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	2024-08-19	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	2023-08-19	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 22nd further downstream (not the permitted location) as it was discovered there was a subsurface flow output from East Creek where a sonde could be installed. The original location is still dry.
- Triton (FortisBC QP) sampled upstream and downstream of WC 309-R2, Triton went further downstream to find a location with sufficient water for a sample.
- Triton sampled end of pipe samples from the end of pipe.
- LC 50 sampling results are included in this report from the August 13th sampling event, no issues.
- The Long-Term guideline 5 week sample average was exceeded for Dissolved Zinc as well as the sample taken on August 20th.
- Included in Appendix C is data from the Water Treatment Plant and data from using a YSI downstream while discharging to document receiving environment as 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	2024-08-19	Yes-Appendix C	52 m^3
Woodfibre	2024-08-20	Yes-Appendix C	37 m^3
Woodfibre	2024-08-21	Yes-Appendix C	78 m^3
Woodfibre	2024-08-22	Yes-Appendix C	79 m^3
Woodfibre	2024-08-23	Yes-Appendix C	120 m^3
Woodfibre	2024-08-24	Yes-Appendix C	61 m^3
Woodfibre	2024-08-25	Yes-Appendix C	08 m^3

*Max discharge is 1500m^3/day

Exceedances

The Long-Term guideline 5 week sample average was exceeded for Dissolved Zinc as well as the sample taken on August 20th.

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	2024-08-20	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	2024-08-20	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. Contractor used a YSI to do in situ readings during discharges.

***** 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					VA24C1037-001	VA24C1037-002					
	Date Sampled					19-Aug-2024	19-Aug-2024					
	Time Sampled					09:10	10:52					
Analyte	Units	FAL-ST [1,2]	FAL-LT [1,2]	MAL-ST [1]	MAL-LT [1,2]	Water	Water					
						N/A	N/A		Guideline notes			
In Situ Parameters												
pH (field)	pH units	6.5-9.0	6.5-9.0	7.0-8.7	7.0-8.7	6.9	6.98	pH for both locations fall outside of the short-term and long-term BCWQ guidelines for MAL. Discharge from BCR has not begun full-time, therefore, the pH is likely due to natural variability.	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]	-	12.7	12.8		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	-	-	-	-	49	31					
Turbidity (field)	NTU	Varies with background, see note Guideline = 206.8	Varies with background, see note Guideline = 202.2 5-week discrete sampling average = 198.8 (DS)	Varies with background, see note Guideline = 206.8	Varies with background, see note Guideline = 202.16 5-week discrete sampling average = 198.8 (DS)	188.0	132.0		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	10.59	9.92		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	-	-	-	-	19.6	23.1					
Total Dissolved Solids	mg/L	-	-	-	-	40	32					
Total Suspended Solids	mg/L	Varies with background, see note Guideline = 171.6	Varies with background, see note Guideline = 208 5-week discrete sampling average = 190.6 (DS)	Varies with background, see note Guideline = 171.6	Varies with background, see note Guideline = 208 5-week discrete sampling average = 190.6 (DS)	156	116		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 in 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 in 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	-	-	-	-	0.5	< 0.50			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	9.1	8.1	The upstream and downstream location both 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	0.0016					
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 = 21.3	Varies with pH and temperature. See note. Guideline = 1.78	Varies with pH, temperature and salinity. See note. Guideline = 131	Varies with pH, temperature and salinity. See note. Guideline = 14	0.067	0.049		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	0.98	0.9				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 = 0.679	-	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	0.0162	0.0168					
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	-	-	-	-	0.144	0.127					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.142	0.147			Guideline is for lakes, refer to BCWQ guideline for nutrients and algae for more information. Guideline does not apply to site.		
Sulfate (as SO_4)	mg/L	-	Varies with hardness. See note. Guideline = 128	-	-	2.76	2.46			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 = 0.024 US 5-week field average = 6.06 (US1) DS 5-week field average = 7.13 (DS1)	-	-	6.34	7.17	Total Al exceed the long-term average BCWG for FAL at both upstream and downstream locations. However, this should not be deemed a reportable exceedance because the discharge from BCR has not begun. Therefore, the high total Al concentration may be characteristic of the Squamish River and the local geology and natural varibility.		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	0.00037	0.00054					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.0629	0.0745			Working guideline status		
Beryllium (Be)-Total	mg/L	-	0.00013	-	0.100	< 0.00010	< 0.00010			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	< 0.010					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	0.0000173	0.0000216					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	5.47	5.69					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.000155	0.000204					
Chromium (Cr) - Total	mg/L	-	-	-	-	0.00136	0.00227					
Chromium (Cr(III))-Total	mg/L	-	0.0089	-	0.056	0.00136	0.00227			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	-	-	0.00114	0.0019					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002	0.007	0.008	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. Therefore, the high total Cu concentration may be characteristic of the Squamish River and the local geology.				
Iron (Fe)-Total	mg/L	1	-	-	-	2.6	4.0	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 are not attributable to BCR construction activities and may be characteristic of the Squamish River and the local geology.				
Lead (Pb)-Total	mg/L	Varies with hardness. See Note. Guideline = 0.010	Varies with hardness. See Note. Guideline = 0.004	0.14	0.002	0.0008	0.0008		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	-	-	-	-	0.0023	0.003					
Magnesium (Mg)-Total	mg/L	-	-	-	-	1.45	2.16					
Manganese (Mn)-Total	mg/L	Varies with hardness Guideline = 0.715	Varies with hardness Guideline = 0.768	-	-	0.068	0.106		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	-	-	0.00042	0.00042					
Nickel (Ni)-Total	mg/L	-	Varies with hardness Guideline = 0.025	-	0.0083	0.0016	0.0024			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	-	-	0.166	0.242			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	-	-	-	-	1.62	1.92					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.0041	0.0056					
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 guidelines 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	-	-	-	-	11.6	12.6					
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	0.000014	0.000016		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	-	-	-	-	3.13	2.89					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.072	0.073					
Sulfur (S)-Total	mg/L	-	-	-	-	0.72	0.63					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.0008	-	-	0.000026	0.000038			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	-	-	-	-	0.00022	0.00028					
Tin (Sn)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Titanium (Ti)-Total	mg/L	-	-	-	-	0.155	0.262					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Total	mg/L	-	0.0085	-	-	0.000101	0.000157			Working guideline status		
Vanadium (V)-Total	mg/L	-	-	-	0.050	0.00642	0.00988					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	Guideline = 0.010 US 5-week field average = 0.027 DS 5-week field average = 0.020	0.009	0.014	Total Zn exceeds the BCWQ MAL long-term guidelines at both upstream and downstream locations. However, this should not be deemed a reportable exceedance because the background total Zn concentration at the upstream location exceeds the BCWG too. Discharge from BCR has not begun yet, so the high concentration are not attributable to BCR construction activities and may be characteristic of the Squamish River and the local geology.				
Zirconium (Zr)-Total	mg/L	-	-	-	-	0.00066	0.00055					
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.175	0.14					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00013	0.00013					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.00508	0.00496					
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 = 0.00011	Varies with hardness, see note Guideline = 0.000065	-	-	< 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 gudeline 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	-	-	3.36	2.97	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	-	-	-	-	0.000014	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 = 0.0003	Guideline varies with other parameters, see note Guideline = 0.0002 US 5-week field average = 0.00146 DS 5-week field average = 0.00540	-	-	0.0006	0.00049	Dissolved Cu exceeds the short-term and 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	-	-	-	0.081	0.071					
Lead (Pb)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	< 0.0010	< 0.0010					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.38	0.332					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00882	0.00784					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.000386	0.000375					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.050	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	0.61	0.556					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00091	0.00081					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	3	2.46					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	1.29	1.12					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0228	0.0205					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	0.69	0.54					
Tellurium (Te)-Dissolved	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Thorium (Th)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Tin (Sn)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Titanium (Ti)-Dissolved	mg/L	-	-	-	-	0.0051	0.00467					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.000015	0.000014					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	0.00102	0.00088					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness Guideline = 0.009	Varies with pH, DOC, hardness Guideline = 0.00367 DS 5-week field average = 0.0047	-	-	< 0.0010	< 0.0010		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	-	-	-	-	0.00025	< 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				6.9	6.98
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations				12.7	12.8
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations				188.00	132.00
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				19.6	23.1
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations				0.5	0.5
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations				9.1	8.1
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations				0.98	0.9

BCR Site Receiving Environment Lab Documentation

ALS Canada Ltd.

CERTIFICATE OF ANALYSIS

Work Order	: **VA24C1037**	Page	: 1 of 6
Amendment	: **1**		
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	:
Address		Address	:
Telephone	: ----	Telephone	:
Project	: 11964	Date Samples Received	: 19-Aug-2024 13:15
PO	: 11964 - Task 20 - Phase 3C-4C	Date Analysis Commenced	: 21-Aug-2024
C-O-C number	: ----	Issue Date	: 30-Aug-2024 15:15
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*
	Lab Assistant	Metals, Burnaby, British Columbia
	Laboratory Analyst	Metals, Burnaby, British Columbia
	Analyst	Metals, Burnaby, British Columbia
	Lab Analyst	Metals, Burnaby, British Columbia
	Senior Analyst	Inorganics, Waterloo, Ontario
	Senior Analyst	Metals, Waterloo, Ontario
	Account Manager Assistant	Administration, Burnaby, British Columbia
	Team Leader - Metals	Inorganics, Burnaby, British Columbia
	Team Leader - Metals	Metals, Burnaby, British Columbia
	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia

General Comments

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

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

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

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

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

LOR: Limit of Reporting (detection limit).

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.

Workorder Comments

Amendment (30/08/2024): This report has been amended and re-released with the following edits - modified the Field data, modified unionized sulfide and additional calculated unionized ammonia analysis data as requested.

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	19-Aug-2024 09:10	19-Aug-2024 10:52	----	----	----
						VA24C1037-001	VA24C1037-002	--------	--------	--------
						Result	Result	----	----	----
Field Tests										
Conductivity, field	----	EF001/VA	0.10	µS/cm		49.000	31.000	----	----	----
pH, field	----	EF001/VA	0.10	pH units		6.90	6.98	----	----	----
Temperature, field	----	EF001/VA	0.10	°C		12.7	12.8	----	----	----
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L		9.95	8.78	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L		19.6	23.1	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		40	32	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		156	116	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		9.1	8.1	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L		0.0666	0.0487	----	----	----
Ammonia, un-ionized (as N), field	7664-41-7	EC298A/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
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		0.98	0.90	----	----	----
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		0.0162	0.0168	----	----	----
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		0.144	0.127	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.142	0.147	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		2.76	2.46	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L		0.50	<0.50	----	----	----
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L		<0.0015	<0.0015	----	----	----
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		6.34	7.17	----	----	----

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	19-Aug-2024 09:10	19-Aug-2024 10:52	----	----	----
						VA24C1037-001	VA24C1037-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00037	0.00054	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.0629	0.0745	----	----	----
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		0.0000173	0.0000216	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		5.47	5.69	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000155	0.000204	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		0.00136	0.00227	----	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		0.00114	0.00190	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00655	0.00828	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		2.57	3.99	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000831	0.000791	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0023	0.0030	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		1.45	2.16	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.0678	0.106	----	----	----
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		0.000417	0.000415	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		0.00164	0.00236	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		0.166	0.242	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		1.62	1.92	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00409	0.00559	----	----	----
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		11.6	12.6	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		0.000014	0.000016	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		3.13	2.89	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0717	0.0727	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		0.72	0.63	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SQU US 1	SQU DS 1	----	----	----
					Client sampling date / time	19-Aug-2024 09:10	19-Aug-2024 10:52	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C1037-001	VA24C1037-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		0.000026	0.000038	----	----	----
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		0.00022	0.00028	----	----	----
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		0.155	0.262	----	----	----
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		0.000101	0.000157	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		0.00642	0.00988	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		0.0086	0.0140	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		0.00066	0.00055	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.175	0.140	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00013	0.00013	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00508	0.00496	----	----	----
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		3.36	2.97	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.000014	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		0.00060	0.00049	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.081	0.071	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		0.380	0.332	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00882	0.00784	----	----	----
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		0.000386	0.000375	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SQU US 1	SQU DS 1	----	----	----
					Client sampling date / time	19-Aug-2024 09:10	19-Aug-2024 10:52	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C1037-001	VA24C1037-002	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		0.610	0.556	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00091	0.00081	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		3.00	2.46	----	----	----
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		1.29	1.12	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0228	0.0205	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		0.69	0.54	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		0.00510	0.00467	----	----	----
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		0.000015	0.000014	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		0.00102	0.00088	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		0.00025	<0.00020	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-		Laboratory	Laboratory	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Laboratory	Laboratory	----	----	----
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		0.00136	0.00227	----	----	----

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	: **VA24C1037**	Page	: 1 of 14
Amendment	: **1**		
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 19-Aug-2024 13:15
PO	: 11964 - Task 20 - Phase 3C-4C	Issue Date	: 30-Aug-2024 15:16
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)

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

Outliers : Frequency of Quality Control Samples

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

Analysis Holding Time Compliance

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

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

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

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

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU DS 1	E298	19-Aug-2024	24-Aug-2024	28 days	5 days	✓	24-Aug-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU US 1	E298	19-Aug-2024	24-Aug-2024	28 days	5 days	✓	24-Aug-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU DS 1	E235.Br-L	19-Aug-2024	21-Aug-2024	28 days	2 days	✓	21-Aug-2024	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU US 1	E235.Br-L	19-Aug-2024	21-Aug-2024	28 days	2 days	✓	21-Aug-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SQU DS 1	E235.Cl	19-Aug-2024	21-Aug-2024	28 days	2 days	✓	21-Aug-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SQU US 1	E235.Cl	19-Aug-2024	21-Aug-2024	28 days	2 days	✓	21-Aug-2024	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE SQU DS 1	E235.F	19-Aug-2024	21-Aug-2024	28 days	2 days	✓	21-Aug-2024	28 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE SQU US 1	E235.F	19-Aug-2024	21-Aug-2024	28 days	2 days	✓	21-Aug-2024	28 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SQU DS 1	E235.NO3-L	19-Aug-2024	21-Aug-2024	3 days	2 days	✓	21-Aug-2024	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SQU US 1	E235.NO3-L	19-Aug-2024	21-Aug-2024	3 days	2 days	✓	21-Aug-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SQU DS 1	E235.NO2-L	19-Aug-2024	21-Aug-2024	3 days	2 days	✓	21-Aug-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SQU US 1	E235.NO2-L	19-Aug-2024	21-Aug-2024	3 days	2 days	✓	21-Aug-2024	3 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SQU DS 1	E235.SO4	19-Aug-2024	21-Aug-2024	28 days	2 days	✓	21-Aug-2024	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SQU US 1	E235.SO4	19-Aug-2024	21-Aug-2024	28 days	2 days	✓	21-Aug-2024	28 days	2 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) SQU DS 1	E366	19-Aug-2024	24-Aug-2024	28 days	5 days	✓	27-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) SQU US 1	E366	19-Aug-2024	24-Aug-2024	28 days	5 days	✓	27-Aug-2024	28 days	8 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SQU DS 1	E372-U	19-Aug-2024	24-Aug-2024	28 days	5 days	✓	27-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SQU US 1	E372-U	19-Aug-2024	24-Aug-2024	28 days	5 days	✓	27-Aug-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SQU DS 1	E509	19-Aug-2024	27-Aug-2024	28 days	8 days	✓	27-Aug-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SQU US 1	E509	19-Aug-2024	27-Aug-2024	28 days	8 days	✓	27-Aug-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SQU DS 1	E421	19-Aug-2024	21-Aug-2024	180 days	2 days	✓	23-Aug-2024	180 days	4 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SQU US 1	E421	19-Aug-2024	21-Aug-2024	180 days	2 days	✓	23-Aug-2024	180 days	4 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	19-Aug-2024	----	----	----		21-Aug-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	19-Aug-2024	----	----	----		21-Aug-2024	----	2 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
SQU DS 1	E358-L	19-Aug-2024	24-Aug-2024	28 days	5 days	✓	24-Aug-2024	28 days	5 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) SQU US 1	E358-L	19-Aug-2024	24-Aug-2024	28 days	5 days	✓	24-Aug-2024	28 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SQU DS 1	E290	19-Aug-2024	21-Aug-2024	14 days	2 days	✓	21-Aug-2024	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SQU US 1	E290	19-Aug-2024	21-Aug-2024	14 days	2 days	✓	21-Aug-2024	14 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SQU DS 1	E162	19-Aug-2024	----	----	----		27-Aug-2024	7 days	8 days	× EHT
Physical Tests : TDS by Gravimetry										
HDPE SQU US 1	E162	19-Aug-2024	----	----	----		27-Aug-2024	7 days	8 days	× EHT
Physical Tests : TSS by Gravimetry										
HDPE SQU DS 1	E160	19-Aug-2024	----	----	----		24-Aug-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE SQU US 1	E160	19-Aug-2024	----	----	----		24-Aug-2024	7 days	5 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
HDPE - total (sodium hydroxide) SQU DS 1	E532	19-Aug-2024	----	----	----		23-Aug-2024	28 days	4 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
HDPE - total (sodium hydroxide) SQU US 1	E532	19-Aug-2024	----	----	----		23-Aug-2024	28 days	4 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
SQU DS 1	E508	19-Aug-2024	28-Aug-2024	28 days	9 days	✓	28-Aug-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
SQU US 1	E508	19-Aug-2024	28-Aug-2024	28 days	9 days	✓	28-Aug-2024	28 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SQU US 1	E420	19-Aug-2024	27-Aug-2024	180 days	8 days	✓	28-Aug-2024	180 days	10 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SQU DS 1	E420	19-Aug-2024	27-Aug-2024	180 days	8 days	✓	28-Aug-2024	180 days	9 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
SQU DS 1	E395	19-Aug-2024	----	----	----		23-Aug-2024	7 days	4 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
SQU US 1	E395	19-Aug-2024	----	----	----		23-Aug-2024	7 days	4 days	✓

Legend & Qualifier Definitions

EHT: Exceeded ALS recommended hold time prior to analysis.

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1607290	0	20	0.0	5.0	✖
Ammonia by Fluorescence	E298	1614118	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1607287	1	7	14.2	5.0	✓
Chloride in Water by IC	E235.Cl	1607283	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1619177	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1607968	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1614115	1	10	10.0	5.0	✓
Fluoride in Water by IC	E235.F	1607286	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1607284	1	8	12.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1607285	1	8	12.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1607282	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1614852	2	22	9.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1612282	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1621389	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1608069	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1614116	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1614122	1	8	12.5	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1612976	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	1614843	2	22	9.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1607290	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1614118	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1607287	1	7	14.2	5.0	✓
Chloride in Water by IC	E235.Cl	1607283	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1619177	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1607968	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1614115	1	10	10.0	5.0	✓
Fluoride in Water by IC	E235.F	1607286	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1607284	1	8	12.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1607285	1	8	12.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1607282	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1614852	2	22	9.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1612282	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1621389	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1608069	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1614116	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*
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1614122	1	8	12.5	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1612976	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	1614843	2	22	9.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1607290	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1614118	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1607287	1	7	14.2	5.0	✓
Chloride in Water by IC	E235.Cl	1607283	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1619177	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1607968	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1614115	1	10	10.0	5.0	✓
Fluoride in Water by IC	E235.F	1607286	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1607284	1	8	12.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1607285	1	8	12.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1607282	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1614852	2	22	9.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1612282	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1621389	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1608069	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1614116	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1614122	1	8	12.5	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1612976	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	1614843	2	22	9.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1614118	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1607287	1	7	14.2	5.0	✓
Chloride in Water by IC	E235.Cl	1607283	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1619177	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1607968	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1614115	1	10	10.0	5.0	✓
Fluoride in Water by IC	E235.F	1607286	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1607284	1	8	12.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1607285	1	8	12.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1607282	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1612282	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1621389	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1608069	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1614116	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1614122	1	8	12.5	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	1612976	1	17	5.8	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 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 and Ionized Ammonia (Calculation) (Field Temperature and pH)	EC298A ALS Environmental - Vancouver	Water	CCME CWQG Ammonia	Un-ionized ammonia is calculated from test results for total ammonia, field temperature and pH, and is expressed in units of mg/L "as N".
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.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **VA24C1037**	Page	: 1 of 17
Amendment	: **1**		
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact	:	Account Manager	:
Address	:	Address	:
Telephone	:	Telephone	:
Project	: 11964	Date Samples Received	: 19-Aug-2024 13:15
PO	: 11964 - Task 20 - Phase 3C-4C	Date Analysis Commenced	: 21-Aug-2024
C-O-C number	: ----	Issue Date	: 30-Aug-2024 15:16
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*
	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
	Laboratory Analyst	Vancouver Metals, Burnaby, British Columbia
	Analyst	Vancouver Metals, Burnaby, British Columbia
	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
	Senior Analyst	Waterloo Inorganics, Waterloo, Ontario
	Senior Analyst	Waterloo Metals, Waterloo, Ontario
	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
	Team Leader - Metals	Vancouver Inorganics, Burnaby, British Columbia
	Team Leader - Metals	Vancouver Metals, Burnaby, British Columbia
	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1614843)											
FJ2402485-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1614844)											
VA24C1037-002	SQU DS 1	Solids, total suspended [TSS]	----	E160	3.0	mg/L	116	120	3.73%	20%	----
Physical Tests (QC Lot: 1614852)											
FJ2402485-001	Anonymous	Solids, total dissolved [TDS]	----	E162	10	mg/L	271	265	2.24%	20%	----
Physical Tests (QC Lot: 1614853)											
VA24C1037-002	SQU DS 1	Solids, total dissolved [TDS]	----	E162	10	mg/L	32	31	2	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607282)											
VA24C0638-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	697	689	1.07%	20%	----
Anions and Nutrients (QC Lot: 1607283)											
VA24C0638-001	Anonymous	Chloride	16887-00-6	E235.Cl	2.50	mg/L	25.8	25.6	0.851%	20%	----
Anions and Nutrients (QC Lot: 1607284)											
VA24C0638-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	0.376	0.374	0.373%	20%	----
Anions and Nutrients (QC Lot: 1607285)											
VA24C0638-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607286)											
VA24C0638-001	Anonymous	Fluoride	16984-48-8	E235.F	0.100	mg/L	0.200	0.198	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607287)											
VA24C0638-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1614116)											
VA24C1037-001	SQU US 1	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.144	0.143	0.00008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1614118)											
VA24C0950-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.807	0.819	1.46%	20%	----
Anions and Nutrients (QC Lot: 1614122)											
VA24C0988-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0029	0.0026	0.0003	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1614115)											
VA24C0988-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.26	3.32	0.07	Diff <2x LOR	----
Total Sulfides (QC Lot: 1612976)											
CG2411715-001	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: 1608069)											

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: 1608069) - continued											
VA24C1018-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0089	0.0092	0.0003	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00013	0.00012	0.000010	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0199	0.0195	2.24%	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	0.013	0.014	0.0002	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	3.48	3.59	3.27%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.017	0.019	0.002	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	0.0012	0.0012	0.00002	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	3.96	3.90	1.46%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00471	0.00466	1.05%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000076	0.000074	0.000002	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	1.18	1.19	0.458%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00112	0.00105	0.00007	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	0.22	0.22	0.008	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	22.4	22.2	1.01%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0345	0.0365	5.57%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	1.97	2.04	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	<0.00030	<0.00030	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: 1608069) - continued											
VA24C1018-001	Anonymous	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	0.000057	0.000055	0.000002	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1621389)											
FJ2402566-014	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1607968)											
YL2401193-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0066	0.0066	0.00003	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	0.00023	0.00028	0.00005	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.117	0.126	7.48%	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	0.601	0.628	4.46%	20%	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.000114	0.000121	6.06%	20%	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	113	116	2.20%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000032	0.000035	0.000004	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	0.00338	0.00355	5.00%	20%	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00089	0.00092	0.00003	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0084	0.0089	0.0005	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	30.8	32.5	5.14%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.306	0.325	5.90%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00905	0.00902	0.346%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0180	0.0188	4.25%	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	23.3	24.7	5.96%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.0197	0.0209	5.86%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000184	0.000189	0.000005	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.58	3.64	1.51%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 1607968) - continued											
YL2401193-001	Anonymous	Sodium, dissolved	7440-23-5	E421	0.050	mg/L	66.6	69.2	3.75%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	1.33	1.35	1.64%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	30.8	31.6	2.23%	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	0.000046	0.000050	0.000004	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	0.00011	0.00010	0.000005	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00123	0.00124	1.35%	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	0.0058	0.0060	0.0003	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: 1619177)											
VA24C0773-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1612282)											
VA24C0997-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	<0.50 µg/L	<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: 1607290)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1614843)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1614844)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1614852)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1614853)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1607282)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1607283)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1607284)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1607285)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1607286)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1607287)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1614116)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1614118)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1614122)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1614115)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1612976)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1608069)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1608069) - continued						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1608069) - continued						
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 1621389)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1607968)						
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1607968) - continued						
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 1619177)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1612282)						
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: 1607290)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1614843)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	85.5	85.0	115	----
Physical Tests (QCLot: 1614844)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	87.2	85.0	115	----
Physical Tests (QCLot: 1614852)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1614853)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1607282)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1607283)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1607284)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1607285)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.7	90.0	110	----
Anions and Nutrients (QCLot: 1607286)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1607287)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	107	85.0	115	----
Anions and Nutrients (QCLot: 1614116)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	98.7	75.0	125	----
Anions and Nutrients (QCLot: 1614118)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 1614122)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	95.0	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1614115)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	100	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Sulfides (QCLot: 1612976)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	102	80.0	120	----
Total Metals (QCLot: 1608069)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	101	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	110	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	107	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	95.0	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	105	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	92.3	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	100	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	104	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	98.5	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	99.5	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	102	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	108	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	95.8	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	109	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	99.7	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	98.3	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	97.7	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	99.8	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	95.8	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	106	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	88.7	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	109	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	106	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	106	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	103	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: 1608069) - continued									
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	98.2	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	106	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	112	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	101	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	105	80.0	120	----
Total Metals (QCLot: 1621389)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	101	80.0	120	----
Dissolved Metals (QCLot: 1607968)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	96.1	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	100	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	99.6	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	96.4	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	91.8	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	97.3	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	97.0	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	97.0	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	94.6	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	96.1	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	91.2	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	98.4	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	97.1	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	93.5	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	95.6	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	97.0	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	104	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	96.2	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	97.2	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	99.8	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	103	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	93.8	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: 1607968) - continued									
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	98.0	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	103	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	86.5	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	99.5	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	96.8	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	96.8	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	98.3	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	91.8	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	95.2	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	97.2	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	94.7	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	99.8	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	96.8	80.0	120	----
Speciated Metals (QCLot: 1612282)									
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: 1607282)										
VA24C0638-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1607283)										
VA24C0638-001	Anonymous	Chloride	16887-00-6	E235.Cl	508 mg/L	500 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1607284)										
VA24C0638-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	12.8 mg/L	12.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1607285)										
VA24C0638-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	2.48 mg/L	2.5 mg/L	99.3	75.0	125	----
Anions and Nutrients (QCLot: 1607286)										
VA24C0638-001	Anonymous	Fluoride	16984-48-8	E235.F	5.10 mg/L	5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1607287)										
VA24C0638-001	Anonymous	Bromide	24959-67-9	E235.Br-L	2.61 mg/L	2.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1614116)										
VA24C1037-002	SQU DS 1	Nitrogen, total	7727-37-9	E366	0.394 mg/L	0.4 mg/L	98.4	70.0	130	----
Anions and Nutrients (QCLot: 1614118)										
VA24C0950-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1614122)										
VA24C0997-010	Anonymous	Phosphorus, total	7723-14-0	E372-U	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1614115)										
VA24C0997-010	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1612976)										
CG2411715-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.207 mg/L	0.2 mg/L	104	75.0	125	----
Total Metals (QCLot: 1608069)										
VA24C1018-002	Anonymous	Aluminum, total	7429-90-5	E420	0.194 mg/L	0.2 mg/L	97.1	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		Barium, total	7440-39-3	E420	0.0196 mg/L	0.02 mg/L	98.1	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0359 mg/L	0.04 mg/L	89.8	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00987 mg/L	0.01 mg/L	98.7	70.0	130	----
		Boron, total	7440-42-8	E420	0.088 mg/L	0.1 mg/L	88.5	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00413 mg/L	0.004 mg/L	103	70.0	130	----
		Calcium, total	7440-70-2	E420	3.62 mg/L	4 mg/L	90.5	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0102 mg/L	0.01 mg/L	102	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0385 mg/L	0.04 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
Total Metals (QCLot: 1608069) - continued										
VA24C1018-002	Anonymous	Cobalt, total	7440-48-4	E420	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		Copper, total	7440-50-8	E420	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----
		Iron, total	7439-89-6	E420	2.00 mg/L	2 mg/L	99.8	70.0	130	----
		Lead, total	7439-92-1	E420	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0875 mg/L	0.1 mg/L	87.5	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----
		Phosphorus, total	7723-14-0	E420	8.96 mg/L	10 mg/L	89.6	70.0	130	----
		Potassium, total	7440-09-7	E420	3.78 mg/L	4 mg/L	94.5	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0406 mg/L	0.04 mg/L	101	70.0	130	----
		Silicon, total	7440-21-3	E420	9.71 mg/L	10 mg/L	97.1	70.0	130	----
		Silver, total	7440-22-4	E420	0.00406 mg/L	0.004 mg/L	101	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	----	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	20.2 mg/L	20 mg/L	101	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0416 mg/L	0.04 mg/L	104	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00389 mg/L	0.004 mg/L	97.3	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Tin, total	7440-31-5	E420	0.0198 mg/L	0.02 mg/L	99.3	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0379 mg/L	0.04 mg/L	94.6	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00426 mg/L	0.004 mg/L	106	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0993 mg/L	0.1 mg/L	99.3	70.0	130	----
		Zinc, total	7440-66-6	E420	0.399 mg/L	0.4 mg/L	99.8	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0417 mg/L	0.04 mg/L	104	70.0	130	----
Total Metals (QCLot: 1621389)										
VA24C0950-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000771 mg/L	0 mg/L	77.1	70.0	130	----
Dissolved Metals (QCLot: 1607968)										
VA24C1021-006	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.213 mg/L	0.2 mg/L	106	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	ND mg/L	----	ND	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0388 mg/L	0.04 mg/L	96.9	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00873 mg/L	0.01 mg/L	87.3	70.0	130	----
		Boron, dissolved	7440-42-8	E421	ND mg/L	----	ND	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00392 mg/L	0.004 mg/L	98.1	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	0.0383 mg/L	0.04 mg/L	95.8	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	ND mg/L	----	ND	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1607968) - continued										
VA24C1021-006	Anonymous	Copper, dissolved	7440-50-8	E421	0.0183 mg/L	0.02 mg/L	91.3	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.88 mg/L	2 mg/L	94.1	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0180 mg/L	0.02 mg/L	89.8	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0941 mg/L	0.1 mg/L	94.1	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	ND mg/L	----	ND	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	10.5 mg/L	10 mg/L	105	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	ND mg/L	----	ND	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0390 mg/L	0.04 mg/L	97.5	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.71 mg/L	10 mg/L	97.1	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00391 mg/L	0.004 mg/L	97.7	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	ND mg/L	----	ND	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0436 mg/L	0.04 mg/L	109	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00354 mg/L	0.004 mg/L	88.4	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0395 mg/L	0.04 mg/L	98.7	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	ND mg/L	----	ND	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.373 mg/L	0.4 mg/L	93.3	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0429 mg/L	0.04 mg/L	107	70.0	130	----
Dissolved Metals (QCLot: 1619177)										
VA24C0773-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000954 mg/L	0 mg/L	95.4	70.0	130	----
Speciated Metals (QCLot: 1612282)										
VA24C0997-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Environmental Division Vancouver
Work Order Reference
VA24C1037

Telephone : +1 604 253 4188

1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17 -

Page 1 of

Report To	Contact and company
Company:	Triton Environmental
Contact:	
Phone:	
Street:	
City/Province:	
Postal Code:	

Report Format / Distribution

Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Control (QC) Report with Report ☑ ☐ NO
pare Results to Criteria on Report - provide details below if box checked
Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
or Fax

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

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

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐
EMERGENCY: 1 Business day [E1 - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: 28-Aug-24

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

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

Select Invoice D
Email 1 or Fax
Email 2

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

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): 1037

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					P	P			F/P						
	SQU US 1			Water	R	R	R	R	R	R	R	R	R	R	R					N	9
	pH: 6.9 cond: 49 µS/cm temp: 22.5°C	19-Aug-24	09:10																		
	SQU DS 1			Water	R	R	R	R	R	R	R	R	R	R	R					N	9
	pH: 7.0 cond: 31 µS/cm temp: 12.8°C	19-Aug-24	10:52																		
	~~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)

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

Are samples for human consumption/ use? ☐ ☑ NO

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

- dissolved samples at both SQU US & SQU DS were not field filtered
- preservatives need to be added to the dissolved samples

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			
				19.2			

RELEASE (client use)

Released by: | Date: Aug 19, 2024 | Time: 13:16

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: | Date: | Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: RK | Date: 8/19/24 | Time: 1315

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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

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

BCR Site Receiving Environment Field Notes and Logs

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-8-19-Renkers-FCDEC

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	08/19/2024	**Location:**	BC Rail Site
Triton QP:	Stephanie Renkers	**Latitude/Longitude:**	
Temperature(c):	Low 12 High 22	**Permit:**	AE 111824
Weather Conditions:	Clear	**Ground Conditions:**	Damp

Observations

Time: 10:52:00 **Flow Volume (visual):** high

Notes: Conductivity: 31 uS/cm

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

Samples Collected - Parameters

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

Logger Maintenance

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

Describe Logger Maintenance

Photos

Photo: 1

Location: SQU DS1

Description: Up view

Photo: 2

Location: SQU DS1

Description: Across view

Photos

Photo: 3

Location: SQU DS1

Description: Down view

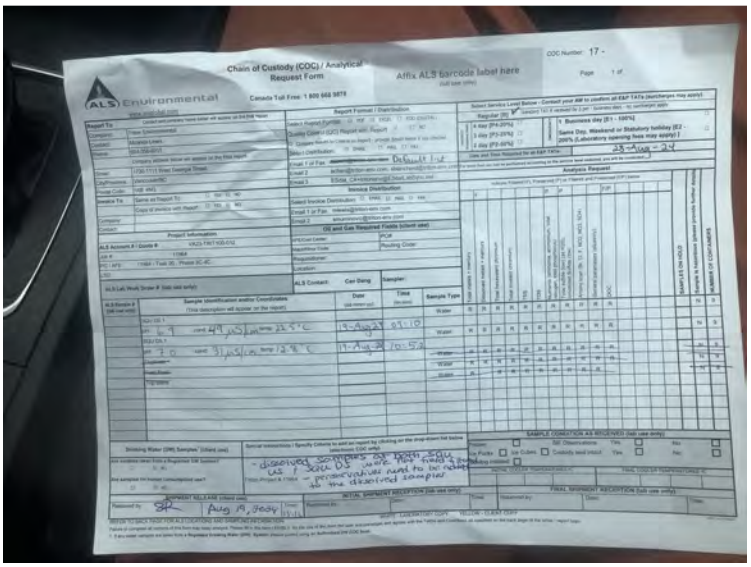

Photo: 4

Location: SQU DS1

Description: Signed lab COC

Sign Off

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

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-8-19-Renkers-83C38

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	08/19/2024	**Location:**	BC Rail Site
Triton QP:	Stephanie Renkers	**Latitude/Longitude:**	49.726866 -123.163912
Temperature(c):	Low 12 High 22	**Permit:**	AE 111824
Weather Conditions:	Clear	**Ground Conditions:**	Damp

Observations

Time: 09:10:00 **Flow Volume (visual):** high

Notes: Conductivity: 49 uS/cm
Troubleshooting sonde (i.e., battery and telemetry communication problem); see logger maintenance notes for details.

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

Samples Collected - Parameters

Total Metals + Mercury	Yes	**General Parameters (Alkalinity)**	Yes	**Other Sample:** Total hexavalent chromium and total trivalent chromium
Dissolved Metals + Mercury	Yes	**Total Sulfide, Unionized Sulfide**	Yes	
TSS	Yes	**Anions**	Yes	
TDS	Yes	**Total Trivalent Chromium**	Yes	**QA Samples:** No Total hexavalent chromium and total trivalent chromium
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

Fortis BC crew was able to retrieve sonde from the Squamish River. Reinstalled weight and swapped sensors in sonde. Began calibration, however, battery was not showing a charge. Tried troubleshooting, and even installed new batteries, but sonde is not currently sending readings to website.

Photos

Photo: 1

Location: SQU US1

Description: Up view

Photo: 2

Location: SQU US1

Description: Across view

Photos

Photo: 3

Location: SQU US1

Description: Down view

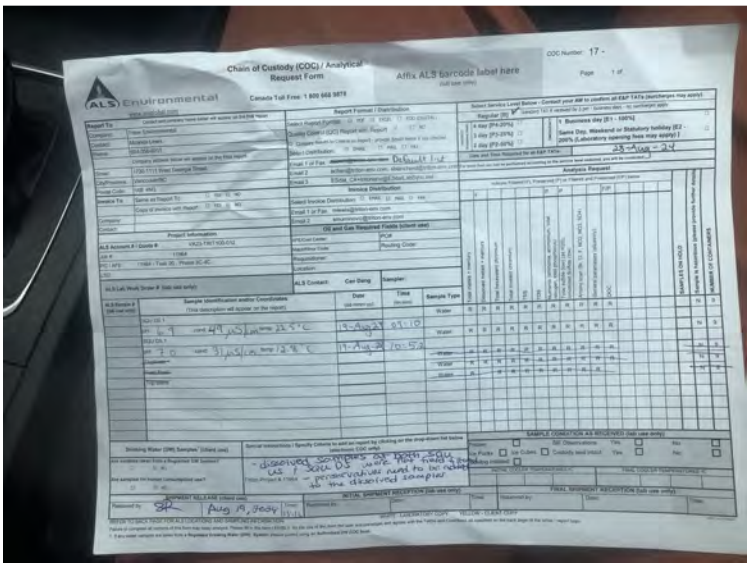

Photo: 4

Location: SQU US1

Description: Signed lab COC

2024-8-19-Renkers-83C38

Sign Off

Report Prepared By:	Stephanie Renkers	**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					VA24C1103-001					
	Date Sampled					20-Aug-2024					
	Time Sampled					11:16					
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	7.23		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	-	**16.9 (5 weeks average 18.8)**		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 guidline 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	-	-	-	-	192					
Turbidity (field)	NTU	Varies with background, see note US1 (background) guideline = 9.5	Varies with background, see note US1 (background) guideline = 3.88 5-week discrete sampling average = 10.0 (EOP)	Varies with background, see note US1 (background) guideline = 9.5	Varies with background, see note US1 (background) guideline = 3.88 5-week discrete sampling average = 10.0 (EOP)	4.8	**Turbidity exceeds the long term BC WQG for FAL and MAL;** however, this is only based on a discrete weekly sampling and does not confirm whether it remained above the guideline for more than 24 h continousaly .	Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.	Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.
General Parameters											
Hardness (as $CaCO_3$) (total)	mg/L	-	-	-	-	58					
Total Dissolved Solids	mg/L	-	-	-	-	97					
Total Suspended Solids	mg/L	Varies with background, see note US1 (background) guideline = 28	Varies with background, see note US1 (background) guideline = 8.34 5-week discrete sampling average = 7.44 (EOP)	Varies with background, see note US1 (background) guideline = 28	Varies with background, see note US1 (background) guideline = 8.34 5-week discrete sampling average = 7.44 (EOP)	9.2		Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 25 = DS guideline Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters. Calculation: US value + 10 = DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 5 mg/L @ one time for a druation of 30 days in clear flow. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.	Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 25 = DS guideline Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters. Calculation: US value + 10 = DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 5 mg/L @ one time for a druation of 30 days in clear flow. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.
Dissolved Organic Carbon (DOC)	mg/L	-	-	-	-	8.88			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	-	-	68.1	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 = 9.26	Varies with pH and temperature. See note. US1 (background) guideline = 1.66	Varies with pH and temperature. See note. US1 (background) guideline = 15	Varies with pH, temperature and salinity. See note. US1 (background) guideline = 2.2	< 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					
Chloride	mg/L	600	150	> 110% of background	< 90% of background	5.02				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 US1 (background) guideline = 0.370	-	1.5	-	0.295		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	< 0.0050					
Nitrite (as N)	mg/L	Varies with chloride. Table 27B, see note. US1 (background) guideline = 0.06	Varies with chloride. Table 27B, see note. US1 (background) guideline = 0.02	-	-	< 0.0010		Varies with chloride. Refer to Table 27B in BC WQG for guideline values.	Varies with chloride. Refer to Table 27B in BC WQG for guideline values.		
Total Nitrogen	mg/L	-	-	-	-	0.119					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.0052			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. US1 (background) guideline = 128	-	-	7.21			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 = 0.125 5-week discrete sampling averages = EOP (0.096), US (0.096), DS (0.075)	-	-	0.198			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	-	-	0.00154					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.0013					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.00773			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	0.023					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	< 0.0000050					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	21.8					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.000048					
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	-	-	< 0.00010					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002	< 0.00050					
Iron (Fe)-Total	mg/L	1	-	-	-	0.876					
Lead (Pb)-Total	mg/L	Varies with hardness. See Note. US1 (background) guideline = 0.00385	Varies with hardness. See Note. US1 (background) guideline = 0.00346	0.14	0.002	0.000105		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	-	-	-	-	0.0187					
Magnesium (Mg)-Total	mg/L	-	-	-	-	0.876					
Manganese (Mn)-Total	mg/L	Varies with hardness US1 (background) guideline = 0.816	Varies with hardness US1 (background) guideline = 0.768	-	-	0.0341		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	-	-	0.0187					
Nickel (Ni)-Total	mg/L	-	Varies with hardness US1 (background) guideline = 0.025	-	0.0083	< 0.00050			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	-	-	-	-	5.36					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00966					
Selenium (Se)-Total	mg/L	-	0.002	-	0.002	0.000104			Guideline for freshwater aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidelines for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guidelines and sampling guidance.		Guideline for marine aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidelines for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guidelines and sampling guidance.
Silicon (Si)-Total	mg/L	-	-	-	-	5.14					
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	-	-	-	-	8.67					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0602					
Sulfur (S)-Total	mg/L	-	-	-	-	1.97					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.0008	-	-	0.00003			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	-	-	-	-	0.00387					
Tungsten (W)-Total	mg/L	-	-	-	-	0.00051					
Uranium (U)-Total	mg/L	-	0.0085	-	-	0.00203			Working guideline status		
Vanadium (V)-Total	mg/L	-	-	-	0.050	< 0.00050					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	0.010	< 0.0030					
Zirconium (Zr)-Total	mg/L	-	-	-	-	< 0.00020					
Dissolved Metals											
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0158					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	0.0009					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00163					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.00449					
Beryllium (Be)-Dissolved	mg/L	-	-	-	-	< 0.000100					
Bismuth (Bi)-Dissolved	mg/L	-	-	-	-	< 0.000050					
Boron (B)-Dissolved	mg/L	-	-	-	-	0.021					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note US1 (background) guideline = 0.00005	Varies with hardness, see note US1 (background) guideline = 0.000036	-	-	< 0.0000100		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 gieedeline 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	-	-	22.9	The WLNG EOP 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	-	-	-	-	0.000029					
Chromium (Cr)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Cobalt (Co)-Dissolved	mg/L	-	-	-	-	< 0.00010					
Copper (Cu)-Dissolved	mg/L	Guideline varies with other parameters, see note US1 (background) guideline = 0.0045	Guideline varies with other parameters, see note US1 (background) guideline = 0.0006 5-week discrete sampling averages = EOP (0.0006), US1 (0.0006), DS1 (0.0005)	-	-	0.0004		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	-	-	-	0.024					
Lead (Pb)-Dissolved	mg/L	-	-	-	-	< 0.000050					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	0.0202					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.818					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00534					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.0224					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	4.6					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00809					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	0.000094					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	4.79					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	0.000013					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	7.34					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0643					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	2.16					
Tellurium (Te)-Dissolved	mg/L	-	-	-	-	< 0.00020					
Thallium (Tl)-Dissolved	mg/L	-	-	-	-	0.000028					
Thorium (Th)-Dissolved	mg/L	-	-	-	-	< 0.00010					
Tin (Sn)-Dissolved	mg/L	-	-	-	-	< 0.00010					
Titanium (Ti)-Dissolved	mg/L	-	-	-	-	< 0.00030					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	0.00055					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.00305					
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 = 0.0032 5-week discrete sampling average = **EOP (0.0048)**, US1 (0.0019), DS1 (0.0012)	-	-	***0.0049***	**Dissolved Zn (5 weeks average) exceeds the long-term BWQG for FAL, thus there is a potential risk for adverse effects to FAL.**	Guideline varies with DOC and hardness. Guideline is calculated using the following formula: Guideline = (EXP((0.833 * (LN(hardness))) + (0.24 * (LN(DOC))) + 0.526)/2/1000) If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.	Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated using the following formula: Guideline = (EXP((0.974 * (LN(hardness))) - (0.815 * pH) + (0.398 * (LN(DOC))) + 4.625)/2/1000) Guideline only applies to water with pH between 6.5 and 8.13, DOC between 0.3 and 22.9 mg/L, anmd hardness between 23.4 and 399 mg/L. If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.		
Zirconium (Zr)-Dissolved	mg/L	-	-	-	-	< 0.00020					
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	-	-	< 0.50			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	-	-	< 0.50			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	0.044					Guideline is for total methylated napthalene and is presented here for reference.
Methylnaphthalene, 2-	µg/L	-	-	-	1	0.053					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	FAL-ST [1,2]	FAL-LT [1,2]	MAL-ST [1]	MAL-LT [1,2]	Values: WLNG EOP	Values: WLNG US 20-Aug-2024
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations				7.23	7.73
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations				16.9 (5 weeks average 18.8)	16
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations				4.80	1.49
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				58	9.08
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations				8.88	2.36
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations				68.1	10.5
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations				5.02	0.74
Total Suspended Solids	mg/L	Laboratory tested total suspended solids tested at the lab used in guideline calculations				9.2	< 3.0

Woodfibre Site Sample Lab Documentation

ALS Canada Ltd.

