed	Open	20.2	271
9/17/2024	8:30:00	7	0.039	13.3	5877.40	Closed	Open	20.3	271
9/17/2024	8:45:00	7	0.033	12.9	5882.69	Closed	Open	20.3	273
9/17/2024	9:00:00	7.6	0.062	21.7	5890.45	Closed	Open	19.8	271
9/17/2024	9:15:00	7.2	0.027	27.5	5897.74	Open	Closed	16.4	266

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/17/2024	9:30:00	7.2	0.022	25.6	5897.74	Open	Closed	15.4	269
9/17/2024	9:45:00	7.3	0.021	22.3	5897.74	Open	Closed	15.7	269
9/17/2024	10:00:00	7.1	0.020	24.6	5897.74	Open	Closed	15.4	269
9/17/2024	10:15:00	7.3	0.029	22.3	5897.74	Open	Closed	15.4	267
9/17/2024	10:30:00	7.1	0.028	19.1	5897.74	Open	Closed	15.4	269
9/17/2024	10:45:00	7.3	0.026	17.5	5897.74	Open	Closed	15.6	269
9/17/2024	11:00:00	7.2	0.026	21.7	5897.74	Open	Closed	15.7	271
9/17/2024	11:15:00	7.2	0.034	15.6	5897.74	Open	Closed	15.8	268
9/17/2024	11:30:00	7.3	0.035	17.1	5902.35	Closed	Open	15.7	271
9/17/2024	11:45:00	7.2	0.036	17.4	5907.77	Closed	Open	15.6	267
9/17/2024	12:00:00	7.1	0.037	17.5	5913.21	Closed	Open	15.5	268
9/17/2024	12:15:00	7.1	0.046	17.6	5920.00	Closed	Open	15.5	266
9/17/2024	12:30:00	7.1	0.044	16.9	5926.77	Closed	Open	15.5	268
9/17/2024	12:45:00	7.1	0.045	15.7	5933.57	Closed	Open	15.5	270
9/17/2024	13:00:00	7.2	0.062	13.9	5941.08	Closed	Open	15.6	267

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/17/2024	13:15:00	7.3	0.065	13.3	5950.55	Closed	Open	15.5	267
9/17/2024	13:30:00	7.3	0.059	11.5	5959.99	Closed	Open	15.5	265
9/17/2024	13:45:00	7.3	0.054	25.6	5968.99	Closed	Open	15.5	263
9/17/2024	14:00:00	7.1	0.064	9.5	5978.40	Closed	Open	15.5	263
9/17/2024	14:15:00	7.2	0.082	7.6	5988.62	Closed	Open	15.4	265
9/17/2024	14:30:00	7.3	0.048	6.3	5999.61	Closed	Open	15.3	259
9/17/2024	14:45:00	7.3	0.044	4.6	6006.36	Closed	Open	15.3	262
9/17/2024	15:00:00	7.2	0.044	3.3	6013.16	Closed	Open	15.3	262
9/17/2024	15:15:00	7.1	0.044	2.4	6019.97	Closed	Open	15.3	262
9/17/2024	15:30:00	7.1	0.044	2	6026.73	Closed	Open	15.3	262
9/17/2024	15:45:00	7.2	0.044	1.5	6033.54	Closed	Open	15.3	262
9/17/2024	16:00:00	7.2	0.044	1.3	6040.34	Closed	Open	15.3	262
9/17/2024	16:15:00	7.3	0.044	0.9	6047.11	Closed	Open	15.3	263
9/17/2024	16:30:00	7.3	0.045	0.8	6053.91	Closed	Open	15.3	262
9/17/2024	16:45:00	7.2	0.044	0.6	6060.72	Closed	Open	15.2	260

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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/17/2024	17:00:00	7.2	0.044	0.6	6067.48	Closed	Open	15.2	264
9/17/2024	17:15:00	7.1	0.043	0.6	6074.27	Closed	Open	15.2	264
9/17/2024	17:30:00	7.1	0.043	0.6	6080.94	Closed	Open	15.2	264
9/17/2024	17:45:00	7.1	0.043	0.6	6087.61	Closed	Open	15.2	263
9/17/2024	18:00:00	7.2	0.043	0.6	6094.20	Closed	Open	15.1	263
9/17/2024	18:15:00	7.2	0.043	0.8	6100.67	Closed	Open	15	263
9/17/2024	18:30:00	7.2	0.043	2.2	6107.30	Closed	Open	15	262
9/17/2024	18:45:00	7.3	0.043	4.5	6112.71	Closed	Open	14.9	261
9/17/2024	19:00:00	7.1	0.026	5.6	6112.85	Open	Closed	14.9	264
9/17/2024	19:15:00	7.1	0.033	3	6112.85	Open	Closed	14.9	263
9/17/2024	19:30:00	7.1	0.044	3.8	6112.85	Open	Closed	15.2	264
9/17/2024	19:45:00	7.6	0.035	411.6	6112.85	Open	Closed	14.7	261
9/17/2024	20:00:00	7.1	0.680	34	6112.85	Open	Closed	14.6	263
9/17/2024	20:15:00	7	0.025	27.7	6112.85	Open	Closed	14.6	263
9/17/2024	20:30:00	7.1	0.000	13.8	6112.85	Open	Closed	15	264

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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/17/2024	20:45:00	7	0.023	15.3	6112.85	Open	Closed	14.7	263
9/17/2024	21:00:00	7.1	0.022	8.8	6112.85	Open	Closed	15	263
9/17/2024	21:15:00	7.1	0.022	7.4	6112.85	Open	Closed	15.3	266
9/17/2024	21:30:00	7.1	0.022	7.7	6112.85	Open	Closed	15.6	264
9/17/2024	21:45:00	7.2	0.023	8.1	6112.85	Open	Closed	14.7	262
9/17/2024	22:00:00	7.2	0.023	7.6	6112.85	Open	Closed	14.7	261
9/17/2024	22:15:00	7.2	0.023	8.9	6112.85	Open	Closed	14.6	259
9/17/2024	22:30:00	7.3	0.023	9.7	6112.85	Open	Closed	14.6	261
9/17/2024	22:45:00	7.4	0.029	6.2	6114.10	Closed	Open	14.9	264
9/17/2024	23:00:00	7.3	0.029	6	6118.83	Closed	Open	15.2	264
9/17/2024	23:15:00	7.1	0.029	9.4	6120.67	Open	Closed	15.6	264
9/17/2024	23:30:00	7.1	0.021	7.1	6120.67	Open	Closed	15.9	264
9/17/2024	23:45:00	7.4	0.036	9.4	6122.58	Closed	Open	16.3	264
9/18/2024	0:00:00	7.2	0.027	7.3	6125.19	Closed	Open	14.7	264
9/18/2024	0:15:00	7.2	0.028	7.5	6129.27	Closed	Open	14.7	266

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/18/2024	0:30:00	7.2	0.017	156.1	6133.23	Closed	Open	14.6	268
9/18/2024	0:45:00	7.1	0.027	9.4	6134.93	Closed	Open	14.6	267
9/18/2024	1:00:00	7.1	0.033	6.9	6139.42	Closed	Open	14.7	267
9/18/2024	1:15:00	7.1	0.034	6.9	6144.22	Closed	Open	14.7	264
9/18/2024	1:30:00	7.1	0.034	7.4	6149.29	Closed	Open	14.8	264
9/18/2024	1:45:00	7.1	0.034	8.3	6154.34	Closed	Open	14.8	265
9/18/2024	2:00:00	7.2	0.034	9.7	6159.41	Closed	Open	14.8	265
9/18/2024	2:15:00	7.2	0.034	8.7	6164.28	Closed	Open	14.8	263
9/18/2024	2:30:00	7.2	0.033	8.8	6169.14	Closed	Open	14.8	264
9/18/2024	2:45:00	7.1	0.037	7.1	6172.46	Closed	Open	14.8	262
9/18/2024	3:00:00	7.2	0.036	6.9	6177.91	Closed	Open	14.8	264
9/18/2024	3:15:00	7.3	0.037	7.8	6183.35	Closed	Open	14.8	264
9/18/2024	3:30:00	7.4	0.023	6.4	6188.59	Closed	Open	14.8	264
9/18/2024	3:45:00	7.3	0.036	4.7	6193.94	Closed	Open	14.8	264
9/18/2024	4:00:00	7.3	0.036	4.8	6199.39	Closed	Open	14.7	264

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/18/2024	4:15:00	7.3	0.036	4.9	6204.83	Closed	Open	14.7	264
9/18/2024	4:30:00	7.3	0.036	4.8	6210.24	Closed	Open	14.6	263
9/18/2024	4:45:00	7.3	0.027	6	6215.65	Closed	Open	14.5	263
9/18/2024	5:00:00	7	0.020	3.5	6218.07	Closed	Open	14.6	266
9/18/2024	5:15:00	7	0.023	5.6	6221.45	Closed	Open	14.5	266
9/18/2024	5:30:00	7.2	0.023	6.6	6224.85	Closed	Open	14.5	262
9/18/2024	5:45:00	7.3	0.026	9.2	6228.71	Closed	Open	14.5	264
9/18/2024	6:00:00	7.3	0.027	9.5	6232.77	Closed	Open	14.4	264
9/18/2024	6:15:00	7	0.027	11.1	6236.86	Closed	Open	14.5	266
9/18/2024	6:30:00	7.4	0.022	10.3	6239.46	Closed	Open	14.9	264
9/18/2024	6:45:00	7.2	0.025	14.6	6243.41	Closed	Open	14.4	264
9/18/2024	7:00:00	7	0.020	13.5	6244.78	Open	Closed	14.4	265
9/18/2024	7:15:00	7.2	0.017	14.6	6244.78	Open	Closed	14.4	265
9/18/2024	7:30:00	7.1	0.000	11.6	6244.78	Open	Closed	14.7	267
9/18/2024	7:45:00	7	0.025	16	6244.78	Open	Closed	15.8	268

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/18/2024	8:00:00	7.3	0.025	5.9	6244.78	Open	Closed	14.7	266
9/18/2024	8:15:00	7.3	0.025	5.4	6244.78	Open	Closed	14.5	265
9/18/2024	8:30:00	7	0.000	12.8	6244.78	Open	Closed	14.7	263
9/18/2024	8:45:00	7.1	0.028	4.7	6244.78	Open	Closed	14.5	263
9/18/2024	9:00:00	7.3	0.028	4.3	6244.78	Open	Closed	14.5	265
9/18/2024	9:15:00	7.2	0.028	5.7	6244.78	Open	Closed	14.6	263
9/18/2024	9:30:00	7	0.027	5	6244.78	Open	Closed	14.6	265
9/18/2024	9:45:00	7.2	0.028	5.7	6244.78	Open	Closed	14.7	266
9/18/2024	10:00:00	7.3	0.028	6.3	6244.78	Open	Closed	14.9	265
9/18/2024	10:15:00	7.1	0.031	9	6248.24	Closed	Open	15.1	265
9/18/2024	10:30:00	7.1	0.031	12.6	6252.97	Closed	Open	15.2	264
9/18/2024	10:45:00	7.4	0.031	19.2	6257.74	Closed	Open	15.3	266
9/18/2024	11:00:00	7.1	0.031	32	6262.50	Closed	Open	15.5	264
9/18/2024	11:15:00	7.1	0.030	76.9	6264.27	Open	Closed	15.2	266
9/18/2024	11:30:00	7.1	0.030	144.7	6264.27	Open	Closed	15.3	266

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/18/2024	11:45:00	7.2	0.030	311.2	6264.27	Open	Closed	15.4	266
9/18/2024	12:00:00	7.3	0.030	413.9	6264.27	Open	Closed	15.5	267
9/18/2024	12:15:00	7.4	0.000	413.9	6264.27	Open	Closed	15.6	269
9/18/2024	12:30:00	7.3	0.000	413.9	6264.27	Open	Closed	16.2	269
9/18/2024	12:45:00	7.3	0.000	67.5	6264.27	Open	Closed	16.8	271
9/18/2024	13:00:00	7.3	0.039	56.1	6264.27	Open	Closed	17.5	272
9/18/2024	13:15:00	7.3	0.000	58.1	6264.27	Open	Closed	18.1	271
9/18/2024	13:30:00	7.3	0.000	60.9	6264.27	Open	Closed	18.6	271
9/18/2024	13:45:00	7.1	0.000	414	6264.27	Open	Closed	16.1	274
9/18/2024	14:00:00	7.4	0.040	414	6264.27	Open	Closed	16.2	271
9/18/2024	14:15:00	7.2	0.000	413.9	6264.27	Open	Closed	16.3	281
9/18/2024	14:30:00	7.1	0.050	413.9	6264.27	Open	Closed	16.4	281
9/18/2024	14:45:00	7.3	0.049	413.8	6264.27	Open	Closed	16.5	279
9/18/2024	15:00:00	7.2	0.000	413.8	6264.27	Open	Closed	16.9	281
9/18/2024	15:15:00	7.5	0.028	413.7	6264.27	Open	Closed	16.7	278

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/18/2024	15:30:00	7.3	0.000	380.8	6264.27	Open	Closed	17.1	278
9/18/2024	15:45:00	7.1	0.046	413.2	6264.27	Open	Closed	16.8	281
9/18/2024	16:00:00	7.3	0.076	413.6	6264.27	Open	Closed	17.4	281
9/18/2024	16:15:00	7.2	0.067	413.7	6264.27	Open	Closed	17	279
9/18/2024	16:30:00	7.2	0.065	413.7	6264.27	Open	Closed	17	279
9/18/2024	16:45:00	7.3	0.000	397.9	6264.27	Open	Closed	17	279
9/18/2024	17:00:00	7.1	0.062	336.4	6264.27	Open	Closed	17	278
9/18/2024	17:15:00	7.4	0.061	258.9	6264.27	Open	Closed	17	277
9/18/2024	17:30:00	7.2	0.000	199.9	6264.27	Open	Closed	17.2	276
9/18/2024	17:45:00	7.1	0.062	207.8	6264.27	Open	Closed	17	274
9/18/2024	18:00:00	7.3	0.061	162.9	6264.27	Open	Closed	16.9	272
9/18/2024	18:15:00	7.2	0.061	145.8	6264.27	Open	Closed	16.9	274
9/18/2024	18:30:00	7.2	0.060	117.1	6264.27	Open	Closed	16.8	272
9/18/2024	18:45:00	7.2	0.044	73.3	6264.27	Open	Closed	16.7	273
9/18/2024	19:00:00	7.3	0.000	61	6264.27	Open	Closed	17.2	276

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/18/2024	19:15:00	7.3	0.043	48.4	6264.27	Open	Closed	17.5	274
9/18/2024	19:30:00	7	0.041	53	6264.27	Open	Closed	16.6	273
9/18/2024	19:45:00	7.3	0.051	45.7	6264.27	Open	Closed	16.6	272
9/18/2024	20:00:00	7.4	0.065	44.6	6264.27	Open	Closed	16.9	271
9/18/2024	20:15:00	7.1	0.058	55.7	6264.27	Open	Closed	16.7	272
9/18/2024	20:30:00	7.2	0.000	51.6	6264.27	Open	Closed	16.7	277
9/18/2024	20:45:00	7.3	0.058	77.6	6264.27	Open	Closed	16.3	270
9/18/2024	21:00:00	7.2	0.039	71.1	6264.27	Open	Closed	16.2	273
9/18/2024	21:15:00	7.3	0.038	55	6264.27	Open	Closed	16.2	270
9/18/2024	21:30:00	7.1	0.037	48	6264.27	Open	Closed	16.2	269
9/18/2024	21:45:00	7.3	0.053	42.3	6264.27	Open	Closed	16.1	270
9/18/2024	22:00:00	7.1	0.052	38	6264.27	Open	Closed	16.1	269
9/18/2024	22:15:00	7.3	0.052	37.5	6264.27	Open	Closed	16	269
9/18/2024	22:30:00	7.1	0.011	23.7	6264.27	Open	Closed	16	270
9/18/2024	22:45:00	7.3	0.047	92	6264.27	Open	Closed	16.1	269

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/18/2024	23:00:00	7.3	0.054	97.6	6264.27	Open	Closed	16.3	270
9/18/2024	23:15:00	7.3	0.000	91.9	6264.27	Open	Closed	16.5	270
9/18/2024	23:30:00	7	0.035	9.4	6264.27	Open	Closed	15.8	266
9/18/2024	23:45:00	7.1	0.036	6.3	6267.72	Closed	Open	15.9	268
9/19/2024	0:00:00	7.1	0.036	6.1	6273.13	Closed	Open	16.1	269
9/19/2024	0:15:00	7.1	0.035	6.2	6278.58	Closed	Open	16.3	271
9/19/2024	0:30:00	7.1	0.036	5.8	6284.02	Closed	Open	16.5	271
9/19/2024	0:45:00	7.1	0.035	5.9	6289.43	Closed	Open	16.7	273
9/19/2024	1:00:00	7.1	0.035	4.9	6294.88	Closed	Open	16.8	273
9/19/2024	1:15:00	7.1	0.034	5.2	6300.32	Closed	Open	16.9	271
9/19/2024	1:30:00	7	0.035	4.8	6305.73	Closed	Open	17.1	271
9/19/2024	1:45:00	7	0.035	4.7	6311.17	Closed	Open	17.2	271
9/19/2024	2:00:00	7.2	0.000	36.5	6315.74	Open	Closed	17.2	271
9/19/2024	2:15:00	7.5	0.000	150.1	6315.74	Open	Closed	15.6	266
9/19/2024	2:30:00	7.1	0.036	96.8	6315.74	Open	Closed	15.6	265

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/19/2024	2:45:00	7.1	0.011	91.1	6315.74	Open	Closed	15.3	269
9/19/2024	3:00:00	7.4	0.022	53.8	6315.74	Open	Closed	15.4	269
9/19/2024	3:15:00	7.1	0.026	62.7	6315.74	Open	Closed	15.4	269
9/19/2024	3:30:00	7.1	0.025	41.9	6315.74	Open	Closed	15.5	268
9/19/2024	3:45:00	7.4	0.020	87.1	6315.74	Open	Closed	15.3	264
9/19/2024	4:00:00	7.4	0.030	1.3	6315.74	Open	Closed	15.4	262
9/19/2024	4:15:00	7	0.030	81.6	6315.74	Open	Closed	15.3	264
9/19/2024	4:30:00	7.1	0.033	20.9	6315.74	Open	Closed	15.2	266
9/19/2024	4:45:00	7.3	0.034	10.8	6316.27	Closed	Open	15.2	262
9/19/2024	5:00:00	7	0.034	7.9	6321.17	Closed	Open	15.2	266
9/19/2024	5:15:00	7.3	0.035	7.6	6326.29	Closed	Open	15.2	264
9/19/2024	5:30:00	7	0.034	8.2	6331.68	Closed	Open	15.2	266
9/19/2024	5:45:00	7.2	0.035	8.9	6337.09	Closed	Open	15.2	266
9/19/2024	6:00:00	7.1	0.034	8.3	6342.45	Closed	Open	15.2	267
9/19/2024	6:15:00	7.1	0.034	8.5	6347.85	Closed	Open	15.2	266

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/19/2024	6:30:00	7.3	0.034	7.9	6353.19	Closed	Open	15.3	264
9/19/2024	6:45:00	7.1	0.035	8.3	6358.43	Closed	Open	15.3	264
9/19/2024	7:00:00	7.4	0.023	8.8	6363.72	Closed	Open	15.3	263
9/19/2024	7:15:00	7.2	0.033	32.7	6365.02	Closed	Open	15.4	262
9/19/2024	7:30:00	7	0.034	9.1	6365.89	Closed	Open	15.3	267
9/19/2024	7:45:00	7.4	0.033	6.8	6370.66	Closed	Open	15.3	262
9/19/2024	8:00:00	7	0.033	7.1	6375.42	Closed	Open	15.3	263
9/19/2024	8:15:00	7.2	0.033	7.5	6380.16	Closed	Open	15.3	263
9/19/2024	8:30:00	7.1	0.033	7.4	6384.92	Closed	Open	15.3	265
9/19/2024	8:45:00	7.1	0.033	8	6389.68	Closed	Open	15.2	267
9/19/2024	9:00:00	7.3	0.033	8.4	6394.42	Closed	Open	15.2	262
9/19/2024	9:15:00	7	0.033	8.9	6399.18	Closed	Open	15.3	266
9/19/2024	9:30:00	7.4	0.034	10.7	6404.01	Closed	Open	15.3	264
9/19/2024	9:45:00	7.1	0.034	7.6	6409.38	Closed	Open	15.3	263
9/19/2024	10:00:00	7.1	0.034	13.5	6414.77	Closed	Open	15.8	265

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/19/2024	10:15:00	7.3	0.034	14.8	6420.17	Closed	Open	15.6	265
9/19/2024	10:30:00	7	0.035	14.5	6425.52	Closed	Open	15.7	264
9/19/2024	10:45:00	7.3	0.034	15.9	6430.90	Closed	Open	15.7	265
9/19/2024	11:00:00	7.2	0.034	17.5	6436.22	Closed	Open	15.7	262
9/19/2024	11:15:00	7	0.034	22.4	6441.40	Closed	Open	15.8	262
9/19/2024	11:30:00	7.3	0.034	43.9	6446.74	Closed	Open	15.7	262
9/19/2024	11:45:00	7.1	0.034	66.6	6451.61	Open	Closed	15.6	260
9/19/2024	12:00:00	7.2	0.026	399.1	6451.61	Open	Closed	15.8	260
9/19/2024	12:15:00	7.3	0.034	414.2	6451.61	Open	Closed	15.9	257
9/19/2024	12:30:00	7	0.035	414.1	6451.61	Open	Closed	16.1	262
9/19/2024	12:45:00	7.4	0.035	353.8	6451.61	Open	Closed	16.2	259
9/19/2024	13:00:00	7.1	0.000	147.1	6451.61	Open	Closed	16.3	262
9/19/2024	13:15:00	7.1	0.000	130.5	6451.61	Open	Closed	16.4	264
9/19/2024	13:30:00	7.2	0.000	74.1	6451.61	Open	Closed	17	264
9/19/2024	13:45:00	7.3	0.036	114.8	6451.61	Open	Closed	16.8	262

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/19/2024	14:00:00	7.1	0.000	31.6	6451.61	Open	Closed	17	262
9/19/2024	14:15:00	7.3	0.033	41.2	6451.61	Open	Closed	16.8	262
9/19/2024	14:30:00	7.2	0.034	16.6	6455.20	Closed	Open	16.8	262
9/19/2024	14:45:00	7.1	0.033	11.7	6455.98	Open	Closed	16.9	264
9/19/2024	15:00:00	7.4	0.033	13.9	6455.98	Open	Closed	17	264
9/19/2024	15:15:00	7.1	0.030	11.9	6458.32	Closed	Open	17.1	266
9/19/2024	15:30:00	7.2	0.030	12.9	6463.08	Closed	Open	17.2	266
9/19/2024	15:45:00	7.3	0.030	18.5	6467.81	Closed	Open	17.3	264
9/19/2024	16:00:00	7	0.031	24.4	6472.57	Closed	Open	17.5	268
9/19/2024	16:15:00	7.3	0.031	34.2	6477.33	Closed	Open	17.5	264
9/19/2024	16:30:00	7.1	0.030	53.9	6482.07	Closed	Open	17.6	266
9/19/2024	16:45:00	7.1	0.030	48.8	6485.08	Open	Closed	17.6	268
9/19/2024	17:00:00	7.3	0.031	52.9	6485.08	Open	Closed	17.6	266
9/19/2024	17:15:00	7	0.030	60.2	6485.08	Open	Closed	17.6	269
9/19/2024	17:30:00	7.3	0.031	62.2	6485.08	Open	Closed	17.5	266

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/19/2024	17:45:00	7.4	0.000	54.5	6485.08	Open	Closed	17.7	266
9/19/2024	18:00:00	7.3	0.000	43.5	6485.08	Open	Closed	18	264
9/19/2024	18:15:00	7.1	0.061	146.6	6485.08	Open	Closed	17.4	265
9/19/2024	18:30:00	7.3	0.067	107.1	6485.08	Open	Closed	17.2	268
9/19/2024	18:45:00	7.1	0.063	115.4	6485.08	Open	Closed	17	270
9/19/2024	19:00:00	7.3	0.055	105.2	6485.08	Open	Closed	16.9	270
9/19/2024	19:15:00	7.1	0.062	86	6485.08	Open	Closed	16.8	270
9/19/2024	19:30:00	7.3	0.065	73.8	6485.08	Open	Closed	16.8	270
9/19/2024	19:45:00	7.2	0.062	104.7	6485.08	Open	Closed	16.7	268
9/19/2024	20:00:00	7.2	0.062	57.4	6485.08	Open	Closed	16.6	268
9/19/2024	20:15:00	7.3	0.062	56.5	6485.08	Open	Closed	16.5	268
9/19/2024	20:30:00	7.1	0.061	54.3	6485.08	Open	Closed	16.5	268
9/19/2024	20:45:00	7.3	0.016	61.6	6485.08	Open	Closed	16.5	268
9/19/2024	21:00:00	7.3	0.000	47.1	6485.08	Open	Closed	16.5	269
9/19/2024	21:15:00	7.1	0.031	120.6	6485.08	Open	Closed	16.4	270

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/19/2024	21:30:00	7.1	0.000	47.3	6485.08	Open	Closed	16.4	274
9/19/2024	21:45:00	7.1	0.036	96.1	6485.08	Open	Closed	16.5	273
9/19/2024	22:00:00	7.2	0.048	414.8	6485.08	Open	Closed	16.5	272
9/19/2024	22:15:00	7.5	0.060	70	6485.08	Open	Closed	16.1	269
9/19/2024	22:30:00	7.2	0.029	33.8	6485.08	Open	Closed	15.9	268
9/19/2024	22:45:00	7.2	0.029	33.7	6486.99	Closed	Open	16.2	269
9/19/2024	23:00:00	6.9	0.040	15.7	6492.42	Closed	Open	15.8	269
9/19/2024	23:15:00	7.3	0.039	10.2	6498.52	Closed	Open	15.8	268
9/19/2024	23:30:00	7.1	0.037	6.5	6503.96	Closed	Open	15.6	268
9/19/2024	23:45:00	7.2	0.037	5.7	6509.41	Closed	Open	15.6	266
9/20/2024	0:00:00	7.2	0.037	5.8	6514.85	Closed	Open	15.5	266
9/20/2024	0:15:00	7.1	0.037	6.8	6520.26	Closed	Open	15.5	266
9/20/2024	0:30:00	7.3	0.037	8.3	6525.71	Closed	Open	15.5	264
9/20/2024	0:45:00	7.1	0.037	9.2	6531.15	Closed	Open	15.5	267
9/20/2024	1:00:00	7.4	0.036	11.4	6536.56	Closed	Open	15.4	265

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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/20/2024	1:15:00	7.2	0.035	10.5	6542.00	Closed	Open	15.6	264
9/20/2024	1:30:00	7	0.012	11.9	6543.85	Closed	Open	15.7	268
9/20/2024	1:45:00	7.3	0.033	20.2	6548.65	Closed	Open	15.2	264
9/20/2024	2:00:00	7.1	0.033	16.1	6553.42	Closed	Open	15.1	264
9/20/2024	2:15:00	7.2	0.035	20.4	6558.68	Closed	Open	15.1	266
9/20/2024	2:30:00	7.4	0.027	18.3	6563.58	Closed	Open	15.1	262
9/20/2024	2:45:00	7.3	0.012	22.9	6567.84	Closed	Open	15.8	263
9/20/2024	3:00:00	7.1	0.032	46.1	6567.90	Open	Closed	14.8	263
9/20/2024	3:15:00	7.3	0.017	17.5	6567.90	Open	Closed	14.8	263
9/20/2024	3:30:00	7.4	0.028	14.5	6570.88	Closed	Open	15.1	263
9/20/2024	3:45:00	7.3	0.028	11.5	6574.96	Closed	Open	15.5	261
9/20/2024	4:00:00	7.3	0.028	10.3	6579.02	Closed	Open	15.8	262
9/20/2024	4:15:00	7.3	0.027	9.7	6583.10	Closed	Open	16.1	261
9/20/2024	4:30:00	7.3	0.028	10.4	6587.18	Closed	Open	16.4	262
9/20/2024	4:45:00	7.3	0.028	12.4	6591.16	Closed	Open	16.6	263

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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/20/2024	5:00:00	7.3	0.028	11.3	6595.25	Closed	Open	16.8	263
9/20/2024	5:15:00	7.3	0.028	11.6	6599.33	Closed	Open	17	261
9/20/2024	5:30:00	7.3	0.028	11.3	6603.39	Closed	Open	17.2	261
9/20/2024	5:45:00	7.3	0.028	11.6	6607.47	Closed	Open	17.3	261
9/20/2024	6:00:00	7.3	0.028	11.1	6611.55	Closed	Open	17.4	262
9/20/2024	6:15:00	7.3	0.027	11.6	6615.61	Closed	Open	17.6	263
9/20/2024	6:30:00	7.3	0.027	10.7	6619.69	Closed	Open	17.6	262
9/20/2024	6:45:00	7.3	0.027	10	6623.61	Closed	Open	17.8	261
9/20/2024	7:00:00	7.3	0.000	15.1	6623.70	Open	Closed	18.1	262
9/20/2024	7:15:00	6.9	0.000	40.7	6623.70	Open	Closed	14.6	261
9/20/2024	7:30:00	7	0.026	27.8	6623.70	Open	Closed	14.4	261
9/20/2024	7:45:00	7.3	0.031	16.1	6623.86	Open	Closed	14.3	256
9/20/2024	8:00:00	7.2	0.031	13.4	6625.10	Closed	Open	14.7	255
9/20/2024	8:15:00	7.2	0.031	10.8	6629.87	Closed	Open	15.1	255
9/20/2024	8:30:00	7.2	0.031	9.8	6634.60	Closed	Open	15.5	256

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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/20/2024	8:45:00	7.2	0.030	10.6	6639.37	Closed	Open	15.8	256
9/20/2024	9:00:00	7.2	0.030	8	6644.13	Closed	Open	16.1	256
9/20/2024	9:15:00	7.2	0.031	9.3	6648.87	Closed	Open	16.5	257
9/20/2024	9:30:00	7.1	0.030	8.6	6653.63	Closed	Open	16.7	257
9/20/2024	9:45:00	7.1	0.030	8.1	6658.39	Closed	Open	17	255
9/20/2024	10:00:00	7.1	0.031	7.7	6663.13	Closed	Open	17.2	255
9/20/2024	10:15:00	7.1	0.030	7.8	6667.89	Closed	Open	17.5	256
9/20/2024	10:30:00	7.1	0.030	8.2	6672.65	Closed	Open	17.7	255
9/20/2024	10:45:00	7.1	0.030	9.1	6677.39	Closed	Open	17.9	255
9/20/2024	11:00:00	7.1	0.031	8.9	6682.15	Closed	Open	18.1	255
9/20/2024	11:15:00	7.1	0.030	7.8	6686.91	Closed	Open	18.3	255
9/20/2024	11:30:00	7.1	0.031	7.9	6691.65	Closed	Open	18.4	253
9/20/2024	11:45:00	7.1	0.031	7.8	6696.41	Closed	Open	18.6	254
9/20/2024	12:00:00	7.1	0.030	8	6701.18	Closed	Open	18.8	254
9/20/2024	12:15:00	7.1	0.031	7.7	6705.91	Closed	Open	18.9	253

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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/20/2024	12:30:00	7.1	0.030	7.7	6710.68	Closed	Open	19	254
9/20/2024	12:45:00	7.1	0.031	7.5	6715.44	Closed	Open	19.2	256
9/20/2024	13:00:00	7.1	0.031	7.6	6720.17	Closed	Open	19.4	256
9/20/2024	13:15:00	7.1	0.031	7.4	6724.94	Closed	Open	19.6	254
9/20/2024	13:30:00	7.1	0.031	7.3	6729.70	Closed	Open	19.8	256
9/20/2024	13:45:00	7.2	0.031	9.4	6734.44	Closed	Open	20.1	118
9/20/2024	14:00:00	7.2	0.031	6.2	6739.20	Closed	Open	20.3	118
9/20/2024	14:15:00	7.2	0.031	6.7	6743.80	Open	Closed	20.6	254
9/20/2024	14:30:00	7.2	0.000	6.4	6743.80	Open	Closed	21.2	255
9/20/2024	14:45:00	7.3	0.000	7	6743.80	Open	Closed	21.6	255
9/20/2024	15:00:00	7.3	0.080	385.5	6743.80	Open	Closed	17.6	251
9/20/2024	15:15:00	7.2	0.037	109.3	6743.80	Open	Closed	17.7	253
9/20/2024	15:30:00	7.2	0.040	33.5	6743.80	Open	Closed	17.8	252
9/20/2024	15:45:00	7.3	0.036	14.9	6743.80	Open	Closed	17.8	253
9/20/2024	16:00:00	7.1	0.036	15.7	6746.59	Closed	Open	17.8	255