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CERTIFICATE OF ANALYSIS

Work Order	: **VA24C1103**	Page	: 1 of 11
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 20-Aug-2024 17:10
PO	: 11964-Task30-Phase 3C-4C	Date Analysis Commenced	: 20-Aug-2024
C-O-C number	: ----	Issue Date	: 28-Aug-2024 15:58
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*
	Lab Assistant	Metals, Burnaby, British Columbia
	Laboratory Analyst	Inorganics, Edmonton, Alberta
	Analyst	Metals, Burnaby, British Columbia
	Supervisor - Metals Prep & Mercury	Metals, Burnaby, British Columbia
	Production Manager, Environmental	Inorganics, Waterloo, Ontario
	Production Manager, Environmental	Metals, Waterloo, Ontario
	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
	Department Manager - Metals	Organics, Burnaby, British Columbia
	Analyst- General	Inorganics, Burnaby, British Columbia
	Lab Analyst	Metals, Burnaby, British Columbia
	Account Manager Assistant	Administration, Burnaby, British Columbia
	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia
	Analyst- General	Organics, Burnaby, British Columbia

General Comments

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

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

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

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

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

LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	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.

Qualifiers

Qualifier	*Description*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*
DTC	*Dissolved concentration exceeds total. Results were confirmed by re-analysis.*

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	WLNG EOP	----	----	----	----
				Client sampling date / time	20-Aug-2024 11:16	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24C1103-001	--------	--------	--------	--------
					Result	----	----	----	----
Field Tests									
Conductivity, field	----	EF001/VA	0.10	µS/cm	192.00	----	----	----	----
pH, field	----	EF001/VA	0.10	pH units	7.23	----	----	----	----
Temperature, field	----	EF001/VA	0.10	°C	16.9	----	----	----	----
Physical Tests									
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	60.5	----	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	58.0	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	97	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	9.2	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	68.1	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	<0.0050	----	----	----	----
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	5.02	----	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.295	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	<0.0050	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	<0.0010	----	----	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.119	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0052	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	7.21	----	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	8.88	----	----	----	----
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	0.198	----	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	0.00154	----	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	20-Aug-2024 11:16	----	----	----	----
					VA24C1103-001	--------	--------	--------	--------	--------
					Result	----	----	----	----	----
Total Metals										
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00130	----	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.00773	----	----	----	----
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		0.023	----	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		<0.0000100 DLM	----	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		21.8	----	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000048	----	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		<0.00050	----	----	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		<0.00010	----	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		<0.00050	----	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.876	----	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000105	----	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0187	----	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		0.876	----	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.0341	----	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L		<0.0000050	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.0187	----	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		<0.00050	----	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.050	----	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		5.36	----	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00966	----	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		0.000104	----	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		5.14	----	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	----	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		8.67	----	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0602	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		1.97	----	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00020	----	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		0.000030	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	20-Aug-2024 11:16	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C1103-001	--------	--------	--------	--------
						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		0.00387	----	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		0.00051	----	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.00203	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		<0.00050	----	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		<0.0030	----	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	----	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0158	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		0.00090	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00163	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00449	----	----	----	----
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		0.021	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		<0.0000100 DLM	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		22.9	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.000029	----	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		<0.00050	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		<0.00010	----	----	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		0.00040	----	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.024	----	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		0.0202	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		0.818	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00534	----	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.0224	----	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		<0.00050	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	20-Aug-2024 11:16	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C1103-001	--------	--------	--------	--------
						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		4.60	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00809	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		0.000094	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		4.79	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		0.000013	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		7.34	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0643	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		2.16	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		0.000028	----	----	----	----
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		<0.00030	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		0.00055	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.00305 DTC	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		<0.00050	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0049 DTC	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00020	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-		Field	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Field	----	----	----	----
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	20-Aug-2024 11:16	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C1103-001	--------	--------	--------	--------
						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		<0.50	----	----	----	----
Trichloroethane, 1,1,1-	71-55-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Trichloroethylene	79-01-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Vinyl chloride	75-01-4	E611C/VA	0.40	µg/L		<0.40	----	----	----	----
Volatile Organic Compounds [Fuels]										
Benzene	71-43-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Ethylbenzene	100-41-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Styrene	100-42-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Toluene	108-88-3	E611C/VA	0.40	µg/L		<0.40	----	----	----	----
Xylene, m+p-	179601-23-1	E611C/VA	0.40	µg/L		<0.40	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	20-Aug-2024 11:16	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C1103-001	--------	--------	--------	--------
						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	%		82.4	----	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%		108	----	----	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%		81.4	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611C/VA	1.0	%		99.0	----	----	----	----
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	20-Aug-2024 11:16	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C1103-001	--------	--------	--------	--------
						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		0.044	----	----	----	----
Methylnaphthalene, 2-	91-57-6	E641A/VA	0.010	µg/L		0.053	----	----	----	----
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	%		110	----	----	----	----
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%		95.6	----	----	----	----
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%		110	----	----	----	----
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	%		107	----	----	----	----

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	: **VA24C1103**	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	: 20-Aug-2024 17:10
PO	: 11964-Task30-Phase 3C-4C	Issue Date	: 28-Aug-2024 15:58
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

- 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
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) WLNG EOP	E562	20-Aug-2024	23-Aug-2024	28 days	3 days	✓	23-Aug-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG EOP	E298	20-Aug-2024	20-Aug-2024	28 days	0 days	✓	21-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG EOP	E235.Br-L	20-Aug-2024	21-Aug-2024	28 days	1 days	✓	21-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG EOP	E235.Cl	20-Aug-2024	21-Aug-2024	28 days	1 days	✓	21-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG EOP	E235.F	20-Aug-2024	21-Aug-2024	28 days	1 days	✓	21-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG EOP	E235.NO3-L	20-Aug-2024	21-Aug-2024	3 days	1 days	✓	21-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG EOP	E235.NO2-L	20-Aug-2024	21-Aug-2024	3 days	1 days	✓	21-Aug-2024	3 days	1 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG EOP	E235.SO4	20-Aug-2024	21-Aug-2024	28 days	1 days	✓	21-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WLNG EOP	E366	20-Aug-2024	20-Aug-2024	28 days	0 days	✓	21-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) WLNG EOP	E372-U	20-Aug-2024	20-Aug-2024	28 days	0 days	✓	22-Aug-2024	28 days	2 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved) WLNG EOP	E509	20-Aug-2024	22-Aug-2024	28 days	2 days	✓	22-Aug-2024	28 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) WLNG EOP	E421	20-Aug-2024	21-Aug-2024	180 days	1 days	✓	23-Aug-2024	180 days	3 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Amber glass dissolved (lab preserved) WLNG EOP	EF001	20-Aug-2024	----	----	----		21-Aug-2024	----	1 days	
Glycols : Glycols (4 analytes) by GC-FID										
Glass vial WLNG EOP	E680E	20-Aug-2024	22-Aug-2024	7 days	2 days	✓	22-Aug-2024	40 days	0 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) WLNG EOP	E601A	20-Aug-2024	27-Aug-2024	14 days	7 days	✓	28-Aug-2024	40 days	1 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate) WLNG EOP	E581.VH+F1	20-Aug-2024	27-Aug-2024	14 days	7 days	✓	27-Aug-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 (lab preserved) WLNG EOP	E358-L	20-Aug-2024	20-Aug-2024	3 days	0 days	✓	21-Aug-2024	28 days	0 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WLNG EOP	E290	20-Aug-2024	21-Aug-2024	14 days	1 days	✓	21-Aug-2024	14 days	1 days	✓
Physical Tests : TDS by Gravimetry										
HDPE WLNG EOP	E162	20-Aug-2024	----	----	----		26-Aug-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WLNG EOP	E160	20-Aug-2024	----	----	----		26-Aug-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	20-Aug-2024	27-Aug-2024	14 days	7 days	✓	27-Aug-2024	40 days	0 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide) WLNG EOP	E532	20-Aug-2024	----	----	----		23-Aug-2024	28 days	3 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved) WLNG EOP	E508	20-Aug-2024	22-Aug-2024	28 days	2 days	✓	22-Aug-2024	28 days	2 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) WLNG EOP	E420	20-Aug-2024	21-Aug-2024	180 days	1 days	✓	22-Aug-2024	180 days	2 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) WLNG EOP	E395	20-Aug-2024	----	----	----		24-Aug-2024	7 days	4 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
WLNG EOP	E611C	20-Aug-2024	27-Aug-2024	14 days	7 days	✓	27-Aug-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	1607345	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1607078	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1607350	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1607349	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1610589	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1607992	1	12	8.3	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1607079	1	8	12.5	5.0	✓
Fluoride in Water by IC	E235.F	1607348	1	15	6.6	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1610325	1	3	33.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1607351	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1607352	1	15	6.6	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1613081	1	16	6.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1607353	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1617393	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1612282	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1610399	1	15	6.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1607119	1	18	5.5	5.0	✓
Total Nitrogen by Colourimetry	E366	1607076	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1607077	1	13	7.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1614424	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	1617384	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1617789	1	12	8.3	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1617788	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1607345	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1607078	1	13	7.6	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1618885	1	10	10.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1607350	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1607349	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1610589	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1607992	1	12	8.3	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1607079	1	8	12.5	5.0	✓
Fluoride in Water by IC	E235.F	1607348	1	15	6.6	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1610325	1	3	33.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1607351	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1607352	1	15	6.6	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	1618884	1	9	11.1	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1613081	1	16	6.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1607353	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1617393	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1612282	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1610399	1	15	6.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1607119	1	18	5.5	5.0	✓
Total Nitrogen by Colourimetry	E366	1607076	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1607077	1	13	7.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1614424	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	1617384	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1617789	1	12	8.3	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1617788	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1607345	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1607078	1	13	7.6	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1618885	1	10	10.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1607350	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1607349	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1610589	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1607992	1	12	8.3	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1607079	1	8	12.5	5.0	✓
Fluoride in Water by IC	E235.F	1607348	1	15	6.6	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1610325	1	3	33.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1607351	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1607352	1	15	6.6	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1618884	1	9	11.1	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1613081	1	16	6.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1607353	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1617393	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1612282	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1610399	1	15	6.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1607119	1	18	5.5	5.0	✓
Total Nitrogen by Colourimetry	E366	1607076	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1607077	1	13	7.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1614424	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	1617384	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1617789	1	12	8.3	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1617788	1	20	5.0	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1607078	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1607350	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1607349	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1610589	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1607992	1	12	8.3	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1607079	1	8	12.5	5.0	✓
Fluoride in Water by IC	E235.F	1607348	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1607351	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1607352	1	15	6.6	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1613081	1	16	6.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1607353	1	15	6.6	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1612282	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1610399	1	15	6.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1607119	1	18	5.5	5.0	✓
Total Nitrogen by Colourimetry	E366	1607076	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1607077	1	13	7.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1614424	1	17	5.8	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1617789	1	12	8.3	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1617788	1	20	5.0	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 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 the GC/MS-FID system.
PHCs and PAHs Hexane Extraction	EP601 ALS Environmental - Vancouver	Water	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.
Glycols Extraction and Derivatization (BC Only)	EP680E ALS Environmental - Vancouver	Water	EPA 8015D (mod)	Aqueous sample is derivatized and extracted with orgaic solvent.

QUALITY CONTROL REPORT

Work Order	: **VA24C1103**	Page	: 1 of 23
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project	: 11964	Date Samples Received	: 20-Aug-2024 17:10
PO	: 11964-Task30-Phase 3C-4C	Date Analysis Commenced	: 20-Aug-2024
C-O-C number	: ----	Issue Date	: 28-Aug-2024 15:59
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*
	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
	Analyst	Vancouver Metals, Burnaby, British Columbia
	Supervisor - Metals Prep & Mercury	Vancouver Metals, Burnaby, British Columbia
	Production Manager, Environmental	Waterloo Inorganics, Waterloo, Ontario
	Production Manager, Environmental	Waterloo Metals, Waterloo, Ontario
	Supervisor - Inorganic	Vancouver Inorganics, Burnaby, British Columbia
	Department Manager - Metals	Vancouver Organics, Burnaby, British Columbia
	Analyst- General	Vancouver Inorganics, Burnaby, British Columbia
	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia
	Analyst- General	Vancouver Organics, Burnaby, British Columbia

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1607345)											
VA24C1109-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	15.0	14.9	0.673%	20%	----
Physical Tests (QC Lot: 1617384)											
KS2403379-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1617393)											
KS2403379-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	2420	2290	5.69%	20%	----
Anions and Nutrients (QC Lot: 1607076)											
VA24C0742-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.119	0.119	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607077)											
VA24C0742-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0049	0.0049	0.00002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607078)											
VA24C0742-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607348)											
VA24C1097-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.055	0.056	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607349)											
VA24C1097-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	0.88	0.89	0.01	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607350)											
VA24C1097-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607351)											
VA24C1097-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.442	0.452	2.07%	20%	----
Anions and Nutrients (QC Lot: 1607352)											
VA24C1097-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0015	0.0014	0.00006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607353)											
VA24C1097-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	18.5	19.1	3.26%	20%	----
Organic / Inorganic Carbon (QC Lot: 1607079)											
VA24C0742-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.01	2.15	0.15	Diff <2x LOR	----
Total Sulfides (QC Lot: 1614424)											
EO2407181-001	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: 1607119)											
FJ2402452-017	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 1607119) - continued											
FJ2402452-017	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	<0.10	<0.10	0	Diff <2x LOR	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----

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: 1607119) - continued											
FJ2402452-017	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: 1610399)											
VA24C0638-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0000050	0.0000056	0.0000006	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1607992)											
VA24C0970-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0050	mg/L	0.0177	0.0162	0.0015	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00050	mg/L	0.00512	0.00511	0.215%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00050	mg/L	0.160	0.159	0.414%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.050	mg/L	1.34	1.37	2.46%	20%	----
		Cadmium, dissolved	7440-43-9	E421	0.0000250	mg/L	<0.0000250	<0.0000250	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.250	mg/L	32.0	33.3	3.98%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00250	mg/L	0.00397	0.00423	0.00026	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00050	mg/L	0.00534	0.00533	0.176%	20%	----
		Copper, dissolved	7440-50-8	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.050	mg/L	17.5	17.8	1.60%	20%	----
		Lead, dissolved	7439-92-1	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0050	mg/L	0.0168	0.0173	0.0005	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0250	mg/L	83.7	84.6	1.08%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00050	mg/L	0.586	0.598	2.14%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000250	mg/L	0.00155	0.00162	0.000069	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00250	mg/L	0.00448	0.00443	0.00005	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.250	mg/L	4.11	3.96	3.75%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.250	mg/L	41.1	41.1	0.0756%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00100	mg/L	0.00741	0.00737	0.00004	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.250	mg/L	27.6	27.2	1.27%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.250	mg/L	789	784	0.705%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00100	mg/L	0.423	0.450	6.15%	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: 1607992) - continued											
VA24C0970-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	2.50	mg/L	<2.50	<2.50	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00150	mg/L	0.0132	0.0138	0.00058	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000050	mg/L	0.000114	0.000126	0.000012	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E421	0.00250	mg/L	0.0106	0.0108	0.00021	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00100	mg/L	0.00522	0.00563	0.00041	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1610589)											
VA24C0781-003	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0050 µg/L	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1612282)											
VA24C0997-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	<0.50 µg/L	<0.00050	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 1613081)											
CG2411751-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1617788)											
KS2403291-001	Anonymous	Benzene	71-43-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Carbon tetrachloride	56-23-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloromethane	74-87-3	E611C	5.0	µg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----

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: 1617788) - continued											
KS2403291-001	Anonymous	Dichloroethylene, trans-1,2-	156-60-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E611C	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Styrene	100-42-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Tetrachloroethylene	127-18-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Toluene	108-88-3	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethylene	79-01-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichlorofluoromethane	75-69-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Vinyl chloride	75-01-4	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611C	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1617789)											
VA24C1101-001	Anonymous	VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----
Glycols (QC Lot: 1610325)											
KS2403316-003	Anonymous	Diethylene glycol	111-46-6	E680E	5.0	mg/L	<5000 µg/L	<5.0	0	Diff <2x LOR	----
		Ethylene glycol	107-21-1	E680E	5.0	mg/L	<5000 µg/L	<5.0	0	Diff <2x LOR	----
		Propylene glycol, 1,2-	57-55-6	E680E	5.0	mg/L	<5000 µg/L	<5.0	0	Diff <2x LOR	----
		Triethylene glycol	112-27-6	E680E	5.0	mg/L	<5000 µg/L	<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: 1607345)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1617384)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1617393)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1607076)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1607077)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1607078)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1607348)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1607349)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1607350)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1607351)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1607352)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1607353)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Organic / Inorganic Carbon (QCLot: 1607079)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1614424)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1607119)						
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: 1607119) - 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: 1610399)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1607992)						
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: 1607992) - 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: 1610589)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1612282)						
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	<0.00050	----
Aggregate Organics (QCLot: 1613081)						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
Volatile Organic Compounds (QCLot: 1617788)						
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: 1617788) - 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: 1617789)						
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----
Hydrocarbons (QCLot: 1618885)						
EPH (C10-C19)	----	E601A	250	µg/L	<250	----
EPH (C19-C32)	----	E601A	250	µg/L	<250	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1618884)						
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: 1618884) - 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: 1610325)						
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: 1607345)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1617384)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	96.7	85.0	115	----
Physical Tests (QCLot: 1617393)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	95.6	85.0	115	----
Anions and Nutrients (QCLot: 1607076)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	98.2	75.0	125	----
Anions and Nutrients (QCLot: 1607077)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	93.5	80.0	120	----
Anions and Nutrients (QCLot: 1607078)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.2	85.0	115	----
Anions and Nutrients (QCLot: 1607348)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1607349)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1607350)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	99.4	85.0	115	----
Anions and Nutrients (QCLot: 1607351)									
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: 1607352)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.6	90.0	110	----
Anions and Nutrients (QCLot: 1607353)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Organic / Inorganic Carbon (QCLot: 1607079)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	99.3	80.0	120	----
Total Sulfides (QCLot: 1614424)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	108	80.0	120	----
Total Metals (QCLot: 1607119)									

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: 1607119) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	95.9	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	95.1	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	103	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	95.9	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	91.9	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	99.8	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	99.5	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	104	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	101	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	99.5	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	97.8	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	101	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	107	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	99.8	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	101	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	99.3	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	96.6	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	103	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	92.1	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	108	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	92.8	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	96.7	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	99.9	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	98.1	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	98.3	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	97.8	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	99.1	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	104	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1607119) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	101	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	98.2	80.0	120	----
Total Metals (QCLot: 1610399)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	96.2	80.0	120	----
Dissolved Metals (QCLot: 1607992)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	96.2	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	98.6	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	101	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	98.8	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	96.7	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	93.2	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	98.9	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	100	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	97.7	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	99.0	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	96.5	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	97.2	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	89.7	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	97.6	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	96.2	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	93.3	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	99.4	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	98.2	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	100	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	96.8	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	99.0	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	98.2	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	104	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	94.1	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	101	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	107	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	83.0	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1607992) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	99.7	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	93.3	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	99.8	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	89.6	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	98.0	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	96.8	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	98.0	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	95.2	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	99.2	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	97.0	80.0	120	----
Speciated Metals (QCLot: 1612282)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.025 mg/L	97.5	80.0	120	----
Aggregate Organics (QCLot: 1613081)									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	99.0	85.0	115	----
Volatile Organic Compounds (QCLot: 1617788)									
Benzene	71-43-2	E611C	0.5	µg/L	100 µg/L	96.8	70.0	130	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	100 µg/L	90.5	70.0	130	----
Bromoform	75-25-2	E611C	0.5	µg/L	100 µg/L	90.1	70.0	130	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	100 µg/L	91.1	70.0	130	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	100 µg/L	105	70.0	130	----
Chloroethane	75-00-3	E611C	0.5	µg/L	100 µg/L	93.6	60.0	140	----
Chloroform	67-66-3	E611C	0.5	µg/L	100 µg/L	93.6	70.0	130	----
Chloromethane	74-87-3	E611C	5	µg/L	100 µg/L	95.5	60.0	140	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	100 µg/L	89.4	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	100 µg/L	106	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	100 µg/L	114	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	100 µg/L	114	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	100 µg/L	98.0	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	100 µg/L	84.9	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	100 µg/L	95.0	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	100 µg/L	89.8	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	100 µg/L	94.2	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: 1617788) - continued									
Dichloromethane	75-09-2	E611C	1	µg/L	100 µg/L	98.3	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	100 µg/L	99.0	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	100 µg/L	73.6	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	100 µg/L	81.0	70.0	130	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	100 µg/L	93.2	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Styrene	100-42-5	E611C	0.5	µg/L	100 µg/L	94.0	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	100 µg/L	94.8	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	100 µg/L	104	70.0	130	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	100 µg/L	106	70.0	130	----
Toluene	108-88-3	E611C	0.4	µg/L	100 µg/L	100	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	100 µg/L	94.1	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	100 µg/L	94.9	70.0	130	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	100 µg/L	92.8	70.0	130	----
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	100 µg/L	106	60.0	140	----
Vinyl chloride	75-01-4	E611C	0.4	µg/L	100 µg/L	97.9	60.0	140	----
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	200 µg/L	109	70.0	130	----
Xylene, o-	95-47-6	E611C	0.3	µg/L	100 µg/L	94.6	70.0	130	----
Hydrocarbons (QCLot: 1617789)									
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	104	70.0	130	----
Hydrocarbons (QCLot: 1618885)									
EPH (C10-C19)	----	E601A	250	µg/L	6490 µg/L	99.9	70.0	130	----
EPH (C19-C32)	----	E601A	250	µg/L	3360 µg/L	106	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1618884)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.5 µg/L	105	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.5 µg/L	114	60.0	130	----
Acridine	260-94-6	E641A	0.01	µg/L	0.5 µg/L	105	60.0	130	----
Anthracene	120-12-7	E641A	0.01	µg/L	0.5 µg/L	115	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.5 µg/L	107	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	0.5 µg/L	104	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	0.5 µg/L	109	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.5 µg/L	114	60.0	130	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	0.5 µg/L	105	60.0	130	----
Chrysene	218-01-9	E641A	0.01	µg/L	0.5 µg/L	108	60.0	130	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike: Target Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1618884) - continued									
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	0.5 µg/L	115	60.0	130	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	0.5 µg/L	106	60.0	130	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.5 µg/L	104	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.5 µg/L	109	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.5 µg/L	101	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.5 µg/L	109	60.0	130	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.5 µg/L	104	50.0	130	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	0.5 µg/L	106	60.0	130	----
Pyrene	129-00-0	E641A	0.01	µg/L	0.5 µg/L	106	60.0	130	----
Quinoline	91-22-5	E641A	0.05	µg/L	0.5 µg/L	120	60.0	130	----
Glycols (QCLot: 1610325)									
Diethylene glycol	111-46-6	E680E	5	mg/L	25 mg/L	101	70.0	130	----
Ethylene glycol	107-21-1	E680E	5	mg/L	25 mg/L	100	70.0	130	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	25 mg/L	98.2	70.0	130	----
Triethylene glycol	112-27-6	E680E	5	mg/L	25 mg/L	101	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: 1607076)										
VA24C0742-002	Anonymous	Nitrogen, total	7727-37-9	E366	0.445 mg/L	0.4 mg/L	111	70.0	130	----
Anions and Nutrients (QCLot: 1607077)										
VA24C0742-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0481 mg/L	0.05 mg/L	96.1	70.0	130	----
Anions and Nutrients (QCLot: 1607078)										
VA24C0742-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.102 mg/L	0.1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1607348)										
VA24C1097-002	Anonymous	Fluoride	16984-48-8	E235.F	0.992 mg/L	1 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 1607349)										
VA24C1097-002	Anonymous	Chloride	16887-00-6	E235.Cl	99.0 mg/L	100 mg/L	99.0	75.0	125	----
Anions and Nutrients (QCLot: 1607350)										
VA24C1097-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.481 mg/L	0.5 mg/L	96.1	75.0	125	----
Anions and Nutrients (QCLot: 1607351)										
VA24C1097-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.46 mg/L	2.5 mg/L	98.4	75.0	125	----
Anions and Nutrients (QCLot: 1607352)										
VA24C1097-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.475 mg/L	0.5 mg/L	95.1	75.0	125	----
Anions and Nutrients (QCLot: 1607353)										
VA24C1097-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	98.2 mg/L	100 mg/L	98.2	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1607079)										
VA24C0742-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	4.85 mg/L	5 mg/L	97.0	70.0	130	----
Total Sulfides (QCLot: 1614424)										
FC2402241-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.244 mg/L	0.2 mg/L	122	75.0	125	----
Total Metals (QCLot: 1607119)										
VA24C1010-001	Anonymous	Aluminum, total	7429-90-5	E420	1.02 mg/L	1 mg/L	102	70.0	130	----
		Antimony, total	7440-36-0	E420	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.104 mg/L	0.1 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	0.201 mg/L	0.2 mg/L	101	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0459 mg/L	0.05 mg/L	91.8	70.0	130	----
		Boron, total	7440-42-8	E420	ND mg/L	----	ND	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0513 mg/L	0.05 mg/L	102	70.0	130	----
		Chromium, total	7440-47-3	E420	0.197 mg/L	0.2 mg/L	98.4	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
Total Metals (QCLot: 1607119) - continued										
VA24C1010-001	Anonymous	Cobalt, total	7440-48-4	E420	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		Copper, total	7440-50-8	E420	0.0959 mg/L	0.1 mg/L	95.9	70.0	130	----
		Iron, total	7439-89-6	E420	ND mg/L	----	ND	70.0	130	----
		Lead, total	7439-92-1	E420	0.0901 mg/L	0.1 mg/L	90.1	70.0	130	----
		Lithium, total	7439-93-2	E420	0.479 mg/L	0.5 mg/L	95.7	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	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Nickel, total	7440-02-0	E420	0.189 mg/L	0.2 mg/L	94.5	70.0	130	----
		Phosphorus, total	7723-14-0	E420	50.1 mg/L	50 mg/L	100	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	----	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0994 mg/L	0.1 mg/L	99.4	70.0	130	----
		Selenium, total	7782-49-2	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		Silicon, total	7440-21-3	E420	ND mg/L	----	ND	70.0	130	----
		Silver, total	7440-22-4	E420	0.0192 mg/L	0.02 mg/L	95.8	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	103 mg/L	100 mg/L	103	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		Thallium, total	7440-28-0	E420	0.0173 mg/L	0.02 mg/L	86.5	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0922 mg/L	0.1 mg/L	92.2	70.0	130	----
		Tin, total	7440-31-5	E420	0.0990 mg/L	0.1 mg/L	99.0	70.0	130	----
		Titanium, total	7440-32-6	E420	0.191 mg/L	0.2 mg/L	95.6	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0927 mg/L	0.1 mg/L	92.7	70.0	130	----
		Uranium, total	7440-61-1	E420	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.505 mg/L	0.5 mg/L	101	70.0	130	----
		Zinc, total	7440-66-6	E420	1.96 mg/L	2 mg/L	97.9	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.205 mg/L	0.2 mg/L	103	70.0	130	----
Total Metals (QCLot: 1610399)										
VA24C0638-002	Anonymous	Mercury, total	7439-97-6	E508	0.000103 mg/L	0 mg/L	103	70.0	130	----
Dissolved Metals (QCLot: 1607992)										
VA24C0970-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.376 mg/L	0.4 mg/L	94.1	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0362 mg/L	0.04 mg/L	90.4	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0744 mg/L	0.08 mg/L	93.0	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.0167 mg/L	0.02 mg/L	83.5	70.0	130	----
		Boron, dissolved	7440-42-8	E421	ND mg/L	----	ND	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00730 mg/L	0.008 mg/L	91.3	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.0183 mg/L	0.02 mg/L	91.5	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0729 mg/L	0.08 mg/L	91.1	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0352 mg/L	0.04 mg/L	87.9	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: 1607992) - continued										
VA24C0970-002	Anonymous	Copper, dissolved	7440-50-8	E421	0.0336 mg/L	0.04 mg/L	84.1	70.0	130	----
		Iron, dissolved	7439-89-6	E421	3.29 mg/L	4 mg/L	82.2	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0342 mg/L	0.04 mg/L	85.6	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.177 mg/L	0.2 mg/L	88.7	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	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0694 mg/L	0.08 mg/L	86.8	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	19.7 mg/L	20 mg/L	98.6	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0363 mg/L	0.04 mg/L	90.8	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0731 mg/L	0.08 mg/L	91.4	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	ND mg/L	----	ND	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00669 mg/L	0.008 mg/L	83.7	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	ND mg/L	----	ND	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0769 mg/L	0.08 mg/L	96.1	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00690 mg/L	0.008 mg/L	86.3	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0348 mg/L	0.04 mg/L	87.1	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0366 mg/L	0.04 mg/L	91.4	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0706 mg/L	0.08 mg/L	88.3	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0374 mg/L	0.04 mg/L	93.4	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00688 mg/L	0.008 mg/L	86.1	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.190 mg/L	0.2 mg/L	94.8	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.695 mg/L	0.8 mg/L	86.8	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0813 mg/L	0.08 mg/L	102	70.0	130	----
Dissolved Metals (QCLot: 1610589)										
VA24C0862-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000917 mg/L	0 mg/L	91.7	70.0	130	----
Speciated Metals (QCLot: 1612282)										
VA24C0997-001	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: 1613081)										
CG2411751-002	Anonymous	Phenols, total (4AAP)	----	E562	0.0195 mg/L	0.02 mg/L	97.7	75.0	125	----
Volatile Organic Compounds (QCLot: 1617788)										
KS2403291-002	Anonymous	Benzene	71-43-2	E611C	98.6 µg/L	100 µg/L	98.6	60.0	140	----
		Bromodichloromethane	75-27-4	E611C	94.9 µg/L	100 µg/L	94.9	60.0	140	----
		Bromoform	75-25-2	E611C	99.4 µg/L	100 µg/L	99.4	60.0	140	----
		Carbon tetrachloride	56-23-5	E611C	94.5 µg/L	100 µg/L	94.5	60.0	140	----
		Chlorobenzene	108-90-7	E611C	108 µg/L	100 µg/L	108	60.0	140	----
		Chloroethane	75-00-3	E611C	96.4 µg/L	100 µg/L	96.4	50.0	150	----
		Chloroform	67-66-3	E611C	97.8 µg/L	100 µg/L	97.8	60.0	140	----
		Chloromethane	74-87-3	E611C	97.3 µg/L	100 µg/L	97.3	50.0	150	----

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: 1617788) - continued										
KS2403291-002	Anonymous	Dibromochloromethane	124-48-1	E611C	94.0 µg/L	100 µg/L	94.0	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	109 µg/L	100 µg/L	109	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	120 µg/L	100 µg/L	120	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	120 µg/L	100 µg/L	120	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611C	88.9 µg/L	100 µg/L	88.9	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611C	97.1 µg/L	100 µg/L	97.1	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	91.0 µg/L	100 µg/L	91.0	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611C	97.9 µg/L	100 µg/L	97.9	60.0	140	----
		Dichloromethane	75-09-2	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611C	104 µg/L	100 µg/L	104	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	75.3 µg/L	100 µg/L	75.3	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	84.6 µg/L	100 µg/L	84.6	60.0	140	----
		Ethylbenzene	100-41-4	E611C	90.0 µg/L	100 µg/L	90.0	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	104 µg/L	100 µg/L	104	60.0	140	----
		Styrene	100-42-5	E611C	92.7 µg/L	100 µg/L	92.7	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	99.6 µg/L	100 µg/L	99.6	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	111 µg/L	100 µg/L	111	60.0	140	----
		Tetrachloroethylene	127-18-4	E611C	109 µg/L	100 µg/L	109	60.0	140	----
		Toluene	108-88-3	E611C	99.7 µg/L	100 µg/L	99.7	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	97.2 µg/L	100 µg/L	97.2	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	94.0 µg/L	100 µg/L	94.0	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611C	110 µg/L	100 µg/L	110	50.0	150	----
		Vinyl chloride	75-01-4	E611C	96.4 µg/L	100 µg/L	96.4	50.0	150	----
		Xylene, m+p-	179601-23-1	E611C	225 µg/L	200 µg/L	112	60.0	140	----
		Xylene, o-	95-47-6	E611C	93.3 µg/L	100 µg/L	93.3	60.0	140	----
Hydrocarbons (QCLot: 1617789)										
VA24C1101-002	Anonymous	VHw (C6-C10)	----	E581.VH+F1	6380 µg/L	6310 µg/L	101	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

Environmental Division Vancouver
Work Order Reference
VA24C1103

Telephone : +1 604 253 4188

Report To	Contact and company name below will appear on the final report	Reports / Recipients	Turnaround Time (TAT) Requested
Company:	Triton Environmental	Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	☑ Routine [R] if received by 3pm M-F - no surcharges apply
Contact:		Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A	☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge min
Phone:		☐ Compare Results to Criteria on Report - provide details below if box checked	☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge mi
	final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge mi
Street:		Email 1 or Fax	☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge m
City/Province:		Email 2	☐ Same day [E2] if received by 10am M-S - 200% rush surcha
Postal Code:		Email 3	Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine
Invoice To	Same as Report To ☐ YES ☑ NO		Date and Time Required for all E&P TATs: 28-Aug-24 hh:mm am/pm
	Copy of Invoice with Report ☐ YES ☑ NO	Select Invoice	For all tests with rush TATs requested, please contact your AM to confirm availability.
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		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):	VA24C1103	ALS Contact:	Sampler:

Analysis Request

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Total metals + mercury	Dissolved metals + mercury	Total hexavalent chromium	Total trivalent chromium	TSS, TDS, T-Alkalinity,Anions scan (Br, Cl, F, NO2, NO3, SO4)	Total sulfide (low) (as H2S), Unionized Sulfide (low)	Nutrients (ammonia, ammonium, total nitrogen, total phosphorus; phenols)	VOC/VPH	EPH, PAH, LEPH/HEPH	DOC	Glycols	General parameters (alkalinity)			SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	~~BCR EOP~~			~~Water~~	15	R	R	R	R	R	R	R	R	R	R	R	R					
	~~pH: cond: temp:~~		11:16			P2	P2															
	WLNG EOP ~~Tank~~	20-Aug-24	~~11:16~~	Water	15	✗	✗	R	R	R	R	R	R	R	✗	R	R					
	pH: ~~7.23~~ 7.23 cond: 192 µS/cm temp: 16.9 °C														R							
	~~Duplicate~~			~~Water~~	15	R	R	R	R	R	R	R	R	R	R	R	R					
	~~Field Blank~~			~~Water~~	15	R	R	R	R	R	R	R	R	R	R	R	R					
	~~Trip Blank~~			~~Water~~	11	R		R	R	R	R	R	R	R		R	R					

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)	SAMPLE RECEIPT DETAILS (ALS use only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	2 day TAT time for total and dissolved metals, regular TAT for other parameters	Cooling Method: ☐ NONE ☐ ICE ☑ ICE PACKS ☐ FROZEN ☑ COOLING INITIATED
Are samples for human consumption/ use? ☐ YES ☐ NO	ESDAT EDD to ESdat_CA-tritonenv@ESdatLabSync.net	Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO
	Dissolved nutrients was not field filtered.	Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A
		INITIAL COOLER TEMPERATURES °C: — FINAL COOLER TEMPERATURES °C: 13 12

SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Date: 20 Aug 24	Time: 17:05	Received by:	Date:	Time:	Received by: AJ	Date: 21Aug24	Time: 5:10pm

IONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY — AUG 2020 FRONT

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

2024-8-20-Chycoski-D3DD3

Project Component:	Tunnel	**Site Name:**	WLNG Treatment Discharge
Inspection Date:	08/20/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	
Temperature(c):	Low 13 High 17	**Permit:**	PE 110136
Weather Conditions:	Light Rain	**Ground Conditions:**	Wet

Observations

Time: 11:16:00 **Flow Volume (visual):** N/A

Notes: DO: 6.53 mg/L
ORP: 112.8 mV
Salinity: 0.14 ppt
Sampled at EOP base at discharge point

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	No		

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

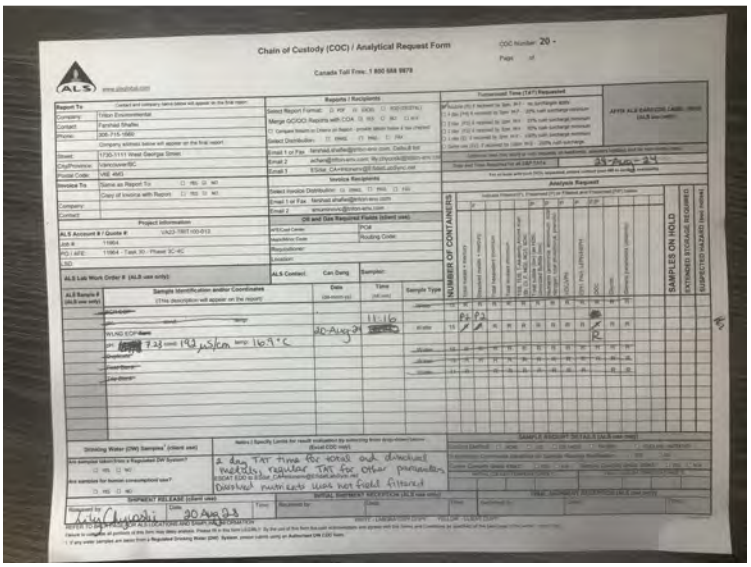

Photo: 4

Location: WLNG EOP

Description: Lab COC

Sign Off

Report Prepared By:	Lily Chycoski	**Report Reviewed:**	
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	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Table of Contents:

1. Executive Summary and Field Notes:

To meet water quality standards, we discharged water daily for a few hours to ensure proper dilution of the water downstream. A YSI device was deployed downstream from August 19 to August 22, recording temperature data every 15 minutes to ensure compliance with the maximum allowable temperature limits. Additionally, the installation of a cooling tower at the Water Treatment Plant (WTP) effectively reduced the water temperature, enhancing overall compliance and system performance. The discharged water mixed with downstream flow, and temperatures consistently remained below 19°C. All relevant parameters were measured using YSI instruments and WTP probes. The total discharge volume up to August 19th was 1610 m^3.
Heavy rainfall caused the downstream sonde to register high NTU levels. Discharge was briefly initiated but then halted to monitor the sonde. Once the discharged water reached the sonde, NTU levels increased, suggesting potential corruption in the sonde data.