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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/20/2024	16:15:00	7.4	0.034	16.6	6752.02	Closed	Open	17.7	253
9/20/2024	16:30:00	7	0.034	16.7	6757.24	Closed	Open	17.7	256
9/20/2024	16:45:00	7.3	0.033	17.2	6762.31	Closed	Open	17.6	255
9/20/2024	17:00:00	7.1	0.035	16.6	6767.74	Closed	Open	17.5	254
9/20/2024	17:15:00	7.2	0.035	18.2	6773.18	Closed	Open	17.5	254
9/20/2024	17:30:00	7.2	0.034	20.9	6778.59	Closed	Open	17.4	254
9/20/2024	17:45:00	7.1	0.031	21.6	6782.27	Open	Closed	17.3	256
9/20/2024	18:00:00	7.3	0.031	2.5	6785.02	Open	Closed	17.5	255
9/20/2024	18:15:00	7.2	0.045	138.5	6785.02	Open	Closed	17	255
9/20/2024	18:30:00	7.1	0.032	70.5	6785.02	Open	Closed	16.8	257
9/20/2024	18:45:00	7.3	0.032	68.7	6785.02	Open	Closed	16.6	255
9/20/2024	19:00:00	7.1	0.033	60.7	6785.02	Open	Closed	16.5	257
9/20/2024	19:15:00	7.1	0.029	80.2	6785.02	Open	Closed	16.4	257
9/20/2024	19:30:00	7.6	0.039	54.7	6785.02	Open	Closed	16.9	257
9/20/2024	19:45:00	7.1	0.041	53.3	6785.02	Open	Closed	16.2	255

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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/20/2024	20:00:00	7.1	0.035	26.4	6785.02	Open	Closed	16.1	257
9/20/2024	20:15:00	7.4	0.036	6.7	6789.77	Closed	Open	16	257
9/20/2024	20:30:00	7	0.036	3	6795.19	Closed	Open	15.9	256
9/20/2024	20:45:00	7.2	0.037	2.6	6800.63	Closed	Open	15.8	259
9/20/2024	21:00:00	7.3	0.036	3.4	6806.07	Closed	Open	15.8	256
9/20/2024	21:15:00	7	0.035	3.9	6811.48	Closed	Open	15.6	258
9/20/2024	21:30:00	7.3	0.035	4.5	6816.92	Closed	Open	15.5	256
9/20/2024	21:45:00	7.1	0.035	4.6	6822.34	Closed	Open	15.4	259
9/20/2024	22:00:00	7.1	0.034	5.7	6827.73	Closed	Open	15.3	259
9/20/2024	22:15:00	7.3	0.034	6.5	6833.11	Closed	Open	15.3	255
9/20/2024	22:30:00	7	0.034	9.5	6838.48	Closed	Open	15.2	259
9/20/2024	22:45:00	7.2	0.034	10.7	6843.87	Closed	Open	15.1	259
9/20/2024	23:00:00	7.3	0.036	11.6	6849.28	Closed	Open	15	256
9/20/2024	23:15:00	7	0.034	14.1	6854.76	Closed	Open	14.9	259
9/20/2024	23:30:00	7.3	0.034	13.9	6860.10	Closed	Open	14.8	256

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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/20/2024	23:45:00	7.2	0.035	17.9	6861.98	Open	Closed	14.7	259
9/21/2024	0:00:00	7.1	0.035	19.7	6861.98	Open	Closed	14.6	261
9/21/2024	0:15:00	7.3	0.034	16.3	6862.38	Closed	Open	14.5	256
9/21/2024	0:30:00	7	0.036	23.6	6867.74	Closed	Open	14.4	259
9/21/2024	0:45:00	7.2	0.035	25.4	6873.19	Closed	Open	14.2	259
9/21/2024	1:00:00	7.3	0.044	49.9	6876.45	Open	Closed	14.3	256
9/21/2024	1:15:00	7.2	0.029	65.6	6876.45	Open	Closed	14	257
9/21/2024	1:30:00	7	0.032	19.3	6876.45	Open	Closed	14.1	261
9/21/2024	1:45:00	7.3	0.032	10.7	6876.45	Open	Open	14	254
9/21/2024	2:00:00	7.4	0.033	8.3	6881.43	Closed	Open	14.3	254
9/21/2024	2:15:00	7.3	0.034	7.7	6886.44	Closed	Open	14.5	254
9/21/2024	2:30:00	7.3	0.034	7.9	6891.46	Closed	Open	14.6	254
9/21/2024	2:45:00	7.3	0.033	7.2	6896.52	Closed	Open	14.8	254
9/21/2024	3:00:00	7.3	0.034	6.4	6901.67	Closed	Open	14.9	254
9/21/2024	3:15:00	7.3	0.034	6.8	6906.71	Closed	Open	15	254

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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/21/2024	3:30:00	7.3	0.033	6.8	6911.75	Closed	Open	15.1	254
9/21/2024	3:45:00	7.3	0.034	6.5	6916.71	Closed	Open	15.2	254
9/21/2024	4:00:00	7.3	0.034	6.2	6921.77	Closed	Open	15.3	254
9/21/2024	4:15:00	7.3	0.033	6.1	6926.89	Closed	Open	15.3	254
9/21/2024	4:30:00	7.3	0.033	5.8	6931.85	Closed	Open	15.3	254
9/21/2024	4:45:00	7.3	0.033	6.3	6936.83	Closed	Open	15.4	254
9/21/2024	5:00:00	7.3	0.034	6.8	6941.81	Closed	Open	15.4	254
9/21/2024	5:15:00	7.3	0.034	6.5	6946.83	Closed	Open	15.4	254
9/21/2024	5:30:00	7.3	0.034	6.6	6951.85	Closed	Open	15.4	254
9/21/2024	5:45:00	7.3	0.034	6.9	6956.92	Closed	Open	15.4	254
9/21/2024	6:00:00	7.3	0.032	6.9	6961.81	Open	Closed	15.5	254
9/21/2024	6:15:00	6.9	0.032	11.5	6961.81	Open	Closed	13.8	259
9/21/2024	6:30:00	7.2	0.033	13.4	6961.81	Open	Closed	13.8	259
9/21/2024	6:45:00	7.3	0.033	9.1	6965.26	Closed	Open	13.9	255
9/21/2024	7:00:00	7.2	0.000	8.2	6966.05	Closed	Open	14	255

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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/21/2024	7:15:00	7	0.000	24.1	6966.05	Open	Closed	13.8	259
9/21/2024	7:30:00	7	0.031	93	6966.05	Open	Closed	13.8	260
9/21/2024	7:45:00	7.3	0.031	56.2	6966.05	Open	Closed	14	261
9/21/2024	8:00:00	7.3	0.028	20.4	6966.05	Open	Closed	13.8	257
9/21/2024	8:15:00	7	0.028	8.3	6966.05	Open	Closed	13.6	260
9/21/2024	8:30:00	7.1	0.027	7.4	6969.93	Closed	Open	13.8	263
9/21/2024	8:45:00	7.3	0.026	7.7	6974.02	Closed	Open	14	259
9/21/2024	9:00:00	7.2	0.027	8.4	6978.10	Closed	Open	14.2	256
9/21/2024	9:15:00	7	0.027	6.7	6982.16	Closed	Open	14.2	256
9/21/2024	9:30:00	7.1	0.026	7.1	6986.24	Closed	Open	14.4	256
9/21/2024	9:45:00	7.2	0.027	6.4	6990.32	Closed	Open	14.8	258
9/21/2024	10:00:00	7.3	0.027	6.2	6994.38	Closed	Open	15.1	256
9/21/2024	10:15:00	7.3	0.027	7.1	6998.47	Closed	Open	15.4	255
9/21/2024	10:30:00	7.3	0.027	6	7002.55	Closed	Open	16	255
9/21/2024	10:45:00	7.3	0.026	6	7006.61	Closed	Open	16.4	255

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/21/2024	11:00:00	7.1	0.027	5.5	7010.69	Closed	Open	16.7	255
9/21/2024	11:15:00	7	0.027	5.8	7014.77	Closed	Open	16.9	255
9/21/2024	11:30:00	7	0.028	5.2	7018.83	Closed	Open	17.2	255
9/21/2024	11:45:00	7	0.027	5.3	7022.91	Closed	Open	17.5	253
9/21/2024	12:00:00	7	0.027	5	7027.00	Closed	Open	17.7	252
9/21/2024	12:15:00	7	0.027	5.1	7031.06	Closed	Open	18	252
9/21/2024	12:30:00	7	0.027	4.7	7035.14	Closed	Open	18.2	254
9/21/2024	12:45:00	7	0.028	5.1	7039.22	Closed	Open	18.3	253
9/21/2024	13:00:00	7	0.027	4.6	7043.28	Closed	Open	18.5	253
9/21/2024	13:15:00	7	0.028	4.5	7047.36	Closed	Open	18.6	253
9/21/2024	13:30:00	7	0.028	4.6	7051.45	Closed	Open	18.8	253
9/21/2024	13:45:00	7	0.027	4.4	7055.51	Closed	Open	19	254
9/21/2024	14:00:00	7	0.028	4.3	7059.59	Closed	Open	19.1	254
9/21/2024	14:15:00	7	0.027	4.4	7063.67	Closed	Open	19.3	253
9/21/2024	14:30:00	7	0.027	4.4	7067.75	Closed	Open	19.5	254

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/21/2024	14:45:00	7	0.028	4	7071.81	Closed	Open	19.6	254
9/21/2024	15:00:00	7	0.027	4	7075.90	Closed	Open	19.8	252
9/21/2024	15:15:00	7	0.027	4.1	7079.98	Closed	Open	20	254
9/21/2024	15:30:00	7	0.000	3.9	7082.00	Open	Closed	20.1	254
9/21/2024	15:45:00	7.5	0.029	14.8	7083.82	Closed	Open	17.1	252
9/21/2024	16:00:00	7.4	0.029	10.7	7088.44	Closed	Open	16.5	252
9/21/2024	16:15:00	7	0.029	13.9	7090.26	Open	Closed	15.5	257
9/21/2024	16:30:00	7.1	0.029	30.4	7090.26	Open	Closed	15.4	257
9/21/2024	16:45:00	7.4	0.054	68.4	7090.26	Open	Closed	15.4	252
9/21/2024	17:00:00	7.2	0.028	28.9	7090.26	Open	Closed	15.8	254
9/21/2024	17:15:00	7	0.027	13.9	7090.26	Open	Closed	15.7	255
9/21/2024	17:30:00	7.3	0.026	11.6	7090.26	Open	Closed	15.7	255
9/21/2024	17:45:00	7.4	0.028	9.4	7093.25	Closed	Open	16	256
9/21/2024	18:00:00	7.4	0.028	9	7097.34	Closed	Open	16.5	254
9/21/2024	18:15:00	7.3	0.028	9.3	7101.42	Closed	Open	16.9	254

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/21/2024	18:30:00	7.3	0.028	6.5	7105.48	Closed	Open	17.4	254
9/21/2024	18:45:00	7.3	0.027	8.6	7109.56	Closed	Open	17.7	252
9/21/2024	19:00:00	7.3	0.028	6	7113.64	Closed	Open	18	252
9/21/2024	19:15:00	7.3	0.028	5.4	7117.70	Closed	Open	18.3	252
9/21/2024	19:30:00	7.3	0.028	4.7	7121.78	Closed	Open	18.6	254
9/21/2024	19:45:00	7.3	0.028	4.5	7125.87	Closed	Open	18.8	254
9/21/2024	20:00:00	7.3	0.028	3.3	7129.93	Closed	Open	19	252
9/21/2024	20:15:00	7.3	0.028	3.7	7134.03	Closed	Open	19.1	252
9/21/2024	20:30:00	7.3	0.028	4.7	7138.11	Closed	Open	19.3	253
9/21/2024	20:45:00	7.3	0.029	5.8	7142.17	Closed	Open	19.4	254
9/21/2024	21:00:00	7.3	0.028	4.7	7146.25	Closed	Open	19.4	253
9/21/2024	21:15:00	7.2	0.000	6.3	7148.36	Open	Closed	19.8	252
9/21/2024	21:30:00	6.8	0.036	95	7148.36	Open	Closed	15.3	257
9/21/2024	21:45:00	6.9	0.034	51.6	7148.36	Open	Closed	15.8	261
9/21/2024	22:00:00	7.1	0.034	33.4	7148.36	Open	Closed	16.3	261

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/21/2024	22:15:00	7.2	0.034	28.3	7152.05	Closed	Open	16.8	261
9/21/2024	22:30:00	7.2	0.034	21.4	7157.39	Closed	Open	17.1	262
9/21/2024	22:45:00	7.2	0.034	24.4	7162.68	Closed	Open	17.4	262
9/21/2024	23:00:00	7.2	0.034	16.9	7167.96	Closed	Open	17.6	259
9/21/2024	23:15:00	6.9	0.047	131	7170.52	Open	Closed	14.7	257
9/21/2024	23:30:00	7.2	0.033	49.3	7170.52	Open	Closed	14.6	255
9/21/2024	23:45:00	7.3	0.034	14.4	7170.80	Closed	Open	14.7	251
9/22/2024	0:00:00	7.3	0.034	13.7	7176.18	Closed	Open	15.1	253
9/22/2024	0:15:00	7.2	0.035	12.1	7181.58	Closed	Open	15.6	253
9/22/2024	0:30:00	7.2	0.034	10.2	7186.97	Closed	Open	16	255
9/22/2024	0:45:00	7.2	0.034	8.1	7192.36	Closed	Open	16.4	253
9/22/2024	1:00:00	7.2	0.034	8.1	7197.75	Closed	Open	16.7	255
9/22/2024	1:15:00	7.2	0.035	6.9	7203.14	Closed	Open	17	255
9/22/2024	1:30:00	7.2	0.035	6.3	7208.53	Closed	Open	17.2	254
9/22/2024	1:45:00	7.2	0.034	5.7	7213.96	Closed	Open	17.4	255

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/22/2024	2:00:00	7.2	0.035	6.1	7219.37	Closed	Open	17.6	255
9/22/2024	2:15:00	7.2	0.033	6	7224.74	Closed	Open	17.8	257
9/22/2024	2:30:00	7.2	0.034	5.6	7230.13	Closed	Open	17.9	257
9/22/2024	2:45:00	7.2	0.034	7.5	7235.54	Closed	Open	18.1	257
9/22/2024	3:00:00	7.2	0.035	7.7	7240.94	Closed	Open	18.3	257
9/22/2024	3:15:00	7.2	0.034	6.7	7246.35	Closed	Open	18.5	254
9/22/2024	3:30:00	7.2	0.034	6.6	7251.76	Closed	Open	18.6	255
9/22/2024	3:45:00	7.2	0.022	19.7	7256.78	Open	Closed	18.7	257
9/22/2024	4:00:00	7.1	0.040	62.9	7256.78	Open	Closed	14	116
9/22/2024	4:15:00	7.3	0.029	18.8	7257.75	Closed	Open	14.2	114
9/22/2024	4:30:00	7.4	0.032	15.3	7262.49	Closed	Open	14.6	114
9/22/2024	4:45:00	7.4	0.033	13.8	7267.25	Closed	Open	15.1	250
9/22/2024	5:00:00	7.3	0.032	10.7	7271.99	Closed	Open	15.5	250
9/22/2024	5:15:00	7.3	0.033	8.4	7276.75	Closed	Open	15.9	250
9/22/2024	5:30:00	7.3	0.033	7.1	7281.52	Closed	Open	16.2	250

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**September 16th to September 22nd**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 26th**

Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/22/2024	5:45:00	7.3	0.033	5.8	7286.25	Closed	Open	16.5	255
9/22/2024	6:00:00	7.3	0.033	5	7291.02	Closed	Open	16.7	252
9/22/2024	6:15:00	7.3	0.033	6.2	7295.78	Closed	Open	16.8	251
9/22/2024	6:30:00	7.3	0.033	6.4	7300.51	Closed	Open	16.9	251
9/22/2024	6:45:00	7.3	0.033	7.6	7305.28	Closed	Open	17	253
9/22/2024	7:00:00	7.3	0.032	6.3	7310.04	Closed	Open	17.1	253
9/22/2024	7:15:00	7.3	0.032	5.6	7314.78	Closed	Open	17.3	253
9/22/2024	7:30:00	7.3	0.032	5.2	7319.54	Closed	Open	17.5	253
9/22/2024	7:45:00	7.3	0.033	5.1	7324.30	Closed	Open	17.8	253
9/22/2024	8:00:00	6.9	0.033	26	7327.69	Closed	Open	14.3	256
9/22/2024	8:15:00	7	0.000	58.8	7327.84	Open	Closed	13.9	257
9/22/2024	8:30:00	7	0.000	40.1	7327.84	Open	Closed	14.4	255
9/22/2024	8:45:00	7	0.000	50.1	7327.84	Open	Closed	15	258
9/22/2024	9:00:00	7	0.011	31.9	7327.84	Open	Closed	15.4	257
9/22/2024	9:15:00	7.4	0.024	12.2	7330.27	Closed	Open	13.7	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/22/2024	9:30:00	7	0.025	10.5	7333.78	Closed	Open	13.7	255
9/22/2024	9:45:00	7.1	0.025	9.7	7337.32	Closed	Open	13.7	255
9/22/2024	10:00:00	7.3	0.026	10.4	7341.14	Closed	Open	13.7	114
9/22/2024	10:15:00	7.3	0.030	8.7	7345.36	Closed	Open	14.3	116
9/22/2024	10:30:00	7	0.030	11.1	7350.12	Closed	Open	14.3	253
9/22/2024	10:45:00	7.1	0.030	11.3	7354.86	Closed	Open	14.5	255
9/22/2024	11:00:00	7.3	0.031	9.3	7359.59	Closed	Open	14.7	257
9/22/2024	11:15:00	7.4	0.031	8.2	7364.35	Closed	Open	14.9	116
9/22/2024	11:30:00	7.1	0.030	8.8	7369.11	Closed	Open	14.9	252
9/22/2024	11:45:00	7	0.026	10.1	7373.82	Closed	Open	14.8	255
9/22/2024	12:00:00	7.3	0.000	11	7376.40	Open	Closed	14.2	115
9/22/2024	12:15:00	7.3	0.000	9.7	7376.40	Open	Closed	14.7	116
9/22/2024	12:30:00	7.3	0.000	9.1	7376.40	Open	Closed	15.2	252
9/22/2024	12:45:00	7.3	0.000	13.5	7376.40	Open	Closed	15.5	252
9/22/2024	13:00:00	6.9	0.031	15.6	7376.40	Open	Closed	14.2	256

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/22/2024	13:15:00	7.2	0.031	10	7378.15	Closed	Open	14.1	115
9/22/2024	13:30:00	7.3	0.027	9.3	7382.84	Closed	Open	14.1	115
9/22/2024	13:45:00	7	0.027	9.3	7386.92	Closed	Open	14.1	257
9/22/2024	14:00:00	7.1	0.026	9.3	7390.98	Closed	Open	14.1	258
9/22/2024	14:15:00	7.4	0.027	8.7	7395.06	Closed	Open	14.1	114
9/22/2024	14:30:00	7.1	0.027	8.9	7399.14	Closed	Open	14.2	258
9/22/2024	14:45:00	7	0.027	9	7403.20	Closed	Open	14.2	260
9/22/2024	15:00:00	7.3	0.027	7.7	7407.28	Closed	Open	14.3	257
9/22/2024	15:15:00	7.2	0.026	8.6	7411.37	Closed	Open	14.3	258
9/22/2024	15:30:00	7	0.027	8.5	7415.43	Closed	Open	14.3	262
9/22/2024	15:45:00	7.2	0.027	8.5	7419.51	Closed	Open	14.4	257
9/22/2024	16:00:00	7.3	0.027	9.6	7423.59	Closed	Open	14.4	257
9/22/2024	16:15:00	7	0.027	11.5	7427.65	Closed	Open	14.4	265
9/22/2024	16:30:00	7.1	0.027	12.3	7431.73	Closed	Open	14.4	264
9/22/2024	16:45:00	7.4	0.027	14.6	7435.82	Closed	Open	14.4	259

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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/22/2024	17:00:00	7.1	0.027	17.5	7439.88	Closed	Open	14.4	265
9/22/2024	17:15:00	7	0.027	19.8	7443.96	Closed	Open	14.4	267
9/22/2024	17:30:00	7.3	0.027	18.8	7448.04	Closed	Open	14.4	262
9/22/2024	17:45:00	7.3	0.027	17.5	7452.10	Closed	Open	14.4	263
9/22/2024	18:00:00	7	0.028	16.4	7456.18	Closed	Open	14.3	268
9/22/2024	18:15:00	7.1	0.028	15.7	7460.26	Closed	Open	14.3	268
9/22/2024	18:30:00	7.4	0.027	13	7464.32	Closed	Open	14.3	265
9/22/2024	18:45:00	7.1	0.027	11.5	7468.41	Closed	Open	14.3	268
9/22/2024	19:00:00	7	0.028	10.6	7472.49	Closed	Open	14.3	267
9/22/2024	19:15:00	7.2	0.029	9.6	7476.62	Closed	Open	14.4	266
9/22/2024	19:30:00	7.4	0.029	12.4	7480.80	Closed	Open	14.6	265
9/22/2024	19:45:00	7.1	0.029	8.5	7484.97	Closed	Open	14.6	265
9/22/2024	20:00:00	7	0.029	8.4	7489.14	Closed	Open	14.7	267
9/22/2024	20:15:00	7.2	0.029	10.3	7493.42	Closed	Open	14.7	267
9/22/2024	20:30:00	7.4	0.029	10.8	7497.79	Closed	Open	14.7	263

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature(°C)	Discharge Conductivity (µS/cm)
9/22/2024	20:45:00	7.2	0.118	28.8	7502.31	Closed	Open	14.9	263
9/22/2024	21:00:00	7.1	0.033	14.7	7508.12	Closed	Open	15.5	265
9/22/2024	21:15:00	7.3	0.056	81.4	7509.31	Open	Closed	14.5	260
9/22/2024	21:30:00	7.3	0.033	36.5	7509.31	Open	Closed	14.4	257
9/22/2024	21:45:00	7.1	0.032	12.4	7511.73	Closed	Open	14.7	259
9/22/2024	22:00:00	7.1	0.032	9	7516.49	Closed	Open	15.6	262
9/22/2024	22:15:00	7.2	0.030	6.5	7521.23	Closed	Open	15.5	260
9/22/2024	22:30:00	7.3	0.030	4.2	7525.97	Closed	Open	15.9	262
9/22/2024	22:45:00	7.2	0.030	3.6	7530.67	Closed	Open	16.3	260
9/22/2024	23:00:00	7.2	0.030	3.4	7535.36	Closed	Open	16.6	260
9/22/2024	23:15:00	7.2	0.029	2.7	7540.11	Closed	Open	17	258
9/22/2024	23:30:00	7.2	0.031	1.6	7544.80	Closed	Open	17.3	260
9/22/2024	23:45:00	7.2	0.030	1.3	7549.46	Closed	Open	17.5	262

Appendix B: Photos

Photo 1: No visible sheen observed in the WTP tank, September 16th

Photo 2: No visible sheen observed in the WTP water, September 17th

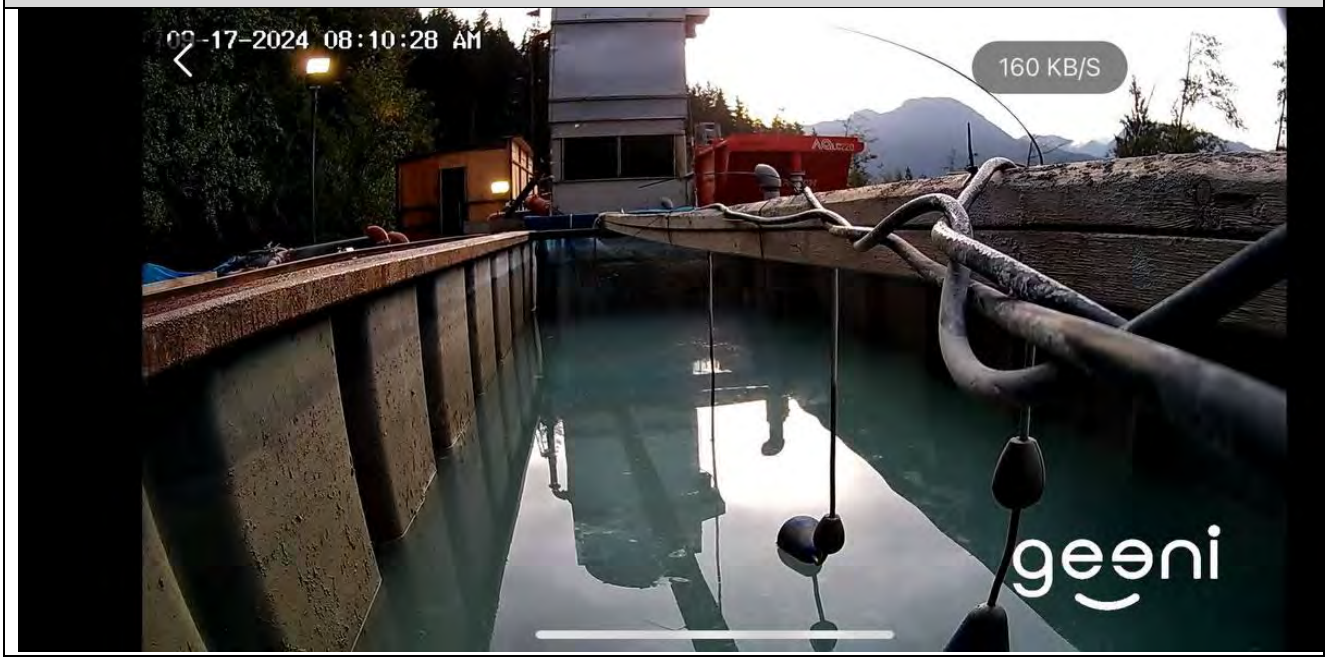

Photo 3: No visible sheen observed in the WTP water, September 17th

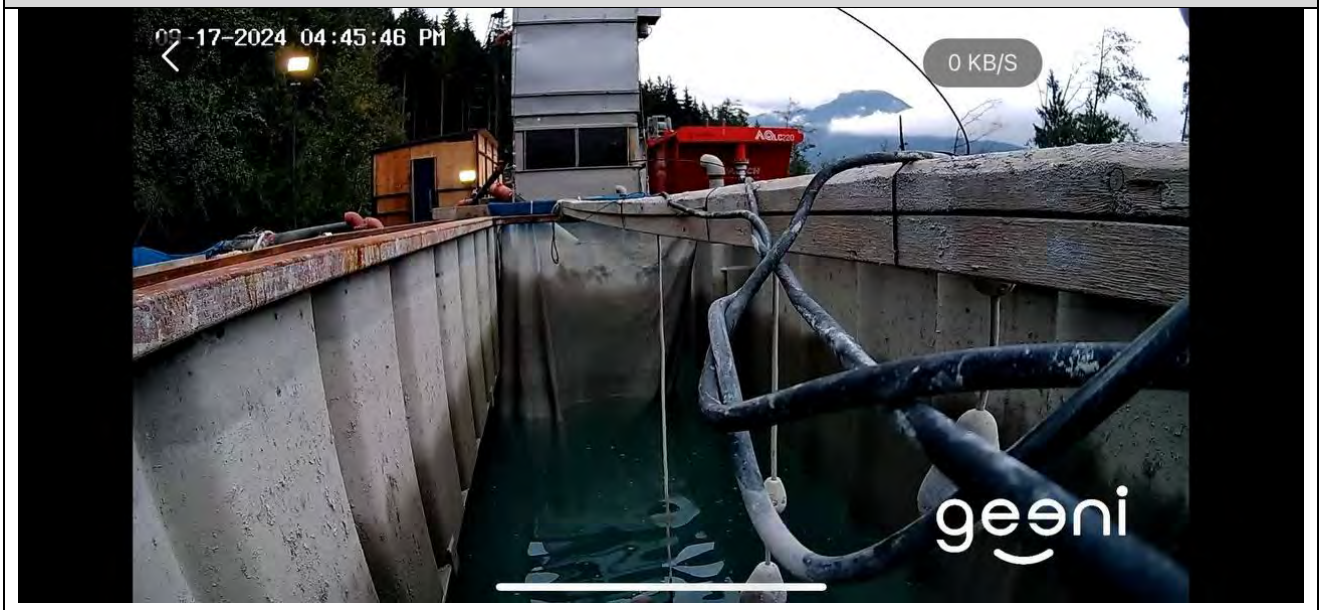

Photo 4: No visible sheen observed in the WTP water, September 19th

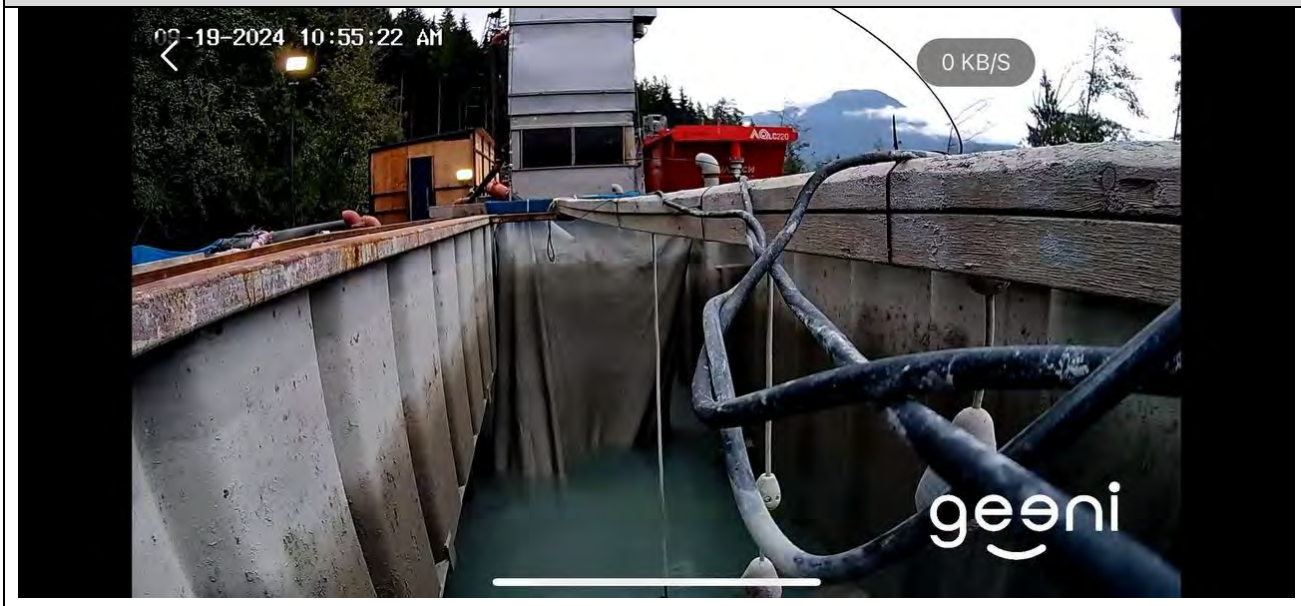

Photo 5: No visible sheen observed in the WTP water, September 20th

Photo 6: No visible sheen observed in the WTP water, September 21st

Photo 7: No visible sheen observed in the WTP water, September 22nd

Photo 9 and 10: Checked NTU at DS with YSI, September 17th

Photo 11 and 12: Checked NTU at DS with YSI, September 17th


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Throughout the period of elevated NTU measured at the WTP during discharge, FKM monitored downstream sondes for NTU levels to record downstream NTU limits. Although there were higher WTP NTU levels on September 19th, the downstream NTU levels remained within the regulatory guidelines.

Table 1: WTP Log

Date	Time	pH	NTU	Temperature (°C)
9/19/2024	9:45:00	7.1	7.6	15.3
9/19/2024	10:00:00	7.1	13.5	15.8
9/19/2024	10:15:00	7.3	14.8	15.6
9/19/2024	10:30:00	7	14.5	15.7
9/19/2024	10:45:00	7.3	15.9	15.7
9/19/2024	11:00:00	7.2	17.5	15.7
9/19/2024	11:15:00	7	22.4	15.8
9/19/2024	11:30:00	7.3	43.9	15.7
9/19/2024	14:30:00	7.2	16.6	16.8
9/19/2024	15:15:00	7.1	11.9	17.1
9/19/2024	15:30:00	7.2	12.9	17.2
9/19/2024	15:45:00	7.3	18.5	17.3
9/19/2024	16:00:00	7	24.4	17.5
9/19/2024	16:15:00	7.3	34.2	17.5
9/19/2024	16:30:00	7.1	53.9	17.6
9/19/2024	22:45:00	7.2	33.7	16.2
9/19/2024	23:00:00	6.9	15.7	15.8
9/19/2024	23:15:00	7.3	10.2	15.8
9/19/2024	23:30:00	7.1	6.5	15.6
9/19/2024	23:45:00	7.2	5.7	15.6

Table 2: DS sonde data

Data and Time	Temperature (°C)	PH	NTU
9/19/2024 23:50	14.87	7.96	0
9/19/2024 23:40	14.84	7.95	0
9/19/2024 23:30	14.79	7.95	0.85
9/19/2024 23:20	14.65	7.96	0.28
9/19/2024 23:10	14.58	7.83	2.99
9/19/2024 23:00	14.6	7.84	0.48
9/19/2024 22:50	14.61	7.84	0.29
9/19/2024 22:40	14.62	7.84	0.15
9/19/2024 22:30	14.63	7.84	0.7
9/19/2024 22:20	14.64	7.84	0.37
9/19/2024 22:10	14.65	7.84	0.88
9/19/2024 22:00	14.66	7.84	0.3
9/19/2024 21:50	14.67	7.84	0.4
9/19/2024 21:40	14.68	7.84	0.07
9/19/2024 21:30	14.69	7.84	0.12
9/19/2024 21:20	14.69	7.85	0.29
9/19/2024 21:10	14.7	7.84	0.24
9/19/2024 21:00	14.71	7.85	0.15
9/19/2024 20:50	14.71	7.85	0.33
9/19/2024 20:40	14.71	7.86	0
9/19/2024 20:30	14.72	7.87	0.01
9/19/2024 20:20	14.73	7.87	0
9/19/2024 20:10	14.74	7.88	0.59
9/19/2024 20:00	14.76	7.88	0.71
9/19/2024 19:50	14.77	7.88	0.46
9/19/2024 19:40	14.78	7.88	0.3
9/19/2024 19:30	14.8	7.89	0.79
9/19/2024 19:20	14.81	7.89	0.4
9/19/2024 19:10	14.83	7.89	0.21
9/19/2024 19:00	14.85	7.89	0.35

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Data and Time	Temperature (°C)	PH	NTU
9/19/2024 18:50	14.86	7.89	0.96
9/19/2024 18:40	14.88	7.9	0.71
9/19/2024 18:30	14.9	7.9	1.05
9/19/2024 18:20	14.92	7.9	1.17
9/19/2024 18:10	14.94	7.91	2.55
9/19/2024 18:00	14.97	7.91	2.27
9/19/2024 17:50	15.01	7.9	1.76
9/19/2024 17:40	15.05	7.89	1.97
9/19/2024 17:30	15.09	7.88	2.69
9/19/2024 17:20	15.17	7.92	2.35
9/19/2024 17:10	15.29	7.94	5.51
9/19/2024 17:00	15.59	8.03	0
9/19/2024 16:50	15.62	8.01	0.19
9/19/2024 16:40	15.6	7.99	0
9/19/2024 16:30	15.6	7.98	0.09
9/19/2024 16:20	15.6	7.98	0
9/19/2024 16:10	15.6	7.98	0.35
9/19/2024 16:00	15.59	7.96	0
9/19/2024 15:50	15.56	7.96	0.31
9/19/2024 15:40	15.49	7.96	0
9/19/2024 15:30	15.4	7.87	1.72
9/19/2024 15:20	15.37	7.86	1.3
9/19/2024 15:10	15.33	7.86	1.55
9/19/2024 15:00	15.29	7.87	1.97
9/19/2024 14:50	15.27	7.88	2.39
9/19/2024 14:40	15.32	7.89	0.65
9/19/2024 14:30	15.34	7.89	0.42
9/19/2024 14:20	15.37	7.89	0.3
9/19/2024 14:10	15.36	7.88	0
9/19/2024 14:00	15.35	7.88	0.5
9/19/2024 13:50	15.3	7.87	0.69
9/19/2024 13:40	15.25	7.87	0.4
9/19/2024 13:30	15.2	7.87	1.12
9/19/2024 13:20	15.16	7.87	0.8
9/19/2024 13:10	15.16	7.88	1.3

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Data and Time	Temperature (°C)	PH	NTU
9/19/2024 13:00	15.18	7.89	2.02
9/19/2024 12:50	15.24	7.9	2.25
9/19/2024 12:40	15.28	7.9	1.5
9/19/2024 12:30	15.26	7.89	1.93
9/19/2024 12:20	15.2	7.94	0.89
9/19/2024 12:10	15.09	8.04	0.77
9/19/2024 12:00	15.03	8	0
9/19/2024 11:50	14.97	7.99	0
9/19/2024 11:40	14.91	7.99	0
9/19/2024 11:30	14.87	8.03	0
9/19/2024 11:20	14.84	8.01	0
9/19/2024 11:10	14.82	7.99	0
9/19/2024 11:00	14.81	7.99	0.22
9/19/2024 10:50	14.8	8	0
9/19/2024 10:40	14.79	8.04	0
9/19/2024 10:30	14.78	7.97	1.17
9/19/2024 10:20	14.78	7.99	0
9/19/2024 10:10	14.77	8	0
9/19/2024 10:00	14.77	8	0
9/19/2024 9:50	14.76	8.01	0
9/19/2024 9:40	14.77	8.02	0
9/19/2024 9:30	14.79	8	0
9/19/2024 9:20	14.84	7.99	1.22
9/19/2024 9:10	14.93	7.98	0
9/19/2024 9:00	15.08	7.91	0

Appendix D: Woodfibre Site Receiving Environment Documentation

Woodfibre Site Receiving Environment Sample Analysis

TRITON Environmental Consultants	Sample ID	Reviewed and signed off by:	COLLEGE OF APPLIED BIOLOGISTS Farshad Shafiei RPBio 3781 CAB		Farshad Shafiei Ph.D., R.P.Bio.	WLNG US1 (Upstream)	WLNG 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					VA24C4571-001	VA24C4571-002					
	Date Sampled					17-Sep-24	17-Sep-24					
	Time Sampled					11:14	9:47					
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	7.19	7.37		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]	-	13.8	14.4		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. Refer to footnote 4 for background temperature range for East Creek. Calculation: US value +/- 1 = guideline range	
Conductivity (field)	µS/cm	-	-	-	-	39	135					
Turbidity (field)	NTU	Varies with background, see note Guideline = 8.6	Varies with background, see note Guideline = 3.84 5-week discrete sampling average = 2.50 (DS)	Varies with background, see note Guideline = 8.6	Varies with background, see note Guideline = 3.84 5-week discrete sampling average = 2.50 (DS)	0.61	5.54		Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.	Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.
Dissolved Oxygen (field)	mg/L	Varies with life stage, see note	Varies with life stage, see note	Varies with life stage, see note	Varies with life stage, see note	8.94	7.31	DO from WLNG DS was manually sampled with YSI	Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L. Refer to BC Water Quality Guidelines for more information.
General Parameters												
Hardness (as $CaCO_3$) (total)	mg/L	-	-	-	-	10	52.5					
Total Dissolved Solids	mg/L	-	-	-	-	32	93					
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 = 3.46 (DS)	Varies with background, see note Guideline = 28	Varies with background, see note Guideline = 8.00 5-week discrete sampling average = 3.46 (DS)	< 3.0	5.3		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	-	-	-	-	1.94	1.34			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	10.1	58.6	The upstream location has high sensitivity to acid inputs (i.e. low buffering capacity), while the downstream has low sensitivity to acid inputs.		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 = 17.1	Varies with pH and temperature. See note. Guideline = 1.78	Varies with pH and temperature. See note. Guideline = 58	Varies with pH, temperature and salinity. See note. Guideline = 5.3	< 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	0.76	2.75				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 =0.408	-	1.5	-	0.025	0.137		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 5-week field average = 1.50 (US), 0.77 (DS)	-	3.7 5-week field average = 1.50 (US), 0.77 (DS)	0.0303	0.155					
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	0.0021		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	-	-	-	-	0.089	0.542					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.0044	0.0152			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 = 218	-	-	2.8	7.17			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 = 0.157 5-week field average = 0.090 (US), 0.077 (DS)	-	-	0.0509	0.181			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	-	-	< 0.00010	0.00082					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.00016	0.00044					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.00463	0.0164			Working guideline status		
Beryllium (Be)-Total	mg/L	-	0.00013	-	0.100	< 0.000100	< 0.000100			Working guideline status		Working guideline status
Bismuth (Bi)-Total	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Boron (B)-Total	mg/L	-	1.2	-	1.2	< 0.010	0.021					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	< 0.0000050	0.0000318					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	3.38	19.2					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.000012	0.000044					
Chromium (Cr) - Total	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Chromium (Cr(III))-Total	mg/L	-	0.0089	-	0.056	< 0.00050	< 0.00050			Working guideline status		Working guideline status
Chromium (Cr(VI))-Total	mg/L	-	0.0025	-	0.0015	< 0.00050	< 0.00050			Working guideline status		Working guideline status
Cobalt (Co)-Total	mg/L	0.11	0.004	-	-	< 0.00010	< 0.00010					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002 5-week field average = 0.0012 (US), 0.0009 (DS)	0.00058	0.00095					
Iron (Fe)-Total	mg/L	1	-	-	-	0.080	0.390					
Lead (Pb)-Total	mg/L	Varies with hardness. See Note. Guideline = 0.004	Varies with hardness. See Note. Guideline = 0.004	0.14	0.002	< 0.000050	0.000701		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	0.0056					
Magnesium (Mg)-Total	mg/L	-	-	-	-	0.393	1.11					
Manganese (Mn)-Total	mg/L	Varies with hardness Guideline = 0.82	Varies with hardness Guideline = 0.77	-	-	0.00195	0.0186		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	-	-	0.000660	0.0150					
Nickel (Ni)-Total	mg/L	-	Varies with hardness Guideline = 0.025	-	0.0083	< 0.00050	0.00053			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	-	-	< 0.050	< 0.050			Guideline only applies to lakes with salmonid species being the dominant fish species. Guideline is for reference only and does not apply to site.		
Potassium (K)-Total	mg/L	-	-	-	-	0.333	2.93					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00075	0.00472					
Selenium (Se)-Total	mg/L	-	0.002	-	0.002	< 0.000050	< 0.000050			Guideline for freshwater aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidelines for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on 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	-	-	-	-	4.98	6.18					
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	-	-	-	-	1.96	5.32					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0170	0.0555					
Sulfur (S)-Total	mg/L	-	-	-	-	1.02	2.46					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.0008	-	-	< 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	-	-	-	-	0.00061	0.00547					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00010	0.00036					
Uranium (U)-Total	mg/L	-	0.0085	-	-	0.000069	0.00126			Working guideline status		
Vanadium (V)-Total	mg/L	-	-	-	0.050	< 0.00050	0.00052					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	0.010	< 0.0030	0.0054					
Zirconium (Zr)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0366	0.0336					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	< 0.00010	0.00072					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00014	0.00033					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.00449	0.0138					
Beryllium (Be)-Dissolved	mg/L	-	-	-	-	< 0.000100	< 0.000100					
Bismuth (Bi)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Boron (B)-Dissolved	mg/L	-	-	-	-	< 0.010	0.019					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note Guideline = 0.000055	Varies with hardness, see note Guideline = 0.000096	-	-	< 0.0000050	0.0000216		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	-	-	3.3	18.1	The upstream location has high sensitivity to acid inputs (i.e. low buffering capacity), while the downstream location has low sensitivity to acid inputs.		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	-	-	-	-	0.000011	0.000026					
Chromium (Cr)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Cobalt (Co)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Copper (Cu)-Dissolved	mg/L	Guideline varies with other parameters, see note Guideline = 0.0019	Guideline varies with other parameters, see note Guideline = 0.0009 5-week field average = **0.0011** (US), 0.0007 (DS)	-	-	0.00057	0.0005		Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date	Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date		
Iron (Fe)-Dissolved	mg/L	0.35	-	-	-	0.057	0.011					
Lead (Pb)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	< 0.0010	0.005					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.389	1.09					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00105	0.00132					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.000611	0.0143					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.050	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	0.345	2.86					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00080	0.00450					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	< 0.00005	< 0.00005					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	4.82	5.73					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	1.94	5.31					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0163	0.0553					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	0.85	2.4					
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	-	-	-	-	< 0.00030	0.00044					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	< 0.00010	0.00030					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.000064	0.000976					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness Guideline = 0.009	Varies with pH, DOC, hardness Guideline = 0.0070 5-week field average = 0.0016 (US), 0.0026 (DS)	-	-	0.0013	0.0025		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) - BCAWWQG - Freshwater Aquatic Life British Columbia Approved and Working Water Quality Guidelines (NOV 2023) - BCAWWQG - Marine Aquatic Life										
Color Key:	Exceeds both FAL and MAL Guidelines	Exceeds FAL Short term Guideline	*Exceeds FAL Long term Guideline*	Exceeds MAL Short term Guideline	*Exceeds MAL Long term Guideline*							
Color Key:		Exceeds FAL Short and Long-Term Guideline		Exceeds MAL Short and Long-term Guidelines								

[1]BC MOECCS. 2023. BC Water Qualtiy Guidelines for the Protection of Aquatic Life, Wildlife & Agriculture. Accessed from: wqg_summary_aquaticlife_wildlife_agri.pdf (gov.bc.ca)
[2]BC MOECCS. 2021. BC Working Water Qualtiy Guidelines for the Protection of Aquatic Life, Widlife & Agriculture. Accessed from: bc_env_working_water_quality_guidelines.pdf (gov.bc.ca)
[3]Note that long-term guidelines apply to averaged data to account for chronic impacts to aquatic life. Ideally, five samples collected at evenly spaced intervals over 30 days is considered to be the minimum number needed to calculate the long-term average of any parameter, though this may vary by parameter and site conditions. Long-term guidelines applied here are for reference only and may not indicate chronic impacts to aquatic life if exceedances occur in the short term.
[4]Background temperature ranges: Dec-Feb: 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	FAL-ST [1,2]	FAL-LT [1,2]	MAL-ST [1]	MAL-LT [1,2]	Values: WLNG US1 (Upstream)	Values: WLNG DS 1 (Downstream)
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations				7.19	7.37
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations				13.8	14.4
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations				0.61	5.54
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				10	52.5
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations				1.94	1.34
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations				10.1	58.6
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations				0.76	2.75

Woodfibre Site Receiving Environment Lab Documentation

ALS Canada Ltd.

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CERTIFICATE OF ANALYSIS

Work Order	: **VA24C4571**	Page	: 1 of 6
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 17-Sep-2024 17:30
PO	: 11964-Task 20-Phase 3C-4C	Date Analysis Commenced	: 18-Sep-2024
C-O-C number	: ----	Issue Date	: 26-Sep-2024 09:44
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
		Metals, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Inorganics, Waterloo, Ontario
		Metals, Waterloo, Ontario
		Metals, Burnaby, British Columbia
		Administration, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia

General Comments

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

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

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

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

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

LOR: Limit of Reporting (detection limit).

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

<: less than.

>: greater than.

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

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	17-Sep-2024 11:14	17-Sep-2024 09:47	----	----	----
						VA24C4571-001	VA24C4571-002	--------	--------	--------
						Result	Result	----	----	----
Field Tests										
Conductivity, field	----	EF001/VA	0.10	µS/cm		39.000	135.00	----	----	----
pH, field	----	EF001/VA	0.10	pH units		7.19	7.37	----	----	----
Temperature, field	----	EF001/VA	0.10	°C		13.8	14.4	----	----	----
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L		9.84	49.7	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L		10.0	52.5	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		32	93	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		<3.0	5.3	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		10.1	58.6	----	----	----
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		0.76	2.75	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L		0.025	0.137	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		0.0303	0.155	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L		<0.0010	0.0021	----	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L		0.089	0.542	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.0044	0.0152	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		2.80	7.17	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L		1.94	1.34	----	----	----
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		0.0509	0.181	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		<0.00010	0.00082	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	17-Sep-2024 11:14	17-Sep-2024 09:47	----	----	----
						VA24C4571-001	VA24C4571-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00016	0.00044	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.00463	0.0164	----	----	----
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	0.021	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		<0.0000050	0.0000318	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		3.38	19.2	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000012	0.000044	----	----	----
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		0.00058	0.00095	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.080	0.390	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		<0.000050	0.000701	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		<0.0010	0.0056	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		0.393	1.11	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.00195	0.0186	----	----	----
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		0.000660	0.0150	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		<0.00050	0.00053	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		0.333	2.93	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00075	0.00472	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		4.98	6.18	----	----	----
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		1.96	5.32	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0170	0.0555	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		1.02	2.46	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	17-Sep-2024 11:14	17-Sep-2024 09:47	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C4571-001	VA24C4571-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		0.00061	0.00547	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		<0.00010	0.00036	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.000069	0.00126	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		<0.00050	0.00052	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		<0.0030	0.0054	----	----	----
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		0.0366	0.0336	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		<0.00010	0.00072	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00014	0.00033	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00449	0.0138	----	----	----
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	0.019	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		<0.0000050	0.0000216	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		3.30	18.1	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.000011	0.000026	----	----	----
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		0.00057	0.00050	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.057	0.011	----	----	----
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	0.0050	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		0.389	1.09	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00105	0.00132	----	----	----
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		0.000611	0.0143	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	17-Sep-2024 11:14	17-Sep-2024 09:47	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C4571-001	VA24C4571-002	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
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		0.345	2.86	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00080	0.00450	----	----	----
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		4.82	5.73	----	----	----
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		1.94	5.31	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0163	0.0553	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		0.85	2.40	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		<0.00030	0.00044	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		<0.00010	0.00030	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.000064	0.000976	----	----	----
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		0.0013	0.0025	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-		Field	Field	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Field	Field	----	----	----
Speciated Metals										
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/WT	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/WT	0.00050	mg/L		<0.00050	<0.00050	----	----	----

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

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

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24C4571**	Page	: 1 of 14
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 17-Sep-2024 17:30
PO	: 11964-Task 20-Phase 3C-4C	Issue Date	: 26-Sep-2024 09:44
C-O-C number	: ----		
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG DS 1	E298	17-Sep-2024	20-Sep-2024	28 days	3 days	✓	20-Sep-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG US 1	E298	17-Sep-2024	20-Sep-2024	28 days	3 days	✓	20-Sep-2024	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG US 1	E235.Br-L	17-Sep-2024	18-Sep-2024	28 days	1 days	✓	18-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG DS 1	E235.Br-L	17-Sep-2024	18-Sep-2024	28 days	2 days	✓	18-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG US 1	E235.Cl	17-Sep-2024	18-Sep-2024	28 days	1 days	✓	18-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG DS 1	E235.Cl	17-Sep-2024	18-Sep-2024	28 days	2 days	✓	18-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG US 1	E235.F	17-Sep-2024	18-Sep-2024	28 days	1 days	✓	18-Sep-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 DS 1	E235.F	17-Sep-2024	18-Sep-2024	28 days	2 days	✓	18-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG US 1	E235.NO3-L	17-Sep-2024	18-Sep-2024	3 days	1 days	✓	18-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG DS 1	E235.NO3-L	17-Sep-2024	18-Sep-2024	3 days	2 days	✓	18-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG US 1	E235.NO2-L	17-Sep-2024	18-Sep-2024	3 days	1 days	✓	18-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG DS 1	E235.NO2-L	17-Sep-2024	18-Sep-2024	3 days	2 days	✓	18-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG US 1	E235.SO4	17-Sep-2024	18-Sep-2024	28 days	1 days	✓	18-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG DS 1	E235.SO4	17-Sep-2024	18-Sep-2024	28 days	2 days	✓	18-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WLNG DS 1	E366	17-Sep-2024	20-Sep-2024	28 days	3 days	✓	20-Sep-2024	28 days	3 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WLNG US 1	E366	17-Sep-2024	20-Sep-2024	28 days	3 days	✓	20-Sep-2024	28 days	3 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WLNG DS 1	E372-U	17-Sep-2024	20-Sep-2024	28 days	3 days	✓	20-Sep-2024	28 days	3 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WLNG US 1	E372-U	17-Sep-2024	20-Sep-2024	28 days	3 days	✓	20-Sep-2024	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
WLNG DS 1	E509	17-Sep-2024	24-Sep-2024	28 days	7 days	✓	24-Sep-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
WLNG US 1	E509	17-Sep-2024	24-Sep-2024	28 days	7 days	✓	24-Sep-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
WLNG DS 1	E421	17-Sep-2024	25-Sep-2024	180 days	8 days	✓	25-Sep-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
WLNG US 1	E421	17-Sep-2024	25-Sep-2024	180 days	8 days	✓	25-Sep-2024	180 days	8 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
WLNG DS 1	EF001	17-Sep-2024	----	----	----		19-Sep-2024	----	2 days	
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
WLNG US 1	EF001	17-Sep-2024	----	----	----		19-Sep-2024	----	2 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
WLNG US 1	E358-L	17-Sep-2024	20-Sep-2024	28 days	3 days	✓	20-Sep-2024	28 days	3 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (lab preserved)										
WLNG DS 1	E358-L	17-Sep-2024	20-Sep-2024	3 days	3 days	✓	20-Sep-2024	28 days	0 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG US 1	E290	17-Sep-2024	18-Sep-2024	14 days	1 days	✓	19-Sep-2024	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG DS 1	E290	17-Sep-2024	18-Sep-2024	14 days	2 days	✓	19-Sep-2024	14 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
WLNG US 1	E162	17-Sep-2024	----	----	----		23-Sep-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
WLNG DS 1	E162	17-Sep-2024	----	----	----		23-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
WLNG US 1	E160	17-Sep-2024	----	----	----		23-Sep-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
WLNG DS 1	E160	17-Sep-2024	----	----	----		23-Sep-2024	7 days	7 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
HDPE - total (sodium hydroxide)										
WLNG DS 1	E532	17-Sep-2024	----	----	----		20-Sep-2024	28 days	3 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
HDPE - total (sodium hydroxide)										
WLNG US 1	E532	17-Sep-2024	----	----	----		20-Sep-2024	28 days	3 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
WLNG DS 1	E508	17-Sep-2024	25-Sep-2024	28 days	8 days	✓	25-Sep-2024	28 days	8 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
WLNG US 1	E508	17-Sep-2024	25-Sep-2024	28 days	8 days	✓	25-Sep-2024	28 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
WLNG DS 1	E420	17-Sep-2024	24-Sep-2024	180 days	7 days	✓	25-Sep-2024	180 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
WLNG US 1	E420	17-Sep-2024	24-Sep-2024	180 days	7 days	✓	25-Sep-2024	180 days	8 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG DS 1	E395	17-Sep-2024	----	----	----		19-Sep-2024	7 days	2 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG US 1	E395	17-Sep-2024	----	----	----		19-Sep-2024	7 days	2 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1659556	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1662396	1	7	14.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1659561	1	5	20.0	5.0	✓
Chloride in Water by IC	E235.Cl	1659560	1	12	8.3	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1670403	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1663970	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1662398	1	8	12.5	5.0	✓
Fluoride in Water by IC	E235.F	1659559	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1659562	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1659563	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1659564	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1668517	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1664291	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1671218	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1664049	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1662394	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1662395	1	7	14.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1660216	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	1668495	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1659556	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1662396	1	7	14.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1659561	1	5	20.0	5.0	✓
Chloride in Water by IC	E235.Cl	1659560	1	12	8.3	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1670403	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1663970	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1662398	1	8	12.5	5.0	✓
Fluoride in Water by IC	E235.F	1659559	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1659562	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1659563	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1659564	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1668517	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1664291	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1671218	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1664049	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1662394	1	9	11.1	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1662395	1	7	14.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1660216	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	1668495	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1659556	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1662396	1	7	14.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1659561	1	5	20.0	5.0	✓
Chloride in Water by IC	E235.Cl	1659560	1	12	8.3	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1670403	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1663970	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1662398	1	8	12.5	5.0	✓
Fluoride in Water by IC	E235.F	1659559	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1659562	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1659563	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1659564	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1668517	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1664291	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1671218	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1664049	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1662394	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1662395	1	7	14.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1660216	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	1668495	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1662396	1	7	14.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1659561	1	5	20.0	5.0	✓
Chloride in Water by IC	E235.Cl	1659560	1	12	8.3	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1670403	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1663970	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1662398	1	8	12.5	5.0	✓
Fluoride in Water by IC	E235.F	1659559	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1659562	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1659563	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1659564	1	15	6.6	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1664291	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1671218	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1664049	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1662394	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1662395	1	7	14.2	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	1660216	1	3	33.3	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
TSS by Gravimetry	E160 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 - Waterloo	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 - Waterloo	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine	EF001 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	: **VA24C4571**	Page	: 1 of 17
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project	: 11964	Date Samples Received	: 17-Sep-2024 17:30
PO	: 11964-Task 20-Phase 3C-4C	Date Analysis Commenced	: 18-Sep-2024
C-O-C number	: ----	Issue Date	: 26-Sep-2024 09:44
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Waterloo Inorganics, Waterloo, Ontario
		Waterloo Metals, Waterloo, Ontario
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Administration, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		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: 1659556)											
VA24C4574-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	45.1	45.1	0.00%	20%	----
Physical Tests (QC Lot: 1668495)											
FJ2402835-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1668517)											
FJ2402835-001	Anonymous	Solids, total dissolved [TDS]	----	E162	10	mg/L	639	639	0.00%	20%	----
Anions and Nutrients (QC Lot: 1659559)											
VA24C4571-001	WLNG US 1	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.025	0.023	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1659560)											
VA24C4571-001	WLNG US 1	Chloride	16887-00-6	E235.Cl	0.50	mg/L	0.76	0.75	0.005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1659561)											
VA24C4571-001	WLNG US 1	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1659562)											
VA24C4571-001	WLNG US 1	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0303	0.0296	0.0007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1659563)											
VA24C4571-001	WLNG US 1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1659564)											
VA24C4571-001	WLNG US 1	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	2.80	2.79	0.02	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1662394)											
VA24C4529-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.280	0.279	0.0007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1662395)											
VA24C4571-001	WLNG US 1	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0044	0.0049	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1662396)											
VA24C4571-001	WLNG US 1	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: 1662398)											
VA24C4529-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	4.95	5.06	2.23%	20%	----
Total Sulfides (QC Lot: 1660216)											
VA24C4468-001	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: 1664049)											
VA24C4571-001	WLNG US 1	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0509	0.0498	2.04%	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: 1664049) - continued											
VA24C4571-001	WLNG US 1	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00016	0.00015	0.00001	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.00463	0.00451	2.48%	20%	----
		Beryllium, total	7440-41-7	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	0.0000056	0.0000006	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	3.38	3.38	0.136%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000012	<0.000010	0.000002	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00058	0.00058	0.000001	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.080	0.080	0.0007	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	0.393	0.386	1.80%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00195	0.00193	1.11%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000660	0.000640	3.00%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	0.333	0.323	0.010	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00075	0.00072	0.00003	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	4.98	5.08	2.05%	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	1.96	1.96	0.120%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0170	0.0166	1.92%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	1.02	0.93	0.08	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	0.00061	0.00066	0.00005	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	0.000069	0.000068	0.0000008	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: 1664049) - continued											
VA24C4571-001	WLNG US 1	Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1671218)											
FJ2402799-005	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1663970)											
VA24C4571-001	WLNG US 1	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0366	0.0358	2.01%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00014	0.00014	0.000004	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00449	0.00444	1.06%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	3.30	3.29	0.383%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000011	0.000011	0.0000002	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00057	0.00058	0.00001	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.057	0.056	0.0007	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	0.389	0.380	2.43%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00105	0.00108	3.15%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000611	0.000608	0.560%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.345	0.328	0.016	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00080	0.00069	0.00012	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.82	4.82	0.137%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	1.94	1.93	0.323%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0163	0.0165	1.54%	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: 1663970) - continued											
VA24C4571-001	WLNG US 1	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	0.85	0.91	0.07	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000064	0.000063	0.0000009	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0013	0.0012	0.00007	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1670403)											
VA24C4417-007	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1664291)											
HA2402244-005	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----

Method Blank (MB) Report

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

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1659556)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1668495)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1668517)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1659559)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1659560)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1659561)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1659562)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1659563)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1659564)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1662394)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1662395)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1662396)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1662398)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1660216)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1664049)						
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: 1664049) - continued						
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1671218)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1663970)						
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: 1663970) - 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: 1670403)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1664291)						
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: 1659556)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	102	85.0	115	----
Physical Tests (QCLot: 1668495)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	97.5	85.0	115	----
Physical Tests (QCLot: 1668517)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	108	85.0	115	----
Anions and Nutrients (QCLot: 1659559)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 1659560)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1659561)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 1659562)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1659563)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1659564)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1662394)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 1662395)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	92.6	80.0	120	----
Anions and Nutrients (QCLot: 1662396)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	101	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1662398)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	100	80.0	120	----
Total Sulfides (QCLot: 1660216)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	102	80.0	120	----
Total Metals (QCLot: 1664049)									

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: 1664049) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	103	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	101	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	107	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	94.5	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	96.8	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	88.8	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	108	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	94.2	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	101	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	99.3	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	108	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	98.3	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	95.1	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	101	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	102	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	100	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	106	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	99.3	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	108	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	91.2	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	103	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	103	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	105	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	107	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	98.5	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	93.1	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	98.2	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	95.1	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	95.3	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	94.3	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1664049) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	114	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	98.8	80.0	120	----
Total Metals (QCLot: 1671218)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	92.6	80.0	120	----
Dissolved Metals (QCLot: 1663970)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	101	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	98.8	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	104	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	103	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	98.4	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	99.6	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	106	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	102	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	99.4	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	99.5	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.2	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	104	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	99.2	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	104	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	102	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	102	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	111	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	97.4	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	104	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	104	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	93.8	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	101	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: 1663970) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	97.9	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	98.0	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	97.1	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	100	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	94.7	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	95.3	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	98.8	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	107	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	99.6	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	91.1	80.0	120	----
Speciated Metals (QCLot: 1664291)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.025 mg/L	97.5	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: 1659559)										
VA24C4571-002	WLNG DS 1	Fluoride	16984-48-8	E235.F	1.06 mg/L	1 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1659560)										
VA24C4571-002	WLNG DS 1	Chloride	16887-00-6	E235.Cl	105 mg/L	100 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1659561)										
VA24C4571-002	WLNG DS 1	Bromide	24959-67-9	E235.Br-L	0.529 mg/L	0.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1659562)										
VA24C4571-002	WLNG DS 1	Nitrate (as N)	14797-55-8	E235.NO3-L	2.59 mg/L	2.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1659563)										
VA24C4571-002	WLNG DS 1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.531 mg/L	0.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1659564)										
VA24C4571-002	WLNG DS 1	Sulfate (as SO4)	14808-79-8	E235.SO4	104 mg/L	100 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1662394)										
VA24C4530-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.368 mg/L	0.4 mg/L	92.0	70.0	130	----
Anions and Nutrients (QCLot: 1662395)										
VA24C4571-002	WLNG DS 1	Phosphorus, total	7723-14-0	E372-U	0.0471 mg/L	0.05 mg/L	94.2	70.0	130	----
Anions and Nutrients (QCLot: 1662396)										
VA24C4571-002	WLNG DS 1	Ammonia, total (as N)	7664-41-7	E298	0.102 mg/L	0.1 mg/L	102	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1662398)										
VA24C4530-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	4.61 mg/L	5 mg/L	92.2	70.0	130	----
Total Sulfides (QCLot: 1660216)										
VA24C4571-001	WLNG US 1	Sulfide, total (as S)	18496-25-8	E395	0.206 mg/L	0.2 mg/L	103	75.0	125	----
Total Metals (QCLot: 1664049)										
VA24C4571-002	WLNG DS 1	Aluminum, total	7429-90-5	E420	0.187 mg/L	0.2 mg/L	93.4	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0186 mg/L	0.02 mg/L	92.8	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----
		Barium, total	7440-39-3	E420	0.0187 mg/L	0.02 mg/L	93.6	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0390 mg/L	0.04 mg/L	97.4	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00933 mg/L	0.01 mg/L	93.3	70.0	130	----
		Boron, total	7440-42-8	E420	0.094 mg/L	0.1 mg/L	93.7	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00386 mg/L	0.004 mg/L	96.5	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00972 mg/L	0.01 mg/L	97.2	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0384 mg/L	0.04 mg/L	96.0	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: 1664049) - continued										
VA24C4571-002	WLNG DS 1	Cobalt, total	7440-48-4	E420	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		Copper, total	7440-50-8	E420	0.0186 mg/L	0.02 mg/L	93.1	70.0	130	----
		Iron, total	7439-89-6	E420	1.86 mg/L	2 mg/L	93.0	70.0	130	----
		Lead, total	7439-92-1	E420	0.0184 mg/L	0.02 mg/L	91.9	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0962 mg/L	0.1 mg/L	96.2	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0190 mg/L	0.02 mg/L	94.8	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		Phosphorus, total	7723-14-0	E420	9.43 mg/L	10 mg/L	94.3	70.0	130	----
		Potassium, total	7440-09-7	E420	3.64 mg/L	4 mg/L	91.1	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0186 mg/L	0.02 mg/L	92.9	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Silicon, total	7440-21-3	E420	9.33 mg/L	10 mg/L	93.3	70.0	130	----
		Silver, total	7440-22-4	E420	0.00376 mg/L	0.004 mg/L	94.1	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	19.0 mg/L	20 mg/L	95.0	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0384 mg/L	0.04 mg/L	95.9	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00362 mg/L	0.004 mg/L	90.6	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0190 mg/L	0.02 mg/L	95.0	70.0	130	----
		Tin, total	7440-31-5	E420	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0366 mg/L	0.04 mg/L	91.5	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0179 mg/L	0.02 mg/L	89.3	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00373 mg/L	0.004 mg/L	93.3	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0959 mg/L	0.1 mg/L	95.9	70.0	130	----
		Zinc, total	7440-66-6	E420	0.409 mg/L	0.4 mg/L	102	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0372 mg/L	0.04 mg/L	93.0	70.0	130	----
Total Metals (QCLot: 1671218)										
KS2403720-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000962 mg/L	0 mg/L	96.2	70.0	130	----
Dissolved Metals (QCLot: 1663970)										
VA24C4571-002	WLNG DS 1	Aluminum, dissolved	7429-90-5	E421	0.196 mg/L	0.2 mg/L	98.1	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0190 mg/L	0.02 mg/L	95.0	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0190 mg/L	0.02 mg/L	95.2	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0393 mg/L	0.04 mg/L	98.3	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00912 mg/L	0.01 mg/L	91.2	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.093 mg/L	0.1 mg/L	92.8	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00398 mg/L	0.004 mg/L	99.5	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00990 mg/L	0.01 mg/L	99.0	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0381 mg/L	0.04 mg/L	95.2	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0192 mg/L	0.02 mg/L	96.3	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
Dissolved Metals (QCLot: 1663970) - continued										
VA24C4571-002	WLNG DS 1	Copper, dissolved	7440-50-8	E421	0.0185 mg/L	0.02 mg/L	92.5	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.92 mg/L	2 mg/L	95.8	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0189 mg/L	0.02 mg/L	94.4	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0967 mg/L	0.1 mg/L	96.7	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0189 mg/L	0.02 mg/L	94.4	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0190 mg/L	0.02 mg/L	95.3	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0388 mg/L	0.04 mg/L	97.1	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	9.71 mg/L	10 mg/L	97.1	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.52 mg/L	4 mg/L	87.9	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0407 mg/L	0.04 mg/L	102	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.38 mg/L	10 mg/L	93.8	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00389 mg/L	0.004 mg/L	97.2	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	19.4 mg/L	20 mg/L	96.8	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0408 mg/L	0.04 mg/L	102	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00375 mg/L	0.004 mg/L	93.9	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0192 mg/L	0.02 mg/L	96.3	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0372 mg/L	0.04 mg/L	92.9	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0182 mg/L	0.02 mg/L	91.0	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00379 mg/L	0.004 mg/L	94.8	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0962 mg/L	0.1 mg/L	96.2	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.407 mg/L	0.4 mg/L	102	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0384 mg/L	0.04 mg/L	96.1	70.0	130	----
Dissolved Metals (QCLot: 1670403)										
VA24C4417-008	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000916 mg/L	0 mg/L	91.6	70.0	130	----
Speciated Metals (QCLot: 1664291)										
HA2402244-005	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0389 mg/L	0.04 mg/L	97.2	70.0	130	----