Daily Volume Summary:

Table 1. Discharge Volumes Daily Summary

Date	Location	Volume (m3)	Comments
August 19	WoodFibre(WF)	52	N/A
August 20	WF	37	N/A
August 21	WF	78	N/A
August 22	WF	79	N/A
August 23	WF	120	N/A
August 24	WF	69	N/A
August 25	WF	0	N/A
Total		449	N/A

2. <u>Discharge Parameter Summary:</u>

Table 2. Discharge Event Summary

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/19/2024	1:15:00	7.1	0.601815	0	1610.983	22.9	242
8/19/2024	1:30:00	7.1	0.586675	0	1610.983	22.7	238
8/19/2024	1:45:00	7.1	0.579105	0	1610.983	22.7	239
8/19/2024	2:00:00	7.2	0.556395	0	1610.983	22.7	241
8/19/2024	2:15:00	7.2	0.56775	0	1610.983	22.6	241
8/19/2024	2:30:00	7.2	0.44663	0	1616.778	22.6	241
8/19/2024	2:45:00	7.2	0.43906	0	1623.544	22.6	240
8/19/2024	3:00:00	7.2	0.43906	0	1630.348	22.6	241
8/19/2024	3:15:00	7.2	0.43149	0	1637.069	22.5	241

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/19/2024	3:30:00	7.2	0.41635	0	1643.366	22.5	242
8/19/2024	3:45:00	7.2	0.412565	0	1649.505	22.4	244
8/19/2024	4:00:00	7.2	0.397425	0	1655.629	22.3	247
8/19/2024	4:15:00	7.2	0	0	1659.643	22.3	248
8/20/2024	11:45:00	7.3	0	1.8	1666.19	21	286
8/20/2024	22:30:00	7.2	0.919755	2	1666.19	21.6	269
8/20/2024	22:45:00	7	0.480695	0	1671.535	21.6	292
8/20/2024	23:00:00	6.8	0.46934	0	1678.724	21.6	291
8/20/2024	23:15:00	6.9	0.47691	0	1685.74	21.6	275
8/20/2024	23:30:00	7	0.46934	0.8	1692.624	21.5	266
8/20/2024	23:45:00	7	0.473125	0	1699.507	21.5	263
8/21/2024	0:00:00	7.1	0.46177	0	1706.334	21.5	261
8/21/2024	0:15:00	7.1	0.47691	0	1713.455	21.4	261
8/21/2024	0:30:00	7.2	0.473125	0	1720.614	21.4	261
8/21/2024	0:45:00	7.2	0.488265	1.3	1727.641	21.3	259
8/21/2024	1:00:00	7.2	0.77971	1.6	1728.382	21.2	259
8/21/2024	1:15:00	7.2	0.49962	0	1731.837	21.1	259
8/21/2024	1:30:00	7.2	0.503405	0	1739.314	21.1	259
8/21/2024	1:45:00	7.2	0.49205	0	1746.814	21.1	259
8/21/2024	2:00:00	7.2	0	0	1749.641	21.1	257
8/21/2024	12:45:00	7.2	0.74943	0.3	1749.641	21.5	253

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/21/2024	13:00:00	7.2	0.344435	0.8	1750.631	21.5	255
8/21/2024	13:15:00	7.2	0.412565	0	1756.449	21.4	255
8/21/2024	13:30:00	7.2	0.39364	0	1762.644	21.4	255
8/21/2024	13:45:00	7.2	0.39364	0	1768.734	21.4	256
8/21/2024	14:00:00	7.2	0.389855	0.4	1774.842	21.4	256
8/21/2024	14:15:00	7.2	0.40121	0.7	1780.958	21.4	256
8/22/2024	3:30:00	7.1	0.49962	3	1784.19	20.5	280
8/22/2024	3:45:00	7	0.526115	0	1791.731	20.5	280
8/22/2024	4:00:00	7	0.51476	0	1799.545	20.4	280
8/22/2024	4:15:00	7	0.49962	0	1807.037	20.4	280
8/22/2024	4:30:00	7	0	0	1813.44	20.4	280
8/22/2024	4:45:00	7	0.503405	0	1815.353	20.3	278
8/22/2024	5:00:00	7	0.480695	0	1822.837	20.3	280
8/22/2024	11:30:00	7.2	0.700225	0.3	1829.864	20.1	277
8/22/2024	11:45:00	7.2	0.412565	0	1832.911	20.1	281
8/22/2024	12:00:00	7.2	0.39364	0	1839.008	20.2	281
8/22/2024	12:15:00	7.2	0.39364	0	1845.048	20.3	281
8/22/2024	12:30:00	7.2	0.389855	0	1851.085	20.3	282
8/22/2024	12:45:00	7.2	0.40121	0	1857.08	20.3	282
8/22/2024	13:00:00	7.2	0.44663	0	1862.969	20.4	282
8/23/2024	1:00:00	7.4	0.39364	0.2	1862.969	18.3	283

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/23/2024	1:15:00	7.4	0.397425	0.1	1868.9	18.2	285
8/23/2024	1:30:00	7.3	0.465555	2.5	1875.035	18.1	297
8/23/2024	10:00:00	7.2	0.87055	2.9	1875.39	17.7	283
8/23/2024	10:15:00	7.2	0.647235	0.9	1880.357	17.8	283
8/23/2024	10:30:00	7.3	0.52233	0.6	1888.836	17.8	283
8/23/2024	10:45:00	7.2	0.526115	2	1896.951	17.8	290
8/23/2024	12:30:00	7.2	0.68887	1.5	1903.857	18.6	288
8/23/2024	12:45:00	7.2	0.67373	1.2	1914.063	18.7	289
8/23/2024	13:00:00	7.2	0.669945	1.4	1924.213	18.7	288
8/23/2024	13:15:00	7.3	0.67373	1.9	1934.362	18.7	288
8/23/2024	14:15:00	7.1	0.768355	0.8	1940.66	19.7	286
8/23/2024	14:30:00	7.2	0.745645	0.5	1952.177	19.6	286
8/23/2024	14:45:00	7.2	0	0	1962.232	19.5	286
8/24/2024	0:15:00	7.2	0.49962	3.2	1998.671	17.7	265
8/24/2024	0:30:00	7.2	0.54504	3.3	2006.511	17.6	265
8/24/2024	0:45:00	7.1	0.495835	3.6	2014.457	17.4	274
8/24/2024	1:00:00	7	0.40878	2.5	2018.282	17.3	275
8/24/2024	10:00:00	7.5	0.74943	4.3	2023.956	17.9	262
8/24/2024	10:15:00	7.5	0.74186	3	2034.861	17.8	262
8/24/2024	19:45:00	7.2	0.72672	28.8	2042.587	17	294
8/24/2024	20:00:00	7.2	0.87055	42.8	2051.501	17	292

Table 3. In-Situ Parameters

Date	Time	pH	DO mg/L	Salinity (ppt)	ORP (mV)	Visible Sheen	Conductivity (uS/cm)
8/19/2024	00:01:21	8.04	9.45	0.06	190.8	No	135.6
8/19/2024	03:16:20	8.07	9.66	0.07	222.6	No	140.7
8/20/2024	20:32:17	8.17	9.36	0.07	149.4	No	155.9
8/20/2024	23:32:16	8.08	9.65	0.07	193	No	155.2
8/21/2024	00:32:16	8.04	9.63	0.06	209.3	No	128.0
8/21/2024	13:15:25	8.11	9.63	0.07	191.3	No	155.1
8/22/2024	01:38:39	8.11	9.65	0.07	213.2	No	158.4
8/22/2024	12:35:38	7.92	9.76	0.05	224.8	No	108.5
8/23/2024	10:04:46	7.62	7.81	0.08	178.7	No	161.0
8/24/2024	09:49:48	7.67	7.99	0.07	177.0	No	142.4
8/24/2024	19:46:36	7.27	8.51	0.08	203.1	No	159.9
8/25/2024	16:29:50	7.17	8.82	0.07	207.4	No	158.2

3. Calibration Log:

Table 4. Calibration Log

Date	Unit	pH	Conductivity/Temp.	Salinity	NTU
8/19/2024	YSI	✓	✓	✓	✓
8/21/2024	WTP	✓	✓	N/A	✓

APPENDIX A: WTP LOG

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/19/2024	0:00:00	7	0	0	1,611	Open	Closed	22.8	238
8/19/2024	0:15:00	7	0	0	1,611	Open	Closed	22.6	238
8/19/2024	0:30:00	7	0	0	1,611	Open	Closed	22.5	240
8/19/2024	0:45:00	7	0	0	1,611	Open	Closed	22.3	240
8/19/2024	1:00:00	7	0	0	1,611	Open	Closed	22.2	240
8/19/2024	1:15:00	7.1	0.601815	0	1,611	Open	Closed	22.9	242
8/19/2024	1:30:00	7.1	0.586675	0	1,611	Open	Closed	22.7	238
8/19/2024	1:45:00	7.1	0.579105	0	1,611	Open	Closed	22.7	239
8/19/2024	2:00:00	7.2	0.556395	0	1,611	Open	Closed	22.7	241
8/19/2024	2:15:00	7.2	0.56775	0	1,611	Open	Closed	22.6	241
8/19/2024	2:30:00	7.2	0.44663	0	1,617	Closed	Open	22.6	241

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/19/2024	2:45:00	7.2	0.43906	0	1,624	Closed	Open	22.6	240
8/19/2024	3:00:00	7.2	0.43906	0	1,630	Closed	Open	22.6	241
8/19/2024	3:15:00	7.2	0.43149	0	1,637	Closed	Open	22.5	241
8/19/2024	3:30:00	7.2	0.41635	0	1,643	Closed	Open	22.5	242
8/19/2024	3:45:00	7.2	0.412565	0	1,650	Closed	Open	22.4	244
8/19/2024	4:00:00	7.2	0.397425	0	1,656	Closed	Open	22.3	247
8/19/2024	4:15:00	7.2	0	0	1,660	Open	Closed	22.3	248
8/19/2024	4:30:00	7.1	0	0	1,660	Open	Closed	22	248
8/19/2024	4:45:00	7.1	0	0	1,660	Open	Closed	21.8	248
8/19/2024	5:00:00	7.1	0	0	1,660	Open	Closed	21.6	250
8/19/2024	5:15:00	7.1	0	0	1,660	Open	Closed	21.4	250
8/19/2024	5:30:00	7.1	0	0	1,660	Open	Closed	21.2	251
8/19/2024	5:45:00	7.1	0	0	1,660	Open	Closed	21	251

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/19/2024	6:00:00	7.1	0	0	1,660	Open	Closed	20.9	252
8/19/2024	6:15:00	7	0	0	1,660	Open	Closed	20.9	252
8/19/2024	6:30:00	7	0	0	1,660	Open	Closed	20.8	252
8/19/2024	6:45:00	7	0	0	1,660	Open	Closed	20.7	252
8/19/2024	7:00:00	7	0	0	1,660	Open	Closed	20.6	251
8/19/2024	7:15:00	7	0	0	1,660	Open	Closed	20.4	253
8/19/2024	7:30:00	7	0	0	1,660	Open	Closed	20.2	251
8/19/2024	7:45:00	7.1	0.412565	11.4	1,660	Open	Closed	21.6	258
8/19/2024	8:00:00	7.2	2.14231	409.1	1,660	Open	Closed	20.1	277
8/19/2024	8:15:00	7.2	2.168805	194.2	1,660	Open	Closed	20.1	280
8/19/2024	8:30:00	7.2	2.17259	409	1,660	Open	Closed	20.1	280
8/19/2024	8:45:00	7.2	2.153665	344.5	1,660	Open	Closed	20.2	280
8/19/2024	9:00:00	6.9	0	341.9	1,660	Open	Closed	20.2	286

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/19/2024	9:15:00	7.1	2.16502	231.1	1,660	Open	Closed	20.3	273
8/19/2024	9:30:00	7.2	0	175.9	1,660	Open	Closed	20.5	272
8/19/2024	9:45:00	7.2	2.032545	222.3	1,660	Open	Closed	20.6	268
8/19/2024	10:00:00	7	2.01362	228.1	1,660	Open	Closed	20.7	268
8/19/2024	10:15:00	7.2	2.05147	38.2	1,660	Open	Closed	20.6	274
8/19/2024	10:30:00	7.2	1.44587	191	1,660	Open	Closed	20.9	269
8/19/2024	10:45:00	7.2	1.54428	102.2	1,660	Open	Closed	21.1	267
8/19/2024	11:00:00	7.1	1.56699	117.3	1,660	Open	Closed	21.2	266
8/19/2024	11:15:00	7.1	1.3626	44.7	1,660	Open	Closed	21.4	266
8/19/2024	11:30:00	7	1.08251	148.8	1,660	Open	Closed	21.5	266
8/19/2024	11:45:00	7.1	2.123385	99.7	1,660	Open	Closed	21.6	266
8/19/2024	12:00:00	7.2	2.146095	36.3	1,660	Open	Closed	21.7	266
8/19/2024	12:15:00	7.3	2.14231	47.3	1,660	Open	Closed	21.9	264

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/19/2024	12:30:00	7.2	2.14231	62.7	1,660	Open	Closed	22.1	264
8/19/2024	12:45:00	7.2	2.14988	83.5	1,660	Open	Closed	22.3	263
8/19/2024	13:00:00	7.2	1.351245	33.4	1,660	Open	Closed	22.6	261
8/19/2024	13:15:00	7.3	0.601815	410	1,660	Open	Closed	22.5	267
8/19/2024	13:30:00	6.9	0.5299	328.5	1,660	Open	Closed	22.8	270
8/19/2024	13:45:00	6.9	0.88569	59.2	1,660	Open	Closed	22.8	268
8/19/2024	14:00:00	7.1	0.791065	32.5	1,660	Open	Closed	22.9	262
8/19/2024	14:15:00	7.1	0	26	1,660	Open	Closed	23.1	260
8/19/2024	14:30:00	7.1	0	18.7	1,660	Open	Closed	23.4	260
8/19/2024	14:45:00	7	0	17.1	1,660	Open	Closed	23.9	262
8/19/2024	15:00:00	7	0	13.6	1,660	Open	Closed	24.4	260
8/19/2024	15:15:00	7	0	16.5	1,660	Open	Closed	24.8	260
8/19/2024	15:30:00	7	0	17.2	1,660	Open	Closed	25	260

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/19/2024	15:45:00	7	0	17	1,660	Open	Closed	25.2	262
8/19/2024	16:00:00	6.7	1.366385	209.6	1,660	Open	Closed	23.1	273
8/19/2024	16:15:00	6.8	2.26343	334.6	1,660	Open	Closed	23.2	269
8/19/2024	16:30:00	7	2.221795	409.9	1,660	Open	Closed	23.1	283
8/19/2024	16:45:00	7.2	2.244505	401.4	1,660	Open	Closed	23.1	287
8/19/2024	17:00:00	7.2	2.229365	316.3	1,660	Open	Closed	23.1	287
8/19/2024	17:15:00	7.3	2.24829	326.2	1,660	Open	Closed	23.2	287
8/19/2024	17:30:00	7.3	2.24072	341.7	1,660	Open	Closed	23.2	287
8/19/2024	17:45:00	7.3	2.05147	295.5	1,660	Open	Closed	23.3	288
8/19/2024	18:00:00	7.3	2.017405	278.7	1,660	Open	Closed	23.3	288
8/19/2024	18:15:00	7.2	0	410	1,660	Open	Closed	23.4	290
8/19/2024	18:30:00	7.2	1.366385	37.8	1,660	Open	Closed	23.3	285
8/19/2024	18:45:00	7.2	1.116575	69.5	1,660	Open	Closed	23.2	285

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/19/2024	19:00:00	7.2	1.003025	28.2	1,660	Open	Closed	23.2	285
8/19/2024	19:15:00	7.2	0.43149	14.4	1,660	Open	Closed	23.2	284
8/19/2024	19:30:00	7.2	0.82513	15.8	1,663	Open	Closed	23.1	284
8/19/2024	19:45:00	7.2	0.798635	18.4	1,663	Open	Closed	23.1	284
8/19/2024	20:00:00	7.2	0.836485	24.5	1,663	Open	Closed	23	284
8/19/2024	20:15:00	7.2	0.82513	22.9	1,663	Open	Closed	23	284
8/19/2024	20:30:00	7.2	0.79485	18.1	1,663	Open	Closed	22.9	284
8/19/2024	20:45:00	7.2	0.654805	12.5	1,663	Open	Closed	22.9	284
8/19/2024	21:00:00	7.2	0	30.6	1,663	Open	Closed	22.9	284
8/19/2024	21:15:00	7.2	0.253595	17.3	1,663	Open	Closed	22.9	284
8/19/2024	21:30:00	7.2	0	30.3	1,663	Open	Closed	22.8	286
8/19/2024	21:45:00	7.2	0.563965	36.9	1,663	Open	Closed	22.8	286
8/19/2024	22:00:00	7.2	0.616955	36.2	1,663	Open	Closed	22.6	286

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/19/2024	22:15:00	7.2	0.52233	20.5	1,663	Open	Closed	22.6	286
8/19/2024	22:30:00	7.2	0.57532	29.6	1,663	Open	Closed	22.5	284
8/19/2024	22:45:00	7.2	0.488265	16.8	1,663	Open	Closed	22.5	286
8/19/2024	23:00:00	7.2	0.61317	43.1	1,663	Open	Closed	22.4	284
8/19/2024	23:15:00	7.2	0.49205	28.6	1,663	Open	Closed	22.3	283
8/19/2024	23:30:00	7.2	0.56018	34.8	1,663	Open	Closed	22.2	281
8/19/2024	23:45:00	7.2	0.54504	16.2	1,663	Open	Closed	22.2	277
8/20/2024	0:00:00	7.2	0.52233	10.5	1,663	Open	Closed	22.2	278
8/20/2024	0:15:00	7.2	0.503405	8.6	1,663	Open	Closed	22.2	281
8/20/2024	0:30:00	7.2	0.49205	7.1	1,663	Open	Closed	22.2	281
8/20/2024	0:45:00	7.2	0.37093	411.2	1,663	Open	Closed	22.2	281
8/20/2024	1:00:00	7.2	1.53671	88.5	1,663	Open	Closed	22.1	282
8/20/2024	1:15:00	6.9	1.46858	79.6	1,663	Open	Closed	22	287

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/20/2024	1:30:00	7.1	1.426945	71.4	1,663	Open	Closed	21.9	286
8/20/2024	1:45:00	7.1	1.33989	104.3	1,663	Open	Closed	21.9	286
8/20/2024	2:00:00	7.2	1.31718	47	1,663	Open	Closed	21.9	286
8/20/2024	2:15:00	7.2	1.31718	77.2	1,663	Open	Closed	21.9	286
8/20/2024	2:30:00	7.2	1.214985	45.1	1,663	Open	Closed	21.8	286
8/20/2024	2:45:00	7.2	1.154425	53.1	1,663	Open	Closed	21.8	286
8/20/2024	3:00:00	7.2	1.124145	30.1	1,663	Open	Closed	21.7	286
8/20/2024	3:15:00	7.2	1.124145	75.6	1,663	Open	Closed	21.7	294
8/20/2024	3:30:00	7	1.116575	44.6	1,663	Open	Closed	21.7	291
8/20/2024	3:45:00	7.1	1.093865	31.7	1,663	Open	Closed	21.7	287
8/20/2024	4:00:00	7.2	0.9084	24.2	1,663	Open	Closed	21.6	287
8/20/2024	4:15:00	7.2	1.0598	32.1	1,663	Open	Closed	21.6	287
8/20/2024	4:30:00	7.2	1.04466	32.8	1,663	Open	Closed	21.6	289

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/20/2024	4:45:00	7.2	0.859195	52.8	1,663	Open	Closed	21.6	289
8/20/2024	5:00:00	7.2	0.965175	73.1	1,663	Open	Closed	21.5	289
8/20/2024	5:15:00	7.2	0.813775	44.3	1,663	Open	Closed	21.5	288
8/20/2024	5:30:00	7.2	0	43.2	1,663	Open	Closed	21.5	289
8/20/2024	5:45:00	7.1	0	40.7	1,663	Open	Closed	21.5	289
8/20/2024	6:00:00	7.1	0	40.7	1,663	Open	Closed	21.5	289
8/20/2024	6:15:00	7.1	0	44.9	1,663	Open	Closed	21.5	291
8/20/2024	6:30:00	7.1	0	40.4	1,663	Open	Closed	21.5	291
8/20/2024	6:45:00	7.1	0.95382	40.7	1,663	Open	Closed	21.3	292
8/20/2024	7:00:00	7.1	0.90083	36.6	1,663	Open	Closed	21.3	292
8/20/2024	7:15:00	7.1	0.881905	38.5	1,663	Open	Closed	21.3	291
8/20/2024	7:30:00	7.1	0.859195	26.2	1,663	Open	Closed	21.2	290
8/20/2024	7:45:00	7.2	0.84027	21.7	1,663	Open	Closed	21.2	288

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/20/2024	8:00:00	7.2	0.81756	14.4	1,663	Open	Closed	21.2	288
8/20/2024	8:15:00	7.2	0.806205	13.1	1,663	Open	Closed	21.2	289
8/20/2024	8:30:00	7.2	0.78728	10.4	1,663	Open	Closed	21.2	289
8/20/2024	8:45:00	7.3	0.77971	10	1,663	Open	Closed	21.2	287
8/20/2024	9:00:00	7.3	0	6.7	1,663	Open	Closed	21.3	287
8/20/2024	9:15:00	7.2	0	5.4	1,663	Open	Closed	21.2	287
8/20/2024	9:30:00	7.2	0	6.3	1,663	Open	Closed	21.2	287
8/20/2024	9:45:00	7.2	0.77214	7.1	1,663	Open	Closed	21.2	287
8/20/2024	10:00:00	7.2	0.76457	2.7	1,663	Open	Closed	21.2	287
8/20/2024	10:15:00	7.2	0.730505	3.9	1,663	Open	Closed	21.2	287
8/20/2024	10:30:00	7.3	0.71915	1.7	1,663	Open	Closed	21.3	287
8/20/2024	10:45:00	7.3	0.707795	4	1,663	Open	Closed	21.2	287
8/20/2024	11:00:00	7.3	0.69644	1.6	1,663	Open	Closed	21.1	286

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/19/2024	19:15:00	7.2	0.43149	14.4	1,660	Open	Closed	23.2	284
8/19/2024	19:30:00	7.2	0.82513	15.8	1,663	Open	Closed	23.1	284
8/20/2024	11:45:00	7.3	0	1.8	1,666	Open	Closed	21	286
8/20/2024	12:00:00	7.4	0.52233	402.6	1,666	Open	Closed	20.9	284
8/20/2024	12:15:00	7.4	1.15064	39.8	1,666	Open	Closed	20.9	282
8/20/2024	12:30:00	7.4	1.373955	2.3	1,666	Open	Closed	20.8	282
8/20/2024	12:45:00	7.4	1.39288	4.6	1,666	Open	Closed	20.9	281
8/20/2024	13:00:00	7.4	1.078725	0.5	1,666	Open	Closed	20.9	279
8/20/2024	13:15:00	7.4	1.27933	4.2	1,666	Open	Closed	21	276
8/20/2024	13:30:00	7.4	0.9841	0.9	1,666	Open	Closed	21.1	276
8/20/2024	13:45:00	7.4	0.889475	2.4	1,666	Open	Closed	21.2	276
8/20/2024	14:00:00	7.4	1.230125	0.9	1,666	Open	Closed	21.4	272
8/20/2024	14:15:00	7.4	0.95382	3.8	1,666	Open	Closed	21.5	273

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/20/2024	14:30:00	7.4	1.04466	0.1	1,666	Open	Closed	21.6	269
8/20/2024	14:45:00	7.4	0	5.1	1,666	Open	Closed	21.7	269
8/20/2024	15:00:00	7.3	0	5.5	1,666	Open	Closed	22	269
8/20/2024	15:15:00	7.2	1.139285	72.2	1,666	Open	Closed	22.3	271
8/20/2024	15:30:00	7.3	0.92354	0	1,666	Open	Closed	21.9	268
8/20/2024	15:45:00	7.3	0	0.8	1,666	Open	Closed	22.1	268
8/20/2024	16:00:00	7.2	0	1.2	1,666	Open	Closed	22.4	268
8/20/2024	16:15:00	7.2	0	0.9	1,666	Open	Closed	22.7	268
8/20/2024	16:30:00	7.2	0	1.3	1,666	Open	Closed	22.9	270
8/20/2024	16:45:00	7.2	0	0.3	1,666	Open	Closed	23.1	270
8/20/2024	17:00:00	7.1	0	0.2	1,666	Open	Closed	23.3	270
8/20/2024	17:15:00	7.1	0	410.3	1,666	Open	Closed	23.5	270
8/20/2024	17:30:00	7.1	0	410.2	1,666	Open	Closed	23.6	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	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/20/2024	17:45:00	7.1	0	410.2	1,666	Open	Closed	23.7	273
8/20/2024	18:00:00	7.1	0	410.2	1,666	Open	Closed	23.8	275
8/20/2024	18:15:00	7.1	0	410.3	1,666	Open	Closed	23.8	273
8/20/2024	18:30:00	7.1	0	410.3	1,666	Open	Closed	23.9	273
8/20/2024	18:45:00	7.1	0	410.3	1,666	Open	Closed	23.9	273
8/20/2024	19:00:00	7.1	0	410.4	1,666	Open	Closed	23.9	273
8/20/2024	19:15:00	7.1	0	0	1,666	Open	Closed	23.9	275
8/20/2024	19:30:00	7.1	0	0	1,666	Open	Closed	23.9	275
8/20/2024	19:45:00	7.1	0	0	1,666	Open	Closed	23.9	275
8/20/2024	20:00:00	7.1	0	0	1,666	Open	Closed	23.9	274
8/20/2024	20:15:00	7.1	1.003025	63.6	1,666	Open	Closed	23.6	274
8/20/2024	20:30:00	7.1	0.9841	1.4	1,666	Open	Closed	21.6	271
8/20/2024	20:45:00	7.2	0.942465	2	1,666	Open	Closed	21.6	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	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/20/2024	21:00:00	7.2	0.91597	2.7	1,666	Open	Closed	21.6	269
8/20/2024	21:15:00	7.2	0.90083	8.1	1,666	Open	Closed	21.6	269
8/20/2024	21:30:00	7.2	0.859195	9.3	1,666	Open	Closed	21.8	268
8/20/2024	21:45:00	7.2	0	5	1,666	Open	Closed	21.8	266
8/20/2024	22:00:00	7.2	0.934895	11.2	1,666	Open	Closed	21.7	266
8/20/2024	22:15:00	7.3	0	2.1	1,666	Open	Closed	21.7	264
8/20/2024	22:30:00	7.2	0.919755	2	1,666	Open	Closed	21.6	269
8/20/2024	22:45:00	7	0.480695	0	1,672	Closed	Open	21.6	292
8/20/2024	23:00:00	6.8	0.46934	0	1,679	Closed	Open	21.6	291
8/20/2024	23:15:00	6.9	0.47691	0	1,686	Closed	Open	21.6	275
8/20/2024	23:30:00	7	0.46934	0.8	1,693	Closed	Open	21.5	266
8/20/2024	23:45:00	7	0.473125	0	1,700	Closed	Open	21.5	263
8/21/2024	0:00:00	7.1	0.46177	0	1,706	Closed	Open	21.5	261

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/21/2024	0:15:00	7.1	0.47691	0	1,713	Closed	Open	21.4	261
8/21/2024	0:30:00	7.2	0.473125	0	1,721	Closed	Open	21.4	261
8/21/2024	0:45:00	7.2	0.488265	1.3	1,728	Closed	Open	21.3	259
8/21/2024	1:00:00	7.2	0.77971	1.6	1,728	Open	Closed	21.2	259
8/21/2024	1:15:00	7.2	0.49962	0	1,732	Closed	Open	21.1	259
8/21/2024	1:30:00	7.2	0.503405	0	1,739	Closed	Open	21.1	259
8/21/2024	1:45:00	7.2	0.49205	0	1,747	Closed	Open	21.1	259
8/21/2024	2:00:00	7.2	0	0	1,750	Open	Closed	21.1	257
8/21/2024	2:15:00	7.2	0.56775	410.9	1,750	Open	Closed	21	259
8/21/2024	2:30:00	7.2	0	102.5	1,750	Open	Closed	21.1	259
8/21/2024	2:45:00	7.1	0	79	1,750	Open	Closed	21.1	261
8/21/2024	3:00:00	7.1	0	85.6	1,750	Open	Closed	21.1	261
8/21/2024	3:15:00	7.1	0	72	1,750	Open	Closed	21	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	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/21/2024	3:30:00	7.1	0.49205	29.6	1,750	Open	Closed	20.9	263
8/21/2024	3:45:00	7.1	0	30.4	1,750	Open	Closed	21	264
8/21/2024	4:00:00	7.1	0	30.8	1,750	Open	Closed	21	264
8/21/2024	4:15:00	7.1	0	34.9	1,750	Open	Closed	20.9	264
8/21/2024	4:30:00	7.1	0	32.3	1,750	Open	Closed	20.9	263
8/21/2024	4:45:00	7.1	0	53.8	1,750	Open	Closed	20.8	266
8/21/2024	5:00:00	7.1	0	57.7	1,750	Open	Closed	20.8	267
8/21/2024	5:15:00	7.1	0	34	1,750	Open	Closed	20.8	267
8/21/2024	5:30:00	7.1	0	32.1	1,750	Open	Closed	20.7	269
8/21/2024	5:45:00	7.1	0	32.7	1,750	Open	Closed	20.7	269
8/21/2024	6:00:00	7.1	0	29.7	1,750	Open	Closed	20.6	269
8/21/2024	6:15:00	7.1	0	28.1	1,750	Open	Closed	20.7	271
8/21/2024	6:30:00	7.1	0	24.5	1,750	Open	Closed	20.7	271

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/21/2024	6:45:00	7.1	0.495835	18	1,750	Open	Closed	20.8	273
8/21/2024	7:00:00	7.1	0.488265	411.5	1,750	Open	Closed	21	269
8/21/2024	7:15:00	7.1	0.46934	64.1	1,750	Open	Closed	21.2	267
8/21/2024	7:30:00	7.1	0.404995	42.4	1,750	Open	Closed	21.4	261
8/21/2024	7:45:00	7.1	0.124905	57.3	1,750	Open	Closed	21.5	257
8/21/2024	8:00:00	7.2	0.117335	17.5	1,750	Open	Closed	21.5	256
8/21/2024	8:15:00	7.2	0.382285	15.1	1,750	Open	Closed	21.6	256
8/21/2024	8:30:00	7.2	0	29.2	1,750	Open	Closed	21.4	252
8/21/2024	8:45:00	7.2	0.6056	279.4	1,750	Open	Closed	21.3	256
8/21/2024	9:00:00	6.8	0.601815	140.8	1,750	Open	Closed	21.4	267
8/21/2024	9:15:00	6.7	0.609385	226.3	1,750	Open	Closed	21.4	262
8/21/2024	9:30:00	6.9	1.018165	16.1	1,750	Open	Closed	21.4	256
8/21/2024	9:45:00	7	0.836485	21.3	1,750	Open	Closed	21.4	254

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/21/2024	10:00:00	7	0.80999	10.3	1,750	Open	Closed	21.5	254
8/21/2024	10:15:00	7.1	0.9841	23.8	1,750	Open	Closed	21.5	255
8/21/2024	10:30:00	7.1	0.97653	9.9	1,750	Open	Closed	21.5	255
8/21/2024	10:45:00	7.1	0.950035	24.9	1,750	Open	Closed	21.5	255
8/21/2024	11:00:00	7.1	0.8327	5.7	1,750	Open	Closed	21.6	255
8/21/2024	11:15:00	7.2	0.851625	22.4	1,750	Open	Closed	21.6	255
8/21/2024	11:30:00	7.2	0.92354	13.7	1,750	Open	Closed	21.6	255
8/21/2024	11:45:00	7.2	0.90083	31.5	1,750	Open	Closed	21.5	255
8/21/2024	12:00:00	7.2	0.84784	9.3	1,750	Open	Closed	21.5	255
8/21/2024	12:15:00	7.2	0.836485	13.9	1,750	Open	Closed	21.5	254
8/21/2024	12:30:00	7.2	0.78728	2.6	1,750	Open	Closed	21.5	253
8/21/2024	12:45:00	7.2	0.74943	0.3	1,750	Open	Closed	21.5	253
8/21/2024	13:00:00	7.2	0.344435	0.8	1,751	Closed	Open	21.5	255

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/21/2024	13:15:00	7.2	0.412565	0	1,756	Closed	Open	21.4	255
8/21/2024	13:30:00	7.2	0.39364	0	1,763	Closed	Open	21.4	255
8/21/2024	13:45:00	7.2	0.39364	0	1,769	Closed	Open	21.4	256
8/21/2024	14:00:00	7.2	0.389855	0.4	1,775	Closed	Open	21.4	256
8/21/2024	14:15:00	7.2	0.40121	0.7	1,781	Closed	Open	21.4	256
8/21/2024	14:30:00	7.2	0	17.6	1,784	Open	Closed	21.4	256
8/21/2024	14:45:00	7.1	0	15.4	1,784	Open	Closed	21.4	258
8/21/2024	15:00:00	7.1	0	14.8	1,784	Open	Closed	21.4	257
8/21/2024	15:15:00	7.1	0	12.3	1,784	Open	Closed	21.5	257
8/21/2024	15:30:00	7.1	0	12.5	1,784	Open	Closed	21.5	259
8/21/2024	15:45:00	7	0	13.7	1,784	Open	Closed	21.5	259
8/21/2024	16:00:00	7	0	13.4	1,784	Open	Closed	21.5	259
8/21/2024	16:15:00	7	0	13.2	1,784	Open	Closed	21.5	259

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
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Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/21/2024	16:30:00	7	0	12.2	1,784	Open	Closed	21.6	259
8/21/2024	16:45:00	7	0	12.8	1,784	Open	Closed	21.6	259
8/21/2024	17:00:00	7	0	12.1	1,784	Open	Closed	21.6	259
8/21/2024	17:15:00	7	0	9.8	1,784	Open	Closed	21.6	259
8/21/2024	17:30:00	7	0	8.5	1,784	Open	Closed	21.6	259
8/21/2024	17:45:00	7	0	8.1	1,784	Open	Closed	21.6	261
8/21/2024	18:00:00	7	0.49205	14.7	1,784	Open	Closed	21.2	266
8/21/2024	18:15:00	7.1	0.56018	411.3	1,784	Open	Closed	21.2	265
8/21/2024	18:30:00	7.1	0.65102	411.3	1,784	Open	Closed	21.3	266
8/21/2024	18:45:00	7.2	0.56018	411.3	1,784	Open	Closed	21.4	267
8/21/2024	19:00:00	7.2	1.24905	411.3	1,784	Open	Closed	21.4	267
8/21/2024	19:15:00	7.2	0.59046	411.2	1,784	Open	Closed	21.4	276
8/21/2024	19:30:00	7	0.53747	411.1	1,784	Open	Closed	21.3	296

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/21/2024	19:45:00	6.8	0.897045	240.7	1,784	Open	Closed	21.3	292
8/21/2024	20:00:00	6.9	0.66616	411.3	1,784	Open	Closed	21.3	281
8/21/2024	20:15:00	7	0.68887	411.1	1,784	Open	Closed	21.2	274
8/21/2024	20:30:00	7	0.662375	176.3	1,784	Open	Closed	21.2	274
8/21/2024	20:45:00	7.1	0.662375	79.7	1,784	Open	Closed	21.1	274
8/21/2024	21:00:00	7.1	0.65102	65.7	1,784	Open	Closed	21.1	276
8/21/2024	21:15:00	7.1	0.647235	7.9	1,784	Open	Closed	21.1	275
8/21/2024	21:30:00	7.1	0.639665	10.8	1,784	Open	Closed	21.1	277
8/21/2024	21:45:00	7.1	0.616955	15.1	1,784	Open	Closed	21.1	277
8/21/2024	22:00:00	7.1	0.601815	70	1,784	Open	Closed	21	277
8/21/2024	22:15:00	7.1	0.586675	37.8	1,784	Open	Closed	21	277
8/21/2024	22:30:00	7.1	0.56018	31.3	1,784	Open	Closed	21	277
8/21/2024	22:45:00	7.1	0.556395	28.7	1,784	Open	Closed	20.9	277

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/21/2024	23:00:00	7.1	0.54504	26.6	1,784	Open	Closed	20.9	277
8/21/2024	23:15:00	7.1	0.53747	20.3	1,784	Open	Closed	20.9	278
8/21/2024	23:30:00	7.1	0.46934	16.4	1,784	Open	Closed	20.9	278
8/21/2024	23:45:00	7.1	0.457985	15.5	1,784	Open	Closed	20.9	279
8/22/2024	0:00:00	7.1	2.14988	383.3	1,784	Open	Closed	20.8	278
8/22/2024	0:15:00	7.1	0.65102	109.1	1,784	Open	Closed	20.7	277
8/22/2024	0:30:00	7.1	0.62074	30.6	1,784	Open	Closed	20.7	278
8/22/2024	0:45:00	7.1	0.58289	20.5	1,784	Open	Closed	20.7	278
8/22/2024	1:00:00	7.1	0.571535	20.2	1,784	Open	Closed	20.7	280
8/22/2024	1:15:00	7.1	0.56018	17.9	1,784	Open	Closed	20.7	280
8/22/2024	1:30:00	7.1	0.2271	336	1,784	Open	Closed	20.6	277
8/22/2024	1:45:00	7.1	0.548825	123.5	1,784	Open	Closed	20.6	278
8/22/2024	2:00:00	7.1	0.563965	31.1	1,784	Open	Closed	20.6	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	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/22/2024	2:15:00	7.1	0.548825	22.4	1,784	Open	Closed	20.6	278
8/22/2024	2:30:00	7.1	0.5299	20.8	1,784	Open	Closed	20.5	278
8/22/2024	2:45:00	7.1	0.510975	19.5	1,784	Open	Closed	20.5	280
8/22/2024	3:00:00	7.1	0.518545	85	1,784	Open	Closed	20.5	280
8/22/2024	3:15:00	7.1	0.526115	7.2	1,784	Open	Closed	20.5	280
8/22/2024	3:30:00	7.1	0.49962	3	1,784	Open	Closed	20.5	280
8/22/2024	3:45:00	7	0.526115	0	1,792	Closed	Open	20.5	280
8/22/2024	4:00:00	7	0.51476	0	1,800	Closed	Open	20.4	280
8/22/2024	4:15:00	7	0.49962	0	1,807	Closed	Open	20.4	280
8/22/2024	4:30:00	7	0	0	1,813	Closed	Open	20.4	280
8/22/2024	4:45:00	7	0.503405	0	1,815	Closed	Open	20.3	278
8/22/2024	5:00:00	7	0.480695	0	1,823	Closed	Open	20.3	280
8/22/2024	5:15:00	7	0.412565	57.2	1,830	Open	Closed	20.2	280

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/22/2024	5:30:00	7	0	43.9	1,830	Open	Closed	20.2	278
8/22/2024	5:45:00	7	0	40.6	1,830	Open	Closed	20.1	280
8/22/2024	6:00:00	7	0	39	1,830	Open	Closed	20.1	280
8/22/2024	6:15:00	7	0	41.9	1,830	Open	Closed	20.1	280
8/22/2024	6:30:00	7	0	38.6	1,830	Open	Closed	20	280
8/22/2024	6:45:00	7	0	35.8	1,830	Open	Closed	19.8	279
8/22/2024	7:00:00	7	0	36.9	1,830	Open	Closed	19.7	279
8/22/2024	7:15:00	7	0	34.9	1,830	Open	Closed	19.6	280
8/22/2024	7:30:00	7.1	0.68887	374.8	1,830	Open	Closed	19.6	278
8/22/2024	7:45:00	7.2	1.207415	80.8	1,830	Open	Closed	19.3	275
8/22/2024	8:00:00	7.2	0.972745	294.2	1,830	Open	Closed	19.3	275
8/22/2024	8:15:00	7.3	1.214985	62.6	1,830	Open	Closed	19.3	275
8/22/2024	8:30:00	7.3	0.96139	167.8	1,830	Open	Closed	19.3	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	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/22/2024	8:45:00	7.3	1.18849	39.6	1,830	Open	Closed	19.4	276
8/22/2024	9:00:00	7.3	0.685085	101.6	1,830	Open	Closed	19.4	275
8/22/2024	9:15:00	7.3	0.62831	411.3	1,830	Open	Closed	19.6	274
8/22/2024	9:30:00	7.3	0.5299	200.1	1,830	Open	Closed	19.5	275
8/22/2024	9:45:00	7.3	0	229.2	1,830	Open	Closed	19.6	275
8/22/2024	10:00:00	7.3	0.80999	31.8	1,830	Open	Closed	19.5	282
8/22/2024	10:15:00	7.2	0.77214	3.4	1,830	Open	Closed	19.7	282
8/22/2024	10:30:00	7.2	0.753215	0.8	1,830	Open	Closed	19.8	281
8/22/2024	10:45:00	7.2	0.757	0.1	1,830	Open	Closed	19.9	279
8/22/2024	11:00:00	7.2	0.73429	0	1,830	Open	Closed	20	277
8/22/2024	11:15:00	7.2	0.707795	0	1,830	Open	Closed	20	278
8/22/2024	11:30:00	7.2	0.700225	0.3	1,830	Open	Closed	20.1	277
8/22/2024	11:45:00	7.2	0.412565	0	1,833	Closed	Open	20.1	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	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/22/2024	12:00:00	7.2	0.39364	0	1,839	Closed	Open	20.2	281
8/22/2024	12:15:00	7.2	0.39364	0	1,845	Closed	Open	20.3	281
8/22/2024	12:30:00	7.2	0.389855	0	1,851	Closed	Open	20.3	282
8/22/2024	12:45:00	7.2	0.40121	0	1,857	Closed	Open	20.3	282
8/22/2024	13:00:00	7.2	0.44663	0	1,863	Open	Closed	20.4	282
8/22/2024	13:15:00	7.2	0.677515	0	1,863	Open	Closed	20.4	282
8/22/2024	13:30:00	7.2	0.442845	0	1,863	Open	Closed	20.4	281
8/22/2024	13:45:00	7.2	0.67373	4	1,863	Open	Closed	20.4	281
8/22/2024	14:00:00	7.2	0.669945	0.4	1,863	Open	Closed	20.5	281
8/22/2024	14:15:00	7.2	0.647235	0	1,863	Open	Closed	20.6	281
8/22/2024	14:30:00	7.2	0.63588	0	1,863	Open	Closed	20.7	281
8/22/2024	14:45:00	7.2	0	0	1,863	Open	Closed	20.7	281
8/22/2024	15:00:00	7.2	0	0	1,863	Open	Closed	21	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	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/22/2024	15:15:00	7.2	0	0	1,863	Open	Closed	21.2	281
8/22/2024	15:30:00	7.2	0.669945	3.3	1,863	Open	Closed	20.8	281
8/22/2024	15:45:00	7.2	0.65859	0	1,863	Open	Closed	20.8	283
8/22/2024	16:00:00	7.2	0	0	1,863	Open	Closed	21	283
8/22/2024	16:15:00	7.2	0	0	1,863	Open	Closed	21.2	283
8/22/2024	16:30:00	7.2	0	0	1,863	Open	Closed	21.4	283
8/22/2024	16:45:00	7.1	0	0	1,863	Open	Closed	21.6	284
8/22/2024	17:00:00	7.1	0	0	1,863	Open	Closed	21.7	283
8/22/2024	17:15:00	7.1	0	0	1,863	Open	Closed	21.9	284
8/22/2024	17:30:00	7.1	0	0	1,863	Open	Closed	22	284
8/22/2024	17:45:00	7.1	0	0	1,863	Open	Closed	22.1	283
8/22/2024	18:00:00	7.1	0	0	1,863	Open	Closed	22.2	284
8/22/2024	18:15:00	7.1	0	0	1,863	Open	Closed	22.3	284

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/22/2024	18:30:00	7.1	0	0	1,863	Open	Closed	22.3	284
8/22/2024	18:45:00	7.1	0	0	1,863	Open	Closed	22.4	284
8/22/2024	19:00:00	7.1	0	0	1,863	Open	Closed	22.4	284
8/22/2024	19:15:00	7.1	0	0	1,863	Open	Closed	22.5	284
8/22/2024	19:30:00	7.1	0	0	1,863	Open	Closed	22.5	286
8/22/2024	19:45:00	7.1	0	0	1,863	Open	Closed	22.5	286
8/22/2024	20:00:00	7.1	0	0	1,863	Open	Closed	22.5	286
8/22/2024	20:15:00	7.1	0	0	1,863	Open	Closed	22.5	286
8/22/2024	20:30:00	7.1	0	0	1,863	Open	Closed	22.5	286
8/22/2024	20:45:00	7.1	0.68887	58.1	1,863	Open	Closed	22.1	285
8/22/2024	21:00:00	7.1	0	1.8	1,863	Open	Closed	20.7	286
8/22/2024	21:15:00	7.2	1.14307	19.1	1,863	Open	Closed	20.5	279
8/22/2024	21:30:00	7.2	1.570775	18.2	1,863	Open	Closed	20.3	279

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/22/2024	21:45:00	7.2	0.87812	8.5	1,863	Open	Closed	20.4	279
8/22/2024	22:00:00	7.2	0.844055	0.9	1,863	Open	Closed	20.3	279
8/22/2024	22:15:00	7.2	0.85541	0.2	1,863	Open	Closed	20.3	281
8/22/2024	22:30:00	7.2	0.844055	0.2	1,863	Open	Closed	19.9	281
8/22/2024	22:45:00	7.3	0.8327	0	1,863	Open	Closed	19.6	282
8/22/2024	23:00:00	7.3	0.8327	2.3	1,863	Open	Closed	19.3	283
8/22/2024	23:15:00	7.3	0.8327	0	1,863	Open	Closed	19.1	283
8/22/2024	23:30:00	7.3	0.97653	29.1	1,863	Open	Closed	18.7	283
8/22/2024	23:45:00	7.3	1.57456	3.2	1,863	Open	Closed	18.6	281
8/23/2024	0:00:00	7.4	1.56699	1.7	1,863	Open	Closed	18.4	279
8/23/2024	0:15:00	7.4	1.570775	1.9	1,863	Open	Closed	18.3	279
8/23/2024	0:30:00	7.4	1.56699	1.8	1,863	Open	Closed	18.2	282
8/23/2024	0:45:00	7.4	1.56699	2.8	1,863	Open	Closed	18.1	282

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/23/2024	1:00:00	7.4	0.39364	0.2	1,863	Open	Closed	18.3	283
8/23/2024	1:15:00	7.4	0.397425	0.1	1,869	Closed	Open	18.2	285
8/23/2024	1:30:00	7.3	0.465555	2.5	1,875	Closed	Open	18.1	297
8/23/2024	1:45:00	7.1	1.366385	186.2	1,875	Open	Closed	17.9	297
8/23/2024	2:00:00	7.1	1.495075	410.9	1,875	Open	Closed	17.6	286
8/23/2024	2:15:00	7.2	0.556395	105	1,875	Open	Closed	17.7	285
8/23/2024	2:30:00	7.2	1.555635	75.8	1,875	Open	Closed	17.6	285
8/23/2024	2:45:00	7.2	1.55185	118.7	1,875	Open	Closed	17.6	288
8/23/2024	3:00:00	7.1	1.2112	79.4	1,875	Open	Closed	17.6	285
8/23/2024	3:15:00	7.2	0.41635	14.2	1,875	Open	Closed	17.7	288
8/23/2024	3:30:00	7.2	1.623765	51.6	1,875	Open	Closed	17.4	283
8/23/2024	3:45:00	7.2	1.018165	197.4	1,875	Open	Closed	17.6	287
8/23/2024	4:00:00	7.1	1.199845	26.4	1,875	Open	Closed	17.5	285

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/23/2024	4:15:00	7.2	0.912185	174.3	1,875	Open	Closed	17.6	285
8/23/2024	4:30:00	7.2	1.063585	35.6	1,875	Open	Closed	17.6	285
8/23/2024	4:45:00	7.2	1.003025	117.6	1,875	Open	Closed	17.3	287
8/23/2024	5:00:00	7.1	1.601055	90.2	1,875	Open	Closed	17.6	287
8/23/2024	5:15:00	7.2	1.22634	71.7	1,875	Open	Closed	17.6	285
8/23/2024	5:30:00	7.3	1.585915	174	1,875	Open	Closed	17.2	282
8/23/2024	5:45:00	7.2	1.585915	195.9	1,875	Open	Closed	17.8	287
8/23/2024	6:00:00	7.1	1.585915	122.1	1,875	Open	Closed	17.8	286
8/23/2024	6:15:00	7.2	0	78.3	1,875	Open	Closed	18.1	283
8/23/2024	6:30:00	7.1	0	85.4	1,875	Open	Closed	18.3	283
8/23/2024	6:45:00	7.1	0	82.3	1,875	Open	Closed	18.6	283
8/23/2024	7:00:00	7.1	0	84.3	1,875	Open	Closed	18.7	283
8/23/2024	7:15:00	7.1	0	79.5	1,875	Open	Closed	18.9	283

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/23/2024	7:30:00	7.1	0	80.6	1,875	Open	Closed	19	285
8/23/2024	7:45:00	7.1	0	77.4	1,875	Open	Closed	19.1	285
8/23/2024	8:00:00	7.1	0	75.6	1,875	Open	Closed	19.3	285
8/23/2024	8:15:00	7.1	0	70.6	1,875	Open	Closed	19.4	285
8/23/2024	8:30:00	7.1	0	67	1,875	Open	Closed	19.5	285
8/23/2024	8:45:00	7.1	0	68.9	1,875	Open	Closed	19.6	287
8/23/2024	9:00:00	7.1	0	65	1,875	Open	Closed	19.6	285
8/23/2024	9:15:00	7.1	0	64.1	1,875	Open	Closed	19.7	287
8/23/2024	9:30:00	7.1	1.063585	20.5	1,875	Open	Closed	17.5	285
8/23/2024	9:45:00	7.2	1.025735	6.7	1,875	Open	Closed	17.6	283
8/23/2024	10:00:00	7.2	0.87055	2.9	1,875	Open	Closed	17.7	283
8/23/2024	10:15:00	7.2	0.647235	0.9	1,880	Closed	Open	17.8	283
8/23/2024	10:30:00	7.3	0.52233	0.6	1,889	Closed	Open	17.8	283

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/23/2024	10:45:00	7.2	0.526115	2	1,897	Open	Open	17.8	290
8/23/2024	11:00:00	7	0.526115	55.7	1,897	Open	Closed	17.9	293
8/23/2024	11:15:00	7	1.02195	221.8	1,897	Open	Closed	18.4	292
8/23/2024	11:30:00	7.1	1.010595	83.2	1,897	Open	Closed	18.9	288
8/23/2024	11:45:00	7.1	0.87812	19.3	1,897	Open	Closed	18.8	288
8/23/2024	12:00:00	7.2	0.881905	7.1	1,897	Open	Closed	18.7	288
8/23/2024	12:15:00	7.2	0.738075	3	1,897	Open	Closed	18.7	288
8/23/2024	12:30:00	7.2	0.68887	1.5	1,904	Closed	Open	18.6	288
8/23/2024	12:45:00	7.2	0.67373	1.2	1,914	Closed	Open	18.7	289
8/23/2024	13:00:00	7.2	0.669945	1.4	1,924	Closed	Open	18.7	288
8/23/2024	13:15:00	7.3	0.67373	1.9	1,934	Open	Closed	18.7	288
8/23/2024	13:30:00	7.2	0.889475	19.6	1,934	Open	Closed	18.7	295
8/23/2024	13:45:00	7	0.78728	41.4	1,934	Open	Closed	19	295

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/23/2024	14:00:00	7.1	0.859195	7	1,934	Open	Closed	19.6	288
8/23/2024	14:15:00	7.1	0.768355	0.8	1,941	Closed	Open	19.7	286
8/23/2024	14:30:00	7.2	0.745645	0.5	1,952	Closed	Open	19.6	286
8/23/2024	14:45:00	7.2	0	0	1,962	Open	Closed	19.5	286
8/23/2024	15:00:00	7.2	0	0	1,962	Open	Closed	19.7	284
8/23/2024	15:15:00	7.2	0.753215	11	1,962	Open	Closed	19.5	284
8/23/2024	15:30:00	7.2	0.8327	6.5	1,962	Open	Closed	19.1	283
8/23/2024	15:45:00	7.2	0.851625	3.9	1,962	Open	Closed	19	284
8/23/2024	16:00:00	7.3	0	4.3	1,962	Open	Closed	18.8	283
8/23/2024	16:15:00	7.2	0	4	1,962	Open	Closed	19	284
8/23/2024	16:30:00	7.2	0	3.8	1,962	Open	Closed	19.2	284
8/23/2024	16:45:00	7.2	0	3.3	1,962	Open	Closed	19.4	284
8/23/2024	17:00:00	7.2	0	4.3	1,962	Open	Closed	19.5	285