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Request For

Canada Toll Free: 1 80

Environmental Division
Vancouver
Work Order Reference
VA24C4571

Telephone : +1 604 253 4188

barcode label here
(lab use only)

COC Number: 17 -

Page 1 of

Report To	Contact and company name below will appear on the final report
Company:	Triton Environmental
Contact:	
Phone:	
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	
Contact:	

Select Repo
Quality Cont
☑ Compare R
Select Distrib
Email 1 or Fa
Email 2
Email 3
Select Invoic
Email 1 or Fa
Email 2

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

Regular [R] X 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: 25 - Sept - 2024

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

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	VA23-TRIT100-012	AFE/Cost Center:	PO#
Job #:	11964	Major/Minor Code:	Routing Code:
PO / AFE:	11964 - Task 20 - Phase 3C-4C	Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):	4571	ALS Contact:	Sampler:

Analysis Request

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total metals + mercury	Dissolved metals + mercury	Total hexavalent chromium	Total trivalent chromium	TSS	TDS	Nutrients (ammonia, ammonium, total nitrogen, total phosphorus)	Total sulfide (low) (as H2S), Unionized Sulfide (low)	Anions scan (Br, Cl, F, NO2, NO3, SO4)	General parameters (alkalinity)	DOC	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	WLNG US 1	17-Sep-24	11:14	Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 7.19 cond: 39 µS/cm temp: 13.8 °C																	
	WLNG DS 1	17-Sep-24	09:47	Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 7.37 cond: 135 µS/cm temp: 14.4 °C																	
	~~Duplicate~~			~~Water~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~		~~N~~	~~9~~
	~~Field Blank~~			~~Water~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~		~~N~~	~~9~~
	~~Trip Blank~~			~~Water~~	~~R~~		~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~			~~N~~	~~6~~

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ ☑ NO	WLNG DS 1 ~~was~~ dissolved nutrients bottle not field filtered, and preservatives were rinsed out.
Are samples for human consumption/ use? ☐ ☑ NO	Triton project # 11964

SAMPLE CONDITION AS RECEIVED (lab use only)

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

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				12			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
	17 Sept 2024	Time: 17:21	Received by:	Date:	Time:	Received by: RJ	Date: Sep-17	Time: 17:30

TIONS 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

2024-9-17-Chycoski-52655

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	09/17/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.669455 -123.25087
Temperature(c):	Low 13 High 18	**Permit:**	PE 110136
Weather Conditions:	Overcast	**Ground Conditions:**	Dry

Observations

Time: 11:14:00 **Flow Volume (visual):** low

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:**	No
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

2024-9-17-Chycoski-52655

Photos

Photo: 1

Location: EAS US 1

Description: US view

Photo: 2

Location: EAS US 1

Description: Across view

Photos

Photo: 3

Location: EAS US 1

Description: DS view

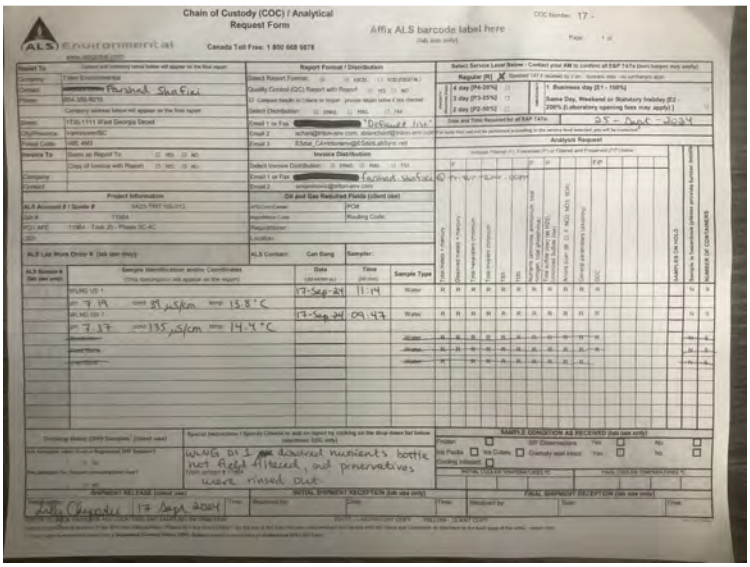

Photo: 4

Location: EAS US 1

Description: Lab COC

2024-9-17-Chycoski-52655

Sign Off

Report Prepared By:	Lily Chycoski	**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

2024-9-17-Chycoski-11EE7

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	09/17/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.668675 -123.248569
Temperature(c):	Low 13 High 18	**Permit:**	PE 110136
Weather Conditions:	Overcast	**Ground Conditions:**	Dry

Observations

Time: 09:47:00 **Flow Volume (visual):** low

Notes: Instream work (lining and bank stabilization) occurred during sampling at isolated area immediately DS. The pump being used had an overflowing drip tray located directly beside East Creek. No sheen was observed but McDermott EM was notified as the potential to overflow into East Creek was high. The sonde was not able to be redeployed in East Creek due to construction nearby. The following parameters were taken using YSI: DO: 7.31 mg/L, ORP: 190.5 mV, Salinity: 0.08 ppt. Dissolved nutrients could not be field filtered. Preservatives were rinsed out.

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:**	No
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

Installed logger back into strea

Photos

Photo: 1

Location: EAS DS 1

Description: US view

Photo: 2

Location: EAS DS 1

Description: Across view

Photos

Photo: 3

Location: EAS DS 1

Description: DS view and isolated work area

Photos

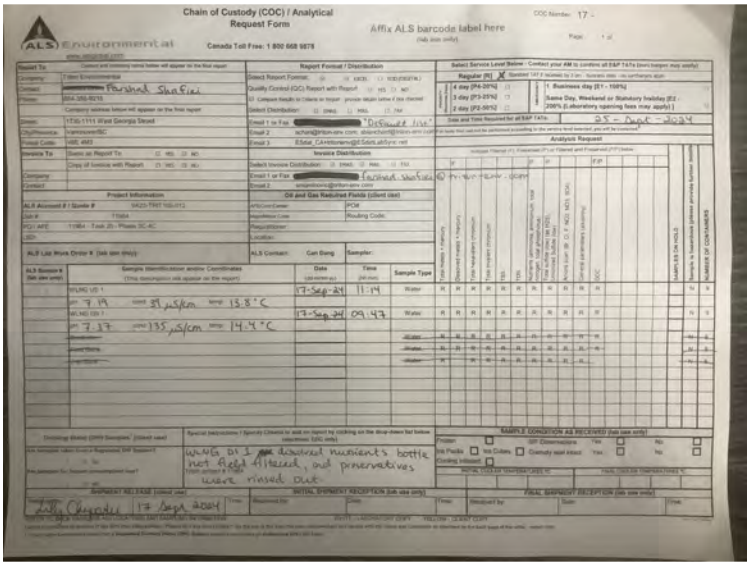

Photo: 5

Location: EAS DS 1

Description: Lab COC

Sign Off

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

EGP-STU-003 (WLNG US) 2024-09-16 to 2024-09-22

Received	Temperature C	Specific Conductivity ÂµS/cm	Salinity PSU	pH pH	ORP mV	Dissolved Oxygen Concentration mg/L	Turbidity NTU	TL Battery V
9/22/2024 23:50	13.81	29.18	0.01	7.16	404.22	8.98	0.5	12
9/22/2024 23:40	13.8	29.27	0.01	7.14	405.34	8.96	0.48	11.9
9/22/2024 23:30	13.8	29.72	0.01	7.17	403.1	8.97	0.55	12
9/22/2024 23:20	13.8	29.88	0.01	7.16	404.27	8.97	0.55	12
9/22/2024 23:10	13.8	30.38	0.01	7.18	402.62	8.98	0.49	11.9
9/22/2024 23:00	13.8	30.6	0.01	7.16	404.01	8.96	0.48	12
9/22/2024 22:50	13.79	31.23	0.02	7.18	402.84	8.97	0.49	11.97
9/22/2024 22:40	13.79	31.13	0.02	7.18	403.52	8.97	0.49	11.88
9/22/2024 22:30	13.79	32.22	0.02	7.18	402.74	8.98	0.53	11.88
9/22/2024 22:20	13.79	32.58	0.02	7.18	402.89	8.98	0.49	11.97
9/22/2024 22:10	13.79	33.33	0.02	7.19	401.71	8.99	0.49	12
9/22/2024 22:00	13.79	33.88	0.02	7.22	400.69	9	0.46	12
9/22/2024 21:50	13.79	34.6	0.02	7.2	401.22	8.97	0.49	11.97
9/22/2024 21:40	13.79	35.21	0.02	7.21	407.19	8.99	0.46	11.97
9/22/2024 21:30	13.79	36.22	0.02	7.2	401.31	9	0.49	11.97
9/22/2024 21:20	13.79	36.87	0.02	7.21	400.99	9	0.45	12.02
9/22/2024 21:10	13.79	38.24	0.02	7.18	402	9	0.5	12.05
9/22/2024 21:00	13.78	38.75	0.02	7.21	400.61	9	0.46	12.02
9/22/2024 20:50	13.78	40.77	0.02	7.23	398.98	8.99	0.47	12.02
9/22/2024 20:40	13.78	41.64	0.02	7.22	398.96	9	0.46	11.93
9/22/2024 20:30	13.79	44.04	0.02	7.23	397.98	9.01	0.48	12.02
9/22/2024 20:20	13.79	45.33	0.02	7.22	398.51	9.01	0.47	12.02
9/22/2024 20:10	13.79	46.77	0.02	7.23	397.71	8.99	0.49	11.95
9/22/2024 20:00	13.79	47.78	0.02	7.21	399.08	8.98	0.45	12.05
9/22/2024 19:50	13.79	48.66	0.02	7.23	397.71	8.99	0.5	12.05
9/22/2024 19:40	13.79	48.11	0.02	7.22	398.08	9.01	0.49	12.05
9/22/2024 19:30	13.8	46.96	0.02	7.22	397.58	9.01	0.48	11.95
9/22/2024 19:20	13.8	43.85	0.02	7.2	398.27	9.01	0.5	11.97
9/22/2024 19:10	13.8	40.35	0.02	7.21	396.92	9.03	0.49	11.97
9/22/2024 19:00	13.81	34.81	0.02	7.19	397.71	9.02	0.49	12.02
9/22/2024 18:50	13.81	29.68	0.01	7.19	397.36	9.03	0.51	12.12
9/22/2024 18:40	13.82	25.83	0.01	7.17	397.64	9.04	0.5	12.17
9/22/2024 18:30	13.82	23.93	0.01	7.18	396.55	9.05	0.51	12.17
9/22/2024 18:30	13.82	23.85	0.01	7.2	395.73	9.03	0.52	12.17
9/22/2024 18:20	13.83	23.4	0.01	7.18	397.15	9.04	0.51	12.19
9/22/2024 18:10	13.83	23.7	0.01	7.2	395.9	9.04	0.5	12.09
9/22/2024 18:00	13.84	23.46	0.01	7.19	395.68	9.06	0.52	12.21
9/22/2024 17:50	13.84	23.78	0.01	7.16	396.14	9.05	0.49	12.14
9/22/2024 17:40	13.85	23.61	0.01	7.18	395.24	9.07	0.53	12.31
9/22/2024 17:30	13.86	23.68	0.01	7.21	392.85	9.07	0.49	12.36
9/22/2024 17:20	13.87	23.42	0.01	7.2	393.82	9.11	0.53	12.38

EGP-STU-003 (WLNG US) 2024-09-16 to 2024-09-22

9/22/2024 17:10	13.87	23.56	0.01	7.18	394.96	9.12	0.52	12.41
9/22/2024 17:00	13.87	23.2	0.01	7.21	393.12	9.11	0.51	12.43
9/22/2024 16:50	13.88	23.5	0.01	7.19	394.18	9.12	0.53	12.33
9/22/2024 16:40	13.88	23.26	0.01	7.19	394.26	9.11	0.52	12.31
9/22/2024 16:30	13.88	23.55	0.01	7.22	392.85	9.07	0.53	12.33
9/22/2024 16:20	13.89	23.4	0.01	7.19	394.93	9.08	0.5	12.36
9/22/2024 16:10	13.9	23.49	0.01	7.2	393.76	9.08	0.52	12.48
9/22/2024 16:00	13.9	23.31	0.01	7.2	393.69	9.13	0.53	12.53
9/22/2024 15:50	13.92	23.3	0.01	7.17	395.53	9.13	0.62	12.55
9/22/2024 15:40	13.92	23.17	0.01	7.23	392.7	9.14	0.5	12.48
9/22/2024 15:30	13.93	23.34	0.01	7.23	392.14	9.15	0.51	12.55
9/22/2024 15:20	13.94	22.93	0.01	7.21	392.92	9.19	0.5	12.65
9/22/2024 15:10	13.94	23.27	0.01	7.23	391.79	9.2	0.53	12.65
9/22/2024 15:00	13.94	22.99	0.01	7.24	391.71	9.18	0.55	12.62
9/22/2024 14:50	13.94	23.22	0.01	7.24	391.36	9.19	0.53	12.65
9/22/2024 14:40	13.95	22.97	0.01	7.23	391.67	9.2	0.55	12.53
9/22/2024 14:30	13.95	23.05	0.01	7.25	390.4	9.23	0.54	12.62
9/22/2024 14:20	13.94	23.03	0.01	7.24	391.77	9.22	0.52	12.57
9/22/2024 14:10	13.94	23.12	0.01	7.23	392.29	9.2	0.51	12.5
9/22/2024 14:00	13.94	22.87	0.01	7.22	392.78	9.21	0.51	12.41
9/22/2024 14:00	13.94	22.87	0.01	7.22	392.78	9.21	0.51	12.41
9/22/2024 13:50	13.94	23.04	0.01	7.25	391.15	9.22	0.51	12.48
9/22/2024 13:40	13.93	22.72	0.01	7.23	392.08	9.23	0.51	12.67
9/22/2024 13:30	13.93	23.13	0.01	7.24	391.13	9.21	0.52	12.55
9/22/2024 13:20	13.92	22.99	0.01	7.23	392.02	9.23	0.53	12.53
9/22/2024 13:10	13.91	23.12	0.01	7.24	391.12	9.22	0.51	12.55
9/22/2024 13:00	13.89	22.94	0.01	7.23	391.71	9.22	0.52	12.48
9/22/2024 12:50	13.88	23.02	0.01	7.2	392.22	9.23	0.51	12.53
9/22/2024 12:40	13.87	23.01	0.01	7.22	391.37	9.23	0.55	12.43
9/22/2024 12:30	13.87	23.02	0.01	7.23	390.3	9.24	0.52	12.45
9/22/2024 12:30	13.87	23.02	0.01	7.23	390.3	9.24	0.52	12.45
9/22/2024 12:20	13.85	23.01	0.01	7.21	391.96	9.23	0.56	12.48
9/22/2024 12:10	13.84	23.07	0.01	7.21	391.83	9.2	0.54	12.33
9/22/2024 12:00	13.83	22.95	0.01	7.2	393.32	9.19	0.53	12.48
9/22/2024 11:50	13.83	22.95	0.01	7.2	392.74	9.16	0.54	12.41
9/22/2024 11:40	13.83	22.63	0.01	7.23	391.4	9.19	0.53	12.38
9/22/2024 11:30	13.82	22.87	0.01	7.21	392.18	9.17	0.52	12.31
9/22/2024 11:20	13.82	22.86	0.01	7.21	393.83	9.18	0.51	12.21
9/22/2024 11:10	13.81	22.92	0.01	7.18	395.67	9.2	0.51	12.29
9/22/2024 11:00	13.8	22.51	0.01	7.18	396.24	9.18	0.5	12.36
9/22/2024 10:50	13.79	22.88	0.01	7.16	397.44	9.19	0.53	12.33
9/22/2024 10:40	13.78	22.62	0.01	7.22	395.87	9.21	0.49	12.33
9/22/2024 10:30	13.78	22.86	0.01	7.22	396.4	9.22	0.51	12.24
9/22/2024 10:20	13.76	22.65	0.01	7.2	398.79	9.19	0.48	12.19
9/22/2024 10:10	13.75	22.77	0.01	7.19	399.62	9.17	0.49	12.17
9/22/2024 10:00	13.75	22.73	0.01	7.21	398.95	9.18	0.48	12.31
9/22/2024 9:50	13.74	22.88	0.01	7.2	399.63	9.2	0.49	12.31

EGP-STU-003 (WLNG US) 2024-09-16 to 2024-09-22

9/22/2024 9:40	13.73	22.78	0.01	7.24	398.97	9.2	0.48	12.09
9/22/2024 9:30	13.71	22.87	0.01	7.18	402.32	9.18	0.49	12.19
9/22/2024 9:20	13.69	22.64	0.01	7.18	402.75	9.13	0.46	12.09
9/22/2024 9:10	13.68	23.01	0.01	7.14	404.89	9.11	0.48	12
9/22/2024 9:00	13.67	22.75	0.01	7.16	404.68	9.11	0.49	12.09
9/22/2024 8:50	13.67	22.97	0.01	7.16	403.86	9.12	0.51	12.19
9/22/2024 8:40	13.66	22.72	0.01	7.16	404.58	9.12	0.47	12.26
9/22/2024 8:30	13.66	22.83	0.01	7.16	404.2	9.12	0.48	12.29
9/22/2024 8:20	13.65	22.55	0.01	7.17	404.45	9.11	0.52	12.29
9/22/2024 8:10	13.65	22.98	0.01	7.16	405.03	9.11	0.48	12.31
9/22/2024 8:00	13.64	22.87	0.01	7.16	406.02	9.11	0.48	12.36
9/22/2024 7:50	13.64	22.94	0.01	7.15	406.52	9.1	0.5	12.05
9/22/2024 7:40	13.64	22.65	0.01	7.14	407.62	9.05	0.49	11.97
9/22/2024 7:30	13.64	22.99	0.01	7.15	407.36	9.04	0.51	11.95
9/22/2024 7:20	13.63	23	0.01	7.14	408.5	9.02	0.5	12.02
9/22/2024 7:10	13.64	23.15	0.01	7.13	408.29	9.02	0.51	12.02
9/22/2024 7:00	13.64	22.93	0.01	7.14	408.35	9.02	0.46	11.97
9/22/2024 6:50	13.65	23.11	0.01	7.13	408.5	9.02	0.49	12.07
9/22/2024 6:40	13.65	22.8	0.01	7.16	407.14	9.03	0.48	12.07
9/22/2024 6:30	13.66	23.18	0.01	7.14	407.76	9.02	0.49	12
9/22/2024 6:20	13.66	22.95	0.01	7.17	406.32	9.02	0.48	12.07
9/22/2024 6:10	13.67	23.2	0.01	7.13	408.14	9.01	0.48	12.09
9/22/2024 6:00	13.68	23.07	0.01	7.12	409.19	9	0.49	12.09
9/22/2024 5:50	13.69	23.18	0.01	7.13	408.13	9	0.49	12
9/22/2024 5:40	13.69	23.04	0.01	7.16	407.75	8.99	0.49	12.12
9/22/2024 5:30	13.7	23.17	0.01	7.14	407.76	9	0.49	12.12
9/22/2024 5:20	13.71	23.02	0.01	7.16	407.51	9.02	0.48	12.12
9/22/2024 5:10	13.71	23.13	0.01	7.12	409.28	9.01	0.47	12.02
9/22/2024 5:00	13.72	22.91	0.01	7.12	409.11	9	0.51	12.12
9/22/2024 4:50	13.72	23.16	0.01	7.14	407.82	9	0.52	12.12
9/22/2024 4:40	13.73	22.79	0.01	7.15	407.66	8.99	0.5	12.14
9/22/2024 4:30	13.74	23.24	0.01	7.14	407.62	8.99	0.49	12.14
9/22/2024 4:20	13.75	22.92	0.01	7.15	407.38	8.98	0.48	12.14
9/22/2024 4:10	13.77	23.18	0.01	7.14	407.86	9.01	0.51	12.14
9/22/2024 4:00	13.78	23.1	0.01	7.12	409.28	9	0.51	12.05
9/22/2024 3:50	13.79	23.23	0.01	7.13	408.05	8.99	0.51	12.05
9/22/2024 3:40	13.8	23	0.01	7.14	407.88	8.98	0.51	12.07
9/22/2024 3:30	13.8	23.26	0.01	7.13	407.85	9	0.49	12.07
9/22/2024 3:20	13.81	23.19	0.01	7.13	408.56	8.99	0.51	12.05
9/22/2024 3:10	13.81	23.18	0.01	7.14	407.37	8.99	0.5	12.17
9/22/2024 3:00	13.82	23.21	0.01	7.15	407.58	8.98	0.51	12.17
9/22/2024 2:50	13.82	23.18	0.01	7.14	407.24	8.98	0.5	12.17
9/22/2024 2:40	13.83	23.02	0.01	7.13	408.23	9	0.51	12.07
9/22/2024 2:30	13.84	23.22	0.01	7.12	408.3	9	0.52	12.07
9/22/2024 2:20	13.84	23.22	0.01	7.15	407	8.97	0.5	12.07
9/22/2024 2:10	13.85	23.29	0.01	7.14	407.32	8.97	0.52	12.12
9/22/2024 2:00	13.86	23.16	0.01	7.12	409.27	8.98	0.51	12.19

EGP-STU-003 (WLNG US) 2024-09-16 to 2024-09-22

9/22/2024 1:50	13.86	23.31	0.01	7.13	408.04	8.97	0.51	12.19
9/22/2024 1:40	13.87	23.09	0.01	7.13	408.43	8.96	0.51	12.19
9/22/2024 1:30	13.88	23.32	0.01	7.13	407.83	8.98	0.49	12.19
9/22/2024 1:20	13.89	22.87	0.01	7.12	408.6	8.96	0.5	12.19
9/22/2024 1:10	13.91	23.3	0.01	7.12	407.7	8.95	0.5	12.09
9/22/2024 1:00	13.92	23.19	0.01	7.15	406.69	8.95	0.5	12.09
9/22/2024 0:50	13.93	23.35	0.01	7.14	406.86	8.96	0.5	12.21
9/22/2024 0:40	13.94	23.23	0.01	7.15	406.62	8.96	0.49	12.21
9/22/2024 0:30	13.95	23.35	0.01	7.13	407.65	8.96	0.48	12.21
9/22/2024 0:20	13.96	23.08	0.01	7.14	407.7	8.95	0.5	12.21
9/22/2024 0:10	13.97	23.37	0.01	7.15	406.36	8.96	0.5	12.21
9/22/2024 0:00	13.98	23.1	0.01	7.2	403.65	8.95	0.52	12.21
9/21/2024 23:50	13.99	23.38	0.01	7.11	408.33	8.95	0.51	12.21
9/21/2024 23:40	14	23.24	0.01	7.13	407.63	8.94	0.51	12.21
9/21/2024 23:30	14.01	23.32	0.01	7.09	409.29	8.94	0.5	12.21
9/21/2024 23:20	14.03	23.35	0.01	7.13	407.71	8.93	0.51	12.21
9/21/2024 23:10	14.04	23.39	0.01	7.14	406.44	8.93	0.52	12.21
9/21/2024 23:00	14.05	23.31	0.01	7.17	405.1	8.91	0.52	12.14
9/21/2024 22:50	14.07	23.46	0.01	7.14	406.59	8.92	0.51	12.21
9/21/2024 22:40	14.08	23.39	0.01	7.13	407.69	8.92	0.53	12.21
9/21/2024 22:30	14.1	23.39	0.01	7.12	407.1	8.93	0.52	12.21
9/21/2024 22:20	14.1	23.42	0.01	7.15	406.26	8.91	0.51	12.12
9/21/2024 22:10	14.12	23.5	0.01	7.13	406.78	8.93	0.5	12.14
9/21/2024 22:00	14.13	23.45	0.01	7.17	405.47	8.9	0.53	12.14
9/21/2024 21:50	14.14	23.44	0.01	7.14	406.18	8.91	0.51	12.24
9/21/2024 21:40	14.14	23.38	0.01	7.17	404.89	8.9	0.51	12.24
9/21/2024 21:30	14.15	23.47	0.01	7.14	405.86	8.91	0.53	12.17
9/21/2024 21:20	14.16	23.43	0.01	7.15	405.81	8.89	0.53	12.24
9/21/2024 21:10	14.17	23.46	0.01	7.12	406.71	8.9	0.51	12.17
9/21/2024 21:00	14.18	23.31	0.01	7.15	405.43	8.89	0.52	12.19
9/21/2024 20:50	14.19	23.46	0.01	7.12	407.11	8.9	0.49	12.26
9/21/2024 20:40	14.2	23.02	0.01	7.21	401.74	8.89	0.5	12.26
9/21/2024 20:30	14.21	23.48	0.01	7.14	405.16	8.9	0.51	12.29
9/21/2024 20:20	14.22	23.15	0.01	7.18	403.23	8.9	0.54	12.29
9/21/2024 20:10	14.23	23.49	0.01	7.15	404.09	8.91	0.52	12.29
9/21/2024 20:00	14.24	23.24	0.01	7.16	403.4	8.89	0.51	12.29
9/21/2024 19:50	14.25	23.4	0.01	7.13	404.03	8.89	0.53	12.29
9/21/2024 19:40	14.27	23.37	0.01	7.14	404.19	8.9	0.5	12.29
9/21/2024 19:30	14.29	23.43	0.01	7.16	402.06	8.89	0.52	12.29
9/21/2024 19:20	14.31	23.31	0.01	7.19	400.58	8.91	0.51	12.19
9/21/2024 19:10	14.32	23.35	0.01	7.15	401.55	8.92	0.5	12.21
9/21/2024 19:00	14.34	23.2	0.01	7.18	400.34	8.93	0.52	12.33
9/21/2024 18:50	14.35	23.19	0.01	7.18	399.38	8.96	0.53	12.24
9/21/2024 18:40	14.36	23.07	0.01	7.18	399.23	8.97	0.54	12.31
9/21/2024 18:30	14.37	23.07	0.01	7.16	399.65	8.99	0.52	12.5
9/21/2024 18:20	14.38	23.02	0.01	7.18	398.39	9.02	0.52	12.55
9/21/2024 18:10	14.39	23	0.01	7.2	396.83	9.03	0.56	12.6

9/21/2024 18:00	14.39	22.88	0.01	7.2	397.31	9.05	0.53	12.57
9/21/2024 17:50	14.39	22.94	0.01	7.21	395.79	9.04	0.52	12.5
9/21/2024 17:40	14.39	22.84	0.01	7.24	394.41	9.05	0.53	12.48
9/21/2024 17:30	14.39	22.85	0.01	7.2	396.01	9.06	0.53	12.45
9/21/2024 17:20	14.39	22.73	0.01	7.28	391.56	9.06	0.53	12.62
9/21/2024 17:10	14.39	22.82	0.01	7.23	393.63	9.07	0.64	12.62
9/21/2024 17:00	14.39	22.45	0.01	7.27	391.19	9.11	0.53	12.72
9/21/2024 16:50	14.39	22.76	0.01	7.26	391.36	9.12	0.51	12.79
9/21/2024 16:40	14.39	22.49	0.01	7.25	391.47	9.14	0.53	12.81
9/21/2024 16:30	14.4	22.72	0.01	7.25	390.68	9.14	0.52	12.79
9/21/2024 16:20	14.4	22.44	0.01	7.27	389.97	9.17	0.54	12.62
9/21/2024 16:10	14.4	22.65	0.01	7.27	389.09	9.21	0.54	12.76
9/21/2024 16:00	14.4	22.57	0.01	7.27	389.09	9.22	0.56	13.56
9/21/2024 15:50	14.38	22.63	0.01	7.25	389.04	9.21	0.53	13.22
9/21/2024 15:40	14.39	22.4	0.01	7.31	385.62	9.24	0.53	12.6
9/21/2024 15:30	14.41	22.55	0.01	7.3	384.55	9.28	0.52	13.34
9/21/2024 15:20	14.44	22.51	0.01	7.3	384.63	9.28	0.55	13.36
9/21/2024 15:10	14.47	22.49	0.01	7.32	382.48	9.29	0.57	13.32
9/21/2024 15:00	14.48	22.51	0.01	7.34	381.36	9.3	0.52	13.51
9/21/2024 14:50	14.5	22.48	0.01	7.32	381.49	9.33	0.55	13.48
9/21/2024 14:40	14.46	22.49	0.01	7.33	381.64	9.34	0.55	13.48
9/21/2024 14:30	14.44	22.53	0.01	7.32	380.68	9.34	0.54	13.46
9/21/2024 14:20	14.4	22.44	0.01	7.32	381.38	9.33	0.54	13.46
9/21/2024 14:10	14.36	22.47	0.01	7.28	382.57	9.35	0.52	13.46
9/21/2024 14:00	14.3	22.5	0.01	7.35	378.7	9.36	0.52	13.46
9/21/2024 13:50	14.31	22.47	0.01	7.28	382.11	9.41	0.53	13.46
9/21/2024 13:40	14.24	22.43	0.01	7.31	380.27	9.38	0.53	13.36
9/21/2024 13:30	14.24	22.49	0.01	7.31	379.97	9.4	0.53	13.46
9/21/2024 13:20	14.23	22.3	0.01	7.32	379.7	9.4	0.51	13.51
9/21/2024 13:10	14.18	22.52	0.01	7.29	381.59	9.42	0.51	13.51
9/21/2024 13:00	14.12	22.25	0.01	7.36	378.59	9.46	0.53	13.56
9/21/2024 12:50	14.07	22.49	0.01	7.33	380.38	9.48	0.51	13.58
9/21/2024 12:40	14.02	22.35	0.01	7.34	380.86	9.51	0.52	13.58
9/21/2024 12:30	13.95	22.43	0.01	7.34	380.75	9.53	0.49	13.48
9/21/2024 12:20	13.85	22.27	0.01	7.36	380.64	9.55	0.51	13.6
9/21/2024 12:10	13.73	22.38	0.01	7.33	382.12	9.57	0.5	13.53
9/21/2024 12:00	13.64	22.32	0.01	7.31	384.41	9.56	0.49	13.63
9/21/2024 11:50	13.6	22.43	0.01	7.32	383.06	9.55	0.5	13.53
9/21/2024 11:40	13.61	22.23	0.01	7.32	382.58	9.56	0.49	13.63
9/21/2024 11:30	13.63	22.39	0.01	7.34	381.45	9.6	0.5	13.63
9/21/2024 11:20	13.63	22.4	0.01	7.33	382.47	9.6	0.49	13.53
9/21/2024 11:10	13.68	22.37	0.01	7.31	382.81	9.6	0.49	13.6
9/21/2024 11:00	13.77	22.32	0.01	7.33	383.06	9.61	0.51	13.63
9/21/2024 10:50	13.69	22.31	0.01	7.33	383.95	9.62	0.48	13.53
9/21/2024 10:40	13.51	22.31	0.01	7.31	387.95	9.6	0.49	13.63
9/21/2024 10:30	13.38	22.36	0.01	7.29	389.49	9.6	0.46	13.65
9/21/2024 10:20	13.26	22.28	0.01	7.27	392.5	9.58	0.44	13.67

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9/21/2024 10:10	13.14	22.52	0.01	7.26	393.02	9.54	0.46	13.2
9/21/2024 10:00	13.15	22.24	0.01	7.27	393.17	9.56	0.46	13.1
9/21/2024 9:50	13.15	22.38	0.01	7.23	395.36	9.59	0.48	12.93
9/21/2024 9:40	13.15	22.12	0.01	7.26	395.98	9.55	0.46	13.03
9/21/2024 9:30	13.1	22.45	0.01	7.25	397.29	9.53	0.44	13.63
9/21/2024 9:20	13.04	22.21	0.01	7.22	400.46	9.5	0.46	13.24
9/21/2024 9:10	13.02	22.51	0.01	7.21	401.52	9.47	0.44	12.72
9/21/2024 9:00	13	22.37	0.01	7.19	403.39	9.45	0.43	12.6
9/21/2024 8:50	12.98	22.67	0.01	7.21	402.76	9.42	0.52	12.29
9/21/2024 8:40	12.97	22.65	0.01	7.19	405.37	9.41	0.45	12.26
9/21/2024 8:30	12.97	22.62	0.01	7.18	405.52	9.4	0.46	12.24
9/21/2024 8:20	12.96	22.5	0.01	7.19	406.52	9.35	0.45	12.12
9/21/2024 8:10	12.95	22.83	0.01	7.16	407.84	9.34	0.45	12.07
9/21/2024 8:00	12.94	22.65	0.01	7.18	407.92	9.31	0.44	12.02
9/21/2024 7:50	12.94	22.86	0.01	7.15	409.21	9.27	0.44	12.07
9/21/2024 7:40	12.94	22.81	0.01	7.16	409.52	9.29	0.44	12.05
9/21/2024 7:30	12.95	22.91	0.01	7.15	409.71	9.25	0.46	12.02
9/21/2024 7:20	12.95	22.84	0.01	7.13	411.44	9.25	0.43	12
9/21/2024 7:10	12.95	22.96	0.01	7.13	410.8	9.23	0.46	11.9
9/21/2024 7:00	12.95	22.83	0.01	7.15	410.24	9.23	0.45	11.9
9/21/2024 6:50	12.96	22.84	0.01	7.14	410.07	9.23	0.44	11.93
9/21/2024 6:40	12.97	22.91	0.01	7.15	410.39	9.23	0.45	12.02
9/21/2024 6:30	12.98	22.99	0.01	7.14	410.12	9.22	0.45	12.02
9/21/2024 6:20	12.99	22.62	0.01	7.13	411.14	9.24	0.45	12.02
9/21/2024 6:10	13	22.92	0.01	7.13	410.42	9.2	0.46	12.02
9/21/2024 6:00	13.02	22.92	0.01	7.16	409.58	9.2	0.46	11.95
9/21/2024 5:50	13.03	23.03	0.01	7.15	409.62	9.21	0.47	12.02
9/21/2024 5:40	13.05	22.8	0.01	7.13	411.34	9.18	0.46	12.05
9/21/2024 5:30	13.06	23.02	0.01	7.13	410.82	9.19	0.44	11.97
9/21/2024 5:20	13.07	22.69	0.01	7.14	410.58	9.18	0.47	12.05
9/21/2024 5:10	13.09	22.95	0.01	7.13	410.86	9.18	0.47	11.97
9/21/2024 5:00	13.1	22.84	0.01	7.15	410.17	9.17	0.47	11.97
9/21/2024 4:50	13.12	22.95	0.01	7.14	409.85	9.18	0.46	12
9/21/2024 4:40	13.14	22.84	0.01	7.13	410.68	9.17	0.47	12.09
9/21/2024 4:30	13.16	23.05	0.01	7.15	409.07	9.16	0.47	12.02
9/21/2024 4:20	13.17	22.94	0.01	7.12	410.81	9.17	0.47	12.12
9/21/2024 4:10	13.2	23.04	0.01	7.13	409.75	9.17	0.48	12.12
9/21/2024 4:00	13.22	22.91	0.01	7.14	409.54	9.15	0.45	12.12
9/21/2024 3:50	13.24	22.98	0.01	7.14	409.22	9.14	0.49	12.14
9/21/2024 3:40	13.26	22.64	0.01	7.14	409.92	9.16	0.48	12.14
9/21/2024 3:30	13.28	22.97	0.01	7.13	409.44	9.13	0.48	12.12
9/21/2024 3:20	13.29	22.8	0.01	7.15	409.41	9.14	0.46	12.02
9/21/2024 3:10	13.31	23.07	0.01	7.12	410.4	9.14	0.47	12.05
9/21/2024 3:00	13.32	22.71	0.01	7.15	409.34	9.13	0.48	12.14
9/21/2024 2:50	13.34	23.13	0.01	7.15	408.69	9.14	0.46	12.14
9/21/2024 2:40	13.36	23	0.01	7.18	407.58	9.12	0.47	12.17
9/21/2024 2:30	13.38	23.02	0.01	7.14	409.26	9.1	0.48	12.17

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9/21/2024 2:20	13.39	22.68	0.01	7.13	409.86	9.12	0.47	12.14
9/21/2024 2:10	13.41	23.09	0.01	7.13	409.23	9.1	0.49	12.14
9/21/2024 2:00	13.42	22.7	0.01	7.14	409.6	9.11	0.46	12.05
9/21/2024 1:50	13.45	23.16	0.01	7.15	408.19	9.09	0.61	12.19
9/21/2024 1:40	13.46	23.06	0.01	7.13	409.36	9.07	0.46	12.09
9/21/2024 1:30	13.48	23.2	0.01	7.14	408.37	9.08	0.48	12.19
9/21/2024 1:20	13.5	23.07	0.01	7.15	408.59	9.07	0.48	12.19
9/21/2024 1:10	13.53	23.09	0.01	7.13	408.88	9.08	0.5	12.19
9/21/2024 1:00	13.55	22.75	0.01	7.18	406.38	9.07	0.5	12.09
9/21/2024 0:50	13.57	23.21	0.01	7.15	407.28	9.08	0.48	12.19
9/21/2024 0:40	13.59	23.13	0.01	7.14	408.23	9.06	0.49	12.09
9/21/2024 0:30	13.62	23.16	0.01	7.14	407.87	9.07	0.49	12.12
9/21/2024 0:20	13.64	23.05	0.01	7.12	409.32	9.05	0.49	12.09
9/21/2024 0:10	13.67	23.28	0.01	7.15	407.38	9.03	0.47	12.12
9/21/2024 0:00	13.68	22.95	0.01	7.15	407.27	9.04	0.51	12.21
9/20/2024 23:50	13.71	23.19	0.01	7.14	407.49	9.02	0.5	12.12
9/20/2024 23:40	13.73	22.83	0.01	7.12	408.56	9.02	0.48	12.12
9/20/2024 23:30	13.76	23.3	0.01	7.15	406.47	9.02	0.49	12.12
9/20/2024 23:20	13.78	23.07	0.01	7.17	405.88	9.02	0.47	12.19
9/20/2024 23:10	13.8	23.34	0.01	7.14	406.74	9.01	0.5	12.21
9/20/2024 23:00	13.82	23.23	0.01	7.17	405.59	9	0.48	12.21
9/20/2024 22:50	13.85	23.28	0.01	7.13	407.35	8.98	0.5	12.21
9/20/2024 22:40	13.86	22.88	0.01	7.15	406.6	8.99	0.52	12.24
9/20/2024 22:30	13.88	23.4	0.01	7.15	405.89	8.98	0.49	12.21
9/20/2024 22:20	13.9	23.3	0.01	7.15	406.53	8.96	0.49	12.14
9/20/2024 22:10	13.92	23.29	0.01	7.15	405.5	8.97	0.5	12.12
9/20/2024 22:00	13.94	23.06	0.01	7.18	404.16	8.96	0.5	12.21
9/20/2024 21:50	13.97	23.4	0.01	7.15	405.14	8.96	0.53	12.24
9/20/2024 21:40	13.99	23.25	0.01	7.13	406.62	8.93	0.5	12.24
9/20/2024 21:30	14.02	23.34	0.01	7.14	405.92	8.95	0.53	12.24
9/20/2024 21:20	14.05	23.32	0.01	7.16	404.86	8.92	0.53	12.26
9/20/2024 21:10	14.08	23.35	0.01	7.14	405.68	8.92	0.51	12.24
9/20/2024 21:00	14.11	23.05	0.01	7.14	405.69	8.89	0.52	12.24
9/20/2024 20:50	14.14	23.31	0.01	7.15	404.36	8.9	0.5	12.14
9/20/2024 20:40	14.17	23.06	0.01	7.15	404.68	8.9	0.53	12.17
9/20/2024 20:30	14.2	23.42	0.01	7.14	403.91	8.88	0.51	12.26
9/20/2024 20:20	14.23	23.35	0.01	7.17	403.14	8.88	0.52	12.26
9/20/2024 20:10	14.26	23.41	0.01	7.16	402.83	8.88	0.51	12.26
9/20/2024 20:00	14.29	23.33	0.01	7.22	399.9	8.87	0.53	12.26
9/20/2024 19:50	14.32	23.4	0.01	7.15	402.59	8.87	0.51	12.19
9/20/2024 19:40	14.35	23.31	0.01	7.16	402.73	8.87	0.53	12.26
9/20/2024 19:30	14.38	23.38	0.01	7.16	402.01	8.87	0.53	12.29
9/20/2024 19:20	14.41	23.27	0.01	7.18	400.64	8.85	0.52	12.29
9/20/2024 19:10	14.43	23.31	0.01	7.17	400.47	8.89	0.51	12.31
9/20/2024 19:00	14.46	23.19	0.01	7.19	399.3	8.89	0.53	12.31
9/20/2024 18:50	14.48	23.33	0.01	7.17	399.6	8.88	0.54	12.24
9/20/2024 18:40	14.51	23.24	0.01	7.16	400.44	8.89	0.54	12.31

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9/20/2024 18:30	14.53	23.29	0.01	7.19	397.87	8.89	0.54	12.24
9/20/2024 18:20	14.55	23.17	0.01	7.19	398.33	8.91	0.54	12.26
9/20/2024 18:10	14.57	23.18	0.01	7.19	397.34	8.9	0.52	12.29
9/20/2024 18:00	14.59	23.05	0.01	7.17	398.67	8.91	0.55	12.38
9/20/2024 17:50	14.61	23.21	0.01	7.18	396.91	8.92	0.54	12.33
9/20/2024 17:40	14.63	22.95	0.01	7.2	396.53	8.93	0.55	12.36
9/20/2024 17:30	14.65	23.07	0.01	7.2	395.02	8.93	0.54	12.48
9/20/2024 17:20	14.66	22.92	0.01	7.22	394.34	8.95	0.55	12.45
9/20/2024 17:10	14.66	23.02	0.01	7.23	393.04	8.95	0.62	12.6
9/20/2024 17:00	14.67	22.95	0.01	7.23	393.91	8.97	0.55	12.62
9/20/2024 16:50	14.67	23.01	0.01	7.23	392.25	8.99	0.55	12.6
9/20/2024 16:40	14.68	22.93	0.01	7.24	392.5	8.99	0.54	12.74
9/20/2024 16:30	14.69	22.9	0.01	7.21	393.06	9.03	0.57	12.72
9/20/2024 16:20	14.7	22.57	0.01	7.24	391.3	9.06	0.55	12.93
9/20/2024 16:10	14.71	22.9	0.01	7.27	388.72	9.07	0.54	13.46
9/20/2024 16:00	14.72	22.84	0.01	7.25	390.25	9.05	0.56	13
9/20/2024 15:50	14.73	22.88	0.01	7.26	388.51	9.05	0.6	13.44
9/20/2024 15:40	14.75	22.72	0.01	7.27	388.55	9.06	0.57	13.39
9/20/2024 15:30	14.78	22.78	0.01	7.28	386.89	9.09	0.55	13.46
9/20/2024 15:20	14.82	22.42	0.01	7.31	385.6	9.12	0.58	13.46
9/20/2024 15:10	14.84	22.71	0.01	7.3	384.57	9.16	0.57	13.22
9/20/2024 15:00	14.85	22.38	0.01	7.3	384.79	9.2	0.57	13.24
9/20/2024 14:50	14.85	22.65	0.01	7.3	383.1	9.19	0.55	13.48
9/20/2024 14:40	14.84	22.4	0.01	7.32	382.05	9.19	0.57	13.46
9/20/2024 14:30	14.82	22.66	0.01	7.3	381.82	9.21	0.56	13.34
9/20/2024 14:20	14.79	22.56	0.01	7.3	381.81	9.24	0.58	13.34
9/20/2024 14:10	14.74	22.58	0.01	7.31	380.24	9.24	0.54	13.34
9/20/2024 14:00	14.7	22.48	0.01	7.37	377.95	9.27	0.56	13.34
9/20/2024 13:50	14.67	22.58	0.01	7.34	378.87	9.3	0.56	13.36
9/20/2024 13:40	14.62	22.37	0.01	7.37	378.15	9.31	0.56	13.41
9/20/2024 13:30	14.53	22.49	0.01	7.3	382.08	9.38	0.56	13.56
9/20/2024 13:20	14.39	22.36	0.01	7.36	380.77	9.41	0.54	13.48
9/20/2024 13:10	14.25	22.41	0.01	7.35	382.2	9.42	0.51	13.6
9/20/2024 13:00	14.17	22.22	0.01	7.35	383.07	9.43	0.53	13.6
9/20/2024 12:50	14.13	22.47	0.01	7.34	382.93	9.42	0.5	13.6
9/20/2024 12:40	14.11	22.42	0.01	7.34	383.81	9.44	0.53	13.63
9/20/2024 12:30	14.08	22.44	0.01	7.33	384.4	9.44	0.51	13.63
9/20/2024 12:30	14.08	22.44	0.01	7.33	384.4	9.44	0.51	13.63
9/20/2024 12:20	14.02	22.37	0.01	7.34	385.08	9.41	0.53	13.63
9/20/2024 12:10	13.97	22.45	0.01	7.3	387.22	9.37	0.52	13.65
9/20/2024 12:00	13.92	22.53	0.01	7.28	389.55	9.34	0.5	13.65
9/20/2024 11:50	13.89	22.57	0.01	7.27	389.49	9.31	0.5	13.32
9/20/2024 11:40	13.89	22.26	0.01	7.27	389.74	9.34	0.5	13.1
9/20/2024 11:30	13.89	22.58	0.01	7.29	387.96	9.36	0.51	13.63
9/20/2024 11:20	13.9	22.32	0.01	7.3	387.29	9.39	0.5	13.51
9/20/2024 11:10	13.92	22.49	0.01	7.3	386.67	9.42	0.53	13.63
9/20/2024 11:00	13.91	22.29	0.01	7.33	386.27	9.44	0.49	13.63

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9/20/2024 10:50	13.86	22.43	0.01	7.3	387.66	9.4	0.5	13.6
9/20/2024 10:40	13.82	22.47	0.01	7.29	389.27	9.39	0.48	13.6
9/20/2024 10:30	13.8	22.56	0.01	7.28	389.36	9.38	0.52	13.65
9/20/2024 10:20	13.8	22.33	0.01	7.3	388.06	9.37	0.49	13.41
9/20/2024 10:10	13.83	22.6	0.01	7.29	388.04	9.4	0.52	13.03
9/20/2024 10:00	13.88	22.51	0.01	7.29	389.42	9.43	0.5	13.51
9/20/2024 9:50	13.83	22.59	0.01	7.28	389.92	9.41	0.52	13.6
9/20/2024 9:40	13.72	22.48	0.01	7.26	393.22	9.38	0.5	13.6
9/20/2024 9:30	13.62	22.66	0.01	7.25	394.62	9.36	0.46	13.51
9/20/2024 9:20	13.54	22.5	0.01	7.28	394.87	9.32	0.48	13.1
9/20/2024 9:10	13.53	22.77	0.01	7.23	397.7	9.32	0.47	12.84
9/20/2024 9:00	13.51	22.6	0.01	7.24	398.39	9.28	0.46	13.12
9/20/2024 8:50	13.48	22.83	0.01	7.21	400.1	9.24	0.5	12.76
9/20/2024 8:40	13.47	22.74	0.01	7.19	402.79	9.23	0.48	12.62
9/20/2024 8:30	13.46	22.92	0.01	7.19	402.79	9.19	0.48	12.53
9/20/2024 8:20	13.45	22.62	0.01	7.16	405.05	9.17	0.47	12.41
9/20/2024 8:10	13.44	22.94	0.01	7.16	405.15	9.13	0.49	12.21
9/20/2024 8:00	13.44	22.86	0.01	7.15	406.39	9.1	0.49	12.33
9/20/2024 7:50	13.45	23.05	0.01	7.16	405.32	9.09	0.5	12.09
9/20/2024 7:40	13.46	22.95	0.01	7.14	407.51	9.07	0.5	12
9/20/2024 7:30	13.48	23.1	0.01	7.15	406.8	9.06	0.47	11.93
9/20/2024 7:20	13.49	22.95	0.01	7.18	405.96	9.06	0.49	12.05
9/20/2024 7:10	13.51	22.99	0.01	7.13	408.52	9.04	0.49	12.05
9/20/2024 7:00	13.52	22.91	0.01	7.15	408.12	9.04	0.48	12.02
9/20/2024 6:50	13.53	23.1	0.01	7.15	407.6	9.04	0.48	12.02
9/20/2024 6:40	13.53	22.74	0.01	7.16	407.65	9.03	0.48	12.05
9/20/2024 6:30	13.53	23.17	0.01	7.15	407.19	9.03	0.49	12.05
9/20/2024 6:20	13.54	23.02	0.01	7.15	407.95	9.03	0.48	12.05
9/20/2024 6:10	13.55	23.13	0.01	7.11	409.64	9.03	0.48	12.05
9/20/2024 6:00	13.55	22.93	0.01	7.15	407.9	9.02	0.49	12.07
9/20/2024 5:50	13.56	23.02	0.01	7.15	407.41	9.01	0.47	12.07
9/20/2024 5:40	13.57	23.06	0.01	7.17	406.7	8.99	0.49	12.07
9/20/2024 5:30	13.59	23.19	0.01	7.14	407.38	9.01	0.5	11.97
9/20/2024 5:20	13.6	23.05	0.01	7.15	407.79	9	0.51	12.07
9/20/2024 5:10	13.62	23.07	0.01	7.15	407.33	8.99	0.48	12.09
9/20/2024 5:00	13.62	22.77	0.01	7.14	408.32	8.99	0.49	12.09
9/20/2024 4:50	13.63	23.08	0.01	7.13	407.48	9	0.5	12.09
9/20/2024 4:40	13.65	23.08	0.01	7.14	407.57	9	0.49	12.09
9/20/2024 4:30	13.66	23.14	0.01	7.14	406.9	8.99	0.49	12.07
9/20/2024 4:20	13.68	23.07	0.01	7.15	406.71	8.99	0.5	12
9/20/2024 4:10	13.69	23.1	0.01	7.15	406.1	8.98	0.53	12
9/20/2024 4:00	13.71	23.04	0.01	7.16	406.21	8.98	0.5	12.02
9/20/2024 3:50	13.73	23.13	0.01	7.11	407.93	8.96	0.5	12.02
9/20/2024 3:40	13.74	23.18	0.01	7.13	407.96	8.95	0.5	12.14
9/20/2024 3:30	13.76	23.13	0.01	7.14	406.6	8.96	0.51	12.14
9/20/2024 3:20	13.77	23.06	0.01	7.17	405.7	8.96	0.52	12.14
9/20/2024 3:10	13.78	23.23	0.01	7.14	406.87	8.94	0.51	12.12

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9/20/2024 3:00	13.79	22.85	0.01	7.15	407.38	8.94	0.5	12.05
9/20/2024 2:50	13.81	23.26	0.01	7.15	406.22	8.94	0.48	12.05
9/20/2024 2:40	13.84	23.15	0.01	7.14	406.7	8.92	0.5	12.07
9/20/2024 2:30	13.86	23.32	0.01	7.15	405.89	8.93	0.51	12.07
9/20/2024 2:20	13.88	22.94	0.01	7.15	406.73	8.92	0.5	12.07
9/20/2024 2:10	13.9	23.37	0.01	7.14	406.1	8.93	0.53	12.09
9/20/2024 2:00	13.92	23.25	0.01	7.14	406.14	8.91	0.51	12.07
9/20/2024 1:50	13.95	23.29	0.01	7.13	406.27	8.89	0.51	12.07
9/20/2024 1:40	13.97	23.23	0.01	7.15	405.81	8.91	0.51	12.07
9/20/2024 1:30	14.01	23.32	0.01	7.14	405.38	8.89	0.51	12.07
9/20/2024 1:20	14.04	23.3	0.01	7.15	405.88	8.88	0.53	12.17
9/20/2024 1:10	14.06	23.47	0.01	7.14	405.77	8.87	0.52	12.19
9/20/2024 1:00	14.09	23.34	0.01	7.14	406.7	8.88	0.52	12.19
9/20/2024 0:50	14.12	23.46	0.01	7.13	406.49	8.87	0.53	12.19
9/20/2024 0:40	14.15	23.04	0.01	7.14	406.56	8.86	0.49	12.21
9/20/2024 0:30	14.17	23.51	0.01	7.15	404.72	8.85	0.53	12.21
9/20/2024 0:20	14.2	23.17	0.01	7.15	405.51	8.83	0.54	12.21
9/20/2024 0:10	14.23	23.53	0.01	7.14	405.1	8.83	1.51	12.19
9/20/2024 0:00	14.25	23.45	0.01	7.17	403.75	8.84	0.53	12.21
9/19/2024 23:50	14.28	23.56	0.01	7.15	404.44	8.8	0.53	12.21
9/19/2024 23:40	14.31	23.37	0.01	7.14	405.68	8.83	0.54	12.21
9/19/2024 23:30	14.33	23.54	0.01	7.14	404.87	8.8	0.53	12.12
9/19/2024 23:20	14.36	23.48	0.01	7.14	405.33	8.8	0.58	12.14
9/19/2024 23:10	14.38	23.52	0.01	7.14	404.59	8.78	0.53	12.21
9/19/2024 23:00	14.41	23.28	0.01	7.16	404.02	8.77	0.53	12.12
9/19/2024 22:50	14.44	23.5	0.01	7.13	404.98	8.78	0.54	12.21
9/19/2024 22:40	14.47	23.27	0.01	7.13	405.68	8.76	0.55	12.21
9/19/2024 22:30	14.5	23.62	0.01	7.15	404.47	8.77	0.53	12.24
9/19/2024 22:20	14.53	23.34	0.01	7.15	404.47	8.76	0.55	12.24
9/19/2024 22:10	14.55	23.57	0.01	7.13	404.64	8.74	0.56	12.21
9/19/2024 22:00	14.58	23.5	0.01	7.15	404.19	8.75	0.55	12.21
9/19/2024 21:50	14.61	23.55	0.01	7.15	403.61	8.74	0.54	12.21
9/19/2024 21:40	14.63	23.48	0.01	7.16	403.22	8.72	0.52	12.24
9/19/2024 21:30	14.65	23.58	0.01	7.14	403.68	8.73	0.54	12.26
9/19/2024 21:20	14.68	23.43	0.01	7.16	402.65	8.73	0.53	12.26
9/19/2024 21:10	14.71	23.64	0.01	7.15	402.6	8.72	0.55	12.26
9/19/2024 21:00	14.73	23.39	0.01	7.16	402.46	8.72	0.55	12.26
9/19/2024 20:50	14.75	23.59	0.01	7.15	402.22	8.7	0.54	12.26
9/19/2024 20:40	14.77	23.12	0.01	7.18	401.16	8.7	0.56	12.26
9/19/2024 20:30	14.79	23.59	0.01	7.14	402.67	8.7	0.55	12.26
9/19/2024 20:20	14.81	23.55	0.01	7.16	402.07	8.69	0.55	12.26
9/19/2024 20:10	14.83	23.62	0.01	7.15	401.22	8.69	0.57	12.19
9/19/2024 20:00	14.86	23.55	0.01	7.15	402.02	8.69	0.57	12.29
9/19/2024 19:50	14.89	23.63	0.01	7.15	400.96	8.69	0.56	12.29
9/19/2024 19:40	14.92	23.55	0.01	7.17	399.71	8.69	0.57	12.29
9/19/2024 19:30	14.95	23.56	0.01	7.17	398.96	8.67	0.55	12.21
9/19/2024 19:20	14.97	23.47	0.01	7.18	398.96	8.69	0.58	12.19

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9/19/2024 19:10	15	23.51	0.01	7.16	398.66	8.69	0.58	12.21
9/19/2024 19:00	15.03	23.43	0.01	7.17	398.49	8.69	0.58	12.29
9/19/2024 18:50	15.06	23.49	0.01	7.18	397.32	8.7	0.56	12.36
9/19/2024 18:40	15.09	23.06	0.01	7.22	395.39	8.7	0.57	12.36
9/19/2024 18:30	15.11	23.46	0.01	7.19	396.14	8.72	0.59	12.38
9/19/2024 18:20	15.14	23.2	0.01	7.21	395.03	8.71	0.59	12.41
9/19/2024 18:10	15.16	23.39	0.01	7.2	394.23	8.74	0.59	12.33
9/19/2024 18:00	15.18	23.32	0.01	7.23	393.22	8.73	0.59	12.43
9/19/2024 17:50	15.21	23.35	0.01	7.2	394.38	8.73	0.59	12.45
9/19/2024 17:40	15.23	23.03	0.01	7.22	393.42	8.76	0.58	12.57
9/19/2024 17:30	15.26	23.24	0.01	7.23	392.12	8.77	0.58	12.62
9/19/2024 17:20	15.27	23.14	0.01	7.24	391.42	8.77	0.6	12.6
9/19/2024 17:10	15.29	23.17	0.01	7.23	391.43	8.79	0.59	12.6
9/19/2024 17:00	15.3	23.04	0.01	7.23	391.67	8.8	0.61	12.62
9/19/2024 16:50	15.32	23.08	0.01	7.25	389.7	8.83	0.6	12.6
9/19/2024 16:40	15.34	23.03	0.01	7.24	390.41	8.84	0.62	12.74
9/19/2024 16:30	15.35	23.12	0.01	7.26	387.86	8.87	0.6	12.57
9/19/2024 16:20	15.36	22.87	0.01	7.26	388.37	8.87	0.61	12.69
9/19/2024 16:10	15.38	23.08	0.01	7.26	387.17	8.91	0.61	12.67
9/19/2024 16:00	15.4	22.68	0.01	7.28	386.15	8.95	0.61	12.98
9/19/2024 15:50	15.42	23.01	0.01	7.29	384.65	8.96	0.61	13.44
9/19/2024 15:40	15.4	22.8	0.01	7.28	385.25	9	0.61	13.48
9/19/2024 15:30	15.41	22.95	0.01	7.3	382.88	8.99	0.61	13.44
9/19/2024 15:20	15.4	22.69	0.01	7.31	383.31	9.01	0.59	13.44
9/19/2024 15:10	15.36	22.97	0.01	7.32	381.77	9.05	0.62	13.48
9/19/2024 15:00	15.31	22.61	0.01	7.31	382.46	9.03	0.62	13.51
9/19/2024 14:50	15.24	22.95	0.01	7.31	381.24	9.04	0.57	13.53
9/19/2024 14:40	15.17	22.89	0.01	7.29	382.1	9.04	0.6	13.51
9/19/2024 14:30	15.2	22.96	0.01	7.29	380.55	9.04	0.61	13.51
9/19/2024 14:20	15.17	22.91	0.01	7.31	380.02	9.06	0.59	13.48
9/19/2024 14:10	15.2	22.88	0.01	7.31	378.32	9.06	0.64	13.2
9/19/2024 14:00	15.22	22.84	0.01	7.32	378.14	9.11	0.57	13.34
9/19/2024 13:50	15.21	22.89	0.01	7.33	376.83	9.13	0.58	13.46
9/19/2024 13:40	15.16	22.84	0.01	7.33	377.34	9.18	0.57	13.51
9/19/2024 13:30	15.06	22.91	0.01	7.31	377.94	9.19	0.6	13.51
9/19/2024 13:20	15.03	22.78	0.01	7.31	378.94	9.18	0.58	13.53
9/19/2024 13:10	14.93	22.89	0.01	7.3	379.66	9.19	0.57	13.53
9/19/2024 13:00	14.83	22.77	0.01	7.35	378.03	9.15	0.56	13.46
9/19/2024 12:50	14.83	23.02	0.01	7.28	380.36	9.12	0.56	13.56
9/19/2024 12:40	14.88	22.53	0.01	7.3	379.02	9.15	0.56	12.96
9/19/2024 12:30	14.99	23.02	0.01	7.31	377.08	9.19	0.58	13.44
9/19/2024 12:20	15.04	22.99	0.01	7.38	373.9	9.2	0.58	13.36
9/19/2024 12:10	15.03	23.04	0.01	7.33	376.6	9.21	0.57	13.51
9/19/2024 12:00	14.99	22.89	0.01	7.33	378.21	9.26	0.56	13.53
9/19/2024 11:50	14.86	22.91	0.01	7.33	378.84	9.26	0.55	13.53
9/19/2024 11:40	14.69	22.73	0.01	7.35	380.08	9.27	0.54	13.56
9/19/2024 11:30	14.47	22.91	0.01	7.3	384.17	9.23	0.53	13.53

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9/19/2024 11:20	14.41	22.79	0.01	7.28	386.08	9.23	0.52	13.17
9/19/2024 11:10	14.36	23.06	0.01	7.26	387.44	9.18	0.54	12.84
9/19/2024 11:00	14.34	22.9	0.01	7.25	388.77	9.18	0.53	12.67
9/19/2024 10:50	14.33	23.09	0.01	7.27	387.97	9.19	0.52	12.81
9/19/2024 10:40	14.3	22.91	0.01	7.24	390.62	9.15	0.52	12.79
9/19/2024 10:30	14.27	23.29	0.01	7.22	391.54	9.13	0.5	12.65
9/19/2024 10:20	14.24	23.28	0.01	7.23	392.13	9.1	0.53	12.45
9/19/2024 10:10	14.23	23.33	0.01	7.22	392.55	9.08	0.53	12.36
9/19/2024 10:00	14.21	23.08	0.01	7.2	394.42	9.07	0.52	12.38
9/19/2024 9:50	14.2	23.53	0.01	7.18	394.99	9.04	0.53	12.26
9/19/2024 9:40	14.19	23.44	0.01	7.21	394.9	9.05	0.53	12.09
9/19/2024 9:30	14.18	23.59	0.01	7.19	395.22	9.06	0.5	12.07
9/19/2024 9:20	14.18	23.48	0.01	7.23	394.27	9.08	0.51	12.17
9/19/2024 9:10	14.18	23.54	0.01	7.21	395.27	9.09	0.52	12.24
9/19/2024 9:00	14.15	23.35	0.01	7.19	397.22	9.04	0.51	12.12
9/19/2024 8:50	14.14	23.6	0.01	7.17	398.6	9.02	0.52	12.21
9/19/2024 8:40	14.13	23.58	0.01	7.19	398.72	9.01	0.52	12.19
9/19/2024 8:30	14.12	23.84	0.01	7.17	399.61	8.98	0.5	12.07
9/19/2024 8:20	14.12	23.81	0.01	7.17	400.56	8.96	0.51	12.07
9/19/2024 8:10	14.11	23.94	0.01	7.16	400.67	8.95	0.51	12.07
9/19/2024 8:00	14.11	23.85	0.01	7.18	401.04	8.95	0.5	12.05
9/19/2024 7:50	14.1	24.04	0.01	7.15	402.07	8.92	0.52	12.05
9/19/2024 7:40	14.1	23.75	0.01	7.14	402.92	8.92	0.51	11.93
9/19/2024 7:30	14.11	24.11	0.01	7.13	403.75	8.88	0.5	11.93
9/19/2024 7:20	14.11	24.05	0.01	7.13	404.46	8.88	0.5	11.93
9/19/2024 7:10	14.12	24.13	0.01	7.13	403.99	8.89	0.52	12.05
9/19/2024 7:00	14.12	23.95	0.01	7.14	404.23	8.9	0.49	12.02
9/19/2024 6:50	14.13	24.21	0.01	7.12	405.12	8.88	0.51	12.02
9/19/2024 6:40	14.14	23.97	0.01	7.13	405.13	8.87	0.52	12.02
9/19/2024 6:30	14.14	24.32	0.01	7.13	404.25	8.88	0.52	11.93
9/19/2024 6:20	14.16	24.34	0.01	7.14	404.22	8.89	0.51	11.95
9/19/2024 6:10	14.17	24.33	0.01	7.13	404.33	8.87	0.52	12.02
9/19/2024 6:00	14.18	24.4	0.01	7.12	405.72	8.89	0.53	12.02
9/19/2024 5:50	14.18	24.6	0.01	7.12	405.53	8.85	0.53	12.02
9/19/2024 5:40	14.18	24.33	0.01	7.13	405.7	8.87	0.52	12.07
9/19/2024 5:30	14.19	24.74	0.01	7.13	405.09	8.86	0.51	12.07
9/19/2024 5:20	14.2	24.68	0.01	7.14	405.16	8.86	0.53	12.07
9/19/2024 5:10	14.21	24.78	0.01	7.11	405.98	8.87	0.52	12.09
9/19/2024 5:00	14.22	24.79	0.01	7.13	405.86	8.86	0.52	12.09
9/19/2024 4:50	14.23	24.98	0.01	7.11	405.46	8.86	0.53	12.09
9/19/2024 4:40	14.25	25.03	0.01	7.15	404.21	8.85	0.52	12.09
9/19/2024 4:30	14.27	25.07	0.01	7.15	403.66	8.83	0.51	12.12
9/19/2024 4:20	14.29	25.18	0.01	7.18	402.45	8.84	0.53	12.12
9/19/2024 4:10	14.31	25.43	0.01	7.13	404.09	8.84	0.52	12.12
9/19/2024 4:00	14.33	25.2	0.01	7.18	401.83	8.85	0.54	12.09
9/19/2024 3:50	14.34	25.5	0.01	7.14	404.05	8.82	0.53	12.02
9/19/2024 3:40	14.36	25.58	0.01	7.14	404.15	8.83	0.52	12.12