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/23/2024	17:15:00	7.1	0	3.8	1,962	Open	Closed	19.7	286
8/23/2024	17:30:00	7.1	0	1.4	1,962	Open	Closed	19.8	287
8/23/2024	17:45:00	7.1	0	1.8	1,962	Open	Closed	19.9	287
8/23/2024	18:00:00	7.1	0	1.7	1,962	Open	Closed	20	287
8/23/2024	18:15:00	7.1	0	1.2	1,962	Open	Closed	20.1	287
8/23/2024	18:30:00	7.1	0	1.2	1,962	Open	Closed	20.1	287
8/23/2024	18:45:00	7.1	0.859195	34.6	1,962	Open	Closed	18.6	287
8/23/2024	19:00:00	7.2	0.897045	87.3	1,962	Open	Closed	18.2	278
8/23/2024	19:15:00	7.2	0.88569	129.9	1,962	Open	Closed	18.1	272
8/23/2024	19:30:00	7.2	0.86298	136.8	1,962	Open	Closed	18.1	267
8/23/2024	19:45:00	7.2	0	121.9	1,962	Open	Closed	18.3	265
8/23/2024	20:00:00	7.2	0.80999	97.9	1,962	Open	Closed	18.1	266
8/23/2024	20:15:00	7.2	0.813775	62.1	1,962	Open	Closed	18.1	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	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/23/2024	20:30:00	7.2	0	56.3	1,962	Open	Closed	18.3	264
8/23/2024	20:45:00	7.2	0.84784	46.3	1,962	Open	Closed	18.1	264
8/23/2024	21:00:00	7.2	0.813775	24.4	1,962	Open	Closed	18.1	263
8/23/2024	21:15:00	7.3	0.78728	15	1,962	Open	Closed	18.1	269
8/23/2024	21:30:00	7.1	0.836485	17.7	1,962	Open	Closed	18.1	277
8/23/2024	21:45:00	7	0.435275	14.6	1,962	Open	Closed	18.1	280
8/23/2024	22:00:00	7	0.68887	14	1,962	Open	Closed	18.3	277
8/23/2024	22:15:00	7.1	0.685085	12.9	1,966	Closed	Open	18.4	277
8/23/2024	22:30:00	7.1	0.65102	9.9	1,972	Open	Closed	18.4	277
8/23/2024	22:45:00	7.2	0.639665	8.5	1,972	Open	Closed	18.3	277
8/23/2024	23:00:00	7.2	0.533685	6.6	1,972	Open	Closed	18.2	275
8/23/2024	23:15:00	7.2	0.616955	8	1,980	Closed	Open	18.2	273
8/23/2024	23:30:00	7.2	0.518545	3.8	1,982	Open	Closed	18	273

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/23/2024	23:45:00	7.2	0.61317	5.9	1,983	Closed	Open	17.9	270
8/24/2024	0:00:00	7.2	0.5299	4.2	1,991	Closed	Open	17.8	270
8/24/2024	0:15:00	7.2	0.49962	3.2	1,999	Closed	Open	17.7	265
8/24/2024	0:30:00	7.2	0.54504	3.3	2,007	Closed	Open	17.6	265
8/24/2024	0:45:00	7.1	0.495835	3.6	2,014	Closed	Open	17.4	274
8/24/2024	1:00:00	7	0.40878	2.5	2,018	Open	Closed	17.3	275
8/24/2024	1:15:00	6.9	0.473125	3.1	2,018	Open	Closed	17.3	272
8/24/2024	1:30:00	7	0.662375	362.3	2,018	Open	Closed	17.1	262
8/24/2024	1:45:00	7.1	1.15821	66	2,018	Open	Closed	17.3	257
8/24/2024	2:00:00	7.1	0.836485	21.3	2,018	Open	Closed	17.6	252
8/24/2024	2:15:00	7.2	0.8327	21.2	2,018	Open	Closed	17.4	248
8/24/2024	2:30:00	7.2	0.821345	26.1	2,018	Open	Closed	17.1	116
8/24/2024	2:45:00	7.2	0.87812	42.2	2,018	Open	Closed	16.9	115

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/24/2024	3:00:00	7.2	0.71915	411.7	2,018	Open	Closed	17.2	248
8/24/2024	3:15:00	7.2	0.96896	349	2,018	Open	Closed	17.5	248
8/24/2024	3:30:00	7.2	0.9084	293.1	2,018	Open	Closed	17.6	247
8/24/2024	3:45:00	7.2	1.517785	149.6	2,018	Open	Closed	17.7	116
8/24/2024	4:00:00	7.2	1.49886	105	2,018	Open	Closed	17.8	116
8/24/2024	4:15:00	7.2	1.16578	62.6	2,018	Open	Closed	17.7	116
8/24/2024	4:30:00	7.2	1.15821	67.2	2,018	Open	Closed	17.5	116
8/24/2024	4:45:00	7.2	1.15064	95.1	2,018	Open	Closed	17.2	116
8/24/2024	5:00:00	7.1	1.434515	163.4	2,018	Open	Closed	17.6	247
8/24/2024	5:15:00	7.1	1.419375	174.4	2,018	Open	Closed	17.8	246
8/24/2024	5:30:00	7.2	1.40045	274.4	2,018	Open	Closed	17.8	248
8/24/2024	5:45:00	7.2	1.50643	411.5	2,018	Open	Closed	17.8	252
8/24/2024	6:00:00	7.2	1.479935	411.7	2,018	Open	Closed	17.9	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	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/24/2024	6:15:00	7.3	1.464795	178.1	2,018	Open	Closed	17.7	258
8/24/2024	6:30:00	7.1	1.154425	128.3	2,018	Open	Closed	17.7	261
8/24/2024	6:45:00	7.1	1.146855	166.4	2,018	Open	Closed	17.5	265
8/24/2024	7:00:00	7.2	1.510215	132.8	2,018	Open	Closed	17.4	266
8/24/2024	7:15:00	7.2	1.275545	95.2	2,018	Open	Closed	17.9	268
8/24/2024	7:30:00	7.2	0.230885	103	2,018	Open	Closed	17.4	267
8/24/2024	7:45:00	7.2	0	71.6	2,018	Open	Closed	17.7	266
8/24/2024	8:00:00	7.2	0	88.8	2,018	Open	Closed	17.9	268
8/24/2024	8:15:00	7.1	1.820585	408.1	2,018	Open	Closed	17.6	268
8/24/2024	8:30:00	7.4	1.27176	18.4	2,018	Open	Closed	17.3	265
8/24/2024	8:45:00	7.7	0.21953	63.9	2,018	Open	Closed	17.4	264
8/24/2024	9:00:00	7.7	1.00681	78.1	2,018	Open	Closed	17.3	260
8/24/2024	9:15:00	7.4	0.707795	129.1	2,018	Open	Closed	17	263

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/24/2024	9:30:00	7.7	0	36.8	2,018	Open	Closed	17.8	262
8/24/2024	9:45:00	7.5	0.957605	15.8	2,018	Open	Closed	17.6	263
8/24/2024	10:00:00	7.5	0.74943	4.3	2,024	Closed	Open	17.9	262
8/24/2024	10:15:00	7.5	0.74186	3	2,035	Closed	Open	17.8	262
8/24/2024	10:30:00	7.7	0.87812	62.1	2,042	Open	Closed	17.6	262
8/24/2024	10:45:00	7.8	0	26.9	2,042	Open	Closed	17.5	260
8/24/2024	11:00:00	7.8	0.760785	151	2,042	Open	Closed	17.1	262
8/24/2024	11:15:00	7.3	0.92354	30	2,042	Open	Closed	18.4	268
8/24/2024	11:30:00	7.1	0	49.3	2,042	Open	Closed	18	271
8/24/2024	11:45:00	7.2	0.87812	122.5	2,042	Open	Closed	18	275
8/24/2024	12:00:00	7.4	0	69.4	2,042	Open	Closed	17.8	272
8/24/2024	12:15:00	7	0.92354	53.9	2,042	Open	Closed	17.8	275
8/24/2024	12:30:00	7.2	0	52.3	2,042	Open	Closed	17.3	275

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/24/2024	12:45:00	7.2	0	49.2	2,042	Open	Closed	17.5	275
8/24/2024	13:00:00	7.4	0.87812	411.8	2,042	Open	Closed	17.2	275
8/24/2024	13:15:00	7.8	1.305825	396.4	2,042	Open	Closed	17.2	273
8/24/2024	13:30:00	8.3	0	411.7	2,042	Open	Closed	17.7	275
8/24/2024	13:45:00	8.3	0	411.6	2,042	Open	Closed	17.9	278
8/24/2024	14:00:00	8.3	0	376.9	2,042	Open	Closed	18.1	280
8/24/2024	14:15:00	8.3	0	360	2,042	Open	Closed	18.3	280
8/24/2024	14:30:00	8.3	0	285.1	2,042	Open	Closed	18.4	279
8/24/2024	14:45:00	8.3	0	287.3	2,042	Open	Closed	18.5	279
8/24/2024	15:00:00	8.2	0	252.1	2,042	Open	Closed	18.6	283
8/24/2024	15:15:00	8.1	0.99167	411.6	2,042	Open	Closed	17.7	283
8/24/2024	15:30:00	8	0.828915	46	2,042	Open	Closed	18	285
8/24/2024	15:45:00	8	0.88569	37.5	2,042	Open	Closed	18	287

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/24/2024	16:00:00	8	0	19.2	2,042	Open	Closed	18.1	287
8/24/2024	16:15:00	8	0.8327	28.3	2,042	Open	Closed	18	288
8/24/2024	16:30:00	8	0	19.9	2,042	Open	Closed	17.7	288
8/24/2024	16:45:00	8	0	19.5	2,042	Open	Closed	18	288
8/24/2024	17:00:00	8	0	17.5	2,042	Open	Closed	18.1	292
8/24/2024	17:15:00	8	0.874335	28.6	2,042	Open	Closed	17.1	295
8/24/2024	17:30:00	8	0	36.3	2,042	Open	Closed	17.2	295
8/24/2024	17:45:00	8	0	37.8	2,042	Open	Closed	17.5	297
8/24/2024	18:00:00	8	0	37.3	2,042	Open	Closed	17.7	297
8/24/2024	18:15:00	8	0	37.2	2,042	Open	Closed	17.9	296
8/24/2024	18:30:00	8	0.88569	71.2	2,042	Open	Closed	17.4	298
8/24/2024	18:45:00	7.9	0.881905	37.2	2,042	Open	Closed	17	301
8/24/2024	19:00:00	7.8	0.69644	203.1	2,042	Open	Closed	17.1	306

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/24/2024	19:15:00	7.1	1.20363	218.2	2,042	Open	Closed	17	296
8/24/2024	19:30:00	7	0.77971	31.1	2,042	Open	Closed	17.1	296
8/24/2024	19:45:00	7.2	0.72672	28.8	2,043	Closed	Open	17	294
8/24/2024	20:00:00	7.2	0.87055	42.8	2,052	Open	Closed	17	292
8/24/2024	20:15:00	6.9	0.783495	116	2,052	Open	Closed	16.8	290
8/24/2024	20:30:00	7.1	0.78728	55.4	2,052	Open	Closed	16.7	290
8/24/2024	20:45:00	7.2	0.80242	36.8	2,052	Open	Closed	16.7	290
8/24/2024	21:00:00	7	0.41635	60.1	2,052	Open	Closed	16.7	289
8/24/2024	21:15:00	7	0.41635	43	2,052	Open	Closed	16.7	290
8/24/2024	21:30:00	7.1	0.40121	30.8	2,052	Open	Closed	16.7	289
8/24/2024	21:45:00	7.2	0.40121	24.2	2,052	Open	Closed	16.6	286
8/24/2024	22:00:00	7.2	0.50719	20.9	2,052	Open	Closed	16.6	283
8/24/2024	22:15:00	7	1.49886	239.4	2,052	Open	Closed	16.3	283

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/24/2024	22:30:00	7.2	1.025735	57.8	2,052	Open	Closed	16.5	284
8/24/2024	22:45:00	7.2	0.35579	23.2	2,052	Open	Closed	16.3	284
8/24/2024	23:00:00	7.3	0.77971	32.5	2,052	Open	Closed	16.3	281
8/24/2024	23:15:00	7	0.43149	51.4	2,052	Open	Closed	16.2	281
8/24/2024	23:30:00	7.1	0.42392	38.3	2,052	Open	Closed	16.2	281
8/24/2024	23:45:00	7.2	0.836485	45.4	2,052	Open	Closed	16.2	281
8/25/2024	0:00:00	7.3	0.813775	103.1	2,052	Open	Closed	16	281
8/25/2024	0:15:00	6.8	0.927325	220.1	2,052	Open	Closed	16	281
8/25/2024	0:30:00	7.2	0.51476	411.9	2,052	Open	Closed	16	281
8/25/2024	0:45:00	7.1	1.896285	401	2,052	Open	Closed	16	281
8/25/2024	1:00:00	7	1.903855	411.9	2,052	Open	Closed	16.1	281
8/25/2024	1:15:00	7.2	1.27176	411.9	2,052	Open	Closed	16.1	281
8/25/2024	1:30:00	7.2	1.063585	412	2,052	Open	Closed	16.1	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	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/25/2024	1:45:00	7.8	1.252835	91.6	2,054	Open	Closed	16.3	283
8/25/2024	2:00:00	7.3	1.25662	411.2	2,060	Open	Closed	16.1	281
8/25/2024	2:15:00	7.3	0.798635	411.7	2,060	Open	Closed	16.2	281
8/25/2024	2:30:00	7.2	1.366385	411.8	2,060	Open	Closed	16.2	283
8/25/2024	2:45:00	7	1.77895	338.2	2,060	Open	Closed	16.2	281
8/25/2024	3:00:00	7.1	0.6813	411.9	2,060	Open	Closed	16.3	281
8/25/2024	3:15:00	7	1.146855	411.9	2,060	Open	Closed	16.3	281
8/25/2024	3:30:00	7.2	0.77214	364.6	2,060	Open	Closed	16.2	283
8/25/2024	3:45:00	7	0.8327	412.1	2,060	Open	Closed	16.2	283
8/25/2024	4:00:00	7.2	1.298255	412	2,060	Open	Closed	16.1	283
8/25/2024	4:15:00	7	0.866765	412	2,060	Open	Closed	16.1	283
8/25/2024	4:30:00	7.2	0.851625	349.1	2,060	Open	Closed	16.2	283
8/25/2024	4:45:00	6.9	0.844055	390.2	2,060	Open	Closed	16.2	283

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/25/2024	5:00:00	7.1	0.73429	305.1	2,060	Open	Closed	16.1	283
8/25/2024	5:15:00	7.2	0.836485	290.8	2,060	Open	Closed	16.1	282
8/25/2024	5:30:00	7.2	0.84027	286.9	2,060	Open	Closed	16	281
8/25/2024	5:45:00	7.2	0.85541	291.7	2,060	Open	Closed	15.9	281
8/25/2024	6:00:00	7.2	0.753215	298	2,060	Open	Closed	15.9	281
8/25/2024	6:15:00	7.2	0.859195	411.9	2,060	Open	Closed	15.9	282
8/25/2024	6:30:00	7.2	0.844055	383.3	2,060	Open	Closed	15.9	283
8/25/2024	6:45:00	7.1	0.836485	398.3	2,060	Open	Closed	15.8	282
8/25/2024	7:00:00	7.1	0.3028	412	2,060	Open	Closed	15.8	283
8/25/2024	7:15:00	7.2	1.434515	412.1	2,060	Open	Closed	15.7	282
8/25/2024	7:30:00	7.2	1.464795	406.9	2,060	Open	Closed	15.7	283
8/25/2024	7:45:00	7.2	1.426945	408.8	2,060	Open	Closed	15.7	283
8/25/2024	8:00:00	7.2	1.426945	388.1	2,060	Open	Closed	15.8	283

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/25/2024	8:15:00	7.2	1.373955	370.3	2,060	Open	Closed	15.7	283
8/25/2024	8:30:00	7	1.260405	363.5	2,060	Open	Closed	15.7	281
8/25/2024	8:45:00	7.2	0.84027	196.7	2,060	Open	Closed	16.1	286
8/25/2024	9:00:00	7.2	1.116575	200	2,060	Open	Closed	15.8	284
8/25/2024	9:15:00	7.2	0.94625	177.4	2,060	Open	Closed	15.8	283
8/25/2024	9:30:00	7.2	0.72672	187.2	2,060	Open	Closed	15.8	283
8/25/2024	9:45:00	7.2	0.96139	147.5	2,060	Open	Closed	15.8	283
8/25/2024	10:00:00	7.2	0.95382	137.9	2,060	Open	Closed	15.8	283
8/25/2024	10:15:00	7.2	1.02952	144.7	2,060	Open	Closed	15.9	284
8/25/2024	10:30:00	7	1.03709	177.2	2,060	Open	Closed	16	287
8/25/2024	10:45:00	7.2	0.757	166.7	2,060	Open	Closed	16.2	286
8/25/2024	11:00:00	7.1	0	407.8	2,060	Open	Closed	16.3	285
8/25/2024	11:15:00	7.2	1.00681	345.6	2,060	Open	Closed	16.3	284

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/25/2024	11:30:00	7	0.81756	273.7	2,060	Open	Closed	16.4	284
8/25/2024	11:45:00	7.3	1.12036	202.2	2,060	Open	Closed	16.4	284
8/25/2024	12:00:00	7.1	0.56018	205.7	2,060	Open	Closed	16.5	285
8/25/2024	12:15:00	7.2	0.91597	165.6	2,060	Open	Closed	16.6	285
8/25/2024	12:30:00	7	1.124145	280.2	2,060	Open	Closed	16.7	285
8/25/2024	12:45:00	7.2	0.851625	220.9	2,060	Open	Closed	16.8	283
8/25/2024	13:00:00	7.2	1.07494	151.8	2,060	Open	Closed	16.8	283
8/25/2024	13:15:00	7.2	1.08251	220.4	2,060	Open	Closed	16.8	283
8/25/2024	13:30:00	7	0.77214	252.6	2,060	Open	Closed	16.8	282
8/25/2024	13:45:00	7.3	0.972745	152.6	2,060	Open	Closed	16.8	282
8/25/2024	14:00:00	7.1	0.722935	192.5	2,060	Open	Closed	16.8	282
8/25/2024	14:15:00	7.1	0.813775	162	2,060	Open	Closed	16.9	282
8/25/2024	14:30:00	7.1	0.647235	134	2,060	Open	Closed	16.9	282

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/25/2024	14:45:00	7	1.040875	165.1	2,060	Open	Closed	16.9	282
8/25/2024	15:00:00	7.2	0.745645	162	2,060	Open	Closed	16.9	282
8/25/2024	15:15:00	7.1	0.84027	163.4	2,060	Open	Closed	17	279
8/25/2024	15:30:00	7.1	0.87055	83.7	2,060	Open	Closed	17.1	278
8/25/2024	15:45:00	7.1	0.86298	87.2	2,060	Open	Closed	17.2	278
8/25/2024	16:00:00	7	0.859195	95.2	2,060	Open	Closed	17.3	278
8/25/2024	16:15:00	7.2	0.80999	47.9	2,060	Open	Closed	17.5	276
8/25/2024	16:30:00	7	0.874335	74.2	2,060	Open	Closed	17.5	277
8/25/2024	16:45:00	7.2	0.61317	197.3	2,060	Open	Closed	17.6	280
8/25/2024	17:00:00	7.1	0.85541	264.5	2,060	Open	Closed	17.9	278
8/25/2024	17:15:00	7.2	0.851625	202.2	2,060	Open	Closed	17.9	277
8/25/2024	17:30:00	7	0.59803	330.1	2,060	Open	Closed	18	277
8/25/2024	17:45:00	7.1	0.84784	248.2	2,060	Open	Closed	18	277

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/25/2024	18:00:00	7.2	0.86298	221.2	2,060	Open	Closed	18	278
8/25/2024	18:15:00	7.2	0.6056	247.4	2,060	Open	Closed	18	278
8/25/2024	18:30:00	7.1	0.84784	208.1	2,060	Open	Closed	17.9	279
8/25/2024	18:45:00	7.2	0.59046	204.4	2,060	Open	Closed	17.9	278
8/25/2024	19:00:00	7.2	0.85541	153.4	2,060	Open	Closed	17.9	279
8/25/2024	19:15:00	6.9	0.980315	225.8	2,060	Open	Closed	17.9	279
8/25/2024	19:30:00	7.2	0.950035	212.2	2,060	Open	Closed	17.9	278
8/25/2024	19:45:00	7	1.124145	208.1	2,060	Open	Closed	17.8	279
8/25/2024	20:00:00	7.2	0.450415	168.8	2,060	Open	Closed	17.7	278
8/25/2024	20:15:00	7.2	0	111.4	2,060	Open	Closed	17.9	282
8/25/2024	20:30:00	7.2	0.46177	214.5	2,060	Open	Closed	17.9	280
8/25/2024	20:45:00	7.2	0.99924	142.8	2,060	Open	Closed	17.7	280
8/25/2024	21:00:00	7	0	96.9	2,060	Open	Closed	17.5	282

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**August 19th to August 25th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **August 29th**

Date	Time	Discharge pH	Discharge Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/25/2024	21:15:00	7	0.9841	218	2,060	Open	Closed	17.6	281
8/25/2024	21:30:00	7.1	0	137.3	2,060	Open	Closed	17.5	282
8/25/2024	21:45:00	7.2	0	101.1	2,060	Open	Closed	17.3	281
8/25/2024	22:00:00	7.2	0.21953	119.4	2,060	Open	Closed	17.2	281
8/25/2024	22:15:00	7.1	0.99924	82.2	2,060	Open	Closed	17	281
8/25/2024	22:30:00	7.1	0.215745	116.4	2,060	Open	Closed	16.9	281
8/25/2024	22:45:00	7.2	0	62.5	2,060	Open	Closed	16.9	281
8/25/2024	23:00:00	7.3	0	44	2,060	Open	Closed	16.9	279
8/25/2024	23:15:00	7.2	0	315.8	2,060	Open	Closed	16.9	279
8/25/2024	23:30:00	6.8	0	169.3	2,060	Open	Closed	16.9	278
8/25/2024	23:45:00	6.9	0	408	2,060	Open	Closed	17	281

Appendix B: YSI Data Log

Date	Time	Down Stream Temperature (°C)
8/19/2024	00:01:21AM	16.4
8/19/2024	00:16:21AM	16.4
8/19/2024	00:31:21AM	16.4
8/19/2024	00:46:21AM	16.3
8/19/2024	01:01:21AM	16.3
8/19/2024	01:16:21AM	16.3
8/19/2024	01:31:21AM	16.3
8/19/2024	01:46:21AM	16.2
8/19/2024	02:01:21AM	16.2
8/19/2024	02:16:21AM	16.2
8/19/2024	02:31:21AM	16.2
8/19/2024	02:46:21AM	16.1
8/19/2024	03:01:21AM	16.1
8/19/2024	03:16:20AM	16.1
8/19/2024	03:31:20AM	16.2
8/19/2024	03:46:20AM	16.5
8/19/2024	04:01:20AM	16.6
8/19/2024	04:16:20AM	16.7
8/20/2024	08:32:17PM	16.4
8/20/2024	08:47:17PM	16.2

Date	Time	Down Stream Temperature (°C)
8/20/2024	09:02:17PM	16.2
8/20/2024	09:17:17PM	16.1
8/20/2024	09:32:17PM	16.1
8/20/2024	09:47:17PM	16.1
8/20/2024	10:02:17PM	16
8/20/2024	10:17:17PM	16
8/20/2024	10:32:17PM	16
8/20/2024	10:47:17PM	16
8/20/2024	11:02:17PM	16
8/20/2024	11:17:16PM	16
8/20/2024	11:32:16PM	16
8/20/2024	11:47:16PM	15.9
8/21/2024	00:02:16AM	16.1
8/21/2024	00:17:16AM	16.2
8/21/2024	00:32:16AM	16.4
8/21/2024	00:47:16AM	16.5
8/21/2024	01:02:16AM	16.6
8/21/2024	01:17:16AM	16.7
8/21/2024	01:32:16AM	16.7
8/21/2024	01:47:16AM	16.5

Date	Time	Down Stream Temperature (°C)
8/21/2024	02:02:16AM	16.7
8/21/2024	02:17:16AM	16.9
8/21/2024	02:32:16AM	16.9
8/21/2024	02:47:16AM	16.8
8/21/2024	12:37:26PM	21.1
8/21/2024	01:00:25PM	16
8/21/2024	01:15:25PM	16
8/21/2024	01:21:33PM	16
8/21/2024	01:36:33PM	16
8/21/2024	01:44:58PM	15.6
8/21/2024	01:59:58PM	16.2
8/21/2024	08:53:40PM	16.1
8/21/2024	09:08:40PM	15.8
8/21/2024	09:23:40PM	15.8
8/21/2024	09:38:40PM	15.8
8/21/2024	09:53:40PM	15.7
8/21/2024	10:08:40PM	15.7
8/21/2024	10:23:40PM	15.7
8/21/2024	10:38:40PM	15.7
8/21/2024	10:53:39PM	15.6
8/21/2024	11:08:39PM	15.6

Date	Time	Down Stream Temperature (°C)
8/21/2024	11:23:39PM	15.6
8/21/2024	11:38:39PM	15.6
8/21/2024	11:53:39PM	15.6
8/22/2024	00:08:39AM	15.6
8/22/2024	00:23:39AM	15.6
8/22/2024	00:38:39AM	15.5
8/22/2024	00:53:39AM	15.5
8/22/2024	01:08:39AM	15.5
8/22/2024	01:23:39AM	15.5
8/22/2024	01:38:39AM	15.5
8/22/2024	01:53:39AM	15.5
8/22/2024	02:08:39AM	15.5
8/22/2024	02:23:38AM	15.5
8/22/2024	02:38:38AM	15.5
8/22/2024	02:53:38AM	15.5
8/22/2024	03:08:38AM	15.5
8/22/2024	03:23:38AM	15.5
8/22/2024	03:38:38AM	15.5
8/22/2024	03:53:38AM	15.5
8/22/2024	04:08:38AM	15.5
8/22/2024	04:23:38AM	15.5

Date	Time	Down Stream Temperature (°C)
8/22/2024	11:35:38AM	16.1
8/22/2024	11:50:38AM	15.9
8/22/2024	12:05:38PM	15.9

Date	Time	Down Stream Temperature (°C)
8/22/2024	12:20:38PM	15.7
8/22/2024	12:35:38PM	16.3
8/22/2024	12:50:38PM	16.6

Appendix C: Photos

Photo 1: No visible sheen observed in the WTP water, August 19th

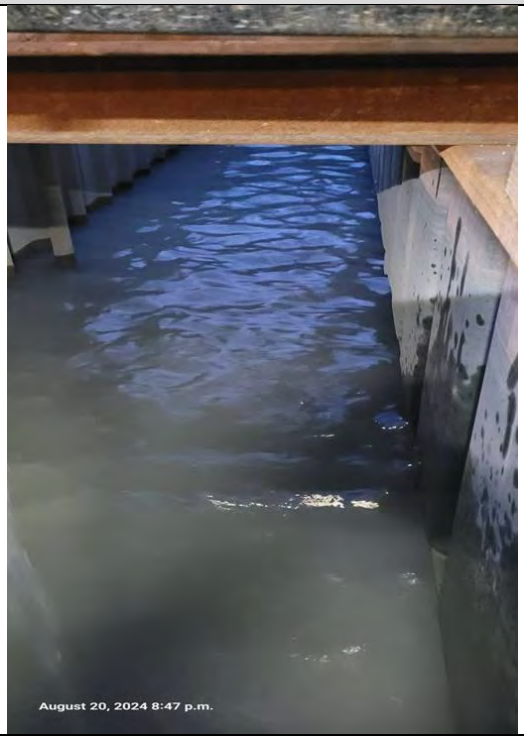
Photo 2: No visible sheen observed in the WTP tank, August 20th


Photo 3: No visible sheen observed in the WTP tank, August 21st

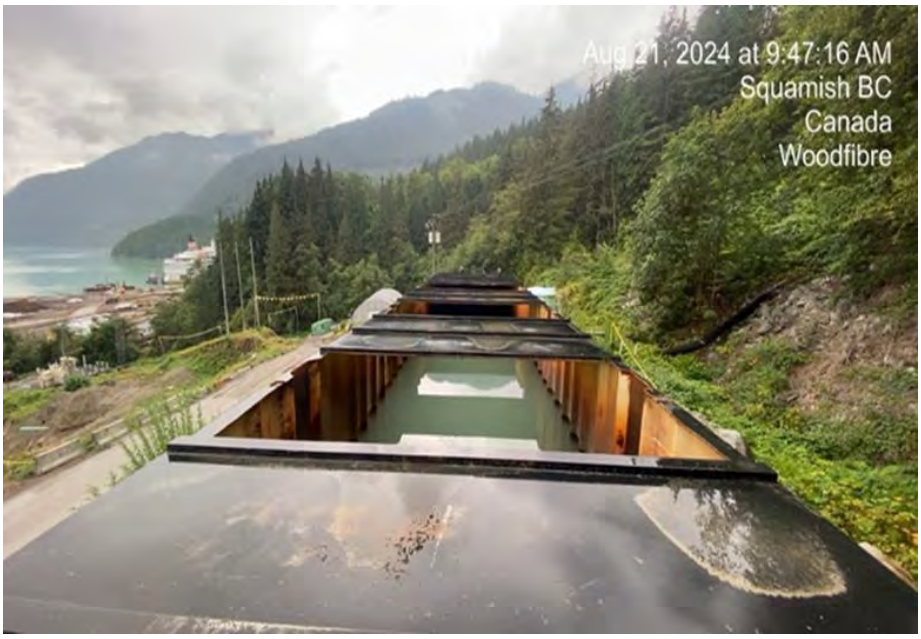



Photo 4: No visible sheen observed in the WTP tank, August 22nd


Photo 5: No visible sheen observed in the WTP tank, August 23rd

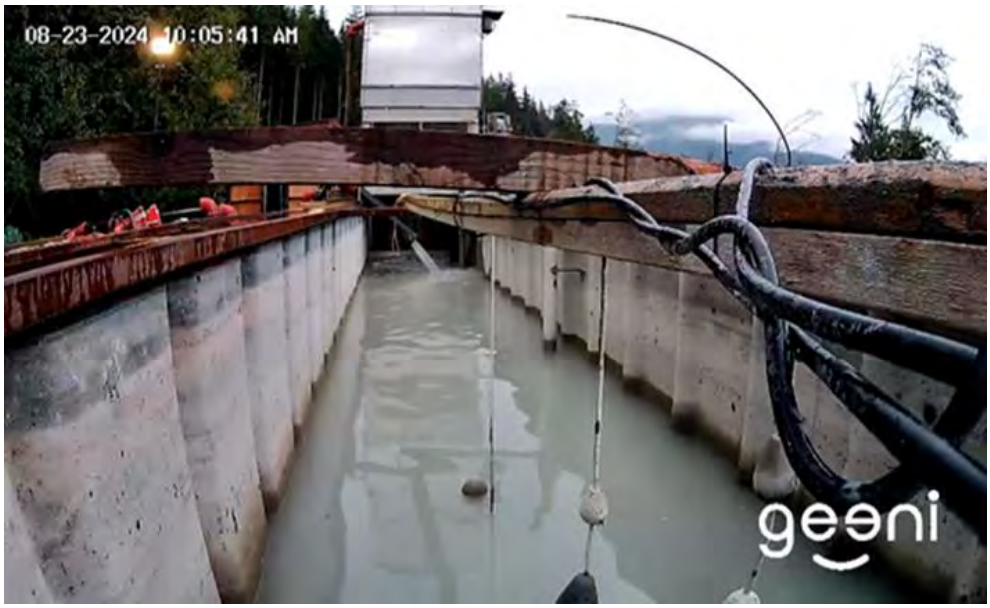



Photo 6: No visible sheen observed in the WTP tank, August 24th


Photo 7: No visible sheen observed in the WTP tank, August 25th


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					VA24C1105-001	VA24C1105-002					
	Date Sampled					20-Aug-2024	20-Aug-2024					
	Time Sampled					12:26	10:23					
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	7.73	7.32		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]	-	16	16.2		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	-	-	-	-	33	120					
Turbidity (field)	NTU	Varies with background, see note Guideline = 9.5	Varies with background, see note Guideline = 3.88 5-week discrete sampling average = 2.69 (DS)	Varies with background, see note Guideline = 9.5	Varies with background, see note Guideline = 3.88 5-week discrete sampling average = 2.69 (DS)	1.49	0.92		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	8.70	-		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	-	-	-	-	9.08	36.7					
Total Dissolved Solids	mg/L	-	-	-	-	30	60					
Total Suspended Solids	mg/L	Varies with background, see note Guideline = 28	Varies with background, see note Guideline = 8.34 5-week discrete sampling average = 5.34 (DS)	Varies with background, see note Guideline = 28	Varies with background, see note Guideline = 8.34 5-week discrete sampling average = 5.34 (DS)	< 3.0	< 3.0		Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 25 = DS guideline Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters. Calculation: US value + 10 = DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 5 mg/L @ one time for a druation of 30 days in clear flow. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.	Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 25 = DS guideline Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters. Calculation: US value + 10 = DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 5 mg/L @ one time for a druation of 30 days in clear flow. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.
Dissolved Organic Carbon (DOC)	mg/L	-	-	-	-	2.36	1.23			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	10.5	41.4	The upstream location has high sensitivity to acid inputs (i.e. high 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 = 9.26	Varies with pH and temperature. See note. Guideline = 1.66	Varies with pH and temperature. See note. Guideline = 15	Varies with pH, temperature and salinity. See note. Guideline = 2.2	< 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	0.74	1.02				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 =0.370	-	1.5	-	0.023	0.036		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	0.0205	0.272					
Nitrite (as N)	mg/L	Varies with chloride. Table 27B, see note. Guideline = 0.06	Varies with chloride. Table 27B, see note. Guideline = 0.02	-	-	< 0.0010	< 0.0010		Varies with chloride. Refer to Table 27B in BC WQG for guideline values.	Varies with chloride. Refer to Table 27B in BC WQG for guideline values.		
Total Nitrogen	mg/L	-	-	-	-	0.104	0.304					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.0086	0.0081			Guideline is for lakes, refer to BCWQ guideline for nutrients and algae for more information. Guideline does not apply to site.		
Sulfate (as SO_4)	mg/L	-	Varies with hardness. See note. Guideline = 128	-	-	2.55	4.71			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 = 0.125 5-week field average = 0.0961 (US), 0.0747 (DS)	-	-	0.058	0.0252			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	0.00012					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.00016	0.00012					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.00546	0.0113			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	0.012					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	< 0.0000050	0.0000091					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	3.12	13.4					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.000012	< 0.000010					
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	0.00068	0.00062					
Iron (Fe)-Total	mg/L	1	-	-	-	0.086	0.01					
Lead (Pb)-Total	mg/L	Varies with hardness. See Note. Guideline = 0.00385	Varies with hardness. See Note. Guideline = 0.00346	0.14	0.002	0.000052	< 0.000050		Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline is 0.003 where hardness ≤8mg/L. Guideline uses equation EXP[1.273*on(hardness)-1.460] where hardness is 8-360 mg/L. Lowest value for guideline is 0.003 mg/L.	Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline equation EXP[1.273*on(hardness)-4.704] applies to samples with hardness 8-360 mg/L.		
Lithium (Li)-Total	mg/L	-	-	-	-	< 0.0010	< 0.0010					
Magnesium (Mg)-Total	mg/L	-	-	-	-	0.314	0.795					
Manganese (Mn)-Total	mg/L	Varies with hardness Guideline = 0.816	Varies with hardness Guideline = 0.768	-	-	0.00243	0.0007		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	-	-	< 0.000005	< 0.000005			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	-	-	0.000565	0.00141					
Nickel (Ni)-Total	mg/L	-	Varies with hardness Guideline = 0.025	-	0.0083	< 0.00050	< 0.00050			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	-	-	-	-	0.348	0.714					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00092	0.00124					
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 guidelens 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	-	-	-	-	4.9	5.23					
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	-	-	-	-	2.02	3.29					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0172	0.0462					
Sulfur (S)-Total	mg/L	-	-	-	-	< 0.50	1.25					
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	-	-	-	-	0.00089	< 0.00030					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Total	mg/L	-	0.0085	-	-	0.000066	0.000083			Working guideline status		
Vanadium (V)-Total	mg/L	-	-	-	0.050	< 0.00050	< 0.00050					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	0.010	< 0.0030	< 0.0030					
Zirconium (Zr)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0425	0.019					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	< 0.00010	0.00014					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00014	0.00012					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.00515	0.012					
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	0.013					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note Guideline = 0.000050	Varies with hardness, see note Guideline = 0.000036	-	-	< 0.0000050	0.0000082		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	-	-	3.31	13.9	The upstream location has high sensitivity to acid inputs (i.e. low buffering capacity) while the downstream location 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	-	-	-	-	0.000012	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 = 0.0045	Guideline varies with other parameters, see note Guideline = 0.0006 5-week field average = 0.0006 (US), 0.0005 (DS)	-	-	0.00064	0.00063		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	-	-	-	0.054	< 0.010					
Lead (Pb)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	< 0.0010	< 0.0010					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.286	0.744					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00156	0.00035					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.000534	0.0015					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.050	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	0.334	0.715					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00095	0.00121					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	4.64	5.35					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	1.78	3.04					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0178	0.0474					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	0.53	1.2					
Tellurium (Te)-Dissolved	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Thorium (Th)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Tin (Sn)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Titanium (Ti)-Dissolved	mg/L	-	-	-	-	0.00031	< 0.00030					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.000059	0.000068					
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 = 0.0032 5-week field average = 0.0012 (US), 0.0019 (DS)	-	-	0.0017	0.0031		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				7.73	7.32
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations				16	16.2
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations				1.49	0.92
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				9.08	36.7
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations				2.36	1.23
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations				10.5	41.4
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations				0.74	1.02

Woodfibre Site Receiving Environment Lab Documentation

ALS Canada Ltd.

right solutions. right partner.

CERTIFICATE OF ANALYSIS

Work Order	: **VA24C1105**	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	: 20-Aug-2024 17:10
PO	: 11964-Task20-Phase3c-4c	Date Analysis Commenced	: 20-Aug-2024
C-O-C number	: ----	Issue Date	: 28-Aug-2024 14:47
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*
	Lab Assistant	Metals, Burnaby, British Columbia
	Analyst	Metals, Burnaby, British Columbia
	Supervisor - Metals Prep & Mercury	Metals, Burnaby, British Columbia
	Production Manager, Environmental	Inorganics, Waterloo, Ontario
	Production Manager, Environmental	Metals, Waterloo, Ontario
	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
	Lab Analyst	Metals, Burnaby, British Columbia
	Lab Assistant	Inorganics, Burnaby, British Columbia
	Account Manager Assistant	Administration, Burnaby, British Columbia
	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia
	Analyst- General	Metals, Burnaby, British Columbia

General Comments

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

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

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

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

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

LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	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 US1	WLNG DS1	----	----	----
					Client sampling date / time: 20-Aug-2024 12:26	20-Aug-2024 10:23	----	----	----
					VA24C1105-001	VA24C1105-002	--------	--------	--------
					Result	Result	----	----	----
Field Tests									
Conductivity, field	----	EF001/VA	0.10	µS/cm	33.000	120.00	----	----	----
pH, field	----	EF001/VA	0.10	pH units	7.73	7.32	----	----	----
Temperature, field	----	EF001/VA	0.10	°C	16.0	16.2	----	----	----
Physical Tests									
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	9.44	37.8	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	9.08	36.7	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	30	60	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	10.5	41.4	----	----	----
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	0.74	1.02	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.023	0.036	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.0205	0.272	----	----	----
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	0.104	0.304	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0086	0.0081	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	2.55	4.71	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	2.36	1.23	----	----	----
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	0.0580	0.0252	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	<0.00010	0.00012	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US1	WLNG DS1	----	----	----
					Client sampling date / time	20-Aug-2024 12:26	20-Aug-2024 10:23	----	----	----
						VA24C1105-001	VA24C1105-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00016	0.00012	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.00546	0.0113	----	----	----
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	0.012	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		<0.0000050	0.0000091	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		3.12	13.4	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000012	<0.000010	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00068	0.00062	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.086	0.010	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000052	<0.000050	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		0.314	0.795	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.00243	0.00070	----	----	----
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		0.000565	0.00141	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		0.348	0.714	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00092	0.00124	----	----	----
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		4.90	5.23	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		2.02	3.29	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0172	0.0462	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		<0.50	1.25	----	----	----
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**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US1	WLNG DS1	----	----	----
					Client sampling date / time	20-Aug-2024 12:26	20-Aug-2024 10:23	----	----	----
						VA24C1105-001	VA24C1105-002	--------	--------	--------
						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		0.00089	<0.00030	----	----	----
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		0.000066	0.000083	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		<0.0030	<0.0030	----	----	----
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		0.0425	0.0190	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		<0.00010	0.00014	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00014	0.00012	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00515	0.0120	----	----	----
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	0.013	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		<0.0000050	0.0000082	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		3.31	13.9	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.000012	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		0.00064	0.00063	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.054	<0.010	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		0.286	0.744	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00156	0.00035	----	----	----
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		0.000534	0.00150	----	----	----
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 US1	WLNG DS1	----	----	----
					Client sampling date / time	20-Aug-2024 12:26	20-Aug-2024 10:23	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C1105-001	VA24C1105-002	--------	--------	--------
						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		0.334	0.715	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00095	0.00121	----	----	----
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		4.64	5.35	----	----	----
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		1.78	3.04	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0178	0.0474	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		0.53	1.20	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		0.00031	<0.00030	----	----	----
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		0.000059	0.000068	----	----	----
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		0.0017	0.0031	----	----	----
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	: **VA24C1105**	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	: 20-Aug-2024 17:10
PO	: 11964-Task20-Phase3c-4c	Issue Date	: 28-Aug-2024 14:47
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 US1	E298	20-Aug-2024	20-Aug-2024	28 days	0 days	✓	21-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG DS1	E298	20-Aug-2024	25-Aug-2024	28 days	5 days	✓	26-Aug-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG DS1	E235.Br-L	20-Aug-2024	21-Aug-2024	28 days	1 days	✓	21-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG US1	E235.Br-L	20-Aug-2024	21-Aug-2024	28 days	1 days	✓	21-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG DS1	E235.Cl	20-Aug-2024	21-Aug-2024	28 days	1 days	✓	21-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG US1	E235.Cl	20-Aug-2024	21-Aug-2024	28 days	1 days	✓	21-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG DS1	E235.F	20-Aug-2024	21-Aug-2024	28 days	1 days	✓	21-Aug-2024	28 days	1 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
WLNG US1	E235.F	20-Aug-2024	21-Aug-2024	28 days	1 days	✓	21-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
WLNG DS1	E235.NO3-L	20-Aug-2024	21-Aug-2024	3 days	1 days	✓	21-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
WLNG US1	E235.NO3-L	20-Aug-2024	21-Aug-2024	3 days	1 days	✓	21-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
WLNG DS1	E235.NO2-L	20-Aug-2024	21-Aug-2024	3 days	1 days	✓	21-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
WLNG US1	E235.NO2-L	20-Aug-2024	21-Aug-2024	3 days	1 days	✓	21-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
WLNG DS1	E235.SO4	20-Aug-2024	21-Aug-2024	28 days	1 days	✓	21-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
WLNG US1	E235.SO4	20-Aug-2024	21-Aug-2024	28 days	1 days	✓	21-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
WLNG US1	E366	20-Aug-2024	20-Aug-2024	28 days	0 days	✓	21-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
WLNG DS1	E366	20-Aug-2024	25-Aug-2024	28 days	5 days	✓	27-Aug-2024	28 days	7 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WLNG US1	E372-U	20-Aug-2024	20-Aug-2024	28 days	0 days	✓	22-Aug-2024	28 days	2 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WLNG DS1	E372-U	20-Aug-2024	25-Aug-2024	28 days	5 days	✓	28-Aug-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
WLNG DS1	E509	20-Aug-2024	22-Aug-2024	28 days	2 days	✓	22-Aug-2024	28 days	2 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
WLNG US1	E509	20-Aug-2024	22-Aug-2024	28 days	2 days	✓	22-Aug-2024	28 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
WLNG DS1	E421	20-Aug-2024	21-Aug-2024	180 days	1 days	✓	23-Aug-2024	180 days	3 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
WLNG US1	E421	20-Aug-2024	21-Aug-2024	180 days	1 days	✓	23-Aug-2024	180 days	3 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
WLNG DS1	EF001	20-Aug-2024	----	----	----		21-Aug-2024	----	1 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 US1	EF001	20-Aug-2024	----	----	----		21-Aug-2024	----	1 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
WLNG US1	E358-L	20-Aug-2024	20-Aug-2024	28 days	0 days	✓	21-Aug-2024	28 days	1 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) WLNG DS1	E358-L	20-Aug-2024	27-Aug-2024	28 days	7 days	✓	27-Aug-2024	28 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WLNG DS1	E290	20-Aug-2024	21-Aug-2024	14 days	1 days	✓	21-Aug-2024	14 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WLNG US1	E290	20-Aug-2024	21-Aug-2024	14 days	1 days	✓	21-Aug-2024	14 days	1 days	✓
Physical Tests : TDS by Gravimetry										
HDPE WLNG US1	E162	20-Aug-2024	----	----	----		26-Aug-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE WLNG DS1	E162	20-Aug-2024	----	----	----		26-Aug-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WLNG DS1	E160	20-Aug-2024	----	----	----		26-Aug-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WLNG US1	E160	20-Aug-2024	----	----	----		26-Aug-2024	7 days	6 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide) WLNG DS1	E532	20-Aug-2024	----	----	----		23-Aug-2024	28 days	3 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide) WLNG US1	E532	20-Aug-2024	----	----	----		23-Aug-2024	28 days	3 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
WLNG US1	E508	20-Aug-2024	22-Aug-2024	28 days	2 days	✓	22-Aug-2024	28 days	2 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
WLNG DS1	E508	20-Aug-2024	25-Aug-2024	28 days	5 days	✓	25-Aug-2024	28 days	5 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
WLNG DS1	E420	20-Aug-2024	21-Aug-2024	180 days	1 days	✓	22-Aug-2024	180 days	2 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
WLNG US1	E420	20-Aug-2024	21-Aug-2024	180 days	1 days	✓	22-Aug-2024	180 days	2 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG DS1	E395	20-Aug-2024	----	----	----		24-Aug-2024	7 days	4 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG US1	E395	20-Aug-2024	----	----	----		24-Aug-2024	7 days	4 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	1607345	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1607078	2	32	6.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1607350	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1607349	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1610589	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1607992	1	12	8.3	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1607079	2	10	20.0	5.0	✓
Fluoride in Water by IC	E235.F	1607348	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1607351	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1607352	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1607353	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1617393	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1612282	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1610399	2	35	5.7	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1607119	1	18	5.5	5.0	✓
Total Nitrogen by Colourimetry	E366	1607076	2	20	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1607077	2	23	8.7	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1614424	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	1617384	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1607345	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1607078	2	32	6.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1607350	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1607349	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1610589	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1607992	1	12	8.3	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1607079	2	10	20.0	5.0	✓
Fluoride in Water by IC	E235.F	1607348	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1607351	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1607352	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1607353	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1617393	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1612282	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1610399	2	35	5.7	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1607119	1	18	5.5	5.0	✓
Total Nitrogen by Colourimetry	E366	1607076	2	20	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*
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1607077	2	23	8.7	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1614424	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	1617384	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1607345	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1607078	2	32	6.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1607350	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1607349	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1610589	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1607992	1	12	8.3	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1607079	2	10	20.0	5.0	✓
Fluoride in Water by IC	E235.F	1607348	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1607351	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1607352	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1607353	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1617393	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1612282	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1610399	2	35	5.7	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1607119	1	18	5.5	5.0	✓
Total Nitrogen by Colourimetry	E366	1607076	2	20	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1607077	2	23	8.7	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1614424	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	1617384	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1607078	2	32	6.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1607350	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1607349	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1610589	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1607992	1	12	8.3	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1607079	2	10	20.0	5.0	✓
Fluoride in Water by IC	E235.F	1607348	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1607351	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1607352	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1607353	1	15	6.6	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1612282	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1610399	2	35	5.7	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1607119	1	18	5.5	5.0	✓
Total Nitrogen by Colourimetry	E366	1607076	2	20	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1607077	2	23	8.7	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	1614424	1	17	5.8	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 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.