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9/19/2024 3:30	14.37	25.9	0.01	7.14	403.17	8.83	0.53	12.14
9/19/2024 3:20	14.39	25.95	0.01	7.14	403.76	8.81	0.52	12.12
9/19/2024 3:10	14.4	26.13	0.01	7.14	403.16	8.83	0.52	12.07
9/19/2024 3:00	14.41	26.26	0.01	7.14	404.13	8.84	0.52	12.14
9/19/2024 2:50	14.42	26.55	0.01	7.15	402.77	8.82	0.52	12.14
9/19/2024 2:40	14.43	26.71	0.01	7.11	406.14	8.82	0.52	12.05
9/19/2024 2:30	14.44	27.04	0.01	7.14	403.46	8.81	0.55	12.05
9/19/2024 2:20	14.45	27.33	0.01	7.13	405.19	8.81	0.49	12.14
9/19/2024 2:10	14.46	27.83	0.01	7.14	404.28	8.8	0.5	12.17
9/19/2024 2:00	14.47	27.78	0.01	7.15	404.14	8.8	0.51	12.17
9/19/2024 1:50	14.48	28.47	0.01	7.14	403.84	8.81	0.51	12.09
9/19/2024 1:40	14.49	28.51	0.01	7.13	405.21	8.79	0.55	12.17
9/19/2024 1:30	14.5	28.67	0.01	7.14	404.61	8.79	0.54	12.17
9/19/2024 1:20	14.51	28.37	0.01	7.14	405.04	8.78	0.54	12.17
9/19/2024 1:10	14.53	28.1	0.01	7.14	404.9	8.79	0.55	12.17
9/19/2024 1:00	14.54	27.4	0.01	7.11	406.9	8.78	0.53	12.14
9/19/2024 0:50	14.56	26.57	0.01	7.15	404.43	8.78	0.54	12.09
9/19/2024 0:40	14.57	25.71	0.01	7.11	407.44	8.75	0.55	12.17
9/19/2024 0:30	14.59	25.06	0.01	7.12	405.84	8.78	0.54	12.19
9/19/2024 0:20	14.6	24.08	0.01	7.16	404.58	8.77	0.55	12.19
9/19/2024 0:10	14.63	23.99	0.01	7.14	405.4	8.76	0.53	12.19
9/19/2024 0:00	14.65	23.42	0.01	7.14	405.97	8.76	0.54	12.19
9/18/2024 23:50	14.67	23.75	0.01	7.13	405.95	8.73	0.57	12.17
9/18/2024 23:40	14.69	23.64	0.01	7.13	406.4	8.75	0.56	12.21
9/18/2024 23:30	14.72	23.75	0.01	7.12	406.54	8.71	0.54	12.21
9/18/2024 23:20	14.74	23.68	0.01	7.14	406.34	8.74	0.53	12.21
9/18/2024 23:10	14.76	23.75	0.01	7.14	406.06	8.71	0.56	12.21
9/18/2024 23:00	14.78	23.69	0.01	7.12	407.8	8.72	0.53	12.19
9/18/2024 22:50	14.81	23.77	0.01	7.13	406.77	8.71	0.55	12.21
9/18/2024 22:40	14.83	23.36	0.01	7.15	406.15	8.7	0.56	12.12
9/18/2024 22:30	14.86	23.78	0.01	7.13	406.38	8.69	0.54	12.21
9/18/2024 22:20	14.88	23.58	0.01	7.12	407.47	8.7	0.55	12.21
9/18/2024 22:10	14.91	23.84	0.01	7.14	405.44	8.68	0.56	12.21
9/18/2024 22:00	14.93	23.53	0.01	7.15	405.41	8.67	0.55	12.14
9/18/2024 21:50	14.95	23.82	0.01	7.13	405.6	8.66	0.56	12.21
9/18/2024 21:40	14.97	23.77	0.01	7.13	406.04	8.66	0.58	12.14
9/18/2024 21:30	15	23.8	0.01	7.13	405.63	8.65	0.58	12.14
9/18/2024 21:20	15.02	23.7	0.01	7.14	406.09	8.66	0.56	12.14
9/18/2024 21:10	15.04	23.92	0.01	7.13	405.83	8.64	0.56	12.24
9/18/2024 21:00	15.06	23.75	0.01	7.15	405.36	8.65	0.6	12.24
9/18/2024 20:50	15.08	23.94	0.01	7.12	406.28	8.65	0.58	12.24
9/18/2024 20:40	15.1	23.92	0.01	7.17	403.16	8.63	0.59	12.26
9/18/2024 20:30	15.11	24.04	0.01	7.13	404.57	8.62	0.6	12.26
9/18/2024 20:20	15.13	23.81	0.01	7.13	404.6	8.61	0.61	12.26
9/18/2024 20:10	15.14	24.07	0.01	7.14	403.42	8.65	0.61	12.26
9/18/2024 20:00	15.17	23.8	0.01	7.14	403.64	8.61	0.59	12.26
9/18/2024 19:50	15.2	23.98	0.01	7.12	404.03	8.63	0.6	12.26

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9/18/2024 19:40	15.22	23.72	0.01	7.15	402.31	8.62	0.64	12.26
9/18/2024 19:30	15.25	23.69	0.01	7.13	402.82	8.61	0.6	12.26
9/18/2024 19:20	15.27	23.58	0.01	7.15	401.68	8.64	0.6	12.19
9/18/2024 19:10	15.3	23.57	0.01	7.14	401.41	8.63	0.61	12.29
9/18/2024 19:00	15.32	23.44	0.01	7.16	400.33	8.65	0.62	12.29
9/18/2024 18:50	15.35	23.53	0.01	7.15	399.87	8.65	0.63	12.29
9/18/2024 18:40	15.37	23.43	0.01	7.16	400.32	8.66	0.64	12.19
9/18/2024 18:30	15.4	23.53	0.01	7.15	399.18	8.64	0.66	12.19
9/18/2024 18:20	15.42	23.42	0.01	7.16	399.34	8.68	0.66	12.33
9/18/2024 18:10	15.45	23.45	0.01	7.16	398.44	8.66	0.65	12.36
9/18/2024 18:00	15.47	23.24	0.01	7.17	398	8.66	0.66	12.33
9/18/2024 17:50	15.49	23.39	0.01	7.19	396.39	8.68	0.64	12.26
9/18/2024 17:40	15.51	23.17	0.01	7.19	396.47	8.67	0.66	12.33
9/18/2024 17:30	15.52	23.29	0.01	7.19	395.5	8.67	0.65	12.29
9/18/2024 17:20	15.53	23.1	0.01	7.21	394.81	8.69	0.66	12.43
9/18/2024 17:10	15.54	23.28	0.01	7.21	393.55	8.71	0.67	12.57
9/18/2024 17:00	15.55	23.12	0.01	7.21	393.56	8.73	0.65	12.57
9/18/2024 16:50	15.56	23.23	0.01	7.21	392.46	8.72	0.69	12.57
9/18/2024 16:40	15.58	23.15	0.01	7.23	391.27	8.74	0.68	12.65
9/18/2024 16:30	15.59	23.22	0.01	7.22	390.78	8.73	0.68	12.57
9/18/2024 16:20	15.6	23.04	0.01	7.24	389.77	8.75	0.68	12.6
9/18/2024 16:10	15.62	23.17	0.01	7.22	390.3	8.76	0.71	12.5
9/18/2024 16:00	15.64	22.99	0.01	7.24	388.59	8.78	0.69	12.65
9/18/2024 15:50	15.68	23.05	0.01	7.24	387.84	8.79	0.69	12.65
9/18/2024 15:40	15.7	22.81	0.01	7.27	386.07	8.82	0.7	12.79
9/18/2024 15:30	15.74	23.1	0.01	7.26	385.39	8.85	0.69	12.6
9/18/2024 15:20	15.77	22.87	0.01	7.3	383.37	8.89	0.7	12.96
9/18/2024 15:10	15.82	22.98	0.01	7.29	382.08	8.91	0.72	12.98
9/18/2024 15:00	15.8	22.87	0.01	7.28	382.92	8.93	0.72	13.2
9/18/2024 14:50	15.78	22.87	0.01	7.28	381.87	8.96	0.7	13.32
9/18/2024 14:40	15.76	22.71	0.01	7.28	381.75	8.95	0.71	13.41
9/18/2024 14:30	15.75	22.9	0.01	7.3	379.47	8.98	0.71	13.39
9/18/2024 14:20	15.71	22.74	0.01	7.3	379.32	9	0.72	13.27
9/18/2024 14:10	15.66	22.93	0.01	7.29	378.08	9	0.7	13.36
9/18/2024 14:00	15.62	22.85	0.01	7.32	376.45	9.03	0.68	13.34
9/18/2024 13:50	15.64	22.92	0.01	7.27	377.59	9.02	0.7	13.36
9/18/2024 13:40	15.59	22.79	0.01	7.31	375.88	9.04	0.66	13.36
9/18/2024 13:30	15.56	22.88	0.01	7.3	374.89	9.08	0.67	13.39
9/18/2024 13:20	15.52	22.84	0.01	7.32	374.93	9.1	0.68	13.41
9/18/2024 13:10	15.49	22.92	0.01	7.3	375.32	9.11	0.67	13.44
9/18/2024 13:00	15.42	22.75	0.01	7.3	376.09	9.12	0.65	13.48
9/18/2024 12:50	15.38	22.91	0.01	7.3	375.64	9.13	0.65	13.34
9/18/2024 12:40	15.33	22.84	0.01	7.29	376.54	9.12	0.67	13.51
9/18/2024 12:30	15.33	22.93	0.01	7.29	375.38	9.13	0.66	13.51
9/18/2024 12:20	15.35	22.87	0.01	7.33	373.43	9.15	0.66	13.39
9/18/2024 12:10	15.37	22.86	0.01	7.32	372.42	9.16	0.67	13.39
9/18/2024 12:00	15.4	22.64	0.01	7.33	372.49	9.18	0.67	13.48

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9/18/2024 11:50	15.42	22.84	0.01	7.35	371	9.19	0.69	13.39
9/18/2024 11:40	15.41	22.6	0.01	7.33	372.27	9.22	0.68	13.41
9/18/2024 11:30	15.4	22.84	0.01	7.34	371.26	9.25	0.65	13.51
9/18/2024 11:20	15.38	22.46	0.01	7.36	370.63	9.25	0.64	13.51
9/18/2024 11:10	15.32	22.69	0.01	7.36	372.19	9.28	0.66	13.51
9/18/2024 11:00	15.24	22.69	0.01	7.35	375.37	9.27	0.63	13.53
9/18/2024 10:50	15.11	22.74	0.01	7.35	376.58	9.29	0.6	13.53
9/18/2024 10:40	14.87	22.69	0.01	7.35	378.39	9.29	0.55	13.53
9/18/2024 10:30	14.79	22.76	0.01	7.34	380.11	9.31	0.55	13.53
9/18/2024 10:20	14.7	22.69	0.01	7.32	381.63	9.31	0.52	13.56
9/18/2024 10:10	14.66	22.78	0.01	7.32	381.52	9.28	0.51	13.53
9/18/2024 10:00	14.51	22.74	0.01	7.3	383.71	9.27	0.49	13.56
9/18/2024 9:50	14.37	22.84	0.01	7.28	385.87	9.27	0.5	13.44
9/18/2024 9:40	14.27	22.65	0.01	7.28	387.25	9.23	0.48	13.56
9/18/2024 9:30	14.22	22.81	0.01	7.25	390.02	9.23	0.49	13.58
9/18/2024 9:20	14.15	22.86	0.01	7.26	391.69	9.21	0.48	13.56
9/18/2024 9:10	14.13	22.93	0.01	7.24	393.73	9.19	0.5	13.03
9/18/2024 9:00	14.09	22.91	0.01	7.22	396.53	9.15	0.49	12.93
9/18/2024 8:50	14.07	23.01	0.01	7.2	397.89	9.14	0.49	12.88
9/18/2024 8:40	14.04	22.98	0.01	7.18	400.91	9.08	0.49	12.31
9/18/2024 8:30	14.02	23.13	0.01	7.17	402.13	9.06	0.47	12.09
9/18/2024 8:20	14	23.11	0.01	7.18	403.21	9.04	0.48	12.02
9/18/2024 8:10	14	23.14	0.01	7.16	404.42	9.04	0.49	12.07
9/18/2024 8:00	14	23.13	0.01	7.14	407.11	9	0.5	12.05
9/18/2024 7:50	13.99	23.28	0.01	7.15	406.33	8.99	0.5	12
9/18/2024 7:40	13.99	23.2	0.01	7.15	407.5	8.97	0.48	12.07
9/18/2024 7:30	14	23.29	0.01	7.14	408.52	8.95	0.48	12.05
9/18/2024 7:20	14	23.24	0.01	7.11	410.64	8.94	0.5	11.95
9/18/2024 7:10	14.01	23.37	0.01	7.15	407.69	8.93	0.48	11.95
9/18/2024 7:00	14.01	23.09	0.01	7.14	408.96	8.92	0.47	12.05
9/18/2024 6:50	14.01	23.39	0.01	7.14	408.6	8.92	0.48	12.05
9/18/2024 6:40	14.02	23.29	0.01	7.13	409.72	8.92	0.48	12.05
9/18/2024 6:30	14.03	23.42	0.01	7.13	408.43	8.9	0.48	12.05
9/18/2024 6:20	14.03	23.28	0.01	7.14	408.44	8.91	0.48	12.05
9/18/2024 6:10	14.04	23.4	0.01	7.14	407.83	8.91	0.5	12.05
9/18/2024 6:00	14.05	23.38	0.01	7.13	409.23	8.91	0.47	11.95
9/18/2024 5:50	14.06	23.46	0.01	7.12	409.2	8.91	0.49	12.05
9/18/2024 5:40	14.07	23.19	0.01	7.14	409.1	8.9	0.48	12.05
9/18/2024 5:30	14.07	23.41	0.01	7.15	407.44	8.9	0.46	12.05
9/18/2024 5:20	14.08	23.18	0.01	7.13	409.17	8.88	0.47	12.05
9/18/2024 5:10	14.08	23.37	0.01	7.15	407.39	8.88	0.46	11.97
9/18/2024 5:00	14.09	23.44	0.01	7.12	410.06	8.9	0.48	12.07
9/18/2024 4:50	14.11	23.54	0.01	7.14	407.98	8.88	1.92	11.97
9/18/2024 4:40	14.12	23.18	0.01	7.13	409.13	8.89	0.5	11.95
9/18/2024 4:30	14.14	23.42	0.01	7.12	409.46	8.88	0.48	12.09
9/18/2024 4:20	14.16	23.46	0.01	7.12	409.68	8.88	0.51	12.09
9/18/2024 4:10	14.17	23.45	0.01	7.12	409.08	8.86	0.49	12.09

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9/18/2024 4:00	14.18	23.5	0.01	7.13	409.88	8.88	0.5	12.12
9/18/2024 3:50	14.2	23.57	0.01	7.15	408.04	8.88	0.5	12.12
9/18/2024 3:40	14.21	23.45	0.01	7.16	408.33	8.86	0.52	12.05
9/18/2024 3:30	14.22	23.51	0.01	7.14	409.06	8.86	0.48	12.02
9/18/2024 3:20	14.22	23.29	0.01	7.13	410.17	8.85	0.51	12.02
9/18/2024 3:10	14.23	23.63	0.01	7.13	409.32	8.85	0.49	12.02
9/18/2024 3:00	14.23	23.2	0.01	7.14	409.36	8.85	0.48	12.12
9/18/2024 2:50	14.23	23.48	0.01	7.12	409.99	8.85	0.48	12.14
9/18/2024 2:40	14.24	23.45	0.01	7.13	409.74	8.86	0.48	12.07
9/18/2024 2:30	14.24	23.57	0.01	7.13	409.24	8.85	0.49	12.14
9/18/2024 2:20	14.24	23.31	0.01	7.14	409.19	8.85	0.49	12.07
9/18/2024 2:10	14.24	23.58	0.01	7.14	408.53	8.85	0.51	12.07
9/18/2024 2:00	14.25	23.25	0.01	7.13	409.16	8.85	0.5	12.09
9/18/2024 1:50	14.25	23.65	0.01	7.13	408.63	8.85	0.5	12.17
9/18/2024 1:40	14.25	23.55	0.01	7.13	409.64	8.84	0.5	12.19
9/18/2024 1:30	14.26	23.65	0.01	7.14	407.92	8.84	0.51	12.19
9/18/2024 1:20	14.26	23.57	0.01	7.13	409.72	8.84	0.51	12.19
9/18/2024 1:10	14.26	23.64	0.01	7.13	408.86	8.84	0.53	12.19
9/18/2024 1:00	14.26	23.35	0.01	7.13	409.55	8.83	0.54	12.21
9/18/2024 0:50	14.27	23.52	0.01	7.14	408.71	8.83	0.53	12.12
9/18/2024 0:40	14.27	23.59	0.01	7.14	409.31	8.85	0.53	12.21
9/18/2024 0:30	14.28	23.6	0.01	7.12	409.76	8.83	0.54	12.21
9/18/2024 0:20	14.28	23.44	0.01	7.11	411.16	8.84	0.52	12.21
9/18/2024 0:10	14.29	23.59	0.01	7.13	409.27	8.84	0.52	12.21
9/18/2024 0:00	14.29	23.39	0.01	7.13	410.51	8.84	0.51	12.12
9/17/2024 23:50	14.29	23.54	0.01	7.14	409.6	8.84	0.53	12.21
9/17/2024 23:40	14.3	23.59	0.01	7.15	409.48	8.82	0.54	12.21
9/17/2024 23:30	14.3	23.67	0.01	7.12	410.08	8.83	0.53	12.12
9/17/2024 23:20	14.3	23.25	0.01	7.14	409.45	8.81	0.53	12.12
9/17/2024 23:10	14.31	23.63	0.01	7.14	409.31	8.83	0.53	12.24
9/17/2024 23:00	14.31	23.53	0.01	7.13	410.34	8.82	0.53	12.24
9/17/2024 22:50	14.32	23.65	0.01	7.14	409.24	8.84	0.55	12.24
9/17/2024 22:40	14.32	23.53	0.01	7.13	410.54	8.83	0.55	12.24
9/17/2024 22:30	14.33	23.64	0.01	7.13	409.68	8.8	0.52	12.24
9/17/2024 22:20	14.33	23.62	0.01	7.14	409.65	8.82	0.54	12.24
9/17/2024 22:10	14.33	23.64	0.01	7.13	409.18	8.8	0.54	12.14
9/17/2024 22:00	14.34	23.37	0.01	7.13	409.62	8.81	0.56	12.14
9/17/2024 21:50	14.34	23.69	0.01	7.14	408.55	8.79	0.53	12.26
9/17/2024 21:40	14.35	23.54	0.01	7.13	409.8	8.8	0.56	12.26
9/17/2024 21:30	14.35	23.63	0.01	7.15	408.35	8.8	0.56	12.26
9/17/2024 21:20	14.36	23.46	0.01	7.15	408.91	8.8	0.57	12.17
9/17/2024 21:10	14.37	23.72	0.01	7.13	408.49	8.8	0.58	12.26
9/17/2024 21:00	14.37	23.56	0.01	7.13	409.33	8.8	0.56	12.19
9/17/2024 20:50	14.38	23.73	0.01	7.15	407.68	8.8	0.57	12.26
9/17/2024 20:40	14.38	23.59	0.01	7.15	408.3	8.79	0.54	12.17
9/17/2024 20:30	14.39	23.72	0.01	7.16	406.6	8.8	0.59	12.17
9/17/2024 20:20	14.4	23.61	0.01	7.16	406.82	8.8	0.57	12.19

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9/17/2024 20:10	14.41	23.73	0.01	7.13	407.31	8.8	0.57	12.29
9/17/2024 20:00	14.41	23.29	0.01	7.19	404.57	8.8	0.56	12.29
9/17/2024 19:50	14.42	23.55	0.01	7.16	405.44	8.79	0.55	12.29
9/17/2024 19:40	14.43	23.52	0.01	7.16	405.96	8.79	0.55	12.29
9/17/2024 19:30	14.44	23.66	0.01	7.15	405.47	8.81	0.56	12.29
9/17/2024 19:20	14.45	23.11	0.01	7.16	404.85	8.81	0.58	12.31
9/17/2024 19:10	14.46	23.58	0.01	7.17	402.98	8.81	0.57	12.31
9/17/2024 19:00	14.47	23.47	0.01	7.16	404.1	8.85	0.58	12.31
9/17/2024 18:50	14.49	23.5	0.01	7.18	401.66	8.84	0.57	12.33
9/17/2024 18:40	14.49	23.08	0.01	7.23	399.84	8.87	0.59	12.29
9/17/2024 18:30	14.5	23.26	0.01	7.2	400.2	8.89	0.61	12.29
9/17/2024 18:20	14.51	23.04	0.01	7.26	396.84	8.9	0.6	12.31
9/17/2024 18:10	14.52	23.15	0.01	7.22	398.78	8.93	0.6	12.55
9/17/2024 18:00	14.53	23.18	0.01	7.22	399.18	8.95	0.61	12.57
9/17/2024 17:50	14.54	23.12	0.01	7.23	397.16	8.96	0.59	12.57
9/17/2024 17:40	14.54	23.01	0.01	7.24	397.01	8.97	0.6	12.62
9/17/2024 17:30	14.54	22.98	0.01	7.24	396.56	8.98	0.64	12.74
9/17/2024 17:20	14.54	22.69	0.01	7.23	396.93	9	0.61	12.69
9/17/2024 17:10	14.55	22.92	0.01	7.24	395.69	9	0.61	12.62
9/17/2024 17:00	14.55	22.62	0.01	7.25	395.34	9.02	0.63	12.57
9/17/2024 16:50	14.56	22.85	0.01	7.26	393.72	9.04	0.62	12.81
9/17/2024 16:40	14.55	22.83	0.01	7.28	392.71	9.06	0.63	13.44
9/17/2024 16:30	14.55	22.96	0.01	7.28	392.06	9.07	0.62	13.63
9/17/2024 16:20	14.54	22.48	0.01	7.3	391.28	9.06	0.64	13.65
9/17/2024 16:10	14.54	22.79	0.01	7.27	392.4	9.08	0.63	13.58
9/17/2024 16:00	14.53	22.6	0.01	7.28	392.48	9.09	0.61	13.6
9/17/2024 15:50	14.53	22.81	0.01	7.29	391.07	9.11	0.61	13.6
9/17/2024 15:40	14.52	22.81	0.01	7.31	390.22	9.13	0.64	13.6
9/17/2024 15:30	14.51	22.77	0.01	7.29	391.39	9.13	0.63	13.6
9/17/2024 15:20	14.48	22.77	0.01	7.31	391.14	9.14	0.6	13.6
9/17/2024 15:10	14.45	22.82	0.01	7.29	391.21	9.11	0.62	13.44
9/17/2024 15:00	14.42	22.79	0.01	7.27	393.71	9.09	0.64	13.63
9/17/2024 14:50	14.39	22.87	0.01	7.26	393.22	9.06	0.62	13.63
9/17/2024 14:40	14.37	22.81	0.01	7.27	393.71	9.07	0.63	13.58
9/17/2024 14:30	14.37	22.82	0.01	7.29	391.16	9.11	0.61	12.6
9/17/2024 14:20	14.37	22.73	0.01	7.29	391.37	9.11	0.62	12.72
9/17/2024 14:10	14.37	22.74	0.01	7.3	389.88	9.15	0.63	13.39
9/17/2024 14:00	14.35	22.41	0.01	7.28	391.37	9.17	0.63	13.51
9/17/2024 13:50	14.33	22.72	0.01	7.29	390.19	9.16	0.6	13.46
9/17/2024 13:40	14.31	22.68	0.01	7.28	391.58	9.2	0.62	13.34
9/17/2024 13:30	14.29	22.75	0.01	7.29	389.89	9.21	0.61	13.29
9/17/2024 13:20	14.27	22.6	0.01	7.33	387.93	9.21	0.64	13.51
9/17/2024 13:10	14.26	22.65	0.01	7.31	387.84	9.22	0.61	13.32
9/17/2024 13:00	14.27	22.57	0.01	7.33	386.74	9.24	0.63	13.6
9/17/2024 12:50	14.25	22.66	0.01	7.33	387.06	9.27	0.59	13.6
9/17/2024 12:40	14.22	22.62	0.01	7.35	388.84	9.26	0.62	13.51
9/17/2024 12:30	14.19	22.7	0.01	7.33	387.09	9.3	0.6	13.6

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9/17/2024 12:20	14.16	22.54	0.01	7.33	388.13	9.27	0.58	13.6
9/17/2024 12:10	14.11	22.75	0.01	7.3	389.26	9.29	0.57	13.63
9/17/2024 12:00	14.06	22.56	0.01	7.3	390.91	9.29	0.58	13.63
9/17/2024 11:50	14.01	22.74	0.01	7.3	390.41	9.32	0.55	13.63
9/17/2024 11:40	13.95	22.53	0.01	7.29	393.04	9.29	0.56	13.41
9/17/2024 11:30	13.92	22.69	0.01	7.32	392.56	9.3	0.67	13.63
9/17/2024 11:20	13.86	22.45	0.01	7.3	396.22	9.32	0.64	13.65
9/17/2024 11:10	14.33	0	0	8.27	318.61	9.23	0.76	13.63
9/17/2024 11:00	13.75	22.84	0.01	7.27	419.4	9.35	0.4	13.46
9/17/2024 10:50	13.71	22.66	0.01	7.26	422.29	9.32	0.39	13.29
9/17/2024 10:40	13.67	22.73	0.01	7.25	421.21	9.31	0.49	13.1
9/17/2024 10:30	13.64	22.8	0.01	7.28	421.08	9.3	0.4	13
9/17/2024 10:20	13.61	22.82	0.01	7.24	423.12	9.3	0.42	13.12
9/17/2024 10:10	13.58	22.87	0.01	7.23	424.08	9.28	0.39	12.84
9/17/2024 10:00	13.55	22.9	0.01	7.21	425.17	9.27	0.4	12.96
9/17/2024 9:50	13.53	22.96	0.01	7.24	424.91	9.22	0.39	12.93
9/17/2024 9:40	13.51	23.03	0.01	7.19	427.86	9.23	0.4	12.72
9/17/2024 9:30	13.5	23.03	0.01	7.2	427.95	9.17	0.38	12.62
9/17/2024 9:20	13.49	23.02	0.01	7.17	429.39	9.17	0.4	12.6
9/17/2024 9:10	13.48	23.09	0.01	7.17	430.06	9.18	0.39	12.65
9/17/2024 9:00	13.48	23.13	0.01	7.18	429.04	9.17	0.41	12.67
9/17/2024 8:50	13.47	23.1	0.01	7.19	429.85	9.16	0.38	12.69
9/17/2024 8:40	13.47	23.08	0.01	7.18	430.16	9.18	0.38	12.74
9/17/2024 8:30	13.46	22.85	0.01	7.2	429.96	9.17	0.38	12.72
9/17/2024 8:20	13.45	23.07	0.01	7.16	432.22	9.17	0.41	12.62
9/17/2024 8:10	13.44	22.95	0.01	7.17	432.56	9.13	0.4	12.48
9/17/2024 8:00	13.43	23.22	0.01	7.15	433.3	9.13	0.39	12.29
9/17/2024 7:50	13.42	23.17	0.01	7.16	433.64	9.09	0.4	12.19
9/17/2024 7:40	13.41	23.24	0.01	7.2	430.81	9.06	0.42	12.21
9/17/2024 7:30	13.4	23.28	0.01	7.13	434.98	9.03	0.39	12.14
9/17/2024 7:20	13.4	23.37	0.01	7.13	434.32	9.02	0.41	12.09
9/17/2024 7:10	13.4	23.09	0.01	7.14	434.3	8.99	0.4	12.07
9/17/2024 7:00	13.42	23.28	0.01	7.13	434.52	8.99	0.41	12.05
9/17/2024 6:50	13.43	23.3	0.01	7.11	435.69	8.98	0.37	12.05
9/17/2024 6:40	13.45	23.41	0.01	7.12	434.05	9	0.39	12.02
9/17/2024 6:30	13.46	23.28	0.01	7.15	433.06	8.96	0.39	12.05
9/17/2024 6:20	13.48	23.35	0.01	7.12	434.54	8.96	0.41	12.05
9/17/2024 6:10	13.49	23.28	0.01	7.13	434.49	8.96	0.39	12.07
9/17/2024 6:00	13.51	23.36	0.01	7.12	434.68	8.94	0.39	12.07
9/17/2024 5:50	13.53	23.33	0.01	7.13	434.58	8.94	0.42	12.07
9/17/2024 5:40	13.54	23.37	0.01	7.12	434.97	8.95	0.41	11.97
9/17/2024 5:30	13.56	23.38	0.01	7.12	434.84	8.93	0.41	12
9/17/2024 5:20	13.57	23.43	0.01	7.12	434.09	8.95	0.4	12.09
9/17/2024 5:10	13.59	23.34	0.01	7.16	432.61	8.91	0.41	12.09
9/17/2024 5:00	13.6	23.47	0.01	7.12	434.07	8.91	0.4	12.09
9/17/2024 4:50	13.61	23.38	0.01	7.12	434.46	8.9	0.42	12.09
9/17/2024 4:40	13.63	23.48	0.01	7.12	433.69	8.93	0.4	12.09

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9/17/2024 4:30	13.65	23.21	0.01	7.14	433.07	8.91	0.42	11.97
9/17/2024 4:20	13.67	23.54	0.01	7.12	433.69	8.92	0.4	12
9/17/2024 4:10	13.68	23.49	0.01	7.14	432.88	8.91	0.41	12.12
9/17/2024 4:00	13.7	23.44	0.01	7.12	433.67	8.91	0.42	12.12
9/17/2024 3:50	13.72	23.39	0.01	7.14	432.93	8.92	0.44	12
9/17/2024 3:40	13.74	23.52	0.01	7.13	432.83	8.91	0.42	12.05
9/17/2024 3:30	13.77	23.52	0.01	7.13	432.95	8.91	0.39	12.14
9/17/2024 3:20	13.79	23.63	0.01	7.13	431.89	8.91	0.42	12.14
9/17/2024 3:10	13.82	23.53	0.01	7.12	433.24	8.88	0.42	12.05
9/17/2024 3:00	13.85	23.54	0.01	7.12	433	8.9	0.42	12.05
9/17/2024 2:50	13.86	23.44	0.01	7.12	433.37	8.87	0.42	12.05
9/17/2024 2:40	13.88	23.62	0.01	7.12	432.09	8.88	1.37	12.17
9/17/2024 2:30	13.91	23.5	0.01	7.12	433.14	8.85	0.41	12.17
9/17/2024 2:20	13.93	23.64	0.01	7.12	431.94	8.87	0.42	12.17
9/17/2024 2:10	13.95	23.63	0.01	7.14	431.18	8.85	0.44	12.14
9/17/2024 2:00	13.98	23.62	0.01	7.12	431.93	8.84	0.44	12.07
9/17/2024 1:50	14	23.64	0.01	7.13	431.87	8.84	0.4	12.17
9/17/2024 1:40	14.02	23.56	0.01	7.11	431.76	8.84	0.44	12.17
9/17/2024 1:30	14.05	23.66	0.01	7.14	430.95	8.84	0.43	12.07
9/17/2024 1:20	14.07	23.68	0.01	7.12	431.63	8.84	0.44	12.17
9/17/2024 1:10	14.09	23.69	0.01	7.13	431.31	8.79	0.42	12.19
9/17/2024 1:00	14.12	23.79	0.01	7.12	430.95	8.8	0.43	12.19
9/17/2024 0:50	14.14	23.69	0.01	7.13	431.06	8.79	0.43	12.19
9/17/2024 0:40	14.16	23.81	0.01	7.12	430.96	8.81	0.43	12.19
9/17/2024 0:30	14.18	23.74	0.01	7.12	431.15	8.81	0.42	12.19
9/17/2024 0:20	14.21	23.71	0.01	7.1	430.65	8.8	0.44	12.19
9/17/2024 0:10	14.23	23.67	0.01	7.12	431.38	8.79	0.44	12.19
9/17/2024 0:00	14.25	23.84	0.01	7.11	430.89	8.79	0.43	12.21
9/16/2024 23:50	14.27	23.66	0.01	7.11	431.21	8.79	0.44	12.21
9/16/2024 23:40	14.29	23.95	0.01	7.12	429.38	8.77	0.42	12.21
9/16/2024 23:30	14.32	23.64	0.01	7.14	428.55	8.77	0.45	12.12
9/16/2024 23:20	14.33	23.82	0.01	7.11	429.88	8.78	0.42	12.12
9/16/2024 23:10	14.35	23.94	0.01	7.16	428.52	8.75	0.42	12.12
9/16/2024 23:00	14.37	23.87	0.01	7.12	430.37	8.75	0.43	12.12
9/16/2024 22:50	14.4	23.83	0.01	7.1	431.48	8.73	0.43	12.19
9/16/2024 22:40	14.42	23.95	0.01	7.12	429.83	8.74	0.46	12.12
9/16/2024 22:30	14.44	24.04	0.01	7.13	429.75	8.73	0.44	12.12
9/16/2024 22:20	14.46	23.99	0.01	7.12	429.27	8.72	0.46	12.21
9/16/2024 22:10	14.49	23.87	0.01	7.12	430.13	8.71	0.47	12.14
9/16/2024 22:00	14.51	23.98	0.01	7.12	429.16	8.72	0.47	12.12
9/16/2024 21:50	14.53	23.92	0.01	7.15	427.81	8.7	0.46	12.21
9/16/2024 21:40	14.55	24	0.01	7.11	429.3	8.72	0.47	12.12
9/16/2024 21:30	14.57	23.94	0.01	7.15	427.95	8.69	0.47	12.24
9/16/2024 21:20	14.59	24	0.01	7.12	428.65	8.7	0.48	12.24
9/16/2024 21:10	14.61	23.99	0.01	7.14	427.86	8.68	0.45	12.26
9/16/2024 21:00	14.63	23.94	0.01	7.12	428.34	8.7	0.46	12.26
9/16/2024 20:50	14.65	23.89	0.01	7.13	428.43	8.68	0.47	12.24