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QUALITY CONTROL REPORT

Work Order	: **VA24C1105**	Page	: 1 of 18
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 20-Aug-2024 17:10
PO	: 11964-Task20-Phase3c-4c	Date Analysis Commenced	: 20-Aug-2024
C-O-C number	: ----	Issue Date	: 28-Aug-2024 14:47
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*
	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
	Analyst	Vancouver Metals, Burnaby, British Columbia
	Supervisor - Metals Prep & Mercury	Vancouver Metals, Burnaby, British Columbia
	Production Manager, Environmental	Waterloo Inorganics, Waterloo, Ontario
	Production Manager, Environmental	Waterloo Metals, Waterloo, Ontario
	Supervisor - Inorganic	Vancouver Inorganics, Burnaby, British Columbia
	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia
	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia
	Analyst- General	Vancouver Metals, Burnaby, British Columbia

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1607345)											
VA24C1109-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	15.0	14.9	0.673%	20%	----
Physical Tests (QC Lot: 1617384)											
KS2403379-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1617393)											
KS2403379-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	2420	2290	5.69%	20%	----
Anions and Nutrients (QC Lot: 1607076)											
VA24C0742-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.119	0.119	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607077)											
VA24C0742-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0049	0.0049	0.00002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607078)											
VA24C0742-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607348)											
VA24C1097-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.055	0.056	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607349)											
VA24C1097-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	0.88	0.89	0.01	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607350)											
VA24C1097-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607351)											
VA24C1097-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.442	0.452	2.07%	20%	----
Anions and Nutrients (QC Lot: 1607352)											
VA24C1097-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0015	0.0014	0.00006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1607353)											
VA24C1097-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	18.5	19.1	3.26%	20%	----
Anions and Nutrients (QC Lot: 1615323)											
VA24C0978-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0030	0.0029	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1615325)											
KS2403311-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.500	mg/L	4.80	4.64	0.158	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1615326)											
KS2403311-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.600	mg/L	5.71	5.81	0.107	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1607079)											

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Organic / Inorganic Carbon (QC Lot: 1607079) - continued											
VA24C0742-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.01	2.15	0.15	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1617547)											
VA24C0978-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.42	2.50	0.07	Diff <2x LOR	----
Total Sulfides (QC Lot: 1614424)											
EO2407181-001	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: 1607119)											
FJ2402452-017	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	<0.10	<0.10	0	Diff <2x LOR	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----

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: 1607119) - continued											
FJ2402452-017	Anonymous	Sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1610399)											
VA24C0638-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0000050	0.0000056	0.0000006	Diff <2x LOR	----
Total Metals (QC Lot: 1615360)											
KS2403370-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1607992)											
VA24C0970-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0050	mg/L	0.0177	0.0162	0.0015	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00050	mg/L	0.00512	0.00511	0.215%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00050	mg/L	0.160	0.159	0.414%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.050	mg/L	1.34	1.37	2.46%	20%	----
		Cadmium, dissolved	7440-43-9	E421	0.0000250	mg/L	<0.0000250	<0.0000250	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.250	mg/L	32.0	33.3	3.98%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00250	mg/L	0.00397	0.00423	0.00026	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00050	mg/L	0.00534	0.00533	0.176%	20%	----
		Copper, dissolved	7440-50-8	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.050	mg/L	17.5	17.8	1.60%	20%	----
		Lead, dissolved	7439-92-1	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0050	mg/L	0.0168	0.0173	0.0005	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0250	mg/L	83.7	84.6	1.08%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00050	mg/L	0.586	0.598	2.14%	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: 1607992) - continued											
VA24C0970-001	Anonymous	Molybdenum, dissolved	7439-98-7	E421	0.000250	mg/L	0.00155	0.00162	0.000069	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00250	mg/L	0.00448	0.00443	0.00005	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.250	mg/L	4.11	3.96	3.75%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.250	mg/L	41.1	41.1	0.0756%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00100	mg/L	0.00741	0.00737	0.00004	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.250	mg/L	27.6	27.2	1.27%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.250	mg/L	789	784	0.705%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00100	mg/L	0.423	0.450	6.15%	20%	----
		Sulfur, dissolved	7704-34-9	E421	2.50	mg/L	<2.50	<2.50	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00150	mg/L	0.0132	0.0138	0.00058	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000050	mg/L	0.000114	0.000126	0.000012	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E421	0.00250	mg/L	0.0106	0.0108	0.00021	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00100	mg/L	0.00522	0.00563	0.00041	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1610589)											
VA24C0781-003	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0050 µg/L	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1612282)											
VA24C0997-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	<0.50 µg/L	<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: 1607345)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1617384)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1617393)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1607076)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1607077)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1607078)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1607348)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1607349)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1607350)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1607351)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1607352)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1607353)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1615323)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1615325)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1615326)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Organic / Inorganic Carbon (QCLot: 1607079)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1617547)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Organic / Inorganic Carbon (QCLot: 1617547) - continued						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1614424)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1607119)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1607119) - continued						
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 1610399)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Total Metals (QCLot: 1615360)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1607992)						
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1607992) - continued						
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 1610589)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1612282)						
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: 1607345)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1617384)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	96.7	85.0	115	----
Physical Tests (QCLot: 1617393)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	95.6	85.0	115	----
Anions and Nutrients (QCLot: 1607076)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	98.2	75.0	125	----
Anions and Nutrients (QCLot: 1607077)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	93.5	80.0	120	----
Anions and Nutrients (QCLot: 1607078)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.2	85.0	115	----
Anions and Nutrients (QCLot: 1607348)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1607349)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1607350)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	99.4	85.0	115	----
Anions and Nutrients (QCLot: 1607351)									
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: 1607352)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.6	90.0	110	----
Anions and Nutrients (QCLot: 1607353)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1615323)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	92.4	80.0	120	----
Anions and Nutrients (QCLot: 1615325)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.3	85.0	115	----
Anions and Nutrients (QCLot: 1615326)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	101	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1607079)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 1607079) - continued									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	99.3	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1617547)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	95.2	80.0	120	----
Total Sulfides (QCLot: 1614424)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	108	80.0	120	----
Total Metals (QCLot: 1607119)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	95.9	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	95.1	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	103	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	95.9	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	91.9	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	99.8	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	99.5	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	104	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	101	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	99.5	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	97.8	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	101	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	107	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	99.8	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	101	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	99.3	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	96.6	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	103	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	92.1	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	108	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	104	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1607119) - continued									
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	92.8	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	96.7	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	99.9	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	98.1	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	98.3	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	97.8	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	99.1	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	104	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	101	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	98.2	80.0	120	----
Total Metals (QCLot: 1610399)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	96.2	80.0	120	----
Total Metals (QCLot: 1615360)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	91.1	80.0	120	----
Dissolved Metals (QCLot: 1607992)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	96.2	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	98.6	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	101	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	98.8	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	96.7	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	93.2	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	98.9	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	100	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	97.7	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	99.0	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	96.5	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	97.2	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	89.7	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	97.6	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	96.2	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	93.3	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	99.4	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	103	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: 1607992) - continued									
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	98.2	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	100	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	96.8	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	99.0	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	98.2	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	104	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	94.1	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	101	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	107	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	83.0	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	99.7	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	93.3	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	99.8	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	89.6	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	98.0	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	96.8	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	98.0	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	95.2	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	99.2	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	97.0	80.0	120	----
Speciated Metals (QCLot: 1612282)									
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: 1607076)										
VA24C0742-002	Anonymous	Nitrogen, total	7727-37-9	E366	0.445 mg/L	0.4 mg/L	111	70.0	130	----
Anions and Nutrients (QCLot: 1607077)										
VA24C0742-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0481 mg/L	0.05 mg/L	96.1	70.0	130	----
Anions and Nutrients (QCLot: 1607078)										
VA24C0742-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.102 mg/L	0.1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1607348)										
VA24C1097-002	Anonymous	Fluoride	16984-48-8	E235.F	0.992 mg/L	1 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 1607349)										
VA24C1097-002	Anonymous	Chloride	16887-00-6	E235.Cl	99.0 mg/L	100 mg/L	99.0	75.0	125	----
Anions and Nutrients (QCLot: 1607350)										
VA24C1097-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.481 mg/L	0.5 mg/L	96.1	75.0	125	----
Anions and Nutrients (QCLot: 1607351)										
VA24C1097-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.46 mg/L	2.5 mg/L	98.4	75.0	125	----
Anions and Nutrients (QCLot: 1607352)										
VA24C1097-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.475 mg/L	0.5 mg/L	95.1	75.0	125	----
Anions and Nutrients (QCLot: 1607353)										
VA24C1097-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	98.2 mg/L	100 mg/L	98.2	75.0	125	----
Anions and Nutrients (QCLot: 1615323)										
VA24C1074-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0509 mg/L	0.05 mg/L	102	70.0	130	----
Anions and Nutrients (QCLot: 1615325)										
KS2403311-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1615326)										
KS2403311-002	Anonymous	Nitrogen, total	7727-37-9	E366	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1607079)										
VA24C0742-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	4.85 mg/L	5 mg/L	97.0	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1617547)										
VA24C1105-002	WLNG DS1	Carbon, dissolved organic [DOC]	----	E358-L	5.14 mg/L	5 mg/L	103	70.0	130	----
Total Sulfides (QCLot: 1614424)										
FC2402241-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.244 mg/L	0.2 mg/L	122	75.0	125	----
Total Metals (QCLot: 1607119)										

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: 1607119) - continued										
VA24C1010-001	Anonymous	Aluminum, total	7429-90-5	E420	1.02 mg/L	1 mg/L	102	70.0	130	----
		Antimony, total	7440-36-0	E420	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.104 mg/L	0.1 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	0.201 mg/L	0.2 mg/L	101	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0459 mg/L	0.05 mg/L	91.8	70.0	130	----
		Boron, total	7440-42-8	E420	ND mg/L	----	ND	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0513 mg/L	0.05 mg/L	102	70.0	130	----
		Chromium, total	7440-47-3	E420	0.197 mg/L	0.2 mg/L	98.4	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		Copper, total	7440-50-8	E420	0.0959 mg/L	0.1 mg/L	95.9	70.0	130	----
		Iron, total	7439-89-6	E420	ND mg/L	----	ND	70.0	130	----
		Lead, total	7439-92-1	E420	0.0901 mg/L	0.1 mg/L	90.1	70.0	130	----
		Lithium, total	7439-93-2	E420	0.479 mg/L	0.5 mg/L	95.7	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	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Nickel, total	7440-02-0	E420	0.189 mg/L	0.2 mg/L	94.5	70.0	130	----
		Phosphorus, total	7723-14-0	E420	50.1 mg/L	50 mg/L	100	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	----	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0994 mg/L	0.1 mg/L	99.4	70.0	130	----
		Selenium, total	7782-49-2	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		Silicon, total	7440-21-3	E420	ND mg/L	----	ND	70.0	130	----
		Silver, total	7440-22-4	E420	0.0192 mg/L	0.02 mg/L	95.8	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	103 mg/L	100 mg/L	103	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		Thallium, total	7440-28-0	E420	0.0173 mg/L	0.02 mg/L	86.5	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0922 mg/L	0.1 mg/L	92.2	70.0	130	----
		Tin, total	7440-31-5	E420	0.0990 mg/L	0.1 mg/L	99.0	70.0	130	----
		Titanium, total	7440-32-6	E420	0.191 mg/L	0.2 mg/L	95.6	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0927 mg/L	0.1 mg/L	92.7	70.0	130	----
		Uranium, total	7440-61-1	E420	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.505 mg/L	0.5 mg/L	101	70.0	130	----
		Zinc, total	7440-66-6	E420	1.96 mg/L	2 mg/L	97.9	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.205 mg/L	0.2 mg/L	103	70.0	130	----
Total Metals (QCLot: 1610399)										
VA24C0638-002	Anonymous	Mercury, total	7439-97-6	E508	0.000103 mg/L	0 mg/L	103	70.0	130	----
Total Metals (QCLot: 1615360)										
VA24C0978-001	Anonymous	Mercury, total	7439-97-6	E508	0.000104 mg/L	0 mg/L	104	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1607992)										
VA24C0970-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.376 mg/L	0.4 mg/L	94.1	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0362 mg/L	0.04 mg/L	90.4	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0744 mg/L	0.08 mg/L	93.0	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.0167 mg/L	0.02 mg/L	83.5	70.0	130	----
		Boron, dissolved	7440-42-8	E421	ND mg/L	----	ND	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00730 mg/L	0.008 mg/L	91.3	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.0183 mg/L	0.02 mg/L	91.5	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0729 mg/L	0.08 mg/L	91.1	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0352 mg/L	0.04 mg/L	87.9	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0336 mg/L	0.04 mg/L	84.1	70.0	130	----
		Iron, dissolved	7439-89-6	E421	3.29 mg/L	4 mg/L	82.2	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0342 mg/L	0.04 mg/L	85.6	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.177 mg/L	0.2 mg/L	88.7	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	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0694 mg/L	0.08 mg/L	86.8	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	19.7 mg/L	20 mg/L	98.6	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0363 mg/L	0.04 mg/L	90.8	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0731 mg/L	0.08 mg/L	91.4	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	ND mg/L	----	ND	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00669 mg/L	0.008 mg/L	83.7	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	ND mg/L	----	ND	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0769 mg/L	0.08 mg/L	96.1	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00690 mg/L	0.008 mg/L	86.3	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0348 mg/L	0.04 mg/L	87.1	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0366 mg/L	0.04 mg/L	91.4	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0706 mg/L	0.08 mg/L	88.3	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0374 mg/L	0.04 mg/L	93.4	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00688 mg/L	0.008 mg/L	86.1	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.190 mg/L	0.2 mg/L	94.8	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.695 mg/L	0.8 mg/L	86.8	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0813 mg/L	0.08 mg/L	102	70.0	130	----
Dissolved Metals (QCLot: 1610589)										
VA24C0862-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000917 mg/L	0 mg/L	91.7	70.0	130	----
Speciated Metals (QCLot: 1612282)										
VA24C0997-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17 -

Page 1 of

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	Triton Environmental	Select Report Format: ☑ ☑ EXCEL ☐ EDD (DIGITAL)	Regular [R] ✔ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	[redacted]	Quality Control (QC) Report with Report ☑ YES ☐ NO	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)] ☐
Phone:		☑ Compare Results to Criteria on Report - provide details below if box checked	
	he final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Street:		Email 1 or Fa [redacted]	Date and Time Required for all E&P TATs: 28-Aug-24 dd-mmm-yy hh:mm
City/Province:		Email 2	For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:		Email 3	
Invoice To	Same as Report To ☐ YES ☑ NO		
	Copy of Invoice with Report ☐ YES ☑ NO	Select Invoice	
Company:		Email 1 or Fa	
Contact:		Email 2	

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):	VA24C1105	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						
	WLNG US 1	20-Aug-24	12:26	Water	R	R	R	R	R	R	R	R	R	R	R					N	9
	pH: 7.73 cond: 33 µS/cm temp: 16.0 °C				P2	P2							P2	P2	P2						
	WLNG DS 1	20-Aug-24	10:23	Water	R	R	R	R	R	R	R	R	R	R	R					N	9
	pH: 7.32 cond: 120 µS/cm temp: 16.2 °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
VA24C1105

Telephone : +1 604 253 4188

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

2 day TAT for WLNG us metals, DOC, and regular TAT for ~~all~~ other parameters.
Triton project # 11964
Anions + general parameters also 2 day TAT

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	13		

SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
[redacted]	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
20 Aug 28	17:05					24.08.20	5:10 pm

REFER TO BACK PAGE FOR ADDITIONAL TERMS AND CONDITIONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY — SEPT 2017 FRONT

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

2024-8-20-Chycoski-856C8

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	08/20/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	
Temperature(c):	Low 13 High 17	**Permit:**	PE 110136
Weather Conditions:	Light Rain	**Ground Conditions:**	Wet

Observations

Time: 10:23:00 **Flow Volume (visual):** low

Notes: DO: 7.63 mg/L
ORP: 66.3 MV
Salinity: 0.12 ppt

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

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

Photo: 4

Location: EAS DS 1

Description: Sonde setup

Photos

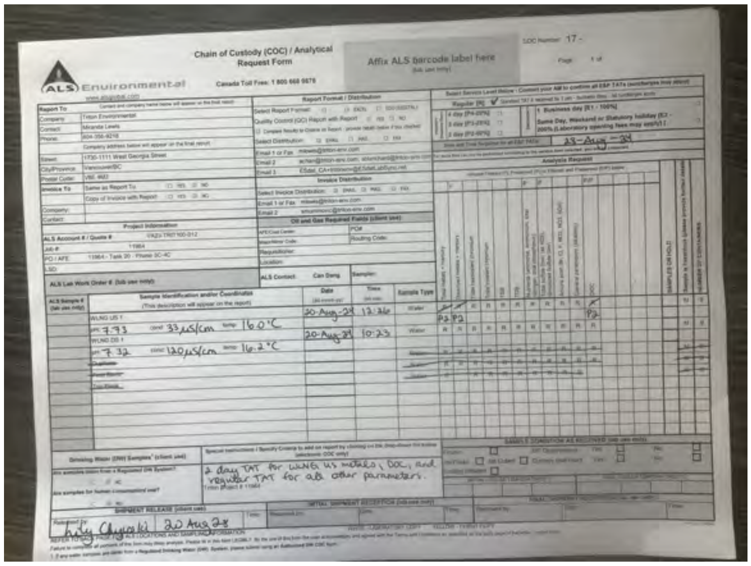
Chain of Custody (COC) / Analytical Request Form
Affix ALS barcode label here
ALS Environmental
Canada Toll Free: 1 800 668 9878
COC Number: 17 -
Report To
Company: Triton Environmental
Contact: Miranda Lewis
Street: 1730-1111 West Georgia Street
City/Province: Vancouver/BC
Report Format / Distribution
Analysis Request
Job #: 11964
PO / AFE: 11964 - Task 20 - Phase 3C-4C
ALS Contact: Can Dang
Sample Identification and/or Coordinates
WLNG US 1 — pH 7.73, cond 33 µS/cm, temp 16.0 °C — 20-Aug-24, 12:36, Water
WLNG DS 1 — pH 7.32, cond 120 µS/cm, temp 16.2 °C — 20-Aug-24, 10:23, Water
Special Instructions: 2 day TAT for WLNG US metals, DOC, and regular TAT for all other parameters.
Triton Project # 11964
Date required: 23-Aug-24
Shipment Release: [illegible] Chycoski, 20 Aug 24

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:			

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-8-20-Chycoski-3FAEA

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	08/20/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.669455 -123.25087
Temperature(c):	Low 13 High 17	**Permit:**	PE 110136
Weather Conditions:	Light Rain	**Ground Conditions:**	Wet

Observations

Time: 12:26:00 **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

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

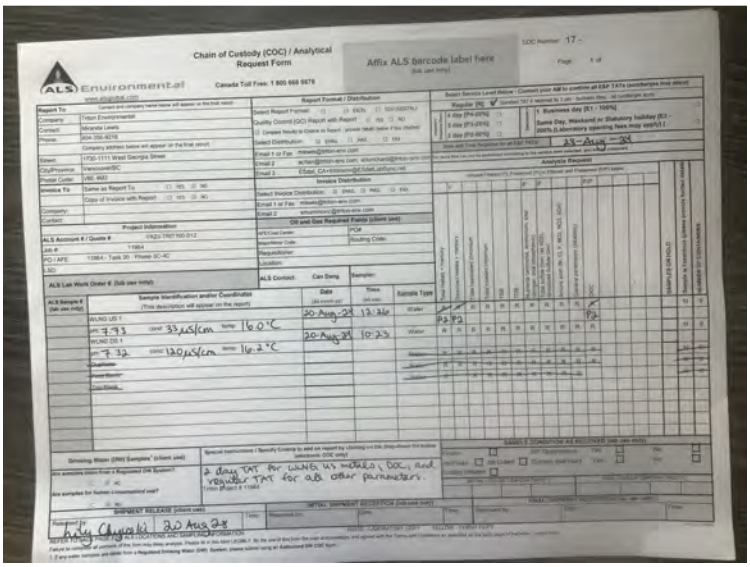

Photo: 4

Location: EAS US 1

Description: Lab COC

Sign Off

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

WLNG Downstream Raw Sonde Data 2024-08-22 to 2024-08-25

Received	Temperature C	Specific Conductivity ÂµS/cm	Salinity PSU	pH pH	ORP mV	Dissolved Oxygen Concentration mg/L	Turbidity NTU	TL Battery V
8/25/2024 23:50	15.09	203.32	0.1	7.87	335.75	0.03	46.72	12.29
8/25/2024 23:40	15.09	203.2	0.1	7.88	350.04	0.04	47.96	12.29
8/25/2024 23:30	15.08	202.71	0.1	7.88	346.48	0.04	56.55	12.29
8/25/2024 23:20	0	0	0	7.88	333.02	0.04	51.96	12.31
8/25/2024 23:10	15.09	202.86	0.1	7.88	337.21	0.04	45.03	12.31
8/25/2024 23:00	15.1	202.74	0.1	7.88	332.5	0.03	44.99	12.29
8/25/2024 22:50	15.12	202.58	0.1	7.88	336.81	0.03	43.89	12.21
8/25/2024 22:40	15.13	202.93	0.1	7.87	340.71	0.03	49.26	12.29
8/25/2024 22:30	15.14	203.08	0.1	7.87	351.19	0.03	42.79	12.33
8/25/2024 22:20	15.15	203.35	0.1	7.85	368.19	0.03	42.2	12.31
8/25/2024 22:10	15.16	203.38	0.1	7.85	366.77	0.04	42.71	12.21
8/25/2024 22:00	15.17	203.43	0.1	7.86	359.84	0.04	42.4	12.19
8/25/2024 21:50	15.18	203.19	0.1	7.86	355.42	0.04	41.79	12.33
8/25/2024 21:40	15.18	203.01	0.1	7.85	341.38	0.03	41.81	12.33
8/25/2024 21:30	15.19	203.11	0.1	7.86	348.83	0.03	41.34	12.33
8/25/2024 21:20	15.2	203.2	0.1	7.85	348.68	0.04	41.7	12.33
8/25/2024 21:10	15.21	203.39	0.1	7.85	347.4	0.04	40.86	12.33
8/25/2024 21:00	15.21	203.05	0.1	7.85	342.11	0.05	40.7	12.33
8/25/2024 20:50	15.22	203.5	0.1	7.85	345.11	0.05	39.75	12.33
8/25/2024 20:40	15.23	203.31	0.1	7.85	345.48	0.06	39.94	12.36
8/25/2024 20:30	15.24	202.87	0.1	7.85	339.14	0.07	39.42	12.26
8/25/2024 20:20	15.24	202.91	0.1	7.85	321.93	0.06	42.51	12.33
8/25/2024 20:10	15.25	202.7	0.1	7.85	324.22	0.06	41.38	12.41
8/25/2024 20:00	15.26	202.81	0.1	7.85	321.66	0.05	41.31	12.43
8/25/2024 19:50	15.27	203.08	0.1	7.85	322.95	0.05	40.69	12.38
8/25/2024 19:40	15.27	203.58	0.1	7.83	324.98	0.05	40.45	12.53
8/25/2024 19:30	15.28	203.74	0.1	7.84	329.82	0.05	41.16	12.53
8/25/2024 19:20	15.29	203.27	0.1	7.84	336.82	0.05	41.1	12.67
8/25/2024 19:10	15.3	203.36	0.1	7.85	350	0.05	39.88	12.84
8/25/2024 19:00	15.3	202.94	0.1	7.86	340.49	0.05	40.33	13.03
8/25/2024 18:50	15.32	202.28	0.1	7.87	349.66	0.05	40.95	13.12
8/25/2024 18:40	15.33	202.4	0.1	7.87	339.74	0.05	40.24	13.2
8/25/2024 18:30	15.33	202.8	0.1	7.86	351.63	0.06	41.61	13.2
8/25/2024 18:20	15.35	202.7	0.1	7.86	353.37	0.07	41.24	13.2
8/25/2024 18:10	15.37	202.75	0.1	7.87	345.38	0.07	40.88	13.22
8/25/2024 18:00	15.37	202.33	0.1	7.87	325.67	0.06	41.96	13.27
8/25/2024 17:50	15.37	202.36	0.1	7.87	331.66	0.05	40.91	13.39
8/25/2024 17:40	15.35	202.49	0.1	7.87	344.89	0.06	41.73	13.32
8/25/2024 17:30	15.35	203.13	0.1	7.86	351.63	0.06	40.19	13.27
8/25/2024 17:20	15.36	202.89	0.1	7.87	349.95	0.06	39.16	13.2
8/25/2024 17:10	15.38	202.76	0.1	7.87	348.88	0.06	38.99	13.27
8/25/2024 17:00	15.38	202.8	0.1	7.88	336.99	0.06	39.09	13.6

WLNG Downstream Raw Sonde Data 2024-08-22 to 2024-08-25

8/25/2024 16:50	15.36	203.25	0.1	7.88	351.04	0.06	39.08	13.58
8/25/2024 16:40	15.35	202.9	0.1	7.88	353.45	0.07	39.37	13.27
8/25/2024 16:30	15.35	202.73	0.1	7.88	350.44	0.07	39.09	13.36
8/25/2024 16:20	15.33	202.93	0.1	7.88	341.85	0.07	38.74	13.32
8/25/2024 16:10	15.34	203.22	0.1	7.88	336.04	0.07	38.34	13.12
8/25/2024 16:00	15.33	202.98	0.1	7.88	321.52	0.06	39.81	13.12
8/25/2024 15:50	15.34	203.38	0.1	7.88	331.55	0.06	39.86	13.12
8/25/2024 15:40	15.34	202.55	0.1	7.9	348.66	0.07	38.7	13.12
8/25/2024 15:30	15.37	202.05	0.1	7.91	348.7	0.07	38.99	13.29
8/25/2024 15:20	15.38	201.99	0.1	7.91	338.68	0.07	40.08	13.58
8/25/2024 15:10	15.37	202.08	0.1	7.91	340.81	0.07	38.19	13.58
8/25/2024 15:00	15.36	202.37	0.1	7.91	341.26	0.08	37.95	13.58
8/25/2024 14:50	15.34	202.36	0.1	7.91	339.94	0.08	38.92	13.6
8/25/2024 14:40	15.35	201.73	0.1	7.92	338.1	0.09	38.58	13.51
8/25/2024 14:40	15.35	201.73	0.1	7.92	338.1	0.09	38.58	13.51
8/25/2024 14:30	15.36	202.1	0.1	7.92	336.06	0.09	37.65	13.58
8/25/2024 14:20	15.35	201.83	0.1	7.91	319.6	0.09	40.01	13.58
8/25/2024 14:10	15.35	202.26	0.1	7.92	320.47	0.09	38.31	13.39
8/25/2024 14:00	15.34	203.14	0.1	7.9	319.63	0.08	39.02	13.6
8/25/2024 13:50	15.34	203.33	0.1	7.9	324.19	0.08	38.22	13.53
8/25/2024 13:40	15.33	203.09	0.1	7.91	324.43	0.07	39.37	13.63
8/25/2024 13:30	15.32	202.49	0.1	7.92	331.76	0.08	39.13	13.63
8/25/2024 13:20	15.31	202.55	0.1	7.92	347.18	0.08	38.14	13.29
8/25/2024 13:10	15.32	201.69	0.1	7.93	342.6	0.08	37.99	13.48
8/25/2024 13:00	15.32	201.78	0.1	7.92	328.45	0.08	48.11	13.41
8/25/2024 12:50	15.33	200.91	0.1	7.93	334.73	0.08	37.62	13.58
8/25/2024 12:40	15.34	200.56	0.1	7.93	343.73	0.09	37.52	13.58
8/25/2024 12:30	15.33	200.86	0.1	7.93	338.2	0.1	37.87	13.58
8/25/2024 12:20	15.33	200.32	0.1	7.92	321.51	0.09	41.16	13.58
8/25/2024 12:10	15.34	199.67	0.09	7.93	321.85	0.08	38.57	13.53
8/25/2024 12:00	15.4	199.72	0.09	7.93	322.54	0.08	38.84	13.48
8/25/2024 11:50	15.43	199.56	0.09	7.94	325.14	0.09	37.65	13.41
8/25/2024 11:40	15.38	199.7	0.09	7.94	323.09	0.08	37.87	13.51
8/25/2024 11:30	15.26	199.92	0.1	7.94	322.98	0.09	37.85	13.63
8/25/2024 11:20	15.27	201.38	0.1	7.93	320.49	0.08	37.66	13.63
8/25/2024 11:10	15.25	201.63	0.1	7.93	324.31	0.08	38.77	13.6
8/25/2024 11:00	15.23	201.67	0.1	7.92	328.11	0.08	37.46	13.44
8/25/2024 10:50	15.22	201.66	0.1	7.93	329.56	0.08	37.58	13.34
8/25/2024 10:40	15.22	202.05	0.1	7.93	321.19	0.07	37.92	13.34
8/25/2024 10:30	15.21	202.4	0.1	7.92	328.67	0.06	37.74	13.41
8/25/2024 10:20	15.2	202.27	0.1	7.93	352.81	0.08	37.73	13.32
8/25/2024 10:10	15.19	202.11	0.1	7.93	349.54	0.09	37.58	13.44
8/25/2024 10:00	15.17	201.91	0.1	7.92	334.16	0.08	44.03	13.36
8/25/2024 9:50	15.15	201.25	0.1	7.94	349.51	0.09	37.7	13.24
8/25/2024 9:40	15.14	201.22	0.1	7.93	355.54	0.09	37.25	13.12
8/25/2024 9:30	15.14	201.04	0.1	7.94	355.97	0.1	37.28	13.1
8/25/2024 9:20	15.12	200.98	0.1	7.93	356.25	0.09	41.28	13.12

WLNG Downstream Raw Sonde Data 2024-08-22 to 2024-08-25

8/25/2024 9:10	15.1	201.18	0.1	7.93	357.53	0.1	37.07	13
8/25/2024 9:00	15.09	201	0.1	7.93	356.31	0.1	37.61	12.96
8/25/2024 8:50	15.07	201.15	0.1	7.93	358.05	0.1	37.52	12.84
8/25/2024 8:40	15.06	201.1	0.1	7.93	356.55	0.1	37.67	12.69
8/25/2024 8:30	15.05	201.02	0.1	7.93	358.08	0.1	37.53	12.55
8/25/2024 8:20	15.03	200.71	0.1	7.93	358.85	0.11	37.28	12.45
8/25/2024 8:10	15.03	200.82	0.1	7.93	358.78	0.1	37.1	12.38
8/25/2024 8:00	15.02	200.6	0.1	7.93	358.22	0.1	36.96	12.33
8/25/2024 7:50	15.02	200.59	0.1	7.93	358.45	0.1	37.25	12.24
8/25/2024 7:40	15.01	200.76	0.1	7.93	359.03	0.1	37.65	12.26
8/25/2024 7:30	15.01	200.92	0.1	7.93	358.75	0.1	36.65	12.24
8/25/2024 7:20	15.01	200.71	0.1	7.92	357.7	0.1	36.83	12.21
8/25/2024 7:10	15	200.55	0.1	7.93	359.96	0.1	36.64	12.21
8/25/2024 7:00	14.99	200.22	0.1	7.93	363.11	0.11	37.36	12.19
8/25/2024 6:50	14.97	199.86	0.09	7.93	362.02	0.12	36.2	12.19
8/25/2024 6:40	14.97	199.61	0.09	7.92	354.06	0.12	35.73	12.19
8/25/2024 6:30	14.96	199.38	0.09	7.93	363.42	0.12	35.04	12.09
8/25/2024 6:20	14.97	199.53	0.09	7.93	366.37	0.12	34.7	12.19
8/25/2024 6:10	14.98	199.39	0.09	7.93	364.26	0.13	33.89	12.17
8/25/2024 6:00	14.99	199.2	0.09	7.92	359.62	0.13	36.1	12.17
8/25/2024 5:50	14.99	199.15	0.09	7.93	355.2	0.13	34	12.17
8/25/2024 5:40	15	199.34	0.09	7.92	333.22	0.12	34.73	12.17
8/25/2024 5:30	15.01	198.98	0.09	7.92	338.07	0.11	34.29	12.14
8/25/2024 5:20	15.03	199.34	0.09	7.92	338.21	0.1	67.46	12.05
8/25/2024 5:10	15.04	199.06	0.09	7.92	348.53	0.09	33.39	12.05
8/25/2024 5:00	15.05	198.87	0.09	7.92	361.45	0.1	34.1	12.07
8/25/2024 4:50	15.07	198.86	0.09	7.92	356.81	0.11	33	12.19
8/25/2024 4:40	15.08	198.91	0.09	7.92	338.95	0.09	40.97	12.19
8/25/2024 4:30	15.09	198.47	0.09	7.92	347.12	0.07	32.5	12.19
8/25/2024 4:20	15.1	198.82	0.09	7.93	366.75	0.13	32.22	12.19
8/25/2024 4:10	15.11	198.64	0.09	7.93	365.43	0.14	32.24	12.12
8/25/2024 4:00	15.1	198.1	0.09	7.93	361.82	0.15	31.92	12.19
8/25/2024 3:50	15.1	197.82	0.09	7.93	359.2	0.16	32.57	12.12
8/25/2024 3:40	15.11	197.36	0.09	7.93	351.06	0.14	31.52	12.21
8/25/2024 3:30	15.11	196.93	0.09	7.93	353.09	0.15	31.06	12.21
8/25/2024 3:20	15.12	196.57	0.09	7.93	360.85	0.18	33.75	12.21
8/25/2024 3:10	15.13	196.38	0.09	7.93	360.89	0.18	31.23	12.21
8/25/2024 3:00	15.14	195.14	0.09	7.93	360.46	0.2	33.31	12.21
8/25/2024 2:50	15.15	193.47	0.09	7.93	357.15	0.2	31.24	12.21
8/25/2024 2:40	15.16	190.48	0.09	7.94	351.16	0.2	32.5	12.21
8/25/2024 2:30	15.16	185.93	0.09	7.95	350.53	0.2	31.75	12.24
8/25/2024 2:20	15.16	176.47	0.08	7.94	353.85	0.19	33.26	12.24
8/25/2024 2:10	15.14	158.87	0.08	7.96	360.12	0.16	32.43	12.24
8/25/2024 2:00	15.14	199.6	0.09	7.93	359.92	0.18	29.05	12.24
8/25/2024 1:50	15.15	199.79	0.09	7.93	362.1	0.18	23.44	12.24
8/25/2024 1:40	15.16	199.68	0.09	7.93	365.04	0.2	24.04	12.24
8/25/2024 1:30	15.17	200.03	0.1	7.93	365.48	0.19	22.98	12.24

WLNG Downstream Raw Sonde Data 2024-08-22 to 2024-08-25

8/25/2024 1:20	15.17	199.94	0.1	7.92	366.58	0.2	23.12	12.24
8/25/2024 1:10	15.18	200.39	0.1	7.92	363.03	0.18	23.27	12.24
8/25/2024 1:00	15.18	199.78	0.09	7.92	357.03	0.19	23.34	12.14
8/25/2024 0:50	15.18	199.58	0.09	7.93	358.07	0.21	23.43	12.14
8/25/2024 0:40	15.18	199.29	0.09	7.93	357.42	0.2	23.11	12.24
8/25/2024 0:30	15.19	198.94	0.09	7.93	358.76	0.2	23.53	12.26
8/25/2024 0:20	15.2	199.14	0.09	7.93	361.57	0.21	23.27	12.24
8/25/2024 0:10	15.21	199.58	0.09	7.93	361.04	0.25	23.84	12.17
8/25/2024 0:00	15.21	199.41	0.09	7.93	360.67	0.27	23.27	12.14
8/24/2024 23:50	15.21	198.98	0.09	7.93	359.32	0.29	24.1	12.29
8/24/2024 23:40	0	0	0	7.93	356.94	0.32	25.19	12.29
8/24/2024 23:30	15.22	199.62	0.09	7.93	358.35	0.33	24.44	12.29
8/24/2024 23:20	15.23	199.34	0.09	7.93	360.92	0.36	23.22	12.31
8/24/2024 23:10	15.23	199.47	0.09	7.93	360.23	0.4	23.96	12.31
8/24/2024 23:00	15.24	199.21	0.09	7.92	359.39	0.42	24.21	12.31
8/24/2024 22:50	15.24	198.89	0.09	7.93	358.16	0.52	23.7	12.31
8/24/2024 22:40	15.25	199.12	0.09	7.92	357.42	0.59	23.64	12.31
8/24/2024 22:30	15.25	198.93	0.09	7.93	357.92	0.66	24.05	12.31
8/24/2024 22:20	15.25	198.85	0.09	7.92	358.64	0.74	25.7	12.31
8/24/2024 22:10	15.26	198.93	0.09	7.92	359.81	0.82	23.98	12.31
8/24/2024 22:00	15.26	198.45	0.09	7.92	361.05	0.88	23.36	12.29
8/24/2024 21:50	15.27	198.08	0.09	7.92	360.86	0.97	23.35	12.21
8/24/2024 21:40	15.28	198.69	0.09	7.91	361.19	1.05	24.97	12.33
8/24/2024 21:30	15.28	198.2	0.09	7.91	360.78	1.16	26.62	12.24
8/24/2024 21:20	15.29	197.39	0.09	7.9	360.55	1.28	25.85	12.24
8/24/2024 21:10	15.29	196.93	0.09	7.91	360.09	1.42	23.46	12.33
8/24/2024 21:00	15.3	195.25	0.09	7.91	359.85	1.58	24.16	12.33
8/24/2024 20:50	15.31	193.55	0.09	7.92	356.82	1.77	22.49	12.33
8/24/2024 20:40	15.33	190.66	0.09	7.91	354.38	1.94	22.76	12.36
8/24/2024 20:30	15.34	184.55	0.09	7.92	353.03	2.07	22.93	12.33
8/24/2024 20:20	15.35	170.9	0.08	7.93	353.43	2.09	23.9	12.31
8/24/2024 20:10	15.33	146.47	0.07	7.96	356.2	1.91	24.51	12.31
8/24/2024 20:00	15.31	195.11	0.09	7.9	358.7	1.55	17.56	12.29
8/24/2024 19:50	15.31	195.41	0.09	7.89	361.31	1.66	17.33	12.38
8/24/2024 19:40	15.32	194.89	0.09	7.9	366.48	1.74	19.99	12.41
8/24/2024 19:30	15.32	194.17	0.09	7.91	371.47	1.85	17.4	12.43
8/24/2024 19:20	15.33	194.27	0.09	7.9	378.36	1.98	16.8	12.45
8/24/2024 19:10	15.33	194.44	0.09	7.91	379.04	2.08	16.72	12.48
8/24/2024 19:00	15.34	194.03	0.09	7.9	380.08	2.18	17.31	12.5
8/24/2024 18:50	15.35	193.92	0.09	7.9	379.84	2.3	18.41	12.53
8/24/2024 18:40	15.36	193.85	0.09	7.89	379.84	2.35	16.55	12.45
8/24/2024 18:30	15.36	194.16	0.09	7.89	379.33	2.45	16.37	12.48
8/24/2024 18:20	15.37	194.07	0.09	7.89	379.96	2.54	16.43	12.57
8/24/2024 18:10	15.37	193.58	0.09	7.9	379.98	2.58	16.22	12.62
8/24/2024 18:00	15.38	193.4	0.09	7.89	380.39	2.59	15.82	12.62
8/24/2024 17:50	15.38	193.18	0.09	7.91	379.48	2.65	16.75	12.67
8/24/2024 17:40	15.39	193.02	0.09	7.91	379.5	2.67	17.52	12.91

WLNG Downstream Raw Sonde Data 2024-08-22 to 2024-08-25

8/24/2024 17:40	15.39	193.02	0.09	7.91	379.5	2.67	17.52	12.91
8/24/2024 17:30	15.4	192.92	0.09	7.91	379.29	2.74	16.03	13.24
8/24/2024 17:20	15.41	192.76	0.09	7.91	380.08	2.81	16.2	13.27
8/24/2024 17:10	15.4	191.54	0.09	7.91	380.19	2.84	15.76	13.27
8/24/2024 17:00	15.39	192.31	0.09	7.91	381.1	2.84	16.01	13.24
8/24/2024 16:50	15.38	191.15	0.09	7.92	380.22	2.81	15.97	13.24
8/24/2024 16:40	15.39	190.49	0.09	7.92	379.9	2.85	14.78	13.22
8/24/2024 16:30	15.4	190.78	0.09	7.92	378.91	2.95	15.55	13.27
8/24/2024 16:20	15.43	190.5	0.09	7.92	378.24	3.04	15.95	13.32
8/24/2024 16:10	15.43	190.51	0.09	7.92	377.6	3.19	15.08	13.41
8/24/2024 16:00	15.44	190.68	0.09	7.92	377.58	3.3	14.53	13.6
8/24/2024 15:50	15.44	190.44	0.09	7.92	379.03	3.43	15.52	13.63
8/24/2024 15:40	15.4	191.42	0.09	7.9	381.01	3.49	16.3	13.63
8/24/2024 15:30	15.36	191.74	0.09	7.91	380.64	3.53	14.3	13.2
8/24/2024 15:20	15.36	191.52	0.09	7.91	380.7	3.5	15.97	13.24
8/24/2024 15:10	15.36	191.25	0.09	7.93	379.93	3.53	14.64	13.27
8/24/2024 15:00	15.35	191.12	0.09	7.93	379.41	3.52	14.76	13.27
8/24/2024 14:50	15.35	189.74	0.09	7.93	379.06	3.62	13.63	13.15
8/24/2024 14:40	15.35	190.49	0.09	7.92	379.12	3.71	13.99	13.1
8/24/2024 14:30	15.37	190.7	0.09	7.93	378.96	3.75	15.08	13.1
8/24/2024 14:20	15.37	190.26	0.09	7.92	379.37	3.7	13.43	13.17
8/24/2024 14:10	15.38	190.08	0.09	7.93	379.03	3.57	14.47	13.1
8/24/2024 14:00	15.38	190.07	0.09	7.93	379.85	3.35	14.28	13.05
8/24/2024 13:50	15.39	189.93	0.09	7.92	380.31	3.18	13.55	12.98
8/24/2024 13:40	15.39	189.5	0.09	7.92	381.2	3.02	19.9	13.2
8/24/2024 13:30	15.38	188.69	0.09	7.92	381.01	2.96	13.92	13.2
8/24/2024 13:20	15.39	188.28	0.09	7.92	381.18	2.98	13.48	13.29
8/24/2024 13:10	15.39	187.14	0.09	7.93	380.8	2.99	14.18	13.24
8/24/2024 13:00	15.36	186.01	0.09	7.92	381.05	3.02	13.18	13.1
8/24/2024 12:50	15.36	185.45	0.09	7.92	380.15	3.07	13.67	13
8/24/2024 12:40	15.36	184.89	0.09	7.93	379.85	3.16	12.72	12.98
8/24/2024 12:30	15.35	183.8	0.09	7.93	378.57	3.22	13.98	12.81
8/24/2024 12:20	15.35	182.65	0.09	7.92	377.32	3.3	13.69	12.76
8/24/2024 12:10	15.35	181.9	0.09	7.92	375.74	3.4	13.89	12.86
8/24/2024 12:00	15.34	181.41	0.09	7.92	374.26	3.52	15.96	12.84
8/24/2024 11:50	15.34	180.71	0.09	7.92	374.89	3.65	14.31	12.72
8/24/2024 11:40	15.32	179.81	0.09	7.91	374.82	3.65	13.22	12.76
8/24/2024 11:30	15.33	179.37	0.09	7.9	374.65	3.74	13.23	12.65
8/24/2024 11:20	15.33	179.56	0.09	7.84	375.56	3.8	16.88	12.72
8/24/2024 11:10	15.34	179.19	0.08	7.83	376.81	3.86	12.87	12.69
8/24/2024 11:00	15.35	180.21	0.09	7.77	377.85	3.74	15.8	12.67
8/24/2024 10:50	15.37	179.97	0.09	7.77	377.34	3.77	12.09	12.67
8/24/2024 10:40	15.38	170.64	0.08	7.79	376.85	3.95	10.4	12.65
8/24/2024 10:30	15.33	151.96	0.07	7.84	375.91	4.39	10.51	12.6
8/24/2024 10:20	15.2	148.69	0.07	7.85	374.83	4.63	11.84	12.55
8/24/2024 10:10	15.08	137.26	0.06	7.83	373.8	4.78	11.26	12.53
8/24/2024 10:00	15.12	166.81	0.08	7.78	372.55	4.53	12.42	12.41