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9/16/2024 20:40	14.67	23.99	0.01	7.13	427.63	8.68	0.44	12.24
9/16/2024 20:30	14.69	23.62	0.01	7.15	426.33	8.68	0.45	12.17
9/16/2024 20:20	14.71	23.92	0.01	7.12	427.48	8.68	0.45	12.26
9/16/2024 20:10	14.72	23.95	0.01	7.15	426.04	8.68	0.46	12.26
9/16/2024 20:00	14.74	23.99	0.01	7.13	426.37	8.67	0.47	12.24
9/16/2024 19:50	14.76	23.91	0.01	7.12	426.84	8.69	0.45	12.17
9/16/2024 19:40	14.78	23.91	0.01	7.13	425.61	8.67	0.48	12.19
9/16/2024 19:30	14.8	23.53	0.01	7.13	426.49	8.66	0.47	12.29
9/16/2024 19:20	14.82	23.96	0.01	7.14	424.6	8.68	0.46	12.26
9/16/2024 19:10	14.84	23.94	0.01	7.13	425.17	8.69	0.47	12.19
9/16/2024 19:00	14.86	23.86	0.01	7.13	424.19	8.69	0.47	12.19
9/16/2024 18:50	14.88	23.9	0.01	7.19	421.24	8.69	0.47	12.33
9/16/2024 18:40	14.89	23.9	0.01	7.15	422.39	8.7	0.49	12.36
9/16/2024 18:30	14.91	23.91	0.01	7.15	422.86	8.69	0.47	12.36
9/16/2024 18:20	14.93	23.85	0.01	7.14	421.9	8.71	0.45	12.31
9/16/2024 18:10	14.95	23.41	0.01	7.15	422.08	8.72	0.49	12.33
9/16/2024 18:00	14.96	23.73	0.01	7.15	420.49	8.72	0.47	12.26
9/16/2024 17:50	14.97	23.49	0.01	7.16	420.32	8.73	0.48	12.38
9/16/2024 17:40	14.98	23.64	0.01	7.17	419.43	8.74	0.48	12.48
9/16/2024 17:30	14.99	23.47	0.01	7.22	416.99	8.76	0.47	12.55
9/16/2024 17:20	14.99	23.51	0.01	7.18	418.08	8.78	0.48	12.57
9/16/2024 17:10	14.99	23.33	0.01	7.17	418.93	8.78	0.48	12.57
9/16/2024 17:00	14.99	23.52	0.01	7.19	416.75	8.78	0.44	12.6
9/16/2024 16:50	14.99	23.54	0.01	7.21	416.14	8.79	0.46	12.55
9/16/2024 16:40	15	23.55	0.01	7.2	415.3	8.81	0.47	12.57
9/16/2024 16:30	15.01	23.49	0.01	7.22	414.01	8.83	0.46	12.6
9/16/2024 16:20	15.02	23.48	0.01	7.21	413.27	8.84	0.46	12.5
9/16/2024 16:10	15.04	23.41	0.01	7.22	412.87	8.86	0.49	12.5
9/16/2024 16:00	15.06	23.47	0.01	7.23	410.94	8.91	0.49	12.74
9/16/2024 15:50	15.07	23.33	0.01	7.25	409.71	8.92	0.45	12.69
9/16/2024 15:40	15.08	23.39	0.01	7.25	408.79	8.92	0.5	12.81
9/16/2024 15:30	15.09	23.27	0.01	7.27	407.71	8.95	0.49	12.69
9/16/2024 15:20	15.1	23.31	0.01	7.26	406.68	8.99	0.48	13.1
9/16/2024 15:10	15.08	23.21	0.01	7.28	405.83	9.02	0.48	13.1
9/16/2024 15:00	15.07	23.2	0.01	7.26	405.45	9.03	0.47	13.46
9/16/2024 14:50	15.04	23.19	0.01	7.27	405.03	9.06	0.68	13.46
9/16/2024 14:40	15	23.28	0.01	7.28	403.42	9.05	0.47	13.44
9/16/2024 14:30	14.96	23.34	0.01	7.28	403.25	9.07	0.46	13.41
9/16/2024 14:20	14.91	23.24	0.01	7.26	403.2	9.11	0.47	13.32
9/16/2024 14:10	14.86	23.23	0.01	7.34	398.63	9.09	0.47	13.32
9/16/2024 14:00	14.88	23.16	0.01	7.28	400.61	9.11	0.47	13.29
9/16/2024 13:50	14.89	23.24	0.01	7.29	399.98	9.14	0.47	13.32
9/16/2024 13:40	14.89	23.26	0.01	7.28	398.83	9.14	0.47	13.41
9/16/2024 13:30	14.84	23.27	0.01	7.28	399.97	9.16	0.49	13.44
9/16/2024 13:20	14.82	23.37	0.01	7.27	399.28	9.18	0.47	13.44
9/16/2024 13:10	14.75	23.06	0.01	7.27	400.52	9.19	0.47	13.34
9/16/2024 13:00	14.71	23.24	0.01	7.27	399.8	9.19	0.46	13.39

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9/16/2024 12:50	14.67	23.23	0.01	7.28	399.64	9.21	0.47	13.32
9/16/2024 12:40	14.63	23.38	0.01	7.27	399.07	9.22	0.45	13.46
9/16/2024 12:30	14.59	23.34	0.01	7.26	400.49	9.24	0.44	13.51
9/16/2024 12:20	14.6	23.42	0.01	7.28	397.76	9.24	0.44	13.41
9/16/2024 12:10	14.59	23.37	0.01	7.29	397.43	9.26	0.46	13.51
9/16/2024 12:00	14.62	23.35	0.01	7.29	397.13	9.28	0.43	13.51
9/16/2024 11:50	14.59	23.37	0.01	7.31	396.55	9.29	0.5	13.53
9/16/2024 11:40	14.6	23.28	0.01	7.3	395.99	9.32	2.46	13.51
9/16/2024 11:30	14.59	23.32	0.01	7.3	395.5	9.35	0.46	13.53
9/16/2024 11:20	14.59	23.27	0.01	7.29	385.34	9.36	0.42	13.44
9/16/2024 11:20	14.59	23.27	0.01	7.29	385.34	9.36	0.42	13.44
9/16/2024 11:10	14.51	23.25	0.01	7.3	398.81	9.35	0.47	13.56
9/16/2024 11:00	14.49	23.37	0.01	7.31	388.38	9.38	0.44	13.56
9/16/2024 10:50	14.33	23.03	0.01	7.32	404.32	9.42	0.42	13.56
9/16/2024 10:40	14.2	23.33	0.01	7.28	408.91	9.4	0.42	13.58
9/16/2024 10:30	14.05	23.18	0.01	7.3	410.48	9.42	0.42	13.58
9/16/2024 10:20	13.88	23.29	0.01	7.26	413.19	9.41	0.42	13.6
9/16/2024 10:10	13.7	23.14	0.01	7.25	415.57	9.4	0.41	13.48
9/16/2024 10:00	13.56	23.41	0.01	7.23	417.49	9.39	0.4	13.6
9/16/2024 9:50	13.41	23.25	0.01	7.22	419.52	9.39	0.39	13.63
9/16/2024 9:40	13.35	23.44	0.01	7.21	420.27	9.32	0.38	13.63
9/16/2024 9:30	13.31	23.15	0.01	7.21	421.77	9.35	0.36	13.63
9/16/2024 9:20	13.3	23.45	0.01	7.19	423.32	9.33	0.41	13.34
9/16/2024 9:10	13.25	23.42	0.01	7.22	424.36	9.31	0.39	13.6
9/16/2024 9:00	13.2	23.49	0.01	7.18	427.05	9.28	0.38	13.63
9/16/2024 8:50	13.17	23.31	0.01	7.19	427.86	9.26	0.37	12.62
9/16/2024 8:40	13.13	23.58	0.01	7.18	428.62	9.27	0.36	12.55
9/16/2024 8:30	13.12	23.49	0.01	7.16	430.64	9.22	0.37	12.67
9/16/2024 8:20	13.11	23.65	0.01	7.17	429.73	9.21	0.4	12.62
9/16/2024 8:10	13.11	23.42	0.01	7.17	430.47	9.2	0.37	12.6
9/16/2024 8:00	13.11	23.64	0.01	7.14	431.51	9.18	0.45	12.5
9/16/2024 7:50	13.11	23.63	0.01	7.13	432.79	9.18	0.38	12.29
9/16/2024 7:40	13.12	23.59	0.01	7.14	431.97	9.16	0.38	12.05
9/16/2024 7:30	13.14	23.6	0.01	7.16	431.34	9.13	0.38	11.95
9/16/2024 7:20	13.15	23.79	0.01	7.14	431.31	9.13	0.39	11.97
9/16/2024 7:10	13.17	23.74	0.01	7.13	432.51	9.11	0.37	12.07
9/16/2024 7:00	13.19	23.85	0.01	7.14	430.7	9.13	0.38	12.07
9/16/2024 6:50	13.21	23.78	0.01	7.13	432.52	9.09	0.39	12.05
9/16/2024 6:40	13.23	23.9	0.01	7.13	431.55	9.09	0.4	11.95
9/16/2024 6:30	13.25	23.87	0.01	7.14	431.48	9.08	0.39	11.97
9/16/2024 6:20	13.27	23.77	0.01	7.12	431.89	9.09	0.39	12.07
9/16/2024 6:20	13.27	23.77	0.01	7.12	431.89	9.09	0.39	12.07
9/16/2024 6:10	13.29	23.73	0.01	7.13	432.16	9.06	0.39	12.07
9/16/2024 6:00	13.3	23.91	0.01	7.12	431.94	9.07	0.38	12
9/16/2024 5:50	13.32	23.62	0.01	7.14	431.77	9.07	0.38	12.07
9/16/2024 5:40	13.35	23.84	0.01	7.13	431.31	9.06	0.41	12.07
9/16/2024 5:30	13.38	23.86	0.01	7.13	431.86	9.07	0.4	12.07

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9/16/2024 5:20	13.41	23.87	0.01	7.13	431.46	9.06	0.39	12.07
9/16/2024 5:10	13.43	23.81	0.01	7.13	431.94	9.06	0.4	12.12
9/16/2024 5:00	13.45	23.97	0.01	7.13	431.14	9.06	0.42	12.12
9/16/2024 4:50	13.47	24.05	0.01	7.13	432.04	9.04	0.4	12.12
9/16/2024 4:40	13.48	24.03	0.01	7.12	431.42	9.04	0.41	12.12
9/16/2024 4:30	13.5	23.95	0.01	7.11	432.66	9.04	0.4	12.12
9/16/2024 4:20	13.51	24.09	0.01	7.13	430.76	9.03	0.41	12.12
9/16/2024 4:10	13.53	23.74	0.01	7.14	431.26	9.01	0.38	12.14
9/16/2024 4:00	13.55	24.05	0.01	7.13	431.1	9.03	0.41	12.12
9/16/2024 3:50	13.57	23.73	0.01	7.13	431.61	9.01	0.41	12.05
9/16/2024 3:40	13.59	24.19	0.01	7.14	430.13	9.02	0.39	12.02
9/16/2024 3:30	13.61	24.09	0.01	7.13	431.09	9.01	0.39	12.14
9/16/2024 3:20	13.63	24.12	0.01	7.12	431.07	8.98	0.41	12.07
9/16/2024 3:10	13.66	24.18	0.01	7.16	429.75	8.98	0.41	12.14
9/16/2024 3:00	13.68	24.25	0.01	7.13	430.05	8.99	0.4	12.17
9/16/2024 2:50	13.7	24	0.01	7.12	431.34	8.97	0.41	12.14
9/16/2024 2:40	13.73	24.24	0.01	7.12	430.47	8.97	0.42	12.05
9/16/2024 2:30	13.75	23.89	0.01	7.18	427.76	8.97	0.4	12.05
9/16/2024 2:20	13.78	24.33	0.01	7.13	429.79	8.95	0.43	12.17
9/16/2024 2:10	13.81	24.3	0.01	7.13	429.97	8.96	0.43	12.17
9/16/2024 2:00	13.83	24.42	0.01	7.13	429.28	8.94	0.39	12.17
9/16/2024 1:50	13.85	24.41	0.01	7.12	430.44	8.95	0.41	12.17
9/16/2024 1:40	13.87	24.31	0.01	7.12	429.51	8.95	0.4	12.17
9/16/2024 1:30	13.9	24.07	0.01	7.17	427.89	8.94	0.41	12.09
9/16/2024 1:20	13.92	24.48	0.01	7.13	429.19	8.91	0.44	12.17
9/16/2024 1:10	13.95	24.39	0.01	7.16	427.94	8.9	0.43	12.17
9/16/2024 1:00	13.97	24.52	0.01	7.13	428.19	8.92	0.41	12.19
9/16/2024 0:50	14.01	24.45	0.01	7.14	428.59	8.92	0.43	12.09
9/16/2024 0:40	14.04	24.43	0.01	7.13	428.14	8.88	0.42	12.09
9/16/2024 0:30	14.06	24.48	0.01	7.13	428.93	8.89	0.43	12.19
9/16/2024 0:20	14.08	24.59	0.01	7.14	427.53	8.88	0.44	12.19
9/16/2024 0:10	14.11	24.39	0.01	7.14	427.96	8.87	0.43	12.17
9/16/2024 0:00	14.14	24.6	0.01	7.13	427.39	8.87	0.49	12.09

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Received	Temperature C	Specific Conductivity ÂµS/cm	Salinity PSU	pH pH	ORP mV	Dissolved Oxygen Concentration mg/L	Turbidity NTU	TL Battery V
9/22/2024 23:50	14.05	163.27	0.08	8.01	403.99	9.2	1.76	12.21
9/22/2024 23:40	14.05	162.71	0.08	8	403.75	9.25	1.24	12.21
9/22/2024 23:30	14.04	162.41	0.08	8.01	403	9.21	1.15	12.21
9/22/2024 23:20	14.04	161.72	0.08	8.01	402.37	9.21	0.55	12.14
9/22/2024 23:10	14.04	161.07	0.08	8.03	402.19	9.22	3.18	12.12
9/22/2024 23:00	14.03	159.87	0.08	8.02	402.17	9.21	1.78	12.24
9/22/2024 22:50	14.04	161.01	0.08	8.02	402.5	9.23	1.46	12.14
9/22/2024 22:40	14.04	161.05	0.08	8	402.33	9.26	3.01	12.17
9/22/2024 22:30	14.04	161.6	0.08	8.03	401.63	9.17	1.91	12.17
9/22/2024 22:20	14.06	162.48	0.08	8.01	402.52	9.17	0.33	12.26
9/22/2024 22:10	14.1	164.82	0.08	8.01	401.78	8.98	1.69	12.26
9/22/2024 22:00	14.28	200.89	0.1	7.93	408.54	8.68	9.03	12.24
9/22/2024 21:50	14.3	219.58	0.1	7.9	409.98	8.78	15.07	12.24
9/22/2024 21:40	14.21	200.59	0.1	7.95	408.85	8.91	10.63	12.24
9/22/2024 21:40	14.21	200.59	0.1	7.95	408.85	8.91	10.63	12.24
9/22/2024 21:30	14.12	189.14	0.09	7.92	405.92	9.22	12.98	12.24
9/22/2024 21:20	14.01	164.85	0.08	8.02	404.92	9.25	2.2	12.29
9/22/2024 21:10	14.01	164.46	0.08	8.03	404.97	9.21	0.96	12.29
9/22/2024 21:00	14	163.63	0.08	8.03	404.62	9.21	0.39	12.31
9/22/2024 20:50	14	164.37	0.08	8.04	404.81	9.21	1.01	12.31
9/22/2024 20:40	13.99	165.26	0.08	8.02	404.84	9.19	0.89	12.31
9/22/2024 20:30	14	166.18	0.08	8.03	405.1	9.22	2.04	12.31
9/22/2024 20:20	13.99	165.99	0.08	8.01	405.05	9.23	0.58	12.31
9/22/2024 20:10	13.99	165.72	0.08	8.04	404.54	9.21	0.41	12.31
9/22/2024 20:00	13.99	165.52	0.08	8.02	404.81	9.21	0.39	12.33
9/22/2024 19:50	14	166.03	0.08	8.03	405.28	9.21	0.47	12.24
9/22/2024 19:40	13.99	165.89	0.08	8.01	405.16	9.27	0.32	12.31
9/22/2024 19:30	13.99	166.48	0.08	8.04	404.44	9.21	1.22	12.31
9/22/2024 19:20	13.99	166.06	0.08	8.02	404.51	9.24	0.6	12.21
9/22/2024 19:10	13.99	165.45	0.08	8.04	404.22	9.2	0.25	12.21
9/22/2024 19:00	13.99	164.96	0.08	8.03	404.22	9.22	0	12.21
9/22/2024 18:50	13.99	165.23	0.08	8.05	404.07	9.19	0.3	12.38
9/22/2024 18:40	13.99	165.27	0.08	8.02	404.1	9.22	0.29	12.41
9/22/2024 18:30	13.99	165.22	0.08	8.04	404.17	9.22	1.14	12.43
9/22/2024 18:20	13.99	164.16	0.08	8.02	404.03	9.27	0.3	12.43
9/22/2024 18:10	13.99	163.56	0.08	8.05	403.46	9.2	0.95	12.43
9/22/2024 18:00	13.99	163.55	0.08	8.03	402.95	9.22	0.24	12.43
9/22/2024 17:50	13.99	163.43	0.08	8.03	403.41	9.21	3	12.36
9/22/2024 17:40	13.99	162.78	0.08	8.02	403.01	9.19	0.33	12.48
9/22/2024 17:30	14	162.66	0.08	8.03	403.18	9.17	0.05	12.55
9/22/2024 17:20	14	161.57	0.08	8.01	403.2	9.2	0.03	12.76

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9/22/2024 17:10	14	161.1	0.08	8.04	402.75	9.2	0.54	12.79
9/22/2024 17:00	14	160.66	0.08	8.01	403.25	9.22	0.62	12.84
9/22/2024 16:50	14	160.39	0.08	8.02	402.6	9.22	0.87	12.79
9/22/2024 16:40	13.99	158.71	0.07	8.02	402.1	9.24	0.96	12.74
9/22/2024 16:30	13.99	158.42	0.07	8.03	402.07	9.23	0.71	12.67
9/22/2024 16:20	13.99	157.81	0.07	8.01	402.66	9.23	5.37	12.62
9/22/2024 16:10	13.99	157.7	0.07	8.04	401.63	9.22	1.17	12.67
9/22/2024 16:00	13.98	157.08	0.07	8.03	401.19	9.26	1.06	12.81
9/22/2024 15:50	13.99	156.74	0.07	8.04	401.38	9.24	1.26	12.81
9/22/2024 15:40	13.99	156.02	0.07	8.03	401.01	9.27	0.2	12.81
9/22/2024 15:30	13.99	156.19	0.07	8.06	400.1	9.28	0.42	12.76
9/22/2024 15:20	13.99	155.87	0.07	8.03	400.03	9.29	0.35	12.91
9/22/2024 15:10	13.99	156.68	0.07	8.04	400.04	9.27	2.24	12.93
9/22/2024 15:00	13.99	155.43	0.07	8.03	399.31	9.28	0.4	13
9/22/2024 14:50	14	155.33	0.07	8.04	399.46	9.25	2.3	13.05
9/22/2024 14:40	14	154.96	0.07	8.02	399.38	9.29	0.5	13.03
9/22/2024 14:30	13.99	155.67	0.07	8.03	399.46	9.24	0.77	13
9/22/2024 14:20	14	154.91	0.07	8.01	399.66	9.25	0.96	12.98
9/22/2024 14:10	14.02	155.57	0.07	8.04	397.6	9.2	6.07	12.91
9/22/2024 14:00	14.05	157.98	0.07	8.01	398.1	9.29	3.63	12.81
9/22/2024 13:50	14.14	156.76	0.07	8.05	398.33	9.08	0.61	12.81
9/22/2024 13:40	14.35	179.1	0.08	7.94	404.33	8.51	1.75	12.96
9/22/2024 13:30	14.51	228.98	0.11	7.89	405.7	8.46	4.89	12.93
9/22/2024 13:20	14.47	231.39	0.11	7.88	406.37	8.5	8.87	12.93
9/22/2024 13:10	14.43	228.07	0.11	7.88	408.58	8.53	8.54	12.96
9/22/2024 13:00	14.37	228.78	0.11	7.88	409.96	8.6	3.65	12.91
9/22/2024 12:50	14.3	225.87	0.11	7.88	410.94	8.73	4.57	12.86
9/22/2024 12:50	14.3	225.87	0.11	7.88	410.94	8.73	4.57	12.86
9/22/2024 12:40	14.2	211.64	0.1	7.87	410.99	9.01	6.65	12.84
9/22/2024 12:30	14.01	183.13	0.09	7.97	405.5	9.27	7.63	12.79
9/22/2024 12:20	13.87	159.18	0.08	8.03	402.89	9.33	2.53	12.84
9/22/2024 12:10	13.84	155.46	0.07	8.05	402.93	9.33	3.43	12.81
9/22/2024 12:00	13.82	154.54	0.07	8.04	402.51	9.31	2.23	12.72
9/22/2024 11:50	13.82	155.06	0.07	8.05	402.86	9.32	0.42	12.74
9/22/2024 11:40	13.82	153.91	0.07	8.04	402.67	9.31	0.33	12.74
9/22/2024 11:30	13.82	154.25	0.07	8.05	402.67	9.3	0.91	12.72
9/22/2024 11:20	13.82	153.88	0.07	8.04	402.47	9.35	0.21	12.62
9/22/2024 11:10	13.82	155.03	0.07	8.05	403.11	9.31	2.58	12.69
9/22/2024 11:00	13.81	154.93	0.07	8.02	403.38	9.37	0.15	12.67
9/22/2024 10:50	13.82	155.3	0.07	8.04	402.68	9.31	0.12	12.62
9/22/2024 10:40	13.82	154.1	0.07	8.03	402.19	9.37	0.48	12.67
9/22/2024 10:30	13.82	154.31	0.07	8.05	401.22	9.31	0.25	12.69
9/22/2024 10:20	13.84	155.69	0.07	8.02	401.66	9.29	4.98	12.67
9/22/2024 10:10	13.85	156.23	0.07	8.03	401.34	9.24	0	12.62
9/22/2024 10:00	13.89	156.92	0.07	8.02	401.68	9.23	0	12.5
9/22/2024 9:50	13.95	158.32	0.07	8.04	400.76	9.16	0	12.6
9/22/2024 9:40	14.1	169.26	0.08	7.99	405.07	8.92	0.09	12.43

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9/22/2024 9:30	14.33	230.27	0.11	7.87	410.16	8.52	8.26	12.31
9/22/2024 9:20	14.28	230.97	0.11	7.88	411.24	8.55	5.04	12.17
9/22/2024 9:10	14.23	228.45	0.11	7.87	413.72	8.61	3.75	12.12
9/22/2024 9:00	14.18	227.53	0.11	7.88	414.59	8.67	2.53	12.12
9/22/2024 8:50	14.12	225.77	0.11	7.87	415.67	8.81	1.75	12.14
9/22/2024 8:40	13.94	202.77	0.1	7.93	411.9	9.19	6.38	12.31
9/22/2024 8:30	13.75	164.92	0.08	8.03	409.83	9.31	2.12	12.41
9/22/2024 8:20	13.7	156.75	0.07	8.03	408.75	9.35	0.05	12.41
9/22/2024 8:10	13.69	156.05	0.07	8.05	408.38	9.31	0.47	12.36
9/22/2024 8:00	13.68	155.06	0.07	8.04	408.3	9.4	0	12.33
9/22/2024 7:50	13.68	155.39	0.07	8.06	408.03	9.32	0	12.26
9/22/2024 7:40	13.68	155.37	0.07	8.04	408.57	9.36	0.34	12.19
9/22/2024 7:30	13.7	155.69	0.07	8.04	408.55	9.32	5.47	12.05
9/22/2024 7:20	13.7	155.63	0.07	8.03	408.66	9.32	0	12.02
9/22/2024 7:10	13.71	155.36	0.07	8.06	408.05	9.3	2.83	12.05
9/22/2024 7:00	13.72	155.16	0.07	8.04	407.89	9.31	0	12.07
9/22/2024 6:50	13.73	155.41	0.07	8.05	408.18	9.29	0	12.14
9/22/2024 6:40	13.75	154.87	0.07	8.03	408.2	9.37	0	12.14
9/22/2024 6:30	13.76	155.18	0.07	8.04	407.91	9.31	0	12.12
9/22/2024 6:20	13.78	154.75	0.07	8.03	407.25	9.36	0	12.05
9/22/2024 6:10	13.79	154.82	0.07	8.06	406.43	9.3	0	12.14
9/22/2024 6:00	13.81	155	0.07	8.03	407.23	9.3	0.62	12.14
9/22/2024 5:50	13.83	155.01	0.07	8.04	407.1	9.27	3.74	12.17
9/22/2024 5:40	13.84	154.38	0.07	8.02	407.51	9.33	0	12.07
9/22/2024 5:30	13.87	154.87	0.07	8.04	406.18	9.27	0.31	12.14
9/22/2024 5:20	13.88	155	0.07	8.02	406.55	9.29	0.77	12.12
9/22/2024 5:10	13.92	154.57	0.07	8.05	406.18	9.26	0.59	12.12
9/22/2024 5:00	13.94	154.46	0.07	8.03	405.75	9.3	0.2	12.09
9/22/2024 4:50	13.99	154.92	0.07	8.04	406.36	9.14	1.09	12.17
9/22/2024 4:40	14.11	165.82	0.08	7.97	412.22	8.94	1.13	12.19
9/22/2024 4:30	14.25	222.61	0.11	7.88	416.06	8.71	8.96	12.19
9/22/2024 4:20	14.18	210.64	0.1	7.9	414.14	8.95	6.27	12.19
9/22/2024 4:10	14.01	166.95	0.08	8.01	409.83	9.25	4.72	12.19
9/22/2024 4:00	13.98	154.52	0.07	8.04	408.74	9.31	6.74	12.19
9/22/2024 3:50	13.98	154.11	0.07	8.06	407.74	9.25	0.09	12.19
9/22/2024 3:40	14.01	154.16	0.07	8.03	408.12	9.25	0	12.12
9/22/2024 3:30	14.03	154.36	0.07	8.04	408.05	9.26	0	12.19
9/22/2024 3:20	14.03	154.33	0.07	8.04	407.83	9.27	0.06	12.17
9/22/2024 3:10	14.06	154.15	0.07	8.05	408.09	9.24	0.61	12.12
9/22/2024 3:00	14.07	154.21	0.07	8.03	408.32	9.31	0	12.14
9/22/2024 2:50	14.08	154.19	0.07	8.05	407.87	9.2	4.94	12.21
9/22/2024 2:40	14.09	154.25	0.07	8.04	408.01	9.31	0	12.12
9/22/2024 2:30	14.1	154.4	0.07	8.05	407.34	9.22	0.47	12.12
9/22/2024 2:20	14.12	154.07	0.07	8.04	406.93	9.32	1.96	12.12
9/22/2024 2:10	14.14	154.58	0.07	8.04	406.29	9.29	0	12.12
9/22/2024 2:00	14.14	154.63	0.07	8.03	406.04	9.26	0.55	12.24
9/22/2024 1:50	14.15	153.83	0.07	8.06	405.34	9.21	0.34	12.26

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9/22/2024 1:40	14.17	153.9	0.07	8.03	404.93	9.24	0.12	12.26
9/22/2024 1:30	14.18	153.57	0.07	8.06	404.47	9.21	0	12.26
9/22/2024 1:20	14.21	153.67	0.07	8.03	404.04	9.21	0	12.26
9/22/2024 1:10	14.24	154.41	0.07	8.05	404.09	9.19	2.35	12
9/22/2024 1:00	14.27	154.26	0.07	8.03	403.25	9.21	0.7	12.26
9/22/2024 0:50	14.29	154.42	0.07	8.05	402.92	9.16	1.81	12.24
9/22/2024 0:40	14.32	154.45	0.07	8.03	402.14	9.16	0	12.17
9/22/2024 0:30	14.35	154.43	0.07	8.05	401.37	9.15	0.36	12.26
9/22/2024 0:20	14.38	156.39	0.07	8	402.24	9.2	5.29	12.29
9/22/2024 0:10	14.42	177.82	0.08	7.95	407.55	8.64	2.1	12.26
9/22/2024 0:00	14.46	225.69	0.11	7.87	409.69	8.52	4.86	12.26
9/21/2024 23:50	14.46	223.92	0.11	7.88	411.34	8.61	8.66	12.26
9/21/2024 23:40	14.45	212.75	0.1	7.88	409.98	8.79	5.2	12.24
9/21/2024 23:30	14.41	156.48	0.07	8.03	403.35	9.19	0.01	12.31
9/21/2024 23:20	14.43	154.08	0.07	8.04	401.63	9.16	0	12.31
9/21/2024 23:10	14.45	154.18	0.07	8.04	401.45	9.14	6.15	12.31
9/21/2024 23:00	14.47	153.75	0.07	8.03	400.29	9.14	0.03	12.31
9/21/2024 22:50	14.48	154.03	0.07	8.04	399.66	9.09	0	12.31
9/21/2024 22:40	14.48	156.61	0.07	8	401.78	9.04	0.18	12.21
9/21/2024 22:30	14.54	219.83	0.1	7.88	409.26	8.47	7.85	12.29
9/21/2024 22:20	14.55	228.47	0.11	7.86	409.86	8.48	2.14	12.21
9/21/2024 22:10	14.55	227.68	0.11	7.86	411.29	8.5	3.36	12.29
9/21/2024 22:00	14.55	226.01	0.11	7.87	411.98	8.51	7.4	12.31
9/21/2024 21:50	14.56	223.1	0.11	7.86	413.88	8.59	11.86	12.31
9/21/2024 21:40	14.56	218.42	0.1	7.86	413.32	8.78	10.34	12.33
9/21/2024 21:30	14.57	157.13	0.07	8.04	406.44	9.16	0.44	12.33
9/21/2024 21:20	14.58	154.58	0.07	8.06	405.26	9.15	0	12.24
9/21/2024 21:10	14.58	154.54	0.07	8.07	405.07	9.14	1.4	12.21
9/21/2024 21:00	14.59	154.38	0.07	8.05	404.89	9.16	0	12.26
9/21/2024 20:50	14.59	154.3	0.07	8.06	404.77	9.17	0	12.36
9/21/2024 20:40	14.6	155.29	0.07	8.04	405.18	9.18	0.38	12.36
9/21/2024 20:30	14.6	154.39	0.07	8.07	404.21	9.16	0	12.36
9/21/2024 20:20	14.6	154.39	0.07	8.05	403.82	9.2	0.99	12.36
9/21/2024 20:10	14.6	154.19	0.07	8.07	403.39	9.16	0	12.36
9/21/2024 20:00	14.6	154.06	0.07	8.06	402.93	9.2	0	12.36
9/21/2024 19:50	14.59	154.29	0.07	8.07	402.33	9.14	0.24	12.26
9/21/2024 19:40	14.6	154.47	0.07	8.06	402.23	9.17	1.12	12.33
9/21/2024 19:30	14.6	154.12	0.07	8.07	401.98	9.16	0	12.41
9/21/2024 19:20	14.61	154.15	0.07	8.06	401.13	9.14	0.84	12.41
9/21/2024 19:10	14.62	154.52	0.07	8.06	401.32	9.15	0	12.45
9/21/2024 19:00	14.62	154.12	0.07	8.04	400.61	9.21	0.19	12.53
9/21/2024 18:50	14.62	154.19	0.07	8.06	399.86	9.14	0	12.53
9/21/2024 18:40	14.62	154.1	0.07	8.03	400.21	9.18	0	12.62
9/21/2024 18:30	14.62	154.59	0.07	8.03	399.85	9.2	8.47	12.79
9/21/2024 18:20	14.62	154.91	0.07	8.01	399.32	9.17	0.3	12.96
9/21/2024 18:10	14.61	157.24	0.07	8.01	399.5	8.93	24.3	13.1
9/21/2024 18:00	14.75	228.13	0.11	7.86	404.62	8.44	4.45	13.17

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9/21/2024 17:50	14.76	227.03	0.11	7.86	405.92	8.44	2.2	12.91
9/21/2024 17:40	14.77	226.96	0.11	7.87	404.37	8.46	2.27	12.88
9/21/2024 17:30	14.79	226.23	0.11	7.88	406.04	8.46	5.49	12.81
9/21/2024 17:20	14.8	223.92	0.11	7.88	406.23	8.5	1.65	13.12
9/21/2024 17:10	14.79	223.03	0.11	7.88	407.44	8.5	2.15	13.17
9/21/2024 17:00	14.78	221.73	0.11	7.9	407.37	8.54	3.42	13.41
9/21/2024 16:50	14.79	218.45	0.1	7.9	408.1	8.63	6.66	13.39
9/21/2024 16:40	14.78	206.73	0.1	7.91	405.75	8.98	8.37	13.39
9/21/2024 16:30	14.68	157.16	0.07	8.07	399.57	9.21	12.42	13.39
9/21/2024 16:20	14.66	152.13	0.07	8.08	399.97	9.25	0	13.41
9/21/2024 16:10	14.64	153.62	0.07	8.08	400.64	9.11	0.36	13.44
9/21/2024 16:00	14.73	191.73	0.09	7.93	407.24	8.81	4.78	13.46
9/21/2024 15:50	14.63	180.63	0.09	7.95	401.58	9.22	12.41	13.44
9/21/2024 15:40	14.59	151.94	0.07	8.09	399.34	9.22	0	13.41
9/21/2024 15:30	14.6	151.24	0.07	8.12	397.99	9.23	0	13.36
9/21/2024 15:20	14.63	151.46	0.07	8.1	397.47	9.26	0	13.27
9/21/2024 15:10	14.65	151.79	0.07	8.12	397.51	9.25	0	13.34
9/21/2024 15:00	14.64	151.42	0.07	8.1	397.23	9.27	0	13.22
9/21/2024 14:50	14.63	151.37	0.07	8.13	396.73	9.29	0	13.22
9/21/2024 14:40	14.57	151.49	0.07	8.11	397.37	9.32	0	13.24
9/21/2024 14:30	14.53	151.91	0.07	8.13	397.13	9.27	0	13.34
9/21/2024 14:20	14.48	152.02	0.07	8.1	397.41	9.36	0	13.34
9/21/2024 14:10	14.43	152.04	0.07	8.12	397.72	9.33	0	13.36
9/21/2024 14:00	14.36	152.11	0.07	8.1	397.63	9.37	0	13.36
9/21/2024 13:50	14.32	152.77	0.07	8.11	397.82	9.38	0	13.36
9/21/2024 13:40	14.26	152.49	0.07	8.1	397.89	9.38	0	13.36
9/21/2024 13:30	14.23	152.57	0.07	8.11	397.65	9.35	0	13.36
9/21/2024 13:20	14.21	152.86	0.07	8.11	397.07	9.37	5.71	13.36
9/21/2024 13:10	14.17	152.83	0.07	8.12	397.42	9.34	0	13.39
9/21/2024 13:00	14.14	153.32	0.07	8.08	398.89	9.39	1.54	13.41
9/21/2024 12:50	14.1	153.98	0.07	8.12	398.07	9.39	0.48	13.41
9/21/2024 12:40	14.07	153.47	0.07	8.1	398.26	9.44	0	13.44
9/21/2024 12:30	14.02	153.98	0.07	8.11	398.68	9.42	0	13.48
9/21/2024 12:20	13.96	153.87	0.07	8.1	398.8	9.44	5.08	13.51
9/21/2024 12:10	13.9	154.47	0.07	8.11	399.28	9.44	0.68	13.53
9/21/2024 12:00	13.85	154.27	0.07	8.1	399.47	9.45	0	13.46
9/21/2024 11:50	13.84	155.3	0.07	8.1	400.23	9.42	0.44	13.53
9/21/2024 11:40	13.82	155.65	0.07	8.09	400.42	9.42	0.1	13.53
9/21/2024 11:30	13.81	156.24	0.07	8.08	403.9	9.09	1.23	13.56
9/21/2024 11:20	13.78	155.48	0.07	8.08	401.28	9.5	0	13.53
9/21/2024 11:10	13.76	156.7	0.07	8.01	400.71	9.33	0	13.53
9/21/2024 11:00	13.73	152.22	0.07	8.1	397.28	9.45	0	13.46
9/21/2024 10:50	13.71	155.31	0.07	8.09	398.88	9.46	17.91	13.58
9/21/2024 10:40	13.69	154.66	0.07	8.08	399	9.43	1.88	13.63
9/21/2024 10:30	13.66	154.17	0.07	8.09	399.03	9.43	0.16	13.65
9/21/2024 10:20	13.64	153.99	0.07	8.08	398.73	9.42	0	13.67
9/21/2024 10:10	13.63	154.05	0.07	8.08	398.7	9.4	1.54	13.67

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9/21/2024 10:00	13.65	154.64	0.07	8.06	398.5	9.47	0	13.41
9/21/2024 9:50	13.66	155.29	0.07	8.06	398.28	9.41	0	13.36
9/21/2024 9:40	13.67	155.86	0.07	8.04	397.71	9.47	2.79	13.36
9/21/2024 9:30	13.67	155.35	0.07	8.07	397.39	9.41	0	13.56
9/21/2024 9:20	13.68	154.95	0.07	8.04	397.13	9.38	0	13.1
9/21/2024 9:10	13.71	155.27	0.07	8.05	397.2	9.37	0.05	12.86
9/21/2024 9:00	13.78	156.92	0.07	8.02	398.16	9.4	0	12.76
9/21/2024 8:50	13.88	160.71	0.08	8	397.63	8.9	0.37	12.67
9/21/2024 8:40	14.11	231.1	0.11	7.89	403.71	8.51	3.27	12.6
9/21/2024 8:30	14.1	230.69	0.11	7.89	404.5	8.54	2.25	12.55
9/21/2024 8:20	14.07	230.93	0.11	7.89	404.42	8.56	2.37	12.33
9/21/2024 8:10	14.06	228.64	0.11	7.89	405.54	8.6	3.04	12.24
9/21/2024 8:00	14.02	229.76	0.11	7.89	405.45	8.65	1.69	12.12
9/21/2024 7:50	14	225.55	0.11	7.9	406.97	8.69	6.09	12.12
9/21/2024 7:40	13.96	224.59	0.11	7.91	406.71	8.78	3.18	12.21
9/21/2024 7:30	13.9	212.26	0.1	7.9	406.62	8.99	6.59	12.19
9/21/2024 7:20	13.74	175.28	0.08	7.99	402.67	9.31	1.39	12.07
9/21/2024 7:10	13.71	158.15	0.07	8.02	401.05	9.28	0.26	12.17
9/21/2024 7:00	13.83	181.25	0.09	7.96	405.28	8.83	0.48	12.17
9/21/2024 6:50	13.92	222.61	0.11	7.9	406.29	8.85	3.18	12.17
9/21/2024 6:40	13.86	213.96	0.1	7.91	405.47	9.13	9.47	12.17
9/21/2024 6:30	13.68	175.78	0.08	8	399.97	9.37	32.03	12.17
9/21/2024 6:20	13.61	160.38	0.08	8.05	399.29	9.37	0.9	12.17
9/21/2024 6:10	13.6	158.68	0.07	8.08	398.37	9.41	0	12.17
9/21/2024 6:00	13.61	158.81	0.08	8.06	398.12	9.44	1.65	12.17
9/21/2024 5:50	13.62	158.85	0.08	8.08	398.53	9.4	0.03	12.07
9/21/2024 5:40	13.64	158.49	0.07	8.08	398.1	9.42	2.04	12.14
9/21/2024 5:30	13.65	158.53	0.07	8.08	398.44	9.41	0	12.17
9/21/2024 5:20	13.66	158.55	0.07	8.07	398.69	9.4	5.53	12.14
9/21/2024 5:10	13.67	158.57	0.07	8.08	398.9	9.39	0	12.14
9/21/2024 5:00	13.69	158.16	0.07	8.07	398.78	9.4	0	12.05
9/21/2024 4:50	13.71	158.07	0.07	8.08	399.43	9.38	0.1	12.07
9/21/2024 4:40	13.74	157.76	0.07	8.06	399.35	9.39	0.4	12.07
9/21/2024 4:30	13.77	157.68	0.07	8.07	399.61	9.37	0.74	12.19
9/21/2024 4:20	13.8	157.57	0.07	8.06	399.67	9.38	0.03	12.19
9/21/2024 4:10	13.82	157.5	0.07	8.08	399.37	9.34	0	12.19
9/21/2024 4:00	13.85	156.93	0.07	8.07	398.98	9.36	0	12.19
9/21/2024 3:50	13.87	157.06	0.07	8.07	399.27	9.32	0	12.21
9/21/2024 3:40	13.92	156.83	0.07	8.06	398.87	9.34	0	12.21
9/21/2024 3:30	13.95	156.2	0.07	8.07	398.64	9.35	0	12.21
9/21/2024 3:20	13.98	156.07	0.07	8.07	398.1	9.32	0	12.17
9/21/2024 3:10	14.01	155.96	0.07	8.06	398.19	9.32	0.95	12.07
9/21/2024 3:00	14.05	155.5	0.07	8.05	397.51	9.33	0	12.09
9/21/2024 2:50	14.08	155.77	0.07	8.06	397.51	9.31	0.11	12.14
9/21/2024 2:40	14.13	154.74	0.07	8.04	396.94	9.3	0	12.21
9/21/2024 2:30	14.16	155.09	0.07	8.03	397.49	9.32	0.29	12.14
9/21/2024 2:20	14.19	153.49	0.07	8.02	396.83	9.26	0	12.24

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9/21/2024 2:10	14.19	179.22	0.08	7.95	402.09	8.59	0.82	12.21
9/21/2024 2:00	14.23	228.12	0.11	7.89	403.18	8.58	1.12	12.12
9/21/2024 1:50	14.23	226.1	0.11	7.88	404.09	8.6	3.22	12.24
9/21/2024 1:40	14.24	225.11	0.11	7.89	403.38	8.65	5.25	12.21
9/21/2024 1:30	14.25	221.42	0.11	7.88	405	8.76	5.82	12.24
9/21/2024 1:20	14.28	203.18	0.1	7.94	399.27	9.25	3.64	12.26
9/21/2024 1:10	14.32	154.57	0.07	8.04	397.08	9.23	0.07	12.26
9/21/2024 1:00	14.35	154.83	0.07	8.04	395.94	9.25	0	12.26
9/21/2024 0:50	14.38	155.26	0.07	8.06	395.76	9.2	0.56	12.26
9/21/2024 0:40	14.33	163.14	0.08	7.99	400.61	8.84	1.79	12.26
9/21/2024 0:30	14.33	228.29	0.11	7.85	406.3	8.53	3.81	12.26
9/21/2024 0:20	14.35	220.79	0.11	7.88	401.84	8.61	5.62	12.26
9/21/2024 0:10	14.39	222.61	0.11	7.88	404.19	8.74	8.91	12.26
9/21/2024 0:00	14.47	194.69	0.09	7.92	399.57	9.13	6.93	12.26
9/20/2024 23:50	14.55	155.08	0.07	8.08	396	9.17	3.24	12.26
9/20/2024 23:40	14.57	155.3	0.07	8.04	396.54	9.21	2.59	12.26
9/20/2024 23:30	14.61	154.46	0.07	8.07	395.79	9.21	38.45	12.26
9/20/2024 23:20	14.63	154.43	0.07	8.04	396.16	9.21	0.71	12.26
9/20/2024 23:10	14.67	154.74	0.07	8.07	396.13	9.19	0.09	12.19
9/20/2024 23:00	14.69	155.1	0.07	8.05	396.01	9.2	0	12.29
9/20/2024 22:50	14.72	154.94	0.07	8.07	395.61	9.12	0	12.29
9/20/2024 22:40	14.75	154.35	0.07	8.07	395.92	9.07	0	12.29
9/20/2024 22:30	14.75	155.61	0.07	8.06	398.44	8.89	0	12.29
9/20/2024 22:20	14.77	151.98	0.07	8.04	395.35	9.18	0	12.31
9/20/2024 22:10	14.77	155.37	0.07	8.06	396.73	8.99	0.02	12.19
9/20/2024 22:00	14.8	148.78	0.07	8.04	393.65	9.16	0	12.26
9/20/2024 21:50	14.82	155.08	0.07	8.06	393.12	9.15	5.81	12.31
9/20/2024 21:40	14.84	155.22	0.07	8.04	392.83	9.14	0	12.31
9/20/2024 21:30	14.85	155.04	0.07	8.06	391.91	9.16	0.45	12.31
9/20/2024 21:20	14.88	155.29	0.07	8.06	391.1	9.11	3.14	12.31
9/20/2024 21:10	14.87	155.42	0.07	8.05	390.75	9.14	0.52	12.33
9/20/2024 21:00	14.84	158.77	0.08	8.06	391.5	9.06	0	12.33
9/20/2024 20:50	14.81	157.97	0.07	8.01	395.34	8.92	0.32	12.33
9/20/2024 20:40	14.75	152.58	0.07	8.03	393.28	9.1	1.48	12.31
9/20/2024 20:30	14.53	202.91	0.1	7.92	401.23	8.4	3.56	12.33
9/20/2024 20:20	14.53	227.92	0.11	7.86	401.38	8.4	3.61	12.31
9/20/2024 20:10	14.55	227.62	0.11	7.86	402.01	8.4	5.14	12.33
9/20/2024 20:00	14.56	226.56	0.11	7.88	398.92	8.44	1.91	12.36
9/20/2024 19:50	14.58	227.07	0.11	7.87	399.96	8.38	2.23	12.33
9/20/2024 19:40	14.59	227.2	0.11	7.86	399.38	8.42	2.94	12.31
9/20/2024 19:30	14.62	227.47	0.11	7.87	398.78	8.42	3.16	12.24
9/20/2024 19:20	14.63	226.91	0.11	7.86	399.47	8.43	4.57	12.38
9/20/2024 19:10	14.65	227.14	0.11	7.85	399.06	8.37	10.46	12.41
9/20/2024 19:00	14.66	219.83	0.1	7.85	397.67	8.43	1.99	12.43
9/20/2024 18:50	14.69	219.38	0.1	7.86	396.18	8.47	1.81	12.45
9/20/2024 18:40	14.71	224.65	0.11	7.83	397.04	8.45	4.97	12.48
9/20/2024 18:30	14.79	221.7	0.11	7.88	396.88	8.55	7.56	12.48

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9/20/2024 18:20	14.97	207.78	0.1	7.87	393.04	8.83	6.15	12.43
9/20/2024 18:10	15.21	155.22	0.07	8.06	389	9	2.93	12.48
9/20/2024 18:00	15.25	157.6	0.07	8.03	388.4	9	13.26	12.69
9/20/2024 17:50	15.31	153.51	0.07	8.07	386.42	9.08	17.37	13.08
9/20/2024 17:40	15.3	154.32	0.07	8.06	386.47	9.04	2	13.05
9/20/2024 17:30	15.29	153.76	0.07	8.09	385.3	9.08	2.92	13.08
9/20/2024 17:20	15.27	153	0.07	8.07	386.16	9.07	0	13.36
9/20/2024 17:10	15.22	153.34	0.07	8.07	389.48	8.9	0.14	13.36
9/20/2024 17:00	15.2	152.72	0.07	8.09	384.53	9.1	0.26	13.32
9/20/2024 16:50	15.12	154.58	0.07	8.05	388.12	9.01	15.3	13.15
9/20/2024 16:40	15.06	153.68	0.07	8.03	387.58	9.04	0	13.34
9/20/2024 16:30	14.97	151.93	0.07	8.1	386.48	9.15	1.83	13.34
9/20/2024 16:20	14.95	192.95	0.09	7.92	394.09	8.42	1.99	13.36
9/20/2024 16:10	15.02	224.87	0.11	7.89	394.9	8.44	2.75	13.34
9/20/2024 16:00	15.03	224.22	0.11	7.87	394.65	8.4	6.19	13.34
9/20/2024 15:50	15.08	224.21	0.11	7.89	394.37	8.41	24.88	13.34
9/20/2024 15:40	15.1	223.85	0.11	7.88	393.15	8.4	4.46	13.34
9/20/2024 15:30	15.13	223.82	0.11	7.89	394.32	8.45	9.45	13.34
9/20/2024 15:20	15.12	222.37	0.11	7.88	392.45	8.48	8.66	13.34
9/20/2024 15:10	15.13	221.47	0.11	7.9	392.32	8.51	5.14	13.34
9/20/2024 15:00	15.12	217.35	0.1	7.88	392.36	8.61	22.74	13.27
9/20/2024 14:50	15.1	211.07	0.1	7.91	387.47	8.81	19.59	13.27
9/20/2024 14:40	15.01	169.73	0.08	8.02	383.54	9.16	33.69	13.36
9/20/2024 14:30	14.94	155.38	0.07	8.07	382.74	9.04	3.01	13.36
9/20/2024 14:20	14.88	154.39	0.07	8.07	380.79	9.21	9.76	13.36
9/20/2024 14:10	14.82	154.53	0.07	8.06	382.2	9.23	15.94	13.39
9/20/2024 14:00	14.74	156.29	0.07	8.1	383.4	9.08	3.58	13.32
9/20/2024 13:50	14.68	153.72	0.07	8.05	380.74	9.29	0	13.32
9/20/2024 13:40	14.61	155.55	0.07	8.03	384.83	9.1	211.83	13.44
9/20/2024 13:30	14.55	150.09	0.07	8.04	380.97	9.32	1.75	13.46
9/20/2024 13:20	14.47	157.3	0.07	8.04	381.4	9.34	0	13.39
9/20/2024 13:10	14.37	156.86	0.07	8.03	382.26	9.35	0	13.53
9/20/2024 13:00	14.31	157.16	0.07	8.03	383.09	9.33	0	13.46
9/20/2024 12:50	14.28	156.68	0.07	8.03	383.43	9.33	0	13.46
9/20/2024 12:40	14.26	156.98	0.07	8.03	383.22	9.35	0	13.56
9/20/2024 12:30	14.22	156.24	0.07	8.03	383.72	9.35	0	13.58
9/20/2024 12:20	14.18	156.02	0.07	8.02	384.25	9.35	0.62	13.6
9/20/2024 12:10	14.15	156.43	0.07	8.01	384.82	9.35	0	13.6
9/20/2024 12:00	14.13	156.75	0.07	8.01	385.21	9.33	0	13.6
9/20/2024 11:50	14.11	157.07	0.07	8	385.11	9.32	0	13.6
9/20/2024 11:40	14.12	157.62	0.07	8	384.62	9.33	0	13.56
9/20/2024 11:30	14.13	157.5	0.07	8	384.67	9.32	0	13.63
9/20/2024 11:20	14.13	157.38	0.07	8.01	384.09	9.33	0	13.41
9/20/2024 11:10	14.14	158.14	0.07	8.02	383.93	9.33	0	13.58
9/20/2024 11:00	14.12	158.01	0.07	8.01	383.44	9.35	0	13.58
9/20/2024 10:50	14.09	158.58	0.07	8	383.68	9.34	0.94	13.58
9/20/2024 10:40	14.08	158.49	0.07	7.99	384.02	9.33	0	13.6

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9/20/2024 10:30	14.07	159.09	0.08	7.98	384.04	9.33	0	13.51
9/20/2024 10:20	14.07	159.92	0.08	7.99	384.13	9.33	0	13.63
9/20/2024 10:10	14.07	160.85	0.08	7.99	384.3	9.33	0	13.44
9/20/2024 10:00	14.06	161.17	0.08	7.98	384.65	9.33	0	13.51
9/20/2024 9:50	14.06	161.46	0.08	7.98	384.66	9.33	0	13.44
9/20/2024 9:40	14.05	161.45	0.08	7.98	384.99	9.32	0	13.46
9/20/2024 9:30	14.03	161.82	0.08	7.98	385.46	9.31	0	13.15
9/20/2024 9:20	14.04	162.55	0.08	7.97	385.89	9.3	0	12.84
9/20/2024 9:10	14.06	163.78	0.08	7.97	386.28	9.29	0	12.88
9/20/2024 9:00	14.07	164.88	0.08	7.97	386.87	9.28	0	12.86
9/20/2024 8:50	14.1	167.93	0.08	7.97	388.14	9.26	0	12.79
9/20/2024 8:40	14.14	177.81	0.08	7.95	389.24	9.23	0	12.76
9/20/2024 8:30	14.2	186.22	0.09	7.94	392.54	9.05	0.23	12.69
9/20/2024 8:20	14.3	218.66	0.1	7.91	400.36	8.15	2.83	12.57
9/20/2024 8:10	14.29	229.66	0.11	7.91	398.8	8.21	0.95	12.45
9/20/2024 8:00	14.29	229.1	0.11	7.91	397.71	8.25	1.15	12.33
9/20/2024 7:50	14.29	228.51	0.11	7.91	396.46	8.29	0.83	12.24
9/20/2024 7:40	14.28	227.99	0.11	7.91	394.89	8.36	1.84	12.12
9/20/2024 7:30	14.27	225.64	0.11	7.91	392.67	8.45	1.17	12.24
9/20/2024 7:20	14.23	217.74	0.1	7.94	388.91	8.82	2.2	12.12
9/20/2024 7:10	14.13	163.8	0.08	8	385.08	9.22	0	12.24
9/20/2024 7:00	14.13	162.78	0.08	7.98	384.65	9.23	0	12.21
9/20/2024 6:50	14.14	163.32	0.08	7.97	384.87	9.21	0	12.21
9/20/2024 6:40	14.16	163.4	0.08	7.98	385.31	9.2	0.05	12.21
9/20/2024 6:30	14.17	163.67	0.08	7.98	385.63	9.19	0	12.24
9/20/2024 6:20	14.19	163.57	0.08	7.99	383.91	9.21	0.19	12.24
9/20/2024 6:10	14.2	163.69	0.08	7.98	384.07	9.2	0	12.24
9/20/2024 6:00	14.22	164.12	0.08	7.98	383.77	9.21	0	12.24
9/20/2024 5:50	14.24	164.39	0.08	7.98	383.69	9.2	0	12.24
9/20/2024 5:40	14.26	164.46	0.08	7.98	383.39	9.19	0.36	12.24
9/20/2024 5:30	14.29	164.76	0.08	7.99	383.18	9.19	0.21	12.21
9/20/2024 5:20	14.31	165.08	0.08	7.99	383.13	9.19	0	12.12
9/20/2024 5:10	14.33	165.25	0.08	7.99	383.37	9.2	0	12.14
9/20/2024 5:00	14.34	165.65	0.08	7.99	384.21	9.17	0	12.26
9/20/2024 4:50	14.35	165.7	0.08	7.99	384.28	9.17	0	12.26
9/20/2024 4:40	14.37	166.32	0.08	7.99	384.11	9.16	0.32	12.26
9/20/2024 4:30	14.38	167.49	0.08	7.98	384.14	9.16	0	12.26
9/20/2024 4:20	14.41	168.32	0.08	7.99	384.13	9.16	0	12.24
9/20/2024 4:10	14.42	170.42	0.08	7.98	384.27	9.16	0.3	12.14
9/20/2024 4:00	14.43	174.8	0.08	7.97	385.46	9.15	0	12.17
9/20/2024 3:50	14.42	179.62	0.09	7.95	387.88	9.01	0	12.24
9/20/2024 3:40	14.42	225.32	0.11	7.89	389.44	8.42	1.03	12.14
9/20/2024 3:30	14.43	225.08	0.11	7.91	387.29	8.45	3.13	12.21
9/20/2024 3:20	14.44	220.1	0.1	7.91	384.42	8.62	2.52	12.26
9/20/2024 3:10	14.5	196.86	0.09	8.01	381.22	9.11	5.47	12.26
9/20/2024 3:00	14.54	166.12	0.08	7.99	379.85	9.13	0.12	12.14
9/20/2024 2:50	14.56	165.71	0.08	7.98	379.4	9.14	0	12.14

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9/20/2024 2:40	14.59	166.33	0.08	7.98	379.32	9.13	0	12.14
9/20/2024 2:30	14.61	166.66	0.08	7.99	379.39	9.13	0	12.24
9/20/2024 2:20	14.64	166.78	0.08	8	379.69	9.12	0	12.19
9/20/2024 2:10	14.66	167.23	0.08	8	379.95	9.12	0	12.29
9/20/2024 2:00	14.68	167.96	0.08	8	379.9	9.1	0	12.29
9/20/2024 1:50	14.69	168.57	0.08	7.99	380.16	9.08	0	12.29
9/20/2024 1:40	14.73	169.95	0.08	8.01	378.86	9.09	0	12.29
9/20/2024 1:30	14.76	167.96	0.08	8	377.82	9.09	0	12.26
9/20/2024 1:20	14.78	167.84	0.08	8	377.53	9.09	0.04	12.19
9/20/2024 1:10	14.79	167.68	0.08	8	377.23	9.08	0	12.29
9/20/2024 1:00	14.8	167.53	0.08	7.98	377.43	9.09	0	12.31
9/20/2024 0:50	14.82	167.74	0.08	7.99	377.48	9.07	0.08	12.31
9/20/2024 0:40	14.83	167.99	0.08	7.99	377.72	9.07	0	12.29
9/20/2024 0:30	14.84	168.58	0.08	7.97	377.75	9.08	0	12.31
9/20/2024 0:20	14.85	168.83	0.08	7.97	378.08	9.06	0	12.31
9/20/2024 0:10	14.86	169.46	0.08	7.97	378.38	9.06	0	12.31
9/20/2024 0:00	14.87	169.43	0.08	7.96	378.55	9.06	0	12.31
9/19/2024 23:50	14.87	169.27	0.08	7.96	379.01	9.05	0	12.31
9/19/2024 23:40	14.84	169.06	0.08	7.95	379.66	9.06	0	12.31
9/19/2024 23:30	14.79	170.12	0.08	7.95	381.88	9.06	0.85	12.31
9/19/2024 23:20	14.65	173.75	0.08	7.96	386.27	9.03	0.28	12.31
9/19/2024 23:10	14.58	229.76	0.11	7.83	399.37	7.67	2.99	12.24
9/19/2024 23:00	14.6	232.95	0.11	7.84	399.49	7.72	0.48	12.31
9/19/2024 22:50	14.61	232.76	0.11	7.84	399.21	7.64	0.29	12.31
9/19/2024 22:40	14.62	232.65	0.11	7.84	398.81	7.68	0.15	12.29
9/19/2024 22:30	14.63	232.45	0.11	7.84	398.33	7.6	0.7	12.24
9/19/2024 22:20	14.64	232.19	0.11	7.84	397.8	7.63	0.37	12.31
9/19/2024 22:10	14.65	231.96	0.11	7.84	397.38	7.58	0.88	12.31
9/19/2024 22:00	14.66	231.8	0.11	7.84	396.91	7.65	0.3	12.33
9/19/2024 21:50	14.67	231.54	0.11	7.84	396.31	7.6	0.4	12.24
9/19/2024 21:40	14.68	231.26	0.11	7.84	395.82	7.63	0.07	12.24
9/19/2024 21:30	14.69	231.11	0.11	7.84	395.23	7.59	0.12	12.24
9/19/2024 21:20	14.69	230.84	0.11	7.85	394.81	7.63	0.29	12.36
9/19/2024 21:10	14.7	230.54	0.11	7.84	394.13	7.63	0.24	12.36
9/19/2024 21:00	14.71	230.17	0.11	7.85	393.59	7.71	0.15	12.36
9/19/2024 20:50	14.71	229.89	0.11	7.85	392.91	7.76	0.33	12.36
9/19/2024 20:40	14.71	229.67	0.11	7.86	392.27	7.88	0	12.36
9/19/2024 20:30	14.72	229.43	0.11	7.87	391.62	7.9	0.01	12.36
9/19/2024 20:20	14.73	229.16	0.11	7.87	390.95	8.01	0	12.38
9/19/2024 20:10	14.74	228.97	0.11	7.88	390.42	7.98	0.59	12.29
9/19/2024 20:00	14.76	228.8	0.11	7.88	389.64	8.03	0.71	12.38
9/19/2024 19:50	14.77	228.59	0.11	7.88	389.01	7.99	0.46	12.38
9/19/2024 19:40	14.78	228.35	0.11	7.88	388.12	8.06	0.3	12.38
9/19/2024 19:30	14.8	228.14	0.11	7.89	387.38	8.08	0.79	12.31
9/19/2024 19:20	14.81	227.82	0.11	7.89	386.76	8.13	0.4	12.36
9/19/2024 19:10	14.83	227.5	0.11	7.89	386.06	8.13	0.21	12.48
9/19/2024 19:00	14.85	227.03	0.11	7.89	385.27	8.17	0.35	12.45

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9/19/2024 18:50	14.86	226.94	0.11	7.89	384.68	8.17	0.96	12.74
9/19/2024 18:40	14.88	226.4	0.11	7.9	384.28	8.18	0.71	12.86
9/19/2024 18:30	14.9	225.54	0.11	7.9	383.4	8.18	1.05	12.91
9/19/2024 18:20	14.92	224.43	0.11	7.9	382.5	8.21	1.17	12.93
9/19/2024 18:10	14.94	223.48	0.11	7.91	381.39	8.22	2.55	12.98
9/19/2024 18:00	14.97	222.25	0.11	7.91	380.33	8.24	2.27	12.91
9/19/2024 17:50	15.01	221.94	0.11	7.9	378.66	8.27	1.76	12.81
9/19/2024 17:40	15.05	220.69	0.11	7.89	376.82	8.31	1.97	13.08
9/19/2024 17:30	15.09	217.78	0.1	7.88	374.14	8.37	2.69	13.1
9/19/2024 17:20	15.17	211.64	0.1	7.92	371.95	8.41	2.35	13.27
9/19/2024 17:10	15.29	198.61	0.09	7.94	370.25	8.44	5.51	13.32
9/19/2024 17:00	15.59	167.46	0.08	8.03	364.42	8.96	0	13.29
9/19/2024 16:50	15.62	164.02	0.08	8.01	363.35	8.97	0.19	13.29
9/19/2024 16:40	15.6	164.74	0.08	7.99	363.86	8.98	0	13.32
9/19/2024 16:30	15.6	164.63	0.08	7.98	364.08	8.98	0.09	13.32
9/19/2024 16:20	15.6	164.92	0.08	7.98	364.09	8.98	0	13.29
9/19/2024 16:10	15.6	164.12	0.08	7.98	364.48	8.98	0.35	13.27
9/19/2024 16:00	15.59	166.41	0.08	7.96	365.75	8.98	0	13.2
9/19/2024 15:50	15.56	168.76	0.08	7.96	367.1	9	0.31	13.32
9/19/2024 15:40	15.49	178.46	0.08	7.96	369.82	8.82	0	13.24
9/19/2024 15:30	15.4	228.6	0.11	7.87	378.27	8.4	1.72	13.22
9/19/2024 15:20	15.37	228.07	0.11	7.86	376.67	8.42	1.3	13.24
9/19/2024 15:10	15.33	227.05	0.11	7.86	374.03	8.45	1.55	13.27
9/19/2024 15:00	15.29	227.28	0.11	7.87	373.49	8.38	1.97	13.41
9/19/2024 14:50	15.27	227.91	0.11	7.88	376.82	8.06	2.39	13.44
9/19/2024 14:40	15.32	228.49	0.11	7.89	377.42	8.03	0.65	13.39
9/19/2024 14:30	15.34	228.35	0.11	7.89	376.93	7.91	0.42	13.41
9/19/2024 14:20	15.37	228	0.11	7.89	376.72	7.96	0.3	13.39
9/19/2024 14:10	15.36	227.51	0.11	7.88	375.18	7.96	0	13.39
9/19/2024 14:00	15.35	228.27	0.11	7.88	375.43	8.09	0.5	13.39
9/19/2024 13:50	15.3	227.67	0.11	7.87	376.66	8.03	0.69	13.27
9/19/2024 13:40	15.25	227.41	0.11	7.87	375.28	8.1	0.4	13.39
9/19/2024 13:30	15.2	227.29	0.11	7.87	374.88	8.12	1.12	13.41
9/19/2024 13:20	15.16	227.63	0.11	7.87	371.95	8.16	0.8	13.44
9/19/2024 13:10	15.16	226.95	0.11	7.88	370.34	8.23	1.3	13.34
9/19/2024 13:00	15.18	225.97	0.11	7.89	368.52	8.29	2.02	13.44
9/19/2024 12:50	15.24	225.53	0.11	7.9	367.48	8.37	2.25	13.41
9/19/2024 12:40	15.28	219.94	0.1	7.9	366.37	8.3	1.5	13.32
9/19/2024 12:30	15.26	218.87	0.1	7.89	368.54	8.35	1.93	13.34
9/19/2024 12:20	15.2	206.97	0.1	7.94	364.9	8.72	0.89	13.36
9/19/2024 12:10	15.09	162.36	0.08	8.04	358.52	9.14	0.77	13.29
9/19/2024 12:00	15.03	161.64	0.08	8	358.45	9.11	0	13.44
9/19/2024 11:50	14.97	161.34	0.08	7.99	357.59	9.12	0	13.48
9/19/2024 11:40	14.91	161.44	0.08	7.99	358.11	9.13	0	13.51
9/19/2024 11:30	14.87	160.75	0.08	8.03	358.11	9.15	0	13.44
9/19/2024 11:20	14.84	160.82	0.08	8.01	357.39	9.15	0	13.24
9/19/2024 11:10	14.82	162.23	0.08	7.99	356.49	9.15	0	12.98

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9/19/2024 11:00	14.81	161.83	0.08	7.99	356.02	9.15	0.22	12.88
9/19/2024 10:50	14.8	161.9	0.08	8	355.13	9.12	0	12.96
9/19/2024 10:40	14.79	161.85	0.08	8.04	354.32	8.98	0	12.96
9/19/2024 10:30	14.78	163.03	0.08	7.97	354.48	9.14	1.17	12.86
9/19/2024 10:20	14.78	163.54	0.08	7.99	353.73	9.13	0	12.81
9/19/2024 10:10	14.77	163.58	0.08	8	353.78	9.14	0	12.74
9/19/2024 10:00	14.77	163.26	0.08	8	353.94	9.12	0	12.6
9/19/2024 9:50	14.76	163.94	0.08	8.01	357.57	9.11	0	12.62
9/19/2024 9:40	14.77	164.56	0.08	8.02	356.45	9.02	0	12.53
9/19/2024 9:30	14.79	165.95	0.08	8	352.69	9	0	12.45
9/19/2024 9:20	14.84	169.17	0.08	7.99	346.28	9.01	1.22	12.48
9/19/2024 9:10	14.93	174.93	0.08	7.98	338.74	8.94	0	12.55
9/19/2024 9:00	15.08	190.1	0.09	7.91	325.23	8.86	0	12.29
9/19/2024 8:50	15.57	186.97	0.09	7.74	286.93	4.71	38.58	12.21