WLNG Downstream Raw Sonde Data 2024-08-22 to 2024-08-25

8/24/2024 9:50	15.1	165.62	0.08	7.8	370.9	4.46	10.78	12.29
8/24/2024 9:40	15.09	166.15	0.08	7.83	369.6	4.37	11.42	12.31
8/24/2024 9:30	15.08	165.19	0.08	7.84	369.51	4.28	19.72	12.21
8/24/2024 9:20	0	0	0	7.86	369.61	4.22	14.45	12.26
8/24/2024 9:10	15.07	165.87	0.08	7.86	368.77	3.87	8.14	12.26
8/24/2024 9:00	15.07	165.3	0.08	7.87	369	3.76	8.27	12.26
8/24/2024 8:50	15.07	165.64	0.08	7.87	368.7	3.69	9.85	12.24
8/24/2024 8:40	15.07	165.33	0.08	7.87	368.33	3.7	7.31	12.24
8/24/2024 8:30	15.07	163.58	0.08	7.88	368.08	3.72	8.19	12.17
8/24/2024 8:20	15.07	163.52	0.08	7.88	368.03	3.64	7.97	12.24
8/24/2024 8:10	15.07	161.9	0.08	7.88	367.26	3.7	6.23	12.21
8/24/2024 8:00	15.06	161.16	0.08	7.88	367.17	3.76	10.4	12.19
8/24/2024 7:50	15.06	159.06	0.08	7.88	366.2	3.99	34.44	12.17
8/24/2024 7:40	15.06	156.95	0.07	7.88	366.36	4.04	7.38	12.09
8/24/2024 7:30	15.06	152.88	0.07	7.89	365.69	4.1	8.07	12.12
8/24/2024 7:20	15.07	149.11	0.07	7.88	365.63	4.15	6.3	12.21
8/24/2024 7:10	15.07	145.43	0.07	7.89	365.17	4.31	5.18	12.14
8/24/2024 7:00	15.07	143.96	0.07	7.88	365.65	4.45	8.15	12.21
8/24/2024 6:50	15.08	142.03	0.07	7.88	364.09	4.68	6.91	12.21
8/24/2024 6:40	15.09	139.8	0.07	7.88	364.25	4.78	7.25	12.21
8/24/2024 6:30	15.09	137.15	0.06	7.89	363.78	5.04	8.15	12.21
8/24/2024 6:20	15.1	133.92	0.06	7.89	364.09	5.21	7.72	12.21
8/24/2024 6:10	15.11	133.03	0.06	7.9	363.65	5.47	22.28	12.19
8/24/2024 6:00	15.12	130.29	0.06	7.89	363.83	5.62	8.47	12.09
8/24/2024 5:50	15.13	128.59	0.06	7.9	364.03	5.78	9.67	12.17
8/24/2024 5:40	15.14	127.03	0.06	7.9	365.33	5.94	9.38	12.17
8/24/2024 5:30	15.15	127.02	0.06	7.9	365.33	6.09	5.9	12.17
8/24/2024 5:20	15.16	126.81	0.06	7.89	365.96	6.37	9.93	12.12
8/24/2024 5:20	15.16	126.81	0.06	7.89	365.96	6.37	9.93	12.12
8/24/2024 5:10	15.17	125.77	0.06	7.9	366.25	6.68	8.02	12.19
8/24/2024 5:00	15.18	126.19	0.06	7.89	367.19	6.74	7.37	12.21
8/24/2024 4:50	15.2	126.53	0.06	7.89	367.31	6.89	6.69	12.12
8/24/2024 4:40	15.22	126.73	0.06	7.89	367.78	7.02	5.24	12.12
8/24/2024 4:30	15.24	128.45	0.06	7.89	367.73	7.35	5.6	12.12
8/24/2024 4:20	0	0	0	7.9	368.08	7.82	6.03	12.21
8/24/2024 4:10	15.28	130.48	0.06	7.89	367.61	7.77	6.92	12.21
8/24/2024 4:00	15.3	131.57	0.06	7.89	367.65	8	13.07	12.21
8/24/2024 3:50	15.33	133.46	0.06	7.89	366.52	8.61	10.53	12.21
8/24/2024 3:40	15.36	133.67	0.06	7.89	366.38	8.8	12.67	12.24
8/24/2024 3:30	15.38	137.82	0.06	7.9	364.99	8.78	12	12.24
8/24/2024 3:20	15.42	140.22	0.07	7.89	363.88	8.81	14.44	12.21
8/24/2024 3:10	15.47	144.71	0.07	7.91	359.89	8.59	12.93	12.12
8/24/2024 3:00	15.52	147.49	0.07	7.9	357.33	8.58	12.93	12.12
8/24/2024 2:50	15.58	152.12	0.07	7.92	354.3	8.71	11.07	12.12
8/24/2024 2:40	15.64	154.25	0.07	7.92	352.74	8.63	9.56	12.21
8/24/2024 2:30	15.71	155.05	0.07	7.93	348.69	8.49	15.24	12.19
8/24/2024 2:20	15.79	157.37	0.07	7.92	345.09	8.61	19.22	12.12

WLNG Downstream Raw Sonde Data 2024-08-22 to 2024-08-25

8/24/2024 2:10	15.86	162.28	0.08	7.94	345.5	8.47	10	12.12
8/24/2024 2:00	15.92	166.15	0.08	7.93	345.57	8.33	15.38	12.24
8/24/2024 1:50	15.98	172.74	0.08	7.94	343.44	8.38	11.25	12.24
8/24/2024 1:40	15.97	178.56	0.08	7.94	344.24	8.27	15.47	12.17
8/24/2024 1:30	15.94	182.62	0.09	7.95	343.9	8.27	9.91	12.24
8/24/2024 1:20	15.96	186.12	0.09	7.94	346.23	8.38	16.03	12.24
8/24/2024 1:10	16.08	177.65	0.08	7.96	346.19	8.46	13.92	12.24
8/24/2024 1:00	16.19	164.04	0.08	7.97	348.72	8.45	9.4	12.14
8/24/2024 0:50	16.21	157.88	0.07	7.97	349.07	8.52	9.23	12.21
8/24/2024 0:40	16.24	155.66	0.07	7.98	346.63	8.52	2.91	12.21
8/24/2024 0:30	16.24	154	0.07	7.99	347.73	8.52	1.05	12.26
8/24/2024 0:20	16.22	152.37	0.07	7.98	348.86	8.55	1.68	12.26
8/24/2024 0:10	16.13	149.63	0.07	8	348.02	8.47	3.88	12.24
8/24/2024 0:00	15.76	178.81	0.08	7.9	357.14	8.09	6.33	12.26
8/23/2024 23:50	15.81	178.12	0.08	7.92	351.62	8.3	2.48	12.26
8/23/2024 23:40	15.87	171.4	0.08	7.92	347.79	8.33	4.08	12.26
8/23/2024 23:30	15.81	158.42	0.07	7.95	352.98	8.09	7.23	12.26
8/23/2024 23:20	15.61	186.37	0.09	7.86	359.97	7.89	6.15	12.26
8/23/2024 23:10	15.62	180.54	0.09	7.87	355.81	7.87	5.3	12.29
8/23/2024 23:00	15.62	173.59	0.08	7.87	355.3	8.4	5.01	12.29
8/23/2024 22:50	15.58	167.73	0.08	7.88	353.46	8.39	4.54	12.29
8/23/2024 22:40	15.61	184.69	0.09	7.84	362.14	7.89	17.31	12.29
8/23/2024 22:30	15.62	199.32	0.09	7.84	362.11	7.9	3.32	12.21
8/23/2024 22:20	15.63	195.53	0.09	7.82	362.06	7.92	5.9	12.31
8/23/2024 22:10	15.64	191.77	0.09	7.82	359.84	8.02	7.19	12.31
8/23/2024 22:00	15.66	189.46	0.09	7.82	358.53	8.05	2.3	12.31
8/23/2024 21:50	15.67	190.16	0.09	7.83	356.59	8.04	1.3	12.29
8/23/2024 21:40	15.68	189.9	0.09	7.82	357.49	8.04	1.27	12.31
8/23/2024 21:30	15.68	187.44	0.09	7.82	354.8	8.07	1.2	12.21
8/23/2024 21:20	15.69	185.7	0.09	7.82	352.11	8.08	2.28	12.31
8/23/2024 21:10	15.7	186.27	0.09	7.84	347.73	8.08	1.5	12.31
8/23/2024 21:00	15.71	187.16	0.09	7.83	347.54	8.08	1.29	12.33
8/23/2024 20:50	15.72	187.49	0.09	7.84	345.58	8.1	0.14	12.31
8/23/2024 20:40	15.73	187.44	0.09	7.83	346.03	8.09	0.23	12.24
8/23/2024 20:30	15.73	187.28	0.09	7.85	345.07	8.11	0.76	12.24
8/23/2024 20:20	15.74	187.07	0.09	7.84	345.3	8.12	0.45	12.24
8/23/2024 20:10	15.75	186.94	0.09	7.85	343.52	8.13	0.64	12.24
8/23/2024 20:00	15.76	187.04	0.09	7.84	343.1	8.09	0.77	12.24
8/23/2024 19:50	15.76	186.94	0.09	7.85	343.13	8.12	0.57	12.26
8/23/2024 19:40	15.77	186.41	0.09	7.85	344.25	8.13	1.27	12.33
8/23/2024 19:30	15.78	186.23	0.09	7.86	343.22	8.12	0.41	12.45
8/23/2024 19:20	15.79	186.16	0.09	7.85	344.76	8.12	0.35	12.48
8/23/2024 19:10	15.79	186.68	0.09	7.86	344.17	8.13	0.58	12.48
8/23/2024 19:00	15.8	186.82	0.09	7.84	343.76	8.16	0.51	12.48
8/23/2024 18:50	15.81	186.41	0.09	7.85	341.66	8.18	0.63	12.53
8/23/2024 18:40	15.83	186.4	0.09	7.84	340.31	8.11	0.64	12.57
8/23/2024 18:30	15.84	187.2	0.09	7.83	340.21	8.15	0.1	12.65

WLNG Downstream Raw Sonde Data 2024-08-22 to 2024-08-25

8/23/2024 18:20	15.85	187.32	0.09	7.84	340.86	8.13	0	12.72
8/23/2024 18:10	15.87	186.73	0.09	7.85	339.55	8.12	0	12.81
8/23/2024 18:00	15.88	186.61	0.09	7.84	339.38	8.12	1.09	12.86
8/23/2024 17:50	15.88	186.61	0.09	7.85	339.61	8.14	0.15	12.79
8/23/2024 17:40	15.88	186.89	0.09	7.85	340.74	8.09	0.07	12.79
8/23/2024 17:30	15.89	187.16	0.09	7.85	341.94	8.08	0.12	12.86
8/23/2024 17:20	15.89	187.28	0.09	7.84	344.57	8.07	0	12.76
8/23/2024 17:10	15.9	186.42	0.09	7.85	345.02	8.13	0	12.69
8/23/2024 17:00	15.91	185.56	0.09	7.85	346.69	8.17	0	12.69
8/23/2024 16:50	15.94	185.41	0.09	7.87	346.13	8.21	0	12.67
8/23/2024 16:40	15.97	185.01	0.09	7.86	346.25	8.2	0	12.86
8/23/2024 16:30	15.99	184.76	0.09	7.86	344.66	8.21	0.05	12.96
8/23/2024 16:20	16.01	183.35	0.09	7.86	344.85	8.19	0.03	13.15
8/23/2024 16:10	16.02	182.04	0.09	7.87	345.46	8.19	0.32	13.03
8/23/2024 16:00	16.05	180.59	0.09	7.87	345.84	8.18	0	12.91
8/23/2024 15:50	16.1	179.2	0.09	7.88	345	8.2	0	12.86
8/23/2024 15:40	16.16	178.33	0.08	7.89	345.48	8.24	0	12.79
8/23/2024 15:30	16.25	177.36	0.08	7.9	343.63	8.31	0	12.79
8/23/2024 15:20	16.4	174.17	0.08	7.91	340.69	8.33	0	12.81
8/23/2024 15:10	16.64	169.62	0.08	7.96	335.74	8.43	0	12.88
8/23/2024 15:00	16.85	166.93	0.08	8.01	329.48	8.48	0	13.03
8/23/2024 14:50	16.87	163.23	0.08	8.04	325.66	8.5	1.35	13.29
8/23/2024 14:40	16.63	160.26	0.08	8.01	327.56	8.53	0.73	13.15
8/23/2024 14:30	16.04	180.74	0.09	7.87	339.54	8.34	1.38	13.1
8/23/2024 14:20	16.11	178.99	0.08	7.88	337.5	8.38	0	13.08
8/23/2024 14:10	16.17	176.49	0.08	7.9	333.61	8.4	0.33	13.32
8/23/2024 14:00	16.22	175.43	0.08	7.88	334.78	8.4	0.02	13.39
8/23/2024 13:50	16.26	173.18	0.08	7.91	334.39	8.42	0	13.22
8/23/2024 13:40	16.41	169.77	0.08	7.95	330.29	8.53	0	12.88
8/23/2024 13:30	16.55	167.26	0.08	8.01	321.36	8.48	0	12.86
8/23/2024 13:20	16.53	164.15	0.08	8.02	319.83	8.51	1.16	12.91
8/23/2024 13:10	16.42	161.88	0.08	8.02	319.98	8.65	2.51	13
8/23/2024 13:00	16.22	157	0.07	8	322.13	8.64	1.86	13.08
8/23/2024 12:50	15.76	140.03	0.07	7.94	320.5	8.27	6.06	12.93
8/23/2024 12:40	15.78	183.6	0.09	7.81	337.37	8.3	0.52	12.86
8/23/2024 12:30	15.82	181.28	0.09	7.85	335.5	8.28	0.91	12.88
8/23/2024 12:20	15.83	179.44	0.09	7.83	332.81	8.31	1.55	13
8/23/2024 12:10	15.77	177.57	0.08	7.85	332.11	8.32	3.12	12.81
8/23/2024 12:00	15.72	175.35	0.08	7.83	329.56	8.36	0.36	12.67
8/23/2024 11:50	15.71	173.88	0.08	7.83	327.65	8.42	0.22	12.53
8/23/2024 11:40	15.72	171.65	0.08	7.82	324.23	8.47	0	12.5
8/23/2024 11:30	15.75	168.7	0.08	7.86	317.99	8.52	0	12.5
8/23/2024 11:20	15.79	163.98	0.08	7.88	312.96	8.6	0	12.55
8/23/2024 11:10	15.85	158.38	0.07	7.91	311.67	8.67	0	12.62
8/23/2024 11:00	15.83	150.48	0.07	7.92	306.19	8.71	0.03	12.65
8/23/2024 10:50	15.52	137.43	0.06	7.9	295.25	8.56	1.05	12.53
8/23/2024 10:40	15.6	9.8	0	7.79	271.34	8.62	550.5	12.62

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8/23/2024 10:30	15.75	203.51	0.1	7.77	292.93	8.27	4.55	12.6
8/23/2024 10:20	15.75	204.21	0.1	7.75	320.36	8.25	5.87	12.55
8/23/2024 10:10	15.73	203.66	0.1	7.75	320.98	8.27	3.49	12.57
8/23/2024 10:00	15.73	203.24	0.1	7.76	322.42	8.28	5.87	12.53
8/23/2024 9:50	15.73	202.34	0.1	7.76	320.17	8.26	5.51	12.38
8/23/2024 9:40	15.72	201.88	0.1	7.77	317.19	8.25	6.55	12.38
8/23/2024 9:30	15.72	203.48	0.1	7.75	310.81	8.23	3.24	12.43
8/23/2024 9:20	15.72	202.99	0.1	7.76	309.17	8.23	3.11	12.48
8/23/2024 9:10	15.74	203.38	0.1	7.75	312.91	8.23	4.11	12.48
8/23/2024 9:00	15.73	203.34	0.1	7.75	314.4	8.23	3.59	12.41
8/23/2024 8:50	15.73	203.26	0.1	7.76	315.99	8.22	3.81	12.36
8/23/2024 8:40	15.73	203.02	0.1	7.76	314.78	8.23	2.82	12.38
8/23/2024 8:30	15.73	203.36	0.1	7.75	312.49	8.23	2.98	12.38
8/23/2024 8:20	15.73	203.46	0.1	7.75	310.54	8.25	4.23	12.36
8/23/2024 8:10	15.73	203.71	0.1	7.75	310.02	8.24	4.85	12.31
8/23/2024 8:00	15.73	203.54	0.1	7.76	308.46	8.24	10.84	12.41
8/23/2024 7:50	15.73	203.44	0.1	7.76	301.87	8.25	9.22	12.33
8/23/2024 7:40	15.73	203.15	0.1	7.77	299.27	8.25	53.32	12.41
8/23/2024 7:30	15.71	202.45	0.1	7.78	302.82	8.26	27.05	12.31
8/23/2024 7:20	15.7	201.98	0.1	7.79	309.08	8.26	6.84	12.36
8/23/2024 7:10	15.69	201.78	0.1	7.79	304.71	8.26	5.39	12.29
8/23/2024 7:00	15.69	201.68	0.1	7.8	297.39	8.26	4.96	12.24
8/23/2024 6:50	15.69	201.82	0.1	7.8	297.36	8.27	3.32	12.31
8/23/2024 6:40	15.7	202.06	0.1	7.8	305.52	8.26	3.11	12.29
8/23/2024 6:30	15.7	202.36	0.1	7.79	305.02	8.25	5.17	12.29
8/23/2024 6:20	15.71	202	0.1	7.79	306.6	8.25	13.44	12.29
8/23/2024 6:10	15.71	201.68	0.1	7.79	310.59	8.25	3.42	12.29
8/23/2024 6:00	15.71	201.57	0.1	7.8	303.72	8.26	19.4	12.29
8/23/2024 5:50	15.72	201.69	0.1	7.8	315.63	8.25	2.69	12.17
8/23/2024 5:40	15.72	202.21	0.1	7.78	313.91	8.25	4.09	12.17
8/23/2024 5:30	15.72	202.45	0.1	7.78	317.94	8.25	3	12.24
8/23/2024 5:20	15.73	202.87	0.1	7.77	317.92	8.24	5.16	12.24
8/23/2024 5:10	15.73	202.25	0.1	7.76	316.4	8.23	8.95	12.29
8/23/2024 5:00	15.73	202.78	0.1	7.77	310.55	8.25	3.83	12.19
8/23/2024 4:50	15.74	203.28	0.1	7.76	308.63	8.24	2.81	12.19
8/23/2024 4:40	15.74	203.67	0.1	7.74	312.95	8.24	3.82	12.29
8/23/2024 4:30	15.74	203.73	0.1	7.74	305.03	8.25	3.22	12.19
8/23/2024 4:20	15.74	203.53	0.1	7.75	314.91	8.26	5.1	12.19
8/23/2024 4:10	15.74	202.6	0.1	7.76	314.2	8.26	4.71	12.21
8/23/2024 4:00	15.74	202.99	0.1	7.75	314.82	8.26	4.85	12.29
8/23/2024 3:50	15.72	203.37	0.1	7.75	303.78	8.25	3.26	12.31
8/23/2024 3:40	15.72	203.34	0.1	7.76	300.19	8.26	3.12	12.31
8/23/2024 3:30	15.71	203.47	0.1	7.76	297.08	8.25	2.54	12.31
8/23/2024 3:20	15.71	203.38	0.1	7.76	310.41	8.26	4.82	12.31
8/23/2024 3:10	15.71	202.6	0.1	7.78	303.26	8.27	3.03	12.31
8/23/2024 3:00	15.7	201.83	0.1	7.79	313.25	8.28	3.04	12.31
8/23/2024 2:50	15.7	201.33	0.1	7.79	311.82	8.28	5.86	12.31

WLNG Downstream Raw Sonde Data 2024-08-22 to 2024-08-25

8/23/2024 2:40	15.71	202.36	0.1	7.79	305.21	8.26	4.71	12.31
8/23/2024 2:30	15.71	203.32	0.1	7.76	315.05	8.25	2.24	12.31
8/23/2024 2:20	15.71	203.3	0.1	7.76	312.41	8.25	2.85	12.31
8/23/2024 2:10	15.71	203.01	0.1	7.76	313.6	8.26	3.88	12.31
8/23/2024 2:00	15.7	201.95	0.1	7.78	314.77	8.26	12.95	12.31
8/23/2024 1:50	15.7	200.74	0.1	7.79	318.94	8.27	27.83	12.31
8/23/2024 1:40	15.71	201.94	0.1	7.79	317.78	8.28	5.22	12.31
8/23/2024 1:30	15.72	203.22	0.1	7.76	315.54	8.26	4.47	12.31
8/23/2024 1:20	15.71	202.77	0.1	7.77	309.48	8.25	6.13	12.31
8/23/2024 1:10	15.7	202.39	0.1	7.78	315.73	8.27	7.68	12.33
8/23/2024 1:00	15.7	201.72	0.1	7.8	314.99	8.28	5.7	12.31
8/23/2024 0:50	15.69	201.36	0.1	7.8	316.33	8.28	2.16	12.31
8/23/2024 0:40	15.68	201.4	0.1	7.8	317.23	8.28	2.83	12.29
8/23/2024 0:30	15.68	201.06	0.1	7.8	317.67	8.28	2.23	12.29
8/23/2024 0:20	15.69	200.95	0.1	7.8	317.52	8.28	2.8	12.29
8/23/2024 0:10	15.69	201.22	0.1	7.8	318.36	8.28	3.59	12.31
8/23/2024 0:00	15.7	201.01	0.1	7.8	317.77	8.28	2.8	12.33
8/22/2024 23:50	15.7	201.09	0.1	7.8	317.96	8.29	3.09	12.33
8/22/2024 23:40	0	0	0	7.81	317.98	8.55	3.32	12.33
8/22/2024 23:30	15.71	201.05	0.1	7.8	317.35	8.28	2.16	12.33
8/22/2024 23:20	15.73	201.48	0.1	7.8	317.55	8.27	3.62	12.33
8/22/2024 23:10	15.74	201.65	0.1	7.79	316.65	8.27	4.51	12.33
8/22/2024 23:00	15.75	201.3	0.1	7.79	314.96	8.27	6.05	12.33
8/22/2024 22:50	15.75	201.47	0.1	7.79	315.14	8.28	7.23	12.26
8/22/2024 22:40	15.75	201.12	0.1	7.79	316.76	8.27	7.01	12.26
8/22/2024 22:30	15.75	201.2	0.1	7.79	317.01	8.26	2.97	12.36
8/22/2024 22:20	15.76	201.17	0.1	7.79	317.17	8.26	3.88	12.26
8/22/2024 22:10	15.77	200.88	0.1	7.79	317.28	8.27	4.21	12.24
8/22/2024 22:00	15.78	200.95	0.1	7.79	317.27	8.26	2.56	12.26
8/22/2024 21:50	15.79	200.92	0.1	7.78	317.48	8.26	4.1	12.36
8/22/2024 21:40	15.8	201.05	0.1	7.78	316.69	8.26	4.76	12.36
8/22/2024 21:30	15.81	201.36	0.1	7.77	315.7	8.26	2.6	12.38
8/22/2024 21:20	15.82	201.63	0.1	7.77	315.06	8.26	3.02	12.38
8/22/2024 21:10	15.83	201.62	0.1	7.77	312.59	8.26	3.62	12.38
8/22/2024 21:00	15.84	201.48	0.1	7.76	313.25	8.26	3.93	12.38
8/22/2024 20:50	15.84	201.09	0.1	7.78	313.77	8.26	2.55	12.38
8/22/2024 20:40	15.84	201.33	0.1	7.77	313.98	8.27	5.16	12.38
8/22/2024 20:30	15.85	201.19	0.1	7.77	313.54	8.27	3.46	12.29
8/22/2024 20:20	15.85	201.52	0.1	7.76	313.83	8.26	4.57	12.43
8/22/2024 20:10	15.87	201.21	0.1	7.76	314	8.26	2.65	12.74
8/22/2024 20:00	15.88	201.46	0.1	7.75	314.52	8.25	3.98	12.86
8/22/2024 19:50	15.89	201.36	0.1	7.75	315.2	8.26	4.79	12.93
8/22/2024 19:40	15.9	201.09	0.1	7.75	315.89	8.25	3.46	12.98
8/22/2024 19:30	15.91	201.14	0.1	7.75	315.23	8.25	3.33	13.03
8/22/2024 19:20	15.92	201.34	0.1	7.75	314.4	8.25	3.96	13.05
8/22/2024 19:10	15.93	201.7	0.1	7.75	314.03	8.26	4.01	13.08
8/22/2024 19:00	15.94	201.49	0.1	7.74	314.18	8.26	3.42	13.15

WLNG Downstream Raw Sonde Data 2024-08-22 to 2024-08-25

8/22/2024 18:50	15.95	201.39	0.1	7.75	312.77	8.27	1.88	13.29
8/22/2024 18:40	15.96	200.52	0.1	7.76	312.95	8.28	2.05	13.32
8/22/2024 18:30	15.96	201.07	0.1	7.75	312.9	8.27	1.7	13.34
8/22/2024 18:20	15.97	201.08	0.1	7.75	313.84	8.28	3.41	13.2
8/22/2024 18:10	15.96	201.03	0.1	7.75	313.52	8.27	2.07	13.03
8/22/2024 18:00	15.95	201.01	0.1	7.75	312.61	8.27	3.21	12.98
8/22/2024 17:50	15.96	200.96	0.1	7.75	311.72	8.28	1.89	13.08
8/22/2024 17:40	15.96	200.85	0.1	7.76	312	8.28	2.43	13.22
8/22/2024 17:30	15.97	200.92	0.1	7.76	311.31	8.29	2.77	13.22
8/22/2024 17:20	15.99	201.15	0.1	7.76	311.71	8.29	2.24	13.24
8/22/2024 17:10	16.02	200.74	0.1	7.78	310.36	8.31	6.75	13.51
8/22/2024 17:00	16	199.73	0.1	7.79	310.22	8.31	2.86	13.53
8/22/2024 16:50	16	198.92	0.09	7.8	309.9	8.32	2.95	13.27
8/22/2024 16:40	16	199.31	0.09	7.79	309.81	8.32	2.21	13.48
8/22/2024 16:30	16	199.09	0.09	7.78	308.67	8.32	3.1	13.27
8/22/2024 16:20	16	198.49	0.09	7.81	309.04	8.32	3.55	13.24
8/22/2024 16:10	16.03	198.42	0.09	7.81	307.74	8.33	3.09	13.44
8/22/2024 16:00	0	0	0	7.82	307.89	8.63	3.27	13.27
8/22/2024 15:50	16.06	199.1	0.09	7.81	303.68	8.35	7.15	13.39
8/22/2024 15:40	16.05	198.87	0.09	7.81	305.71	8.34	3.81	13.48
8/22/2024 15:30	16.06	198.71	0.09	7.82	306.68	8.35	3.31	13.48
8/22/2024 15:20	16.05	199.9	0.1	7.8	305.37	8.33	4.49	13.46
8/22/2024 15:10	16.09	200.23	0.1	7.8	306.17	8.35	2.35	13.48
8/22/2024 15:00	16.05	200.5	0.1	7.79	305.98	8.35	2.75	13.48
8/22/2024 14:50	16.04	200.39	0.1	7.8	305.14	8.35	1.8	13.39
8/22/2024 14:40	16.06	199.78	0.1	7.81	303.8	8.36	3.81	13.46
8/22/2024 14:30	16.07	199.93	0.1	7.82	302.11	8.37	3.98	13.48
8/22/2024 14:20	16.05	199.65	0.09	7.81	301.15	8.35	2.98	13.48
8/22/2024 14:10	16.06	199.19	0.09	7.82	300.19	8.35	2.48	13.29
8/22/2024 14:00	16.09	199.08	0.09	7.82	301.62	8.36	2.97	13.48
8/22/2024 13:50	16.15	199.22	0.09	7.82	301.04	8.36	3.31	13.46
8/22/2024 13:40	16.13	199.26	0.09	7.82	302.35	8.38	2.41	13.48
8/22/2024 13:30	16.09	199.68	0.09	7.81	303.97	8.38	2.8	13.48
8/22/2024 13:20	16.07	200.04	0.1	7.8	301.28	8.39	4.72	13.36
8/22/2024 13:10	16.1	200.28	0.1	7.78	301.98	8.39	1.74	13.44
8/22/2024 13:00	16.08	199.53	0.09	7.79	301.33	8.4	3.75	13.44
8/22/2024 12:50	16.04	200.06	0.1	7.77	300.52	8.38	7.34	13.27
8/22/2024 12:40	16.02	200.01	0.1	7.77	301.69	8.34	2.66	12.84
8/22/2024 12:30	16.09	197.29	0.09	7.81	305.44	8.39	2.23	13.05
8/22/2024 12:20	16.18	200.2	0.1	7.83	311.27	8.37	3.91	13.12
8/22/2024 12:10	16.26	199.99	0.1	7.84	310.11	8.35	2.47	13.32
8/22/2024 12:00	16.25	200.55	0.1	7.83	308.58	8.37	2.31	13.32
8/22/2024 11:50	16.19	201.01	0.1	7.83	302.6	8.38	1.57	13.17
8/22/2024 11:40	16.19	201.57	0.1	7.83	294.12	8.37	2.97	13.15
8/22/2024 11:30	16.16	201.12	0.1	7.83	302.68	8.36	2.39	13.12
8/22/2024 11:20	0	0	0	7.83	303.03	8.7	2.92	13.08
8/22/2024 11:10	16.08	202.18	0.1	7.82	300.79	8.37	3.22	13

WLNG Downstream Raw Sonde Data 2024-08-22 to 2024-08-25

8/22/2024 11:00	16.07	201.62	0.1	7.83	281.59	8.38	9.4	12.84
8/22/2024 10:50	16.06	201.42	0.1	7.81	303.23	8.33	52.19	12.88
8/22/2024 10:40	16.11	201.51	0.1	7.83	305.6	8.37	2.77	12.88
8/22/2024 10:30	16.05	201.88	0.1	7.83	302.09	8.4	13.22	12.91
8/22/2024 10:20	15.98	202.29	0.1	7.82	313.29	8.41	24.54	12.76
8/22/2024 10:10	15.91	202.03	0.1	7.82	313.46	8.4	3.02	12.76
8/22/2024 10:00	15.95	201.9	0.1	7.84	302.78	8.4	26.45	12.69
8/22/2024 9:50	15.93	202.17	0.1	7.78	286.25	8.22	273.66	12.65

WLNG Upstream Raw Sonde Data 2024-08-19 to 2024-08-25

Received	Temperature C	Specific Conductivity ÂµS/cm	Salinity PSU	pH pH	ORP mV	Dissolved Oxygen Concentration mg/L	Turbidity NTU	TL Battery V
8/25/2024 23:50	14.97	27.88	0.01	7.19	418.68	8.88	1.06	12.24
8/25/2024 23:40	14.98	28	0.01	7.18	418.56	8.88	0.48	12.24
8/25/2024 23:30	14.99	28.28	0.01	7.2	416.95	8.88	0.48	12.24
8/25/2024 23:20	15.01	28.71	0.01	7.2	417.18	8.88	0.47	12.26
8/25/2024 23:10	15.02	28.93	0.01	7.23	417.09	8.87	0.47	12.14
8/25/2024 23:00	15.04	29.43	0.01	7.22	416.35	8.87	0.49	12.24
8/25/2024 22:50	15.05	29.59	0.01	7.26	414.51	8.88	0.5	12.14
8/25/2024 22:40	15.07	30.28	0.01	7.21	416.08	8.86	0.5	12.17
8/25/2024 22:30	15.08	30.64	0.01	7.24	415.24	8.86	0.47	12.17
8/25/2024 22:20	15.1	31.41	0.02	7.2	415.69	8.85	0.48	12.24
8/25/2024 22:10	15.11	31.59	0.02	7.24	414.28	8.87	0.51	12.26
8/25/2024 22:00	15.13	32.35	0.02	7.2	415.48	8.86	0.49	12.26
8/25/2024 21:50	15.14	32.82	0.02	7.24	414.34	8.86	0.51	12.26
8/25/2024 21:40	15.15	33.66	0.02	7.23	414.19	8.85	0.62	12.24
8/25/2024 21:30	15.16	34.17	0.02	7.26	412.92	8.86	0.51	12.29
8/25/2024 21:20	15.18	35.24	0.02	7.2	414.02	8.85	0.53	12.29
8/25/2024 21:10	15.19	36.23	0.02	7.22	413.07	8.85	0.47	12.29
8/25/2024 21:00	15.2	37.42	0.02	7.21	412.73	8.84	0.49	12.29
8/25/2024 20:50	15.21	38.27	0.02	7.27	409.5	8.84	0.51	12.19
8/25/2024 20:40	15.22	40.06	0.02	7.23	411.53	8.83	0.49	12.29
8/25/2024 20:30	15.23	41.45	0.02	7.22	412.15	8.83	0.48	12.19
8/25/2024 20:20	15.25	43.09	0.02	7.22	411.17	8.85	0.48	12.31
8/25/2024 20:10	15.26	44.43	0.02	7.22	411.79	8.84	0.49	12.24
8/25/2024 20:00	15.27	46.91	0.02	7.22	410.61	8.85	0.52	12.31
8/25/2024 19:50	15.28	48.36	0.02	7.27	408.62	8.83	0.49	12.33
8/25/2024 19:40	15.29	50.1	0.03	7.23	409.94	8.87	0.48	12.36
8/25/2024 19:30	15.3	50.81	0.03	7.25	408.94	8.86	0.48	12.26
8/25/2024 19:20	15.32	52.44	0.03	7.25	408.65	8.84	0.49	12.26
8/25/2024 19:10	15.32	53.52	0.03	7.31	404.85	8.85	0.48	12.29
8/25/2024 19:00	15.34	55.13	0.03	7.28	406.88	8.88	0.53	12.5
8/25/2024 19:00	15.34	55.13	0.03	7.28	406.88	8.88	0.53	12.5
8/25/2024 18:50	15.35	56.19	0.03	7.29	406.89	8.87	0.5	12.55
8/25/2024 18:40	15.36	58.24	0.03	7.27	406.56	8.9	0.48	12.62
8/25/2024 18:30	15.36	59.43	0.03	7.29	406.59	8.9	0.5	12.65
8/25/2024 18:20	15.37	62.72	0.03	7.27	405.99	8.91	0.51	12.67
8/25/2024 18:10	15.37	64.3	0.03	7.3	405.4	8.94	0.49	12.76
8/25/2024 18:00	15.37	67.04	0.03	7.28	405.54	8.96	0.51	12.81
8/25/2024 17:50	15.36	68.38	0.04	7.33	404.45	8.95	0.48	12.88
8/25/2024 17:40	15.35	70.77	0.04	7.27	405.18	8.94	0.51	12.81
8/25/2024 17:30	15.35	71.95	0.04	7.3	405.54	8.94	0.51	12.74

WLNG Upstream Raw Sonde Data 2024-08-19 to 2024-08-25

8/25/2024 17:20	15.35	74.71	0.04	7.31	404.86	8.94	0.49	12.65
8/25/2024 17:10	15.34	76.73	0.04	7.31	404.48	8.99	0.52	12.69
8/25/2024 17:00	15.33	78.63	0.04	7.32	404.01	8.99	0.51	12.88
8/25/2024 16:50	15.32	78.91	0.04	7.36	402.16	8.98	0.48	13.05
8/25/2024 16:40	15.3	80.21	0.04	7.31	404.7	8.97	0.48	12.86
8/25/2024 16:30	15.29	81.2	0.04	7.29	406.11	8.96	0.48	12.81
8/25/2024 16:20	15.28	82.23	0.04	7.29	405.73	8.95	0.5	12.88
8/25/2024 16:10	15.28	80.85	0.04	7.33	405.95	8.95	0.51	12.76
8/25/2024 16:00	15.27	80.18	0.04	7.29	406.23	8.93	0.5	12.76
8/25/2024 15:50	15.27	78.62	0.04	7.3	406.13	8.97	0.51	12.67
8/25/2024 15:40	15.27	78.68	0.04	7.29	405.64	8.97	0.56	12.72
8/25/2024 15:30	15.26	78.5	0.04	7.32	405.46	8.99	0.5	12.84
8/25/2024 15:20	15.25	77.41	0.04	7.29	406.13	9.01	0.48	12.96
8/25/2024 15:10	15.23	75.24	0.04	7.29	407.11	9.02	0.49	12.84
8/25/2024 15:00	15.21	73.75	0.04	7.27	407.61	9.04	0.5	12.96
8/25/2024 14:50	15.2	72.74	0.04	7.28	407.3	9.01	0.5	12.86
8/25/2024 14:40	15.19	70.78	0.04	7.27	407.79	9.04	0.48	12.88
8/25/2024 14:30	15.18	68.13	0.04	7.31	408	9.05	0.47	12.96
8/25/2024 14:20	15.17	64.63	0.03	7.26	409.26	9.05	0.49	12.93
8/25/2024 14:10	15.15	61.01	0.03	7.25	408.88	9.05	0.49	12.93
8/25/2024 14:00	15.14	54.21	0.03	7.23	410.2	9.05	0.51	12.81
8/25/2024 13:50	15.12	45.23	0.02	7.23	410.9	9.07	0.53	12.79
8/25/2024 13:40	15.11	35.17	0.02	7.27	409.68	9.07	0.48	12.91
8/25/2024 13:30	15.09	28.68	0.01	7.3	408.31	9.03	0.49	12.84
8/25/2024 13:20	15.09	24.15	0.01	7.26	409.16	9.06	0.51	12.81
8/25/2024 13:10	15.09	22.77	0.01	7.33	407.12	9.07	0.5	12.69
8/25/2024 13:00	15.08	22.83	0.01	7.26	408.77	9.07	0.49	12.76
8/25/2024 12:50	15.08	22.76	0.01	7.29	407.92	9.07	0.52	12.72
8/25/2024 12:40	15.06	22.78	0.01	7.26	408.64	9.11	0.52	12.86
8/25/2024 12:30	15.05	22.9	0.01	7.32	407.03	9.09	0.51	12.84
8/25/2024 12:20	15.04	22.88	0.01	7.26	408.86	9.08	0.51	12.81
8/25/2024 12:10	15.03	22.83	0.01	7.35	407.84	9.08	0.47	12.81
8/25/2024 12:00	15.04	22.73	0.01	7.29	406.75	9.13	0.49	12.93
8/25/2024 11:50	15.03	22.64	0.01	7.37	406.6	9.15	0.5	13.05
8/25/2024 11:40	15	22.87	0.01	7.29	408.6	9.16	0.48	13.36
8/25/2024 11:30	14.9	22.69	0.01	7.29	409.68	9.11	0.49	13
8/25/2024 11:20	14.87	22.94	0.01	7.25	409.53	9.13	0.51	12.74
8/25/2024 11:10	14.85	22.8	0.01	7.26	410.27	9.13	0.5	12.76
8/25/2024 11:00	14.82	23.04	0.01	7.22	410.11	9.13	0.49	12.72
8/25/2024 10:50	14.8	22.93	0.01	7.25	409.67	9.12	0.51	12.67
8/25/2024 10:40	14.78	22.99	0.01	7.27	410.38	9.11	0.49	12.69
8/25/2024 10:30	14.76	22.87	0.01	7.3	408.66	9.13	0.5	12.74
8/25/2024 10:20	14.75	22.94	0.01	7.24	411.32	9.13	0.48	12.67
8/25/2024 10:10	14.72	23.01	0.01	7.24	411.53	9.13	0.49	12.76
8/25/2024 10:00	14.69	22.98	0.01	7.22	412.27	9.11	0.49	12.65
8/25/2024 9:50	14.67	23.04	0.01	7.29	411.36	9.13	0.49	12.69
8/25/2024 9:40	14.66	23.04	0.01	7.23	412.7	9.13	0.5	12.69

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8/25/2024 9:30	14.64	22.89	0.01	7.26	411.41	9.14	0.49	12.74
8/25/2024 9:20	14.62	23.1	0.01	7.21	413.33	9.12	0.48	12.74
8/25/2024 9:10	14.6	23.04	0.01	7.18	415.07	9.13	0.49	12.65
8/25/2024 9:00	14.58	23.27	0.01	7.21	413.94	9.12	0.46	12.57
8/25/2024 8:50	14.56	23.09	0.01	7.27	412.98	9.1	0.49	12.36
8/25/2024 8:40	14.54	23.41	0.01	7.21	415.27	9.1	0.5	12.26
8/25/2024 8:30	14.53	23.39	0.01	7.24	414.03	9.08	0.51	12.09
8/25/2024 8:20	14.51	23.38	0.01	7.23	415.22	9.05	0.48	12.17
8/25/2024 8:10	14.51	23.1	0.01	7.21	414.58	9.07	0.56	12.09
8/25/2024 8:00	14.5	23.59	0.01	7.21	415.41	9.05	0.47	12.07
8/25/2024 7:50	14.5	23.42	0.01	7.15	417.2	9.07	0.5	11.95
8/25/2024 7:40	14.5	23.59	0.01	7.16	415.81	9.06	0.49	11.97
8/25/2024 7:30	14.5	23.22	0.01	7.23	413.46	9.05	0.5	12
8/25/2024 7:20	14.5	23.79	0.01	7.19	415.99	9.04	0.5	11.97
8/25/2024 7:10	14.5	23.71	0.01	7.2	413.57	9.03	0.48	11.97
8/25/2024 7:00	14.5	23.9	0.01	7.26	415.33	9.02	0.48	11.97
8/25/2024 6:50	14.5	23.78	0.01	7.27	415.18	9.04	0.5	11.97
8/25/2024 6:40	14.52	23.96	0.01	7.21	414.97	9	0.49	11.88
8/25/2024 6:30	14.53	23.59	0.01	7.17	415.65	9.02	0.5	11.95
8/25/2024 6:20	14.55	23.98	0.01	7.24	415.67	9.01	0.5	11.88
8/25/2024 6:10	14.56	23.98	0.01	7.2	415.85	9	0.48	11.93
8/25/2024 6:00	14.58	24.1	0.01	7.17	415.19	9	0.51	11.85
8/25/2024 5:50	14.59	23.94	0.01	7.25	410.58	8.98	0.5	11.95
8/25/2024 5:40	14.61	24.22	0.01	7.21	415.13	8.98	0.46	11.97
8/25/2024 5:30	14.62	24.08	0.01	7.2	412.46	9	0.49	11.95
8/25/2024 5:20	14.64	24.34	0.01	7.17	413.97	8.96	0.52	11.88
8/25/2024 5:10	14.65	23.77	0.01	7.29	412.65	8.97	0.53	11.85
8/25/2024 5:00	14.66	24.33	0.01	7.2	413.5	8.94	0.48	11.85
8/25/2024 4:50	14.67	24.27	0.01	7.27	412.8	8.95	0.51	11.88
8/25/2024 4:40	14.68	24.36	0.01	7.23	413.87	8.93	0.48	11.97
8/25/2024 4:30	14.69	24.39	0.01	7.25	413.1	8.95	0.51	11.97
8/25/2024 4:20	14.7	24.48	0.01	7.21	413.19	8.89	0.55	11.97
8/25/2024 4:10	14.71	24.47	0.01	7.25	413.12	8.91	0.5	11.97
8/25/2024 4:00	14.71	24.57	0.01	7.19	412.25	8.91	0.5	11.97
8/25/2024 3:50	14.72	24.49	0.01	7.28	411.76	8.93	0.48	11.88
8/25/2024 3:40	14.73	24.6	0.01	7.19	412.24	8.85	0.54	11.88
8/25/2024 3:30	14.74	24.5	0.01	7.18	410.68	8.93	0.5	11.97
8/25/2024 3:20	14.75	24.8	0.01	7.21	411.83	8.86	0.49	12
8/25/2024 3:10	14.76	24.79	0.01	7.22	412.56	8.85	0.5	12
8/25/2024 3:00	14.77	24.7	0.01	7.22	412.06	8.91	0.5	12
8/25/2024 2:50	14.77	24.91	0.01	7.21	410.5	8.89	0.47	12.02
8/25/2024 2:40	14.78	25.01	0.01	7.21	411.58	8.94	0.54	12.02
8/25/2024 2:30	14.79	24.91	0.01	7.23	408.68	8.94	0.52	12.02
8/25/2024 2:20	14.8	25.01	0.01	7.22	412.41	8.92	0.5	12.02
8/25/2024 2:10	14.82	25.02	0.01	7.2	412.24	8.95	0.55	12.02
8/25/2024 2:00	14.83	25.18	0.01	7.21	413.36	8.93	0.56	12.02
8/25/2024 1:50	14.83	24.66	0.01	7.25	409.82	8.93	0.56	12.02

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8/25/2024 1:40	14.84	25.37	0.01	7.23	413.08	8.92	0.51	11.95
8/25/2024 1:30	14.85	25.13	0.01	7.17	411.77	8.93	0.5	12.05
8/25/2024 1:20	14.86	25.34	0.01	7.26	411.86	8.9	0.56	12.05
8/25/2024 1:10	14.86	25.2	0.01	7.23	411.75	8.91	0.66	11.97
8/25/2024 1:00	14.87	25.21	0.01	7.23	412.28	8.89	0.53	11.97
8/25/2024 0:50	14.88	25.1	0.01	7.25	411.7	8.86	0.59	12
8/25/2024 0:40	14.89	25.13	0.01	7.24	411.38	8.81	0.52	12
8/25/2024 0:30	14.89	25.06	0.01	7.29	409.73	8.74	0.55	12.09
8/25/2024 0:20	14.9	25.2	0.01	7.22	412.71	8.81	0.5	12.02
8/25/2024 0:10	14.91	25.19	0.01	7.29	411.01	8.78	0.68	12
8/25/2024 0:00	14.92	25.29	0.01	7.23	412.56	8.8	0.53	12.02
8/24/2024 23:50	14.92	25.37	0.01	7.29	409.18	8.73	0.6	12.02
8/24/2024 23:40	14.93	25.34	0.01	7.14	411.43	8.86	2.05	12.14
8/24/2024 23:30	14.94	26.05	0.01	7.22	410.15	8.87	0.7	12.14
8/24/2024 23:20	14.94	27.35	0.01	7.2	410.9	8.91	7.53	12.14
8/24/2024 23:10	14.95	25.57	0.01	7.25	407.51	8.89	0.62	12.14
8/24/2024 23:00	14.96	25.76	0.01	7.23	410.16	8.88	0.56	12.14
8/24/2024 22:50	14.96	25.98	0.01	7.24	406.04	8.88	0.55	12.14
8/24/2024 22:40	14.98	25.95	0.01	7.24	409.07	8.93	0.56	12.17
8/24/2024 22:30	14.98	26.08	0.01	7.24	404.92	8.88	0.65	12.17
8/24/2024 22:20	14.99	26.15	0.01	7.16	407.86	8.9	0.57	12.17
8/24/2024 22:10	15	26.27	0.01	7.18	407.42	8.84	0.55	12.17
8/24/2024 22:00	15.01	26.42	0.01	7.16	407.27	8.89	0.52	12.17
8/24/2024 21:50	15.02	26.5	0.01	7.21	406.27	8.88	0.55	12.09
8/24/2024 21:40	15.03	26.65	0.01	7.2	407.16	8.91	0.63	12.19
8/24/2024 21:30	15.04	26.79	0.01	7.17	406.61	8.87	0.63	12.09
8/24/2024 21:20	15.05	26.97	0.01	7.17	407.29	8.88	0.55	12.09
8/24/2024 21:10	15.05	27	0.01	7.24	402.96	8.88	0.55	12.19
8/24/2024 21:00	15.06	27.2	0.01	7.18	406.3	8.89	0.55	12.21
8/24/2024 20:50	15.07	27.31	0.01	7.24	403.02	8.86	0.52	12.24
8/24/2024 20:40	15.08	27.49	0.01	7.17	406.57	8.89	0.61	12.24
8/24/2024 20:30	15.08	27.69	0.01	7.22	404.34	8.86	0.56	12.21
8/24/2024 20:20	15.09	27.85	0.01	7.19	405.15	8.87	0.56	12.14
8/24/2024 20:10	15.1	27.9	0.01	7.21	404.52	8.86	0.56	12.21
8/24/2024 20:00	15.11	28.06	0.01	7.16	406.62	8.88	0.79	12.26
8/24/2024 19:50	15.12	28.26	0.01	7.19	405.48	8.85	0.57	12.26
8/24/2024 19:40	15.13	28.58	0.01	7.18	405.23	8.89	0.59	12.26
8/24/2024 19:30	15.13	28.69	0.01	7.24	402.15	8.86	0.55	12.29
8/24/2024 19:20	15.14	28.76	0.01	7.19	404.29	8.88	0.75	12.29
8/24/2024 19:10	15.15	28.86	0.01	7.28	402.8	8.89	0.59	12.29
8/24/2024 19:00	15.15	29.2	0.01	7.22	402.71	8.9	0.57	12.31
8/24/2024 18:50	15.16	29.33	0.01	7.23	401.27	8.89	0.59	12.31
8/24/2024 18:40	15.17	29.58	0.01	7.26	403.12	8.89	0.6	12.33
8/24/2024 18:30	15.17	29.97	0.01	7.26	401.08	8.91	0.63	12.26
8/24/2024 18:20	15.18	30.03	0.01	7.19	401.6	8.9	0.73	12.31
8/24/2024 18:10	15.18	30.2	0.01	7.31	395.56	8.91	0.61	12.41
8/24/2024 18:00	15.18	30.57	0.01	7.2	400.24	8.92	0.69	12.45

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8/24/2024 17:50	15.18	30.95	0.01	7.21	401.29	8.92	0.65	12.41
8/24/2024 17:40	15.19	31.25	0.02	7.21	399.62	8.92	0.63	12.53
8/24/2024 17:30	15.19	31.42	0.02	7.23	398.81	8.92	0.59	12.45
8/24/2024 17:20	15.19	31.85	0.02	7.21	398.77	8.96	1	12.62
8/24/2024 17:10	15.18	32.14	0.02	7.23	397.71	8.94	0.58	12.6
8/24/2024 17:00	15.18	32.52	0.02	7.21	397.68	8.95	7.63	12.57
8/24/2024 16:50	15.17	32.52	0.02	7.28	393.68	8.89	0.81	12.57
8/24/2024 16:40	15.18	33.2	0.02	7.22	397.57	8.91	0.66	12.57
8/24/2024 16:30	15.18	33.47	0.02	7.24	395.65	8.88	0.59	12.6
8/24/2024 16:20	15.18	33.85	0.02	7.21	396.32	8.94	0.62	12.67
8/24/2024 16:10	15.17	34.46	0.02	7.23	396.1	8.89	0.67	12.62
8/24/2024 16:00	15.16	35.05	0.02	7.21	395.65	8.95	0.62	12.74
8/24/2024 15:50	15.15	35.48	0.02	7.26	393.57	8.93	0.62	12.76
8/24/2024 15:40	15.12	36.06	0.02	7.22	394.48	8.96	0.62	12.76
8/24/2024 15:30	15.1	36.07	0.02	7.21	394.44	8.88	1.88	12.6
8/24/2024 15:20	15.1	37.28	0.02	7.21	393.16	8.93	0.61	12.57
8/24/2024 15:10	15.1	37.7	0.02	7.27	389.52	8.95	2.36	12.5
8/24/2024 15:00	15.09	38.35	0.02	7.22	391.51	8.97	0.66	12.5
8/24/2024 14:50	15.09	38.59	0.02	7.23	390.73	8.93	0.82	12.53
8/24/2024 14:40	15.09	40.04	0.02	7.23	389.96	8.94	0.74	12.48
8/24/2024 14:30	15.09	40.69	0.02	7.27	387.45	8.92	4.76	12.5
8/24/2024 14:20	15.09	41.53	0.02	7.24	388.52	8.96	0.66	12.55
8/24/2024 14:10	15.08	42.35	0.02	7.24	388.87	8.94	0.79	12.62
8/24/2024 14:00	15.08	42.91	0.02	7.25	387.56	8.96	0.63	12.55
8/24/2024 13:50	15.07	42.85	0.02	7.28	385.29	8.93	0.7	12.65
8/24/2024 13:40	15.06	44.04	0.02	7.25	386.52	8.97	0.72	12.65
8/24/2024 13:30	15.05	44.44	0.02	7.27	385.48	8.97	0.77	12.67
8/24/2024 13:20	15.05	44.89	0.02	7.26	385.23	8.99	0.67	12.72
8/24/2024 13:10	15.03	45.11	0.02	7.28	384.75	9.01	0.67	12.74
8/24/2024 13:00	15.01	45.92	0.02	7.27	384.81	9	0.69	12.72
8/24/2024 12:50	14.99	46.09	0.02	7.3	382.96	9.01	0.72	12.65
8/24/2024 12:40	14.98	46.77	0.02	7.27	382.79	9	1.15	12.65
8/24/2024 12:30	14.97	47.05	0.02	7.3	381.72	9.01	0.7	12.62
8/24/2024 12:20	14.96	47.46	0.02	7.26	381.07	9.01	0.72	12.48
8/24/2024 12:10	14.95	47.54	0.02	7.28	380.09	9.01	1.18	12.53
8/24/2024 12:00	14.94	47.88	0.02	7.27	379.64	9	0.75	12.57
8/24/2024 11:50	14.92	48	0.02	7.28	381.88	8.98	1.05	12.53
8/24/2024 11:40	14.91	48.49	0.02	7.26	381.31	8.97	4.45	12.48
8/24/2024 11:30	14.9	48.88	0.02	7.27	380	8.97	0.79	12.31
8/24/2024 11:20	14.89	49.5	0.03	7.27	378.78	9	0.78	12.24
8/24/2024 11:10	14.88	50.05	0.03	7.26	378.64	8.97	1.02	12.17
8/24/2024 11:00	14.88	50.62	0.03	7.27	376.6	8.98	0.8	12.29
8/24/2024 10:50	14.88	50.89	0.03	7.31	373.42	8.97	1.07	12.41
8/24/2024 10:40	14.88	51.62	0.03	7.26	374.69	9.01	3.23	12.38
8/24/2024 10:30	14.87	51.77	0.03	7.29	371.39	8.98	1.41	12.24
8/24/2024 10:20	14.87	53.66	0.03	7.28	369.34	9.01	1.33	12.26
8/24/2024 10:10	14.86	54.3	0.03	7.3	366.81	9	1.15	12.24

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8/24/2024 10:00	14.86	55.42	0.03	7.29	366.61	9.02	1.01	12.12
8/24/2024 9:50	14.85	56.23	0.03	7.28	366.22	9.01	0.88	12.02
8/24/2024 9:40	14.85	57.68	0.03	7.29	364.97	9.01	1.43	11.95
8/24/2024 9:30	14.84	58.72	0.03	7.29	364.21	8.98	1.77	12.02
8/24/2024 9:20	14.85	60.1	0.03	7.3	361.92	8.99	1.34	12.02
8/24/2024 9:10	14.85	61.38	0.03	7.28	362.67	9	2.22	12
8/24/2024 9:00	14.85	62.52	0.03	7.28	362.21	8.98	1.11	12
8/24/2024 8:50	14.86	63.55	0.03	7.31	360.8	8.98	1.01	12
8/24/2024 8:40	14.86	65.49	0.03	7.3	360.64	8.98	1.58	11.9
8/24/2024 8:30	14.87	67.07	0.03	7.29	361.08	8.99	0.99	11.97
8/24/2024 8:20	14.88	69.11	0.04	7.31	359.61	8.98	1.23	11.88
8/24/2024 8:10	14.88	70.77	0.04	7.29	359.62	8.97	1.2	11.9
8/24/2024 8:00	14.89	72.61	0.04	7.32	357.15	8.97	3.36	11.88
8/24/2024 7:50	14.89	74.28	0.04	7.33	355.92	8.97	1.09	11.95
8/24/2024 7:40	14.9	76.24	0.04	7.32	354.6	8.96	1.43	11.95
8/24/2024 7:30	14.91	77.65	0.04	7.32	353.19	8.98	1.43	11.88
8/24/2024 7:20	14.92	81.2	0.04	7.35	350.37	8.98	1.86	11.97
8/24/2024 7:10	14.94	82.83	0.04	7.34	349.56	8.98	1.86	12
8/24/2024 7:00	14.95	86.74	0.05	7.36	347.16	8.97	1.96	11.97
8/24/2024 6:50	14.96	88.69	0.05	7.31	348.73	8.99	1.64	11.97
8/24/2024 6:40	14.97	90.07	0.05	7.35	345.78	8.98	1.51	12
8/24/2024 6:30	14.97	87.96	0.05	7.33	346.86	8.97	1.76	12
8/24/2024 6:20	14.97	83.91	0.04	7.32	346.56	8.97	2.04	11.97
8/24/2024 6:10	14.98	78.9	0.04	7.29	347.27	9	4.11	12
8/24/2024 6:10	14.98	78.9	0.04	7.29	347.27	9	4.11	12
8/24/2024 6:00	14.99	76.8	0.04	7.33	345.01	8.97	3.91	11.9
8/24/2024 5:50	15	74.73	0.04	7.33	344.11	8.99	2.34	11.9
8/24/2024 5:40	15.01	73.41	0.04	7.31	344.24	8.99	5.82	11.97
8/24/2024 5:30	15.02	73.11	0.04	7.31	344.59	8.97	2.33	11.9
8/24/2024 5:20	15.04	73.71	0.04	7.34	342.32	9	5.5	12
8/24/2024 5:10	15.05	74.66	0.04	7.29	345.25	8.97	5.54	12
8/24/2024 5:00	15.07	76.87	0.04	7.37	340.64	8.96	6.16	12
8/24/2024 4:50	15.09	79.21	0.04	7.34	342.26	8.96	6.12	11.9
8/24/2024 4:40	15.11	81.45	0.04	7.38	339.5	8.95	7.38	11.9
8/24/2024 4:30	15.12	83.66	0.04	7.38	338.64	8.97	56.53	11.95
8/24/2024 4:20	15.14	87.3	0.05	7.41	337.55	8.96	78.5	12.02
8/24/2024 4:10	15.16	88.84	0.05	7.41	343.82	8.95	13.48	12.02
8/24/2024 4:00	15.18	93.03	0.05	7.42	344.9	8.96	218.23	12.02
8/24/2024 3:50	15.19	96.75	0.05	7.43	346.91	8.96	34.12	12.02
8/24/2024 3:40	15.2	98.04	0.05	7.4	348.94	8.95	52	12.05
8/24/2024 3:30	15.21	96.38	0.05	7.41	348.44	8.93	20.06	12.05
8/24/2024 3:20	15.23	102.75	0.05	7.42	348.34	8.9	65.15	12.05
8/24/2024 3:10	15.25	108.05	0.06	7.42	346.66	8.91	64.66	11.95
8/24/2024 3:00	15.26	112.74	0.06	7.42	345.11	8.88	50.99	11.95
8/24/2024 2:50	15.27	119.26	0.06	7.44	343.14	8.92	41.43	11.95
8/24/2024 2:40	15.29	133.51	0.07	7.47	340.43	8.86	44.68	11.95
8/24/2024 2:30	15.32	146.15	0.08	7.48	339.6	8.85	20.87	12.05

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8/24/2024 2:20	15.36	166.48	0.09	7.52	337.56	8.83	33.18	11.97
8/24/2024 2:10	15.36	172.84	0.09	7.53	338.25	8.82	23.39	11.95
8/24/2024 2:00	15.37	172.94	0.09	7.52	337.89	8.81	32.64	11.95
8/24/2024 1:50	15.38	177.48	0.09	7.52	336.78	8.8	23.6	11.97
8/24/2024 1:40	15.38	179.85	0.1	7.51	335.58	8.78	18.07	12.07
8/24/2024 1:30	15.37	178.47	0.09	7.48	336.57	8.77	9.84	12.07
8/24/2024 1:20	15.35	162.12	0.09	7.44	334.46	8.75	11.56	12.07
8/24/2024 1:10	15.33	129.42	0.07	7.42	329.26	8.75	7.64	11.97
8/24/2024 1:00	15.35	134.05	0.07	7.43	320.71	8.76	7.82	11.97
8/24/2024 0:50	15.38	149.9	0.08	7.45	314.34	8.75	3.78	11.97
8/24/2024 0:40	15.41	172.31	0.09	7.48	313.76	8.74	3.76	12
8/24/2024 0:30	15.43	193.12	0.1	7.48	316.28	8.71	8.24	12.07
8/24/2024 0:20	15.45	213.98	0.11	7.51	318.7	8.72	2.77	12.09
8/24/2024 0:10	15.46	230.22	0.12	7.51	321.59	8.71	3.14	12.07
8/24/2024 0:00	15.45	243.63	0.13	7.51	325.91	8.72	3.91	12.09
8/23/2024 23:50	15.44	251.37	0.13	7.49	330.86	8.71	2.75	12.09
8/23/2024 23:40	15.41	256.33	0.14	7.47	335.28	8.72	2.99	12.07
8/23/2024 23:30	15.38	249.71	0.13	7.44	340.1	8.71	2.06	12.07
8/23/2024 23:20	15.36	240.01	0.13	7.41	344.98	8.71	2.59	12
8/23/2024 23:10	15.34	235.53	0.13	7.38	349.12	8.68	0.93	12.09
8/23/2024 23:00	15.32	226.49	0.12	7.34	354.19	8.68	0.93	12.09
8/23/2024 22:50	15.3	177.26	0.09	7.29	359.47	8.7	0.79	12.09
8/23/2024 22:40	15.29	111.83	0.06	7.21	365.37	8.71	0.62	12.09
8/23/2024 22:30	15.29	54.02	0.03	7.13	368.08	8.69	0.77	12.09
8/23/2024 22:20	15.3	25.5	0.01	7.13	367.66	8.66	1.28	12.09
8/23/2024 22:10	15.31	23.4	0.01	7.13	366.2	8.65	0.67	12.09
8/23/2024 22:00	15.32	23.32	0.01	7.14	364.36	8.65	1.02	12.12
8/23/2024 21:50	15.32	23.18	0.01	7.12	365.01	8.62	0.65	12.12
8/23/2024 21:40	15.33	23.1	0.01	7.16	362.19	8.62	0.54	12.12
8/23/2024 21:30	15.34	22.83	0.01	7.13	362.31	8.63	0.55	12.12
8/23/2024 21:20	15.35	23.13	0.01	7.15	360.72	8.64	0.63	12.09
8/23/2024 21:10	15.35	23.11	0.01	7.18	360.59	8.65	0.51	12.09
8/23/2024 21:00	15.36	23.26	0.01	7.18	360.26	8.64	0.55	12.02
8/23/2024 20:50	15.37	23.15	0.01	7.18	361.03	8.66	0.5	12.02
8/23/2024 20:40	15.38	23.38	0.01	7.17	362	8.65	0.9	12.05
8/23/2024 20:30	15.38	23.3	0.01	7.18	363.68	8.66	0.5	12.05
8/23/2024 20:20	15.39	23.58	0.01	7.19	361.55	8.64	0.49	12.05
8/23/2024 20:10	15.39	23.59	0.01	7.2	364.3	8.65	0.47	12.07
8/23/2024 20:00	15.4	23.72	0.01	7.16	364.8	8.66	0.47	12.07
8/23/2024 19:50	15.4	23.65	0.01	7.19	365.52	8.66	0.51	12.09
8/23/2024 19:40	15.41	23.87	0.01	7.19	364.34	8.67	0.49	12.19
8/23/2024 19:30	15.42	23.74	0.01	7.19	366.97	8.67	0.5	12.19
8/23/2024 19:20	15.43	24.02	0.01	7.19	365.04	8.67	0.49	12.26
8/23/2024 19:10	15.43	23.86	0.01	7.26	364.55	8.67	0.52	12.26
8/23/2024 19:00	15.45	24.23	0.01	7.19	365.77	8.67	0.51	12.24
8/23/2024 18:50	15.45	24.08	0.01	7.2	369.19	8.66	0.51	12.24
8/23/2024 18:40	15.46	24.34	0.01	7.18	366.04	8.65	0.5	12.26

WLNG Upstream Raw Sonde Data 2024-08-19 to 2024-08-25

8/23/2024 18:30	15.47	24.17	0.01	7.2	366.05	8.67	0.5	12.29
8/23/2024 18:20	15.48	24.34	0.01	7.2	366.41	8.69	0.5	12.33
8/23/2024 18:10	15.48	24.27	0.01	7.21	366.98	8.7	0.51	12.38
8/23/2024 18:00	15.49	24.19	0.01	7.2	368.32	8.71	0.49	12.43
8/23/2024 17:50	15.49	23.88	0.01	7.21	370.62	8.72	0.49	12.31
8/23/2024 17:40	15.49	24.12	0.01	7.22	367.7	8.72	0.55	12.29
8/23/2024 17:30	15.49	23.51	0.01	7.23	372.42	8.72	0.5	12.36
8/23/2024 17:20	15.5	23.7	0.01	7.2	368.39	8.73	0.51	12.26
8/23/2024 17:10	15.5	22.99	0.01	7.28	365.61	8.7	0.52	12.24
8/23/2024 17:00	15.51	23.11	0.01	7.21	368.21	8.7	0.49	12.26
8/23/2024 16:50	15.51	22.7	0.01	7.23	372.28	8.72	0.5	12.29
8/23/2024 16:40	15.52	22.67	0.01	7.23	367.1	8.75	0.51	12.43
8/23/2024 16:30	15.53	22.29	0.01	7.25	367.78	8.75	0.5	12.53
8/23/2024 16:20	15.52	22.45	0.01	7.22	366.83	8.75	0.54	12.48
8/23/2024 16:10	15.52	22.25	0.01	7.24	366.95	8.75	0.51	12.62
8/23/2024 16:00	15.52	22.5	0.01	7.19	368.42	8.7	0.5	12.48
8/23/2024 15:50	15.52	22.35	0.01	7.19	370.5	8.7	0.52	12.43
8/23/2024 15:40	15.53	22.53	0.01	7.21	369.01	8.68	0.51	12.29
8/23/2024 15:30	15.54	22.32	0.01	7.26	367.71	8.69	0.51	12.45
8/23/2024 15:20	15.56	22.5	0.01	7.2	369.08	8.67	0.52	12.45
8/23/2024 15:10	15.57	22.44	0.01	7.21	369.62	8.69	0.57	12.45
8/23/2024 15:00	15.58	22.35	0.01	7.21	367.84	8.71	0.59	12.53
8/23/2024 14:50	15.59	22.13	0.01	7.28	367.41	8.77	0.5	12.67
8/23/2024 14:40	15.59	22.29	0.01	7.24	366.96	8.78	0.54	12.69
8/23/2024 14:30	15.58	22.07	0.01	7.24	369.25	8.76	0.51	12.69
8/23/2024 14:20	15.58	22.14	0.01	7.24	366.15	8.79	0.51	12.55
8/23/2024 14:10	15.57	21.94	0.01	7.29	363.81	8.8	0.51	12.69
8/23/2024 14:00	15.56	22.15	0.01	7.25	366.18	8.83	0.53	12.79
8/23/2024 13:50	15.52	22.11	0.01	7.24	369.35	8.8	0.51	12.74
8/23/2024 13:40	15.49	22.14	0.01	7.22	367.73	8.74	0.5	12.53
8/23/2024 13:30	15.49	21.91	0.01	7.21	369.77	8.74	0.5	12.45
8/23/2024 13:20	15.49	22.01	0.01	7.23	366.48	8.78	0.5	12.38
8/23/2024 13:10	15.48	21.65	0.01	7.24	366.36	8.78	0.48	12.55
8/23/2024 13:00	15.49	21.94	0.01	7.23	366.27	8.83	0.58	12.6
8/23/2024 12:50	15.47	21.81	0.01	7.2	368.63	8.79	0.49	12.6
8/23/2024 12:40	15.46	21.93	0.01	7.21	366.08	8.75	0.49	12.5
8/23/2024 12:30	15.45	21.8	0.01	7.22	365.85	8.78	0.52	12.55
8/23/2024 12:20	15.45	21.83	0.01	7.22	363.78	8.82	0.51	12.6
8/23/2024 12:10	15.43	21.73	0.01	7.24	364.4	8.83	1.76	12.57
8/23/2024 12:00	15.38	21.89	0.01	7.18	367.59	8.73	0.52	12.17
8/23/2024 11:50	15.37	21.91	0.01	7.21	368.85	8.7	0.52	12.24
8/23/2024 11:40	15.37	21.98	0.01	7.19	371.96	8.69	0.49	12.19
8/23/2024 11:30	15.37	21.97	0.01	7.23	373.75	8.71	0.48	12.21
8/23/2024 11:20	15.38	22.05	0.01	7.21	372.63	8.71	0.48	12.24
8/23/2024 11:10	15.38	21.94	0.01	7.24	373.54	8.74	0.49	12.26
8/23/2024 11:00	15.38	21.98	0.01	7.21	373.67	8.76	0.52	12.19
8/23/2024 10:50	15.37	21.92	0.01	7.29	374.76	8.75	0.5	12.14

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8/23/2024 10:40	15.37	21.99	0.01	7.22	373.55	8.74	0.51	12.24
8/23/2024 10:30	15.36	21.84	0.01	7.25	374.77	8.72	0.49	12.19
8/23/2024 10:20	15.36	22.03	0.01	7.2	373.27	8.74	0.5	12.07
8/23/2024 10:10	15.36	21.87	0.01	7.26	371.25	8.74	0.49	12.17
8/23/2024 10:10	15.36	21.87	0.01	7.26	371.25	8.74	0.49	12.17
8/23/2024 10:00	15.36	21.96	0.01	7.2	375.51	8.74	0.5	12.29
8/23/2024 9:50	15.36	21.86	0.01	7.22	376.68	8.72	0.51	12.24
8/23/2024 9:40	15.36	22.08	0.01	7.18	377.16	8.69	0.51	12.09
8/23/2024 9:30	15.36	21.93	0.01	7.25	378.84	8.69	0.49	12.09
8/23/2024 9:20	15.36	22.12	0.01	7.17	379.21	8.71	0.5	12.24
8/23/2024 9:10	15.35	22	0.01	7.22	380.51	8.72	0.48	12.24
8/23/2024 9:00	15.35	22.01	0.01	7.16	380.45	8.69	0.48	12.21
8/23/2024 8:50	15.34	21.94	0.01	7.26	379.17	8.7	0.51	12.19
8/23/2024 8:40	15.34	22.01	0.01	7.17	381.15	8.68	0.51	12.19
8/23/2024 8:30	15.34	21.92	0.01	7.26	379.94	8.7	0.5	12.19
8/23/2024 8:20	15.34	21.94	0.01	7.19	380.4	8.68	0.49	12.19
8/23/2024 8:10	15.34	21.61	0.01	7.29	383.22	8.72	0.51	12.12
8/23/2024 8:00	15.33	21.89	0.01	7.2	380.02	8.71	0.47	12.14
8/23/2024 7:50	15.33	21.73	0.01	7.33	382.12	8.71	0.48	12.26
8/23/2024 7:40	15.33	21.88	0.01	7.21	379.43	8.72	0.51	12.21
8/23/2024 7:30	15.32	21.75	0.01	7.27	382.52	8.7	0.49	12.31
8/23/2024 7:20	15.32	21.95	0.01	7.18	379.2	8.69	0.51	12.24
8/23/2024 7:10	15.31	21.88	0.01	7.3	378.91	8.67	0.49	12.12
8/23/2024 7:00	15.32	21.98	0.01	7.17	378.94	8.66	0.5	12.09
8/23/2024 6:50	15.32	21.86	0.01	7.2	379.35	8.68	0.48	12.07
8/23/2024 6:40	15.33	22.03	0.01	7.17	379.63	8.64	0.49	12.07
8/23/2024 6:30	15.33	21.88	0.01	7.23	376.91	8.62	0.51	12.17
8/23/2024 6:20	15.34	21.96	0.01	7.16	381.22	8.64	0.49	12.17
8/23/2024 6:10	15.34	22.1	0.01	7.18	380.9	8.63	0.49	12.17
8/23/2024 6:00	15.35	22.03	0.01	7.16	381.17	8.63	0.5	12.19
8/23/2024 5:50	15.36	22.08	0.01	7.22	380.18	8.63	0.49	12.17
8/23/2024 5:40	15.36	22.12	0.01	7.19	380.34	8.62	0.48	12.07
8/23/2024 5:30	15.37	21.77	0.01	7.23	379.94	8.63	0.5	12.07
8/23/2024 5:20	15.38	22.17	0.01	7.19	381.42	8.63	0.49	12.07
8/23/2024 5:10	15.38	22.07	0.01	7.25	383.6	8.64	0.5	12.09
8/23/2024 5:00	15.38	22.19	0.01	7.19	382.75	8.64	0.51	12.09
8/23/2024 4:50	15.38	22.17	0.01	7.23	383.86	8.65	0.51	12.09
8/23/2024 4:40	15.38	22.16	0.01	7.18	383.18	8.65	0.51	12.09
8/23/2024 4:30	15.38	22.03	0.01	7.31	382.69	8.66	0.5	12.09
8/23/2024 4:20	15.39	22.13	0.01	7.17	382.48	8.64	113.85	12.09
8/23/2024 4:10	15.39	22.19	0.01	7.2	381.61	8.66	0.5	12.09
8/23/2024 4:00	15.39	22.22	0.01	7.2	383.77	8.64	0.5	12.19
8/23/2024 3:50	15.39	22.19	0.01	7.31	382.38	8.66	0.49	12.21
8/23/2024 3:40	15.39	22.17	0.01	7.22	382.5	8.64	0.48	12.19
8/23/2024 3:30	15.38	22.13	0.01	7.22	382.46	8.64	0.5	12.21
8/23/2024 3:20	15.38	22.26	0.01	7.25	381.46	8.65	0.49	12.21
8/23/2024 3:10	15.38	22.09	0.01	7.25	379.68	8.65	0.49	12.21

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8/23/2024 3:00	15.39	22.22	0.01	7.19	380.95	8.65	0.48	12.21
8/23/2024 2:50	15.39	22.1	0.01	7.23	381.66	8.64	0.5	12.21
8/23/2024 2:40	15.4	22.22	0.01	7.21	382.25	8.62	0.48	12.21
8/23/2024 2:30	15.41	22.09	0.01	7.17	382.83	8.63	0.53	12.21
8/23/2024 2:20	15.41	22.17	0.01	7.2	383.73	8.65	0.5	12.21
8/23/2024 2:10	15.41	22.19	0.01	7.16	384.77	8.63	0.47	12.12
8/23/2024 2:00	15.42	22.17	0.01	7.19	384.46	8.64	0.49	12.12
8/23/2024 1:50	15.42	22.07	0.01	7.19	385.38	8.63	0.49	12.21
8/23/2024 1:40	15.43	22.18	0.01	7.2	386.02	8.63	0.5	12.12
8/23/2024 1:30	15.44	22.22	0.01	7.28	387.85	8.63	0.5	12.12
8/23/2024 1:20	15.44	22.23	0.01	7.23	386.65	8.63	0.71	12.21
8/23/2024 1:10	15.45	22.2	0.01	7.33	384.16	8.62	0.49	12.24
8/23/2024 1:00	15.45	22.28	0.01	7.23	386.1	8.63	0.5	12.21
8/23/2024 0:50	15.46	22.17	0.01	7.28	385.96	8.63	0.51	12.21
8/23/2024 0:40	15.47	22.27	0.01	7.16	385.53	8.62	0.49	12.21
8/23/2024 0:30	15.49	22.33	0.01	7.23	382.27	8.61	0.5	12.21
8/23/2024 0:30	15.49	22.33	0.01	7.23	382.27	8.61	0.5	12.21
8/23/2024 0:20	15.5	22.37	0.01	7.18	385.1	8.6	0.52	12.21
8/23/2024 0:10	15.52	22.17	0.01	7.29	386.69	8.62	0.54	12.24
8/23/2024 0:00	15.53	22.36	0.01	7.23	385.35	8.62	0.51	12.24
8/22/2024 23:50	15.55	22.31	0.01	7.2	384.73	8.61	0.54	12.24
8/22/2024 23:40	15.57	22.39	0.01	7.24	383.42	8.61	0.49	12.24
8/22/2024 23:30	15.58	22.28	0.01	7.21	383.26	8.59	0.53	12.24
8/22/2024 23:20	15.61	22.49	0.01	7.19	381.63	8.59	0.52	12.26
8/22/2024 23:10	15.62	22.44	0.01	7.33	377.79	8.58	0.51	12.24
8/22/2024 23:00	15.64	22.48	0.01	7.19	379.27	8.59	0.52	12.26
8/22/2024 22:50	15.65	22.62	0.01	7.27	375.49	8.58	0.5	12.26
8/22/2024 22:40	15.67	22.53	0.01	7.15	378.41	8.57	0.53	12.17
8/22/2024 22:30	15.68	22.61	0.01	7.14	379.85	8.56	0.52	12.17
8/22/2024 22:20	15.7	22.61	0.01	7.19	378.35	8.57	0.52	12.26
8/22/2024 22:10	15.71	22.52	0.01	7.17	377.4	8.57	0.5	12.17
8/22/2024 22:00	15.73	22.6	0.01	7.14	378.45	8.56	0.52	12.17
8/22/2024 21:50	15.74	22.61	0.01	7.21	374.57	8.55	0.52	12.26
8/22/2024 21:50	15.74	22.61	0.01	7.21	374.57	8.55	0.52	12.26
8/22/2024 21:40	15.76	22.6	0.01	7.2	379.24	8.56	0.54	12.26
8/22/2024 21:30	15.77	22.49	0.01	7.16	379.18	8.58	0.51	12.29
8/22/2024 21:20	15.78	22.67	0.01	7.15	379.28	8.57	0.49	12.29
8/22/2024 21:10	15.79	22.74	0.01	7.17	380.12	8.56	0.53	12.29
8/22/2024 21:00	15.8	22.65	0.01	7.16	379.18	8.55	0.53	12.29
8/22/2024 20:50	15.81	22.61	0.01	7.15	379.8	8.57	0.51	12.29
8/22/2024 20:40	15.82	22.58	0.01	7.22	380.13	8.55	0.52	12.19
8/22/2024 20:30	15.83	22.55	0.01	7.27	378.61	8.57	0.53	12.26
8/22/2024 20:20	15.85	22.64	0.01	7.21	378.78	8.56	0.51	12.29
8/22/2024 20:10	15.86	22.51	0.01	7.22	376.06	8.58	0.54	12.31
8/22/2024 20:00	15.87	22.57	0.01	7.25	377.66	8.59	0.52	12.36
8/22/2024 19:50	15.88	22.54	0.01	7.26	376.28	8.59	0.51	12.36
8/22/2024 19:40	15.9	22.59	0.01	7.19	375.01	8.6	0.5	12.38

WLNG Upstream Raw Sonde Data 2024-08-19 to 2024-08-25

8/22/2024 19:30	15.91	22.48	0.01	7.17	375.99	8.62	0.52	12.38
8/22/2024 19:20	15.92	22.37	0.01	7.25	374.94	8.62	0.53	12.38
8/22/2024 19:10	15.92	22.24	0.01	7.27	373.45	8.63	0.54	12.31
8/22/2024 19:00	15.94	22.33	0.01	7.25	374.47	8.65	0.54	12.36
8/22/2024 18:50	15.94	22.23	0.01	7.34	372.95	8.66	0.51	12.62
8/22/2024 18:40	15.95	22.2	0.01	7.27	373.02	8.68	0.52	12.67
8/22/2024 18:30	15.95	22.16	0.01	7.29	371.78	8.68	0.54	12.69
8/22/2024 18:20	15.96	22.21	0.01	7.26	371.09	8.66	0.51	12.67
8/22/2024 18:10	15.95	21.96	0.01	7.25	372.62	8.67	0.53	12.65
8/22/2024 18:00	15.95	22.19	0.01	7.2	371.81	8.64	0.53	12.62
8/22/2024 17:50	15.96	22.05	0.01	7.2	370.94	8.66	0.5	12.65
8/22/2024 17:40	15.96	22.06	0.01	7.23	372.01	8.66	0.54	12.67
8/22/2024 17:30	15.97	22.14	0.01	7.34	368.35	8.69	0.53	12.65
8/22/2024 17:20	15.97	21.95	0.01	7.25	369.09	8.73	0.55	12.69
8/22/2024 17:10	15.97	21.73	0.01	7.27	365.66	8.77	0.52	13.1
8/22/2024 17:00	15.96	21.91	0.01	7.31	367.45	8.76	0.53	13.36
8/22/2024 16:50	15.96	21.73	0.01	7.33	368.23	8.76	0.53	12.98
8/22/2024 16:40	15.97	21.9	0.01	7.29	367.53	8.76	0.53	12.93
8/22/2024 16:30	15.97	21.81	0.01	7.21	368.57	8.75	0.53	12.74
8/22/2024 16:20	15.97	21.79	0.01	7.24	365.67	8.75	0.54	12.79
8/22/2024 16:10	15.97	21.72	0.01	7.25	363.69	8.78	0.5	12.81
8/22/2024 16:00	15.98	21.68	0.01	7.27	362.64	8.8	0.51	12.84
8/22/2024 15:50	15.96	21.52	0.01	7.27	360.48	8.83	0.54	13.53
8/22/2024 15:40	15.94	21.68	0.01	7.29	359.05	8.84	0.51	13.24
8/22/2024 15:30	15.94	21.67	0.01	7.26	358.86	8.84	0.52	13.58
8/22/2024 15:20	15.93	21.68	0.01	7.28	357.74	8.81	0.54	13.51
8/22/2024 15:10	15.93	21.68	0.01	7.27	357.52	8.87	0.53	13.22
8/22/2024 15:00	15.91	21.65	0.01	7.27	357.42	8.85	0.52	13.53
8/22/2024 14:50	15.89	21.65	0.01	7.26	358.11	8.83	0.56	13.53
8/22/2024 14:40	15.88	21.6	0.01	7.28	357.66	8.88	0.52	13.44
8/22/2024 14:30	15.88	21.46	0.01	7.28	356.25	8.89	0.54	13.53
8/22/2024 14:20	15.86	21.65	0.01	7.28	356.76	8.86	0.52	13.53
8/22/2024 14:10	15.84	21.49	0.01	7.27	355.39	8.86	0.51	13.22
8/22/2024 14:00	15.85	21.67	0.01	7.29	355.16	8.87	0.49	13.53
8/22/2024 13:50	15.85	21.5	0.01	7.32	352	8.92	0.52	13.48
8/22/2024 13:40	15.83	21.58	0.01	7.3	354.41	8.91	0.5	13.56
8/22/2024 13:30	15.79	21.47	0.01	7.3	353.19	8.91	0.52	13.56
8/22/2024 13:20	15.77	21.65	0.01	7.28	356.35	8.91	0.52	13.53
8/22/2024 13:10	15.76	21.42	0.01	7.28	354.44	8.92	0.52	13.53
8/22/2024 13:00	15.74	21.64	0.01	7.27	356.35	8.92	0.51	13.53
8/22/2024 12:50	15.71	21.49	0.01	7.27	355.49	8.88	0.5	13.34
8/22/2024 12:40	15.69	21.64	0.01	7.26	357.09	8.85	0.53	12.79
8/22/2024 12:30	15.73	21.6	0.01	7.3	352.91	8.9	0.54	12.93
8/22/2024 12:20	15.78	21.56	0.01	7.29	353.73	8.96	0.52	13.22
8/22/2024 12:10	15.83	21.58	0.01	7.3	351.6	8.96	0.51	13.36
8/22/2024 12:00	15.86	21.61	0.01	7.31	352.41	8.98	0.53	13.39
8/22/2024 11:50	15.8	21.58	0.01	7.35	350.5	9.01	0.52	13.48

WLNG Upstream Raw Sonde Data 2024-08-19 to 2024-08-25

8/22/2024 11:40	15.8	21.59	0.01	7.3	353.33	8.97	0.51	13.48
8/22/2024 11:30	15.81	21.61	0.01	7.29	352.13	9	0.51	13.41
8/22/2024 11:20	15.8	21.51	0.01	7.29	352.25	9.02	0.52	13.48
8/22/2024 11:10	15.68	21.63	0.01	7.29	352.8	8.99	0.5	13.48
8/22/2024 11:00	15.58	21.53	0.01	7.27	353.89	9.01	0.49	13.12
8/22/2024 10:50	15.56	21.45	0.01	7.3	352.25	9.01	0.5	13.48
8/22/2024 10:40	15.59	21.53	0.01	7.29	353.59	9	0.48	13.48
8/22/2024 10:30	15.48	21.41	0.01	7.29	351.85	9.03	0.5	13.48
8/22/2024 10:20	15.33	21.51	0.01	7.28	354.08	9.01	0.49	13.48
8/22/2024 10:10	15.25	21.46	0.01	7.24	355.41	8.98	0.48	13.1
8/22/2024 10:00	15.22	21.62	0.01	7.25	357.39	8.96	0.5	13.27
8/22/2024 9:50	15.19	21.5	0.01	7.23	358.05	8.98	0.51	13.27
8/22/2024 9:40	15.16	21.51	0.01	7.24	358.45	8.99	0.5	12.98
8/22/2024 9:30	15.13	21.6	0.01	7.22	360.09	8.95	0.48	12.93
8/22/2024 9:20	15.11	21.66	0.01	7.22	359.41	8.93	0.48	12.76
8/22/2024 9:10	15.09	21.54	0.01	7.21	359.99	8.95	0.58	12.74
8/22/2024 9:00	15.07	21.59	0.01	7.21	360.94	8.93	0.49	12.65
8/22/2024 8:50	15.04	21.64	0.01	7.23	360.83	8.93	0.49	12.62
8/22/2024 8:40	15.03	21.62	0.01	7.22	362.68	8.96	0.48	12.6
8/22/2024 8:30	15.01	21.64	0.01	7.23	362.51	8.93	0.49	12.41
8/22/2024 8:20	15	21.6	0.01	7.24	365.07	8.93	0.49	12.24
8/22/2024 8:10	14.98	21.18	0.01	7.21	366.08	8.94	0.47	12.14
8/22/2024 8:00	14.97	21.73	0.01	7.2	366.2	8.91	0.47	12.07
8/22/2024 7:50	14.96	21.57	0.01	7.2	367.35	8.87	0.49	11.93
8/22/2024 7:40	14.96	21.76	0.01	7.2	366.13	8.91	14.74	12.02
8/22/2024 7:40	14.96	21.76	0.01	7.2	366.13	8.91	14.74	12.02
8/22/2024 7:30	14.95	21.59	0.01	7.22	365.56	8.91	0.49	12.17
8/22/2024 7:20	14.94	21.68	0.01	7.21	366.21	8.88	0.47	12.14
8/22/2024 7:10	14.94	21.74	0.01	7.25	364.01	8.86	0.48	12.07
8/22/2024 7:00	14.94	21.76	0.01	7.17	367.15	8.83	0.46	12.02
8/22/2024 6:50	14.93	21.81	0.01	7.17	368.38	8.83	0.48	12
8/22/2024 6:40	14.94	21.86	0.01	7.19	367.67	8.81	0.46	11.97
8/22/2024 6:30	14.94	21.72	0.01	7.19	368.2	8.81	0.46	11.88
8/22/2024 6:20	14.95	21.87	0.01	7.17	367.89	8.82	0.48	11.88
8/22/2024 6:10	14.95	21.81	0.01	7.2	367.91	8.79	0.46	11.69
8/22/2024 6:00	14.96	21.9	0.01	7.17	368.11	8.79	0.47	11.95
8/22/2024 5:50	14.96	21.82	0.01	7.17	369.81	8.8	0.47	11.88
8/22/2024 5:40	14.97	21.85	0.01	7.19	369.42	8.81	0.48	11.97
8/22/2024 5:30	14.97	21.79	0.01	7.22	368.66	8.8	0.46	11.97
8/22/2024 5:20	14.98	21.9	0.01	7.19	368.85	8.8	0.48	11.88
8/22/2024 5:10	14.99	21.75	0.01	7.2	368.18	8.78	0.49	11.88
8/22/2024 5:00	14.99	21.83	0.01	7.19	367.69	8.78	0.5	11.88
8/22/2024 4:50	15	21.63	0.01	7.21	367.04	8.8	0.47	11.88
8/22/2024 4:40	15.01	21.87	0.01	7.18	367.1	8.78	0.49	11.97
8/22/2024 4:30	15.01	21.7	0.01	7.21	365.67	8.79	0.48	11.97
8/22/2024 4:20	15.02	21.91	0.01	7.17	367	8.79	0.5	11.97
8/22/2024 4:10	15.02	21.82	0.01	7.18	367.25	8.79	0.46	11.97

WLNG Upstream Raw Sonde Data 2024-08-19 to 2024-08-25

8/22/2024 4:00	15.03	21.95	0.01	7.17	367.1	8.78	0.49	11.97
8/22/2024 3:50	15.03	21.88	0.01	7.19	366.93	8.8	0.49	11.97
8/22/2024 3:40	15.04	21.96	0.01	7.17	366.69	8.78	0.45	11.88
8/22/2024 3:30	15.04	21.81	0.01	7.14	368	8.78	0.46	11.88
8/22/2024 3:20	15.04	21.93	0.01	7.16	366.16	8.79	0.47	11.95
8/22/2024 3:10	15.05	21.84	0.01	7.19	365.01	8.78	0.49	11.97
8/22/2024 3:00	15.05	21.94	0.01	7.15	366.43	8.79	0.46	12
8/22/2024 2:50	15.06	21.81	0.01	7.22	364.4	8.79	0.49	11.97
8/22/2024 2:40	15.07	21.9	0.01	7.15	367.25	8.78	0.48	11.97
8/22/2024 2:30	15.07	21.98	0.01	7.22	365.27	8.8	0.48	11.88
8/22/2024 2:20	15.08	22.07	0.01	7.16	367.48	8.78	0.49	12
8/22/2024 2:10	15.08	21.94	0.01	7.2	366.89	8.78	0.47	12
8/22/2024 2:00	15.09	22.09	0.01	7.16	367.02	8.78	0.48	12
8/22/2024 1:50	15.1	22	0.01	7.23	365.49	8.8	0.47	12
8/22/2024 1:40	15.11	22.15	0.01	7.15	367.61	8.77	0.47	11.9
8/22/2024 1:30	15.11	22.01	0.01	7.26	367.09	8.79	0.49	11.97
8/22/2024 1:20	15.12	22.2	0.01	7.16	366.76	8.77	0.46	11.9
8/22/2024 1:10	15.13	22.15	0.01	7.3	365.73	8.78	0.56	12
8/22/2024 1:00	15.14	22.27	0.01	7.15	366.87	8.78	0.49	12
8/22/2024 0:50	15.14	22.2	0.01	7.26	367.82	8.78	0.48	11.9
8/22/2024 0:40	15.16	22.36	0.01	7.16	365.91	8.76	0.47	12
8/22/2024 0:30	15.17	22.15	0.01	7.28	363	8.78	0.5	11.9
8/22/2024 0:20	15.18	22.34	0.01	7.17	363.89	8.76	0.49	11.9
8/22/2024 0:10	15.19	22.17	0.01	7.16	364.38	8.77	0.48	11.9
8/22/2024 0:00	15.2	22.44	0.01	7.17	364.16	8.76	0.49	11.9
8/21/2024 23:50	15.2	22.4	0.01	7.19	362.81	8.75	0.49	11.9
8/21/2024 23:40	15.22	22.53	0.01	7.17	364.58	8.75	0.5	12
8/21/2024 23:30	15.23	22.46	0.01	7.15	365.8	8.76	0.52	12
8/21/2024 23:20	15.24	22.59	0.01	7.17	364.98	8.76	0.49	12
8/21/2024 23:10	15.25	22.56	0.01	7.17	365.69	8.76	0.48	12
8/21/2024 23:00	15.27	22.66	0.01	7.17	366.04	8.74	0.49	12
8/21/2024 22:50	15.29	22.69	0.01	7.18	366.85	8.75	0.5	12.02
8/21/2024 22:40	15.3	22.82	0.01	7.17	367.47	8.76	0.55	12
8/21/2024 22:30	15.32	22.7	0.01	7.2	366.23	8.73	0.49	12
8/21/2024 22:20	15.34	22.98	0.01	7.16	368.83	8.74	0.49	12.02
8/21/2024 22:10	15.36	23.07	0.01	7.22	367.38	8.72	0.48	12
8/21/2024 22:00	15.38	23.12	0.01	7.18	370.02	8.71	0.5	11.9
8/21/2024 21:50	15.4	23.09	0.01	7.24	368.71	8.72	0.49	12
8/21/2024 21:40	15.42	23.25	0.01	7.16	371.15	8.7	0.51	12
8/21/2024 21:30	15.44	23.27	0.01	7.19	369.55	8.71	0.51	12
8/21/2024 21:20	15.46	23.37	0.01	7.17	371.48	8.71	0.51	11.9
8/21/2024 21:10	15.47	23.35	0.01	7.23	367.55	8.7	0.48	11.93
8/21/2024 21:00	15.49	23.45	0.01	7.18	370.69	8.71	0.48	12.02
8/21/2024 20:50	15.5	23.57	0.01	7.2	368.17	8.71	0.51	11.95
8/21/2024 20:40	15.52	23.58	0.01	7.18	367.13	8.71	0.5	12.02
8/21/2024 20:30	15.53	23.64	0.01	7.18	364.08	8.71	0.5	12.02
8/21/2024 20:20	15.54	23.73	0.01	7.18	363.57	8.72	0.52	12.02

WLNG Upstream Raw Sonde Data 2024-08-19 to 2024-08-25

8/21/2024 20:10	15.56	23.71	0.01	7.17	364.29	8.7	0.51	11.97
8/21/2024 20:00	15.57	23.75	0.01	7.19	363.83	8.7	0.47	12.12
8/21/2024 19:50	15.58	23.6	0.01	7.19	364.66	8.73	0.51	12.14
8/21/2024 19:40	15.59	23.83	0.01	7.2	362.8	8.71	0.5	12.14
8/21/2024 19:30	15.59	23.73	0.01	7.22	361.6	8.73	0.5	12.19
8/21/2024 19:20	15.6	23.67	0.01	7.21	362.09	8.73	0.51	12.21
8/21/2024 19:10	15.6	23.65	0.01	7.23	361.54	8.75	0.5	12.21
8/21/2024 19:00	15.61	23.58	0.01	7.21	362.91	8.74	0.5	12.21
8/21/2024 18:50	15.62	23.18	0.01	7.23	362.38	8.75	0.5	12.19
8/21/2024 18:40	15.62	23.26	0.01	7.21	364.15	8.77	0.53	12.29
8/21/2024 18:30	15.62	22.91	0.01	7.19	365.76	8.77	0.53	12.17
8/21/2024 18:20	15.63	22.82	0.01	7.21	365.17	8.77	0.52	12.17
8/21/2024 18:10	15.62	22.74	0.01	7.19	366.07	8.76	0.52	12.24
8/21/2024 18:00	15.63	22.65	0.01	7.21	365.59	8.74	0.52	12.12
8/21/2024 17:50	15.64	22.59	0.01	7.22	363.47	8.74	0.5	12.24
8/21/2024 17:40	15.66	22.58	0.01	7.21	364.42	8.75	0.52	12.19
8/21/2024 17:30	15.66	22.47	0.01	7.22	363.12	8.75	0.53	12.24
8/21/2024 17:20	15.67	22.57	0.01	7.21	363.86	8.76	0.52	12.43
8/21/2024 17:10	15.67	22.53	0.01	7.23	359.25	8.77	0.53	12.38
8/21/2024 17:00	15.68	22.5	0.01	7.21	359.27	8.8	0.55	12.53
8/21/2024 16:50	15.68	22.6	0.01	7.23	359.07	8.8	0.53	12.53
8/21/2024 16:40	15.68	22.49	0.01	7.22	358.56	8.82	0.52	12.6
8/21/2024 16:30	15.68	22.59	0.01	7.29	355.69	8.83	0.53	12.62
8/21/2024 16:20	15.68	22.44	0.01	7.23	357.82	8.83	0.52	12.62
8/21/2024 16:10	15.68	22.32	0.01	7.24	358.56	8.84	0.5	12.67
8/21/2024 16:00	15.67	22.38	0.01	7.23	358.66	8.86	0.53	12.72
8/21/2024 15:50	15.65	22.29	0.01	7.23	359.14	8.84	0.49	12.69
8/21/2024 15:40	15.64	22.37	0.01	7.22	360.21	8.82	0.53	12.62
8/21/2024 15:30	15.63	22.33	0.01	7.19	362.64	8.78	0.52	12.53
8/21/2024 15:20	15.63	22.41	0.01	7.21	362.78	8.79	0.52	12.53
8/21/2024 15:10	15.63	22.27	0.01	7.19	363.62	8.79	0.54	12.41
8/21/2024 15:00	15.63	22.34	0.01	7.2	363.46	8.77	0.5	12.36
8/21/2024 14:50	15.63	22.35	0.01	7.23	362.27	8.78	0.52	12.31
8/21/2024 14:40	15.63	22.17	0.01	7.23	363.87	8.8	0.52	12.43
8/21/2024 14:30	15.63	22.04	0.01	7.29	359.89	8.81	0.53	12.38
8/21/2024 14:20	15.63	22.07	0.01	7.24	363.69	8.79	0.5	12.5
8/21/2024 14:10	15.62	22.05	0.01	7.24	364.11	8.79	0.52	12.55
8/21/2024 14:00	15.62	22.08	0.01	7.25	365.46	8.77	0.51	12.48
8/21/2024 13:50	15.62	21.81	0.01	7.28	363.85	8.79	0.54	12.38
8/21/2024 13:40	15.63	21.92	0.01	7.25	366.11	8.8	0.52	12.38
8/21/2024 13:30	15.63	21.76	0.01	7.25	368.74	8.8	0.5	12.5
8/21/2024 13:20	15.63	21.91	0.01	7.29	367.58	8.77	0.51	12.45
8/21/2024 13:10	15.62	21.99	0.01	7.19	369.99	8.76	0.52	12.29
8/21/2024 13:00	15.63	22.05	0.01	7.31	368.87	8.73	0.5	12.33
8/21/2024 12:50	15.63	21.87	0.01	7.34	368.46	8.75	0.53	12.29
8/21/2024 12:40	15.64	21.97	0.01	7.29	368.21	8.74	0.53	12.26
8/21/2024 12:30	15.65	21.92	0.01	7.33	368.24	8.74	0.54	12.24

WLNG Upstream Raw Sonde Data 2024-08-19 to 2024-08-25

8/21/2024 12:20	15.65	21.89	0.01	7.3	368.33	8.75	0.52	12.26
8/21/2024 12:10	15.66	21.76	0.01	7.35	364.26	8.74	0.54	12.26
8/21/2024 12:00	15.66	21.91	0.01	7.24	368.07	8.75	0.51	12.29
8/21/2024 11:50	15.66	21.83	0.01	7.29	366.61	8.77	0.52	12.29
8/21/2024 11:40	15.67	21.92	0.01	7.26	367.81	8.76	0.5	12.24
8/21/2024 11:30	15.66	21.87	0.01	7.22	368.48	8.75	0.53	12.02
8/21/2024 11:20	15.67	21.95	0.01	7.22	369.03	8.74	0.52	12.09
8/21/2024 11:10	15.66	21.8	0.01	7.27	365.76	8.76	0.99	12
8/21/2024 11:00	15.67	21.86	0.01	7.26	368.32	8.77	0.53	12.12
8/21/2024 10:50	15.66	21.85	0.01	7.23	367.78	8.77	0.87	12.12
8/21/2024 10:40	15.66	21.9	0.01	7.25	369.34	8.75	0.51	12.17
8/21/2024 10:30	15.66	21.74	0.01	7.27	368.43	8.79	0.53	12.29
8/21/2024 10:20	15.66	21.86	0.01	7.21	369.64	8.78	0.57	12.26
8/21/2024 10:10	15.65	21.78	0.01	7.24	368.03	8.77	0.52	12.17
8/21/2024 10:00	15.64	21.93	0.01	7.22	371.43	8.72	0.53	12.14
8/21/2024 9:50	15.64	21.87	0.01	7.25	369.72	8.72	0.54	11.97
8/21/2024 9:40	15.64	21.99	0.01	7.22	370.19	8.73	0.52	12.14
8/21/2024 9:30	15.64	21.91	0.01	7.25	369.2	8.72	0.53	12.14
8/21/2024 9:20	15.64	22.06	0.01	7.21	368.2	8.7	0.53	12.09
8/21/2024 9:10	15.64	21.86	0.01	7.23	368.72	8.66	0.51	12.09
8/21/2024 9:00	15.65	22.06	0.01	7.2	367.34	8.69	0.52	12.07
8/21/2024 8:50	15.65	21.96	0.01	7.21	368.66	8.68	0.53	12.07
8/21/2024 8:40	15.66	22.1	0.01	7.2	368.06	8.67	0.51	11.95
8/21/2024 8:30	15.67	22.07	0.01	7.19	371	8.68	0.52	12.02
8/21/2024 8:20	15.68	22.12	0.01	7.19	371.21	8.66	0.51	12.05
8/21/2024 8:10	15.68	22.11	0.01	7.22	372.71	8.69	0.49	12.07
8/21/2024 8:00	15.69	22.2	0.01	7.2	372.65	8.67	0.51	11.97
8/21/2024 7:50	15.69	22.03	0.01	7.2	373.83	8.67	0.52	12.05
8/21/2024 7:40	15.69	22.21	0.01	7.19	374.58	8.65	0.52	11.95
8/21/2024 7:30	15.7	21.95	0.01	7.25	372.26	8.66	0.52	11.95
8/21/2024 7:20	15.7	22.21	0.01	7.21	375.05	8.66	0.53	12.02
8/21/2024 7:10	15.7	22.2	0.01	7.22	374.33	8.65	0.51	11.95
8/21/2024 7:00	15.71	22.23	0.01	7.26	375.98	8.65	0.52	11.97
8/21/2024 6:50	15.71	22.24	0.01	7.21	374.87	8.64	0.5	12.05
8/21/2024 6:40	15.72	22.23	0.01	7.23	376.58	8.64	0.51	12.07
8/21/2024 6:30	15.72	22.28	0.01	7.19	374.58	8.64	0.53	12.07
8/21/2024 6:20	15.72	22.2	0.01	7.23	375.37	8.64	0.53	12.07
8/21/2024 6:10	15.73	22.19	0.01	7.24	371.22	8.65	0.52	12.07
8/21/2024 6:00	15.73	22.27	0.01	7.24	375.12	8.64	0.49	11.97
8/21/2024 5:50	15.74	22.27	0.01	7.16	374.99	8.63	0.51	12.05
8/21/2024 5:40	15.75	22.25	0.01	7.16	376.41	8.63	0.51	12.09
8/21/2024 5:30	15.75	22.22	0.01	7.17	374.35	8.64	0.49	12
8/21/2024 5:20	15.76	22.24	0.01	7.21	375.76	8.61	0.52	12.09
8/21/2024 5:10	15.76	22.17	0.01	7.15	373.79	8.62	0.5	12.09
8/21/2024 5:00	15.77	22.26	0.01	7.16	374.71	8.63	0.51	12
8/21/2024 4:50	15.78	22.29	0.01	7.16	374.33	8.64	0.53	12.02
8/21/2024 4:40	15.78	22.21	0.01	7.24	374.35	8.63	0.53	12.09

WLNG Upstream Raw Sonde Data 2024-08-19 to 2024-08-25

8/21/2024 4:30	15.79	22.34	0.01	7.24	371	8.62	0.52	12.02
8/21/2024 4:20	15.8	22.26	0.01	7.21	374.05	8.62	0.54	12.14
8/21/2024 4:10	15.8	22.31	0.01	7.16	372.46	8.64	0.52	12.14
8/21/2024 4:00	15.81	22.3	0.01	7.22	371.98	8.63	0.54	12.14
8/21/2024 3:50	15.82	22.24	0.01	7.24	368.86	8.63	0.53	12.14
8/21/2024 3:40	15.83	22.3	0.01	7.2	372.32	8.63	0.53	12.14
8/21/2024 3:30	15.83	22.31	0.01	7.19	372.56	8.62	0.51	12.17
8/21/2024 3:20	15.84	22.3	0.01	7.18	372.73	8.64	0.51	12.17
8/21/2024 3:10	15.85	22.17	0.01	7.2	370.76	8.62	0.54	12.17
8/21/2024 3:00	15.86	22.34	0.01	7.18	373.63	8.62	0.53	12.07
8/21/2024 2:50	15.86	22.29	0.01	7.17	373.32	8.62	0.51	12.09
8/21/2024 2:40	15.87	22.36	0.01	7.17	374.08	8.61	0.54	12.17
8/21/2024 2:30	15.88	22.38	0.01	7.19	372.4	8.61	0.52	12.19
8/21/2024 2:20	15.88	22.34	0.01	7.18	374.64	8.63	0.55	12.09
8/21/2024 2:10	15.89	22.36	0.01	7.16	373.38	8.6	0.52	12.09
8/21/2024 2:00	15.9	22.4	0.01	7.16	375.07	8.62	0.52	12.09
8/21/2024 1:50	15.91	22.3	0.01	7.22	373.97	8.6	0.5	12.19
8/21/2024 1:40	15.92	22.34	0.01	7.17	376.7	8.59	0.53	12.21
8/21/2024 1:30	15.92	22.36	0.01	7.2	374.78	8.6	0.51	12.21
8/21/2024 1:20	15.93	22.4	0.01	7.16	378.17	8.6	0.52	12.12
8/21/2024 1:10	15.94	22.4	0.01	7.19	377.91	8.59	0.52	12.12
8/21/2024 1:00	15.95	22.33	0.01	7.15	380.59	8.59	0.54	12.12
8/21/2024 0:50	15.96	22.38	0.01	7.18	379.73	8.59	0.54	12.19
8/21/2024 0:40	15.96	22.39	0.01	7.16	381.14	8.59	0.57	12.21
8/21/2024 0:30	15.97	22.5	0.01	7.2	379.61	8.58	0.56	12.21
8/21/2024 0:20	15.98	22.4	0.01	7.13	385.1	8.6	0.52	12.21
8/21/2024 0:10	15.99	22.3	0.01	7.18	383.46	8.57	0.51	12.21
8/21/2024 0:00	16	22.46	0.01	7.13	385.55	8.6	0.53	12.21
8/20/2024 23:50	16	22.32	0.01	7.16	384.22	8.58	0.53	12.21
8/20/2024 23:40	16.01	22.48	0.01	7.12	387.44	8.59	0.52	12.21
8/20/2024 23:30	16.02	22.5	0.01	7.19	386.16	8.58	0.54	12.14
8/20/2024 23:20	16.03	22.4	0.01	7.14	386.82	8.6	0.52	12.21
8/20/2024 23:10	16.03	22.42	0.01	7.17	386.94	8.57	0.54	12.14
8/20/2024 23:00	16.04	22.44	0.01	7.14	387.52	8.56	0.52	12.17
8/20/2024 22:50	16.05	22.49	0.01	7.17	386.93	8.55	0.54	12.24
8/20/2024 22:40	16.06	22.44	0.01	7.14	386.74	8.57	0.53	12.24
8/20/2024 22:30	16.07	22.53	0.01	7.16	386.14	8.58	0.52	12.24
8/20/2024 22:20	16.08	22.53	0.01	7.15	385.57	8.58	0.55	12.24
8/20/2024 22:10	16.09	22.58	0.01	7.18	385.32	8.57	0.53	12.24
8/20/2024 22:00	16.1	22.55	0.01	7.16	385.7	8.57	0.53	12.26
8/20/2024 21:50	16.12	22.51	0.01	7.18	384.95	8.56	0.53	12.26
8/20/2024 21:40	16.13	22.47	0.01	7.16	385.71	8.55	0.54	12.26
8/20/2024 21:30	16.15	22.45	0.01	7.15	386.75	8.54	0.55	12.26
8/20/2024 21:20	16.16	22.7	0.01	7.16	383.75	8.56	0.54	12.17
8/20/2024 21:10	16.18	22.62	0.01	7.14	385.19	8.54	0.55	12.17
8/20/2024 21:00	16.2	22.59	0.01	7.16	383.1	8.54	0.55	12.17
8/20/2024 20:50	16.21	22.61	0.01	7.16	382.92	8.54	0.54	12.29

WLNG Upstream Raw Sonde Data 2024-08-19 to 2024-08-25

8/20/2024 20:40	16.23	22.59	0.01	7.16	381.84	8.54	0.54	12.29
8/20/2024 20:30	16.24	22.53	0.01	7.22	378.58	8.55	0.54	12.29
8/20/2024 20:20	16.25	22.55	0.01	7.16	381.57	8.55	0.53	12.21
8/20/2024 20:10	16.27	22.59	0.01	7.17	380.92	8.55	0.55	12.21
8/20/2024 20:00	16.28	22.51	0.01	7.18	380.08	8.55	0.54	12.31
8/20/2024 19:50	16.3	22.58	0.01	7.17	380.4	8.55	0.55	12.24
8/20/2024 19:40	16.31	22.55	0.01	7.17	378.58	8.57	0.56	12.24
8/20/2024 19:30	16.32	22.48	0.01	7.18	378.57	8.55	0.55	12.38
8/20/2024 19:20	16.34	22.55	0.01	7.17	376.76	8.56	0.54	12.5
8/20/2024 19:10	16.35	22.35	0.01	7.17	376.99	8.56	0.53	12.53
8/20/2024 19:00	16.36	22.46	0.01	7.18	373.94	8.57	0.56	12.55
8/20/2024 18:50	16.37	22.45	0.01	7.16	374.31	8.58	0.58	12.57
8/20/2024 18:40	16.38	22.38	0.01	7.19	371.63	8.56	0.54	12.53
8/20/2024 18:30	16.39	22.31	0.01	7.15	374.75	8.58	0.54	12.53
8/20/2024 18:20	16.4	22.36	0.01	7.18	372.14	8.58	0.58	12.55
8/20/2024 18:10	16.41	22.15	0.01	7.17	373.35	8.59	0.56	12.6
8/20/2024 18:00	16.43	22.32	0.01	7.2	370.87	8.58	0.57	12.62
8/20/2024 17:50	16.44	22.08	0.01	7.2	371.64	8.59	0.57	12.62
8/20/2024 17:40	16.45	22.29	0.01	7.2	371.08	8.59	0.55	12.6
8/20/2024 17:30	16.46	22.21	0.01	7.19	372.24	8.59	0.56	12.6
8/20/2024 17:20	16.48	22.14	0.01	7.2	371.72	8.61	0.54	12.57
8/20/2024 17:10	16.49	22.11	0.01	7.24	370.73	8.61	0.57	12.53
8/20/2024 17:00	16.49	22.14	0.01	7.22	371.09	8.62	0.56	12.6
8/20/2024 16:50	16.5	21.95	0.01	7.21	372.37	8.65	0.64	12.69
8/20/2024 16:40	16.51	22.06	0.01	7.24	369.86	8.66	0.55	12.57
8/20/2024 16:30	16.52	21.93	0.01	7.25	370.25	8.68	0.58	12.67
8/20/2024 16:20	16.52	21.95	0.01	7.26	369.44	8.69	0.59	12.67
8/20/2024 16:10	16.5	21.87	0.01	7.24	371.24	8.69	0.56	12.65
8/20/2024 16:00	16.53	22.06	0.01	7.27	368.85	8.66	0.57	12.81
8/20/2024 15:50	16.53	21.95	0.01	7.26	370.23	8.7	0.57	13.41
8/20/2024 15:40	16.53	22.07	0.01	7.28	368.76	8.71	0.55	12.98
8/20/2024 15:30	16.58	21.83	0.01	7.28	369.44	8.75	0.56	13.15
8/20/2024 15:20	16.6	21.99	0.01	7.3	368.22	8.75	0.57	13.41
8/20/2024 15:10	16.56	21.79	0.01	7.27	371.03	8.78	0.57	13.46
8/20/2024 15:00	16.54	21.89	0.01	7.3	370.27	8.78	0.57	13.48
8/20/2024 14:50	16.47	21.9	0.01	7.3	371.28	8.81	0.53	13.48
8/20/2024 14:40	16.41	21.97	0.01	7.29	370.08	8.8	0.54	13.46
8/20/2024 14:30	16.43	21.91	0.01	7.31	370	8.85	0.58	13.39
8/20/2024 14:20	16.45	21.87	0.01	7.32	368.76	8.9	0.57	13.48
8/20/2024 14:10	16.35	21.92	0.01	7.33	370.02	8.91	0.54	13.51
8/20/2024 14:00	16.29	21.89	0.01	7.32	368.99	8.93	0.53	13.51
8/20/2024 13:50	16.18	21.88	0.01	7.3	371.28	8.92	0.54	13.53
8/20/2024 13:40	16.16	21.85	0.01	7.31	370.19	8.92	0.53	13.53
8/20/2024 13:30	16.13	21.9	0.01	7.32	370.84	8.95	0.53	13.53
8/20/2024 13:20	16.12	21.89	0.01	7.32	369.89	8.93	0.52	13.46
8/20/2024 13:10	16.06	21.76	0.01	7.33	370.02	8.96	0.55	13.56
8/20/2024 13:00	16.01	21.91	0.01	7.31	370.42	8.96	0.54	13.58

WLNG Upstream Raw Sonde Data 2024-08-19 to 2024-08-25

8/20/2024 12:50	15.89	21.88	0.01	7.28	372.96	8.97	0.52	13.46
8/20/2024 12:40	15.83	21.87	0.01	7.28	372.58	8.94	0.51	13.58
8/20/2024 12:30	15.79	21.68	0.01	7.32	371.24	8.92	0.54	13.22
8/20/2024 12:20	15.76	21.85	0.01	7.26	372.9	8.9	0.55	13.1
8/20/2024 12:10	15.74	21.77	0.01	7.24	374.03	8.89	0.53	12.81
8/20/2024 12:00	15.73	21.78	0.01	7.24	372.69	8.89	0.5	12.84
8/20/2024 11:50	15.71	21.76	0.01	7.24	373.06	8.9	0.5	12.84
8/20/2024 11:40	15.71	21.67	0.01	7.25	372.12	8.89	0.55	12.86
8/20/2024 11:30	15.69	21.64	0.01	7.23	373.9	8.9	0.52	12.86
8/20/2024 11:20	15.67	21.63	0.01	7.24	372	8.89	0.55	12.86
8/20/2024 11:10	15.65	21.48	0.01	7.24	373.6	8.88	0.6	12.76
8/20/2024 11:00	15.64	21.62	0.01	7.24	372.63	8.86	0.51	12.67
8/20/2024 10:50	15.63	21.44	0.01	7.23	374.12	8.88	0.53	12.55
8/20/2024 10:40	15.62	21.62	0.01	7.24	373.2	8.87	0.52	12.5
8/20/2024 10:30	15.62	21.6	0.01	7.23	375.36	8.88	0.5	12.55
8/20/2024 10:20	15.61	21.67	0.01	7.23	373.73	8.85	0.52	12.53
8/20/2024 10:10	15.61	21.7	0.01	7.25	374.36	8.85	0.5	12.62
8/20/2024 10:00	15.6	21.7	0.01	7.22	374.21	8.88	0.49	12.62
8/20/2024 9:50	15.59	21.69	0.01	7.24	374.92	8.86	0.53	12.62
8/20/2024 9:40	15.59	21.67	0.01	7.24	373.45	8.89	0.52	12.57
8/20/2024 9:30	15.58	21.49	0.01	7.24	374.44	8.91	0.5	12.67
8/20/2024 9:20	15.56	21.67	0.01	7.22	374.9	8.89	0.49	12.62
8/20/2024 9:10	15.54	21.59	0.01	7.21	376.84	8.87	1.64	12.53
8/20/2024 9:00	15.52	21.76	0.01	7.2	376.97	8.85	0.51	12.31
8/20/2024 8:50	15.51	21.77	0.01	7.27	374.83	8.82	0.52	12.33
8/20/2024 8:40	15.5	21.87	0.01	7.2	378.19	8.8	0.5	12.24
8/20/2024 8:30	15.49	21.72	0.01	7.19	379.87	8.8	0.48	12.17
8/20/2024 8:20	15.49	21.93	0.01	7.18	379.21	8.77	0.48	12.12
8/20/2024 8:10	15.49	21.96	0.01	7.19	379.98	8.75	0.51	12
8/20/2024 8:00	15.49	22.02	0.01	7.18	378.84	8.76	0.51	12.07
8/20/2024 7:50	15.49	21.99	0.01	7.17	380.32	8.75	0.5	12.05
8/20/2024 7:40	15.5	21.97	0.01	7.18	379.59	8.73	0.49	12.07
8/20/2024 7:30	15.5	21.97	0.01	7.18	380.36	8.72	0.51	12.05
8/20/2024 7:20	15.51	22.07	0.01	7.18	379.81	8.72	0.49	12.05
8/20/2024 7:10	15.52	21.91	0.01	7.18	380.1	8.71	0.53	11.95
8/20/2024 7:00	15.52	22.06	0.01	7.16	380.76	8.71	0.52	11.95
8/20/2024 6:50	15.53	22.04	0.01	7.15	382.17	8.71	0.52	11.95
8/20/2024 6:40	15.54	22.17	0.01	7.17	380.76	8.7	0.51	12.02
8/20/2024 6:30	15.55	22.24	0.01	7.14	382.61	8.69	0.51	11.95
8/20/2024 6:20	15.56	22.24	0.01	7.16	381.26	8.7	0.51	12.02
8/20/2024 6:10	15.57	22.16	0.01	7.15	382.19	8.7	0.5	12.05
8/20/2024 6:00	15.58	22.26	0.01	7.17	380.53	8.69	0.54	12.07
8/20/2024 5:50	15.59	22.25	0.01	7.18	380.44	8.67	0.51	11.95
8/20/2024 5:40	15.6	22.27	0.01	7.16	381.31	8.66	0.52	11.97
8/20/2024 5:30	15.61	22.31	0.01	7.15	382.82	8.66	0.48	11.97
8/20/2024 5:20	15.63	22.24	0.01	7.16	382.3	8.67	0.54	12
8/20/2024 5:10	15.64	22.22	0.01	7.16	382.09	8.64	0.53	12.09

WLNG Upstream Raw Sonde Data 2024-08-19 to 2024-08-25

8/20/2024 5:00	15.65	22.33	0.01	7.16	381.36	8.66	0.51	12
8/20/2024 4:50	15.66	22.22	0.01	7.15	381.77	8.65	0.56	12.09
8/20/2024 4:40	15.67	22.4	0.01	7.16	380.82	8.65	0.65	12.09
8/20/2024 4:30	15.68	22.33	0.01	7.14	381.81	8.63	0.53	12.02
8/20/2024 4:20	15.7	22.37	0.01	7.15	380.17	8.62	0.61	12.02
8/20/2024 4:10	15.71	22.31	0.01	7.15	381.48	8.62	0.53	12
8/20/2024 4:00	15.72	22.26	0.01	7.15	380.85	8.65	0.54	12.12
8/20/2024 3:50	15.73	22.16	0.01	7.14	381.64	8.63	0.51	12.14
8/20/2024 3:40	15.74	22.27	0.01	7.16	379.65	8.62	0.52	12.14
8/20/2024 3:30	15.75	22.06	0.01	7.15	380.12	8.62	0.54	12.14
8/20/2024 3:20	15.76	22.22	0.01	7.14	379.19	8.62	0.56	12.14
8/20/2024 3:10	15.77	22.19	0.01	7.12	380.64	8.63	0.54	12.14
8/20/2024 3:00	15.79	22.17	0.01	7.14	378.21	8.61	0.68	12.14
8/20/2024 2:50	15.8	21.94	0.01	7.16	377.63	8.6	0.51	12.17
8/20/2024 2:40	15.82	22.09	0.01	7.15	378.08	8.64	0.6	12.17
8/20/2024 2:30	15.82	21.95	0.01	7.16	377.99	8.63	0.52	12.17
8/20/2024 2:20	15.83	22	0.01	7.17	377.57	8.63	0.52	12.17
8/20/2024 2:10	15.84	21.87	0.01	7.14	378.71	8.64	0.52	12.07
8/20/2024 2:00	15.85	22	0.01	7.16	377.75	8.64	0.51	12.17
8/20/2024 1:50	15.86	21.89	0.01	7.17	377.35	8.63	0.54	12.17
8/20/2024 1:40	15.87	22.08	0.01	7.16	377.08	8.63	0.55	12.14
8/20/2024 1:30	15.88	22.07	0.01	7.14	379	8.62	0.54	12.07
8/20/2024 1:20	15.89	22.06	0.01	7.16	376.96	8.62	0.58	12.09
8/20/2024 1:10	15.9	21.94	0.01	7.14	378.78	8.64	0.49	12.07
8/20/2024 1:00	15.91	22.08	0.01	7.18	376.53	8.63	0.54	12.19
8/20/2024 0:50	15.92	22.06	0.01	7.18	376.38	8.62	0.54	12.17
8/20/2024 0:40	15.93	22.04	0.01	7.17	377.07	8.64	0.54	12.09
8/20/2024 0:30	15.94	22.08	0.01	7.15	377.65	8.61	0.54	12.19
8/20/2024 0:20	15.95	22.14	0.01	7.15	377.16	8.61	0.52	12.19
8/20/2024 0:10	15.96	22.02	0.01	7.16	377	8.61	0.52	12.21
8/20/2024 0:00	15.97	22.13	0.01	7.15	376.75	8.6	0.55	12.21
8/19/2024 23:50	15.98	22.09	0.01	7.18	376.93	8.6	1.17	12.21
8/19/2024 23:40	16	22.13	0.01	7.16	377.45	8.59	0.54	12.21
8/19/2024 23:30	16.01	21.97	0.01	7.14	378.77	8.6	0.54	12.21
8/19/2024 23:20	16.02	22.04	0.01	7.16	377.7	8.59	0.96	12.21
8/19/2024 23:10	16.03	22.11	0.01	7.14	379.75	8.58	7.92	12.21
8/19/2024 23:00	16.05	22.13	0.01	7.15	377.44	8.58	0.75	12.21
8/19/2024 22:50	16.06	22.14	0.01	7.18	377.64	8.58	0.63	12.21
8/19/2024 22:40	16.07	22.15	0.01	7.15	378.53	8.56	0.53	12.14
8/19/2024 22:30	16.09	21.99	0.01	7.15	379.73	8.56	0.54	12.14
8/19/2024 22:20	16.11	22.18	0.01	7.16	378.95	8.56	1.55	12.12
8/19/2024 22:10	16.12	22.03	0.01	7.16	380.68	8.55	0.53	12.21
8/19/2024 22:00	16.15	22.19	0.01	7.15	380.74	8.55	21.22	12.24
8/19/2024 21:50	16.17	22.18	0.01	7.14	383.8	8.53	0.54	12.14
8/19/2024 21:40	16.19	22.2	0.01	7.15	382.22	8.54	0.58	12.21
8/19/2024 21:30	16.21	22.03	0.01	7.15	384.92	8.55	0.52	12.24
8/19/2024 21:20	16.23	22.24	0.01	7.16	385.72	8.52	0.57	12.24

WLNG Upstream Raw Sonde Data 2024-08-19 to 2024-08-25

8/19/2024 21:10	16.26	22.14	0.01	7.19	385.36	8.51	0.55	12.26
8/19/2024 21:00	16.3	22.17	0.01	7.15	387.49	8.51	0.75	12.24
8/19/2024 20:50	16.32	22.26	0.01	7.17	386.53	8.52	0.56	12.24
8/19/2024 20:40	16.36	22.28	0.01	7.16	385.74	8.49	0.63	12.14
8/19/2024 20:30	16.38	22.34	0.01	7.25	380.69	8.48	2.87	12.26
8/19/2024 20:20	16.41	22.26	0.01	7.16	384.29	8.49	1.07	12.26
8/19/2024 20:10	16.44	22.2	0.01	7.16	384.17	8.49	0.53	12.26
8/19/2024 20:00	16.47	22.25	0.01	7.16	383.19	8.48	0.63	12.26
8/19/2024 19:50	16.49	22.13	0.01	7.19	381.85	8.5	0.57	12.29
8/19/2024 19:40	16.52	22.35	0.01	7.17	381.61	8.5	37.38	12.31
8/19/2024 19:30	16.54	22.28	0.01	7.19	380.53	8.49	1.38	12.21
8/19/2024 19:20	16.57	22.16	0.01	7.17	380.04	8.5	0.57	12.21
8/19/2024 19:10	16.59	22.23	0.01	7.21	377.42	8.48	0.57	12.24
8/19/2024 19:00	16.62	22.21	0.01	7.18	376.9	8.49	0.74	12.24
8/19/2024 18:50	16.65	22.2	0.01	7.19	376	8.5	1.06	12.26
8/19/2024 18:40	16.68	22.14	0.01	7.18	375.47	8.51	4.63	12.41
8/19/2024 18:30	16.71	22.16	0.01	7.19	374.51	8.5	0.82	12.36
8/19/2024 18:20	16.74	22.05	0.01	7.18	374.19	8.52	4.55	12.36
8/19/2024 18:10	16.76	22.11	0.01	7.21	373.87	8.52	9.15	12.48
8/19/2024 18:00	16.78	22.01	0.01	7.2	374.75	8.52	58.78	12.5
8/19/2024 17:50	16.81	21.97	0.01	7.22	375.66	8.53	41.89	12.6
8/19/2024 17:40	16.83	22.14	0.01	7.19	376.53	8.55	45.65	12.62
8/19/2024 17:30	16.88	22.29	0.01	7.18	376.45	8.57	139.39	12.67
8/19/2024 17:20	16.85	21.94	0.01	7.22	372.8	8.59	0.58	12.62
8/19/2024 17:10	16.86	21.92	0.01	7.31	373.67	8.62	0.58	12.76
8/19/2024 17:00	16.86	21.88	0.01	7.25	371.68	8.64	0.58	12.91
8/19/2024 16:50	16.85	21.84	0.01	7.3	374.23	8.63	0.58	13.29
8/19/2024 16:40	16.86	21.85	0.01	7.24	371.73	8.63	0.6	12.62
8/19/2024 16:30	16.86	21.87	0.01	7.28	374.83	8.66	0.57	13.15
8/19/2024 16:20	16.86	21.78	0.01	7.24	370.81	8.66	0.57	13.44
8/19/2024 16:10	16.86	21.78	0.01	7.3	372.87	8.67	0.58	13.46
8/19/2024 16:00	16.86	21.74	0.01	7.25	369.74	8.68	0.58	13.44
8/19/2024 15:50	16.86	21.67	0.01	7.3	372.83	8.66	0.58	13.46
8/19/2024 15:40	16.87	21.75	0.01	7.24	369.35	8.67	0.58	13.34
8/19/2024 15:30	16.89	21.67	0.01	7.32	369.91	8.67	0.57	13.22
8/19/2024 15:20	16.93	21.6	0.01	7.28	366.41	8.71	0.58	13.29
8/19/2024 15:10	16.95	21.53	0.01	7.37	364.44	8.72	0.59	13.39
8/19/2024 15:00	16.96	21.64	0.01	7.28	364.67	8.72	0.61	13.27
8/19/2024 14:50	16.93	21.56	0.01	7.35	364.69	8.77	0.58	13.32
8/19/2024 14:40	16.82	21.47	0.01	7.29	365.35	8.77	0.56	13.41
8/19/2024 14:30	16.76	21.54	0.01	7.33	366.77	8.75	0.57	13.41
8/19/2024 14:20	16.74	21.56	0.01	7.27	365.63	8.75	0.6	13.39
8/19/2024 14:10	16.74	21.66	0.01	7.32	365.53	8.74	0.59	13.27
8/19/2024 14:00	16.78	21.44	0.01	7.29	363.23	8.77	0.57	13.24
8/19/2024 13:50	16.8	21.44	0.01	7.39	364.16	8.84	0.57	13.34
8/19/2024 13:40	16.72	21.5	0.01	7.31	361.63	8.84	0.59	13.34
8/19/2024 13:30	16.67	21.44	0.01	7.33	363.64	8.84	0.56	13.34

WLNG Upstream Raw Sonde Data 2024-08-19 to 2024-08-25

8/19/2024 13:20	16.68	21.56	0.01	7.31	361	8.85	0.57	13.39
8/19/2024 13:10	16.61	21.33	0.01	7.38	362.63	8.87	0.59	13.39
8/19/2024 13:00	16.57	21.48	0.01	7.3	360.14	8.89	0.55	13.39
8/19/2024 12:50	16.58	21.52	0.01	7.38	360.12	8.88	0.59	13.29
8/19/2024 12:40	16.58	21.46	0.01	7.3	359.04	8.88	0.56	13.32
8/19/2024 12:30	16.49	21.28	0.01	7.35	359.72	8.93	0.57	13.44
8/19/2024 12:20	16.43	21.48	0.01	7.31	358.46	8.9	0.57	13.34
8/19/2024 12:10	16.4	21.37	0.01	7.34	361.51	8.91	0.54	13.44
8/19/2024 12:00	16.33	21.43	0.01	7.3	357.96	8.91	0.55	13.36
8/19/2024 11:50	16.46	21.29	0.01	7.36	359.07	8.93	0.55	13.46
8/19/2024 11:40	16.46	21.44	0.01	7.32	356.07	8.95	0.54	13.48
8/19/2024 11:30	16.29	21.21	0.01	7.42	356.16	8.99	0.53	13.46
8/19/2024 11:20	16.12	21.4	0.01	7.3	358.08	9.02	0.53	13.48
8/19/2024 11:10	15.94	21.23	0.01	7.38	359.39	8.99	0.52	13.51
8/19/2024 11:00	15.91	21.44	0.01	7.3	357.84	9	0.52	13.51
8/19/2024 10:50	15.89	21.46	0.01	7.39	358.08	9	0.5	13.51
8/19/2024 10:40	15.82	21.48	0.01	7.27	357.68	9.03	0.5	13.51
8/19/2024 10:30	15.65	21.48	0.01	7.28	361.81	9	0.81	13.53
8/19/2024 10:20	15.58	21.53	0.01	7.24	359.35	8.97	0.52	13.41
8/19/2024 10:10	15.54	21.52	0.01	7.27	361.95	8.94	0.5	13.53
8/19/2024 10:00	15.48	21.58	0.01	7.22	361.98	8.9	0.51	13.44
8/19/2024 9:50	15.45	21.66	0.01	7.26	364.73	8.88	0.51	13.56
8/19/2024 9:40	15.43	21.68	0.01	7.19	363.34	8.88	0.5	13.12
8/19/2024 9:30	15.43	21.62	0.01	7.24	366.08	8.87	0.5	12.98
8/19/2024 9:20	15.43	21.74	0.01	7.2	363.17	8.86	0.5	12.79
8/19/2024 9:10	15.41	21.72	0.01	7.23	365.23	8.86	0.51	12.62
8/19/2024 9:00	15.38	21.82	0.01	7.19	363.82	8.83	0.49	12.57
8/19/2024 8:50	15.37	21.83	0.01	7.24	365.42	8.84	0.5	12.48
8/19/2024 8:40	15.37	21.87	0.01	7.17	365.17	8.82	0.49	12.36
8/19/2024 8:30	15.38	21.67	0.01	7.25	364.4	8.82	0.49	12.33
8/19/2024 8:20	15.38	21.9	0.01	7.16	365.77	8.82	0.5	12.24
8/19/2024 8:10	15.38	21.77	0.01	7.21	367.86	8.8	0.49	12.21
8/19/2024 8:00	15.4	21.91	0.01	7.17	365.17	8.78	0.49	12.02
8/19/2024 7:50	15.41	21.76	0.01	7.26	364.16	8.76	0.49	12.09
8/19/2024 7:40	15.43	21.99	0.01	7.16	365.38	8.77	0.49	12.17
8/19/2024 7:30	15.45	21.79	0.01	7.26	363.99	8.76	0.47	12.14
8/19/2024 7:20	15.47	21.92	0.01	7.16	367.65	8.75	0.5	12.12
8/19/2024 7:10	15.49	22.06	0.01	7.21	368.9	8.72	0.5	12.09
8/19/2024 7:00	15.52	22.01	0.01	7.16	368.98	8.72	0.49	12.09
8/19/2024 6:50	15.55	21.97	0.01	7.19	372.43	8.72	0.49	12.07
8/19/2024 6:40	15.58	22.06	0.01	7.16	369.92	8.7	0.51	11.97
8/19/2024 6:30	15.6	22.06	0.01	7.24	369.35	8.69	0.52	11.95
8/19/2024 6:20	15.63	22.11	0.01	7.15	372.77	8.68	0.51	11.93
8/19/2024 6:10	15.66	22.11	0.01	7.25	370.55	8.68	0.5	12.02
8/19/2024 6:00	15.69	22.1	0.01	7.14	371.76	8.67	0.51	11.95
8/19/2024 5:50	15.72	22.08	0.01	7.21	369.81	8.65	0.52	12.05
8/19/2024 5:40	15.75	22.21	0.01	7.13	371.23	8.64	0.51	12.05

WLNG Upstream Raw Sonde Data 2024-08-19 to 2024-08-25

8/19/2024 5:30	15.77	22	0.01	7.2	371.47	8.64	0.51	12.05
8/19/2024 5:20	15.81	22.23	0.01	7.14	370.39	8.64	0.53	11.93
8/19/2024 5:10	15.84	22.1	0.01	7.24	372.35	8.63	0.52	11.93
8/19/2024 5:00	15.87	22.28	0.01	7.15	371.37	8.61	0.54	12.07
8/19/2024 4:50	15.9	22.24	0.01	7.25	372.22	8.63	0.52	12.07
8/19/2024 4:40	15.92	22.35	0.01	7.15	370.68	8.62	0.54	12.07
8/19/2024 4:30	15.94	22.27	0.01	7.31	368.3	8.6	0.56	12.07
8/19/2024 4:20	15.97	22.35	0.01	7.14	369.53	8.62	0.52	12.07
8/19/2024 4:10	15.99	22.11	0.01	7.2	372.04	8.59	0.52	12.09
8/19/2024 4:00	16.01	22.34	0.01	7.14	369.44	8.61	0.54	12.07
8/19/2024 3:50	16.03	22.18	0.01	7.3	369.89	8.58	0.54	12
8/19/2024 3:40	16.05	22.29	0.01	7.21	369.66	8.61	0.52	12
8/19/2024 3:30	16.07	22.33	0.01	7.15	369.72	8.58	0.53	12.09
8/19/2024 3:20	16.09	22.38	0.01	7.16	368.24	8.57	0.55	12
8/19/2024 3:10	16.11	22.25	0.01	7.24	369.61	8.56	0.51	12.12
8/19/2024 3:00	16.13	22.31	0.01	7.15	367.92	8.57	0.54	12.12
8/19/2024 2:50	16.14	22.32	0.01	7.17	368.72	8.57	0.53	12.12
8/19/2024 2:40	16.16	22.38	0.01	7.14	367.54	8.56	0.54	12.12
8/19/2024 2:30	16.17	22.12	0.01	7.14	369.47	8.55	0.55	12.12
8/19/2024 2:20	16.2	22.43	0.01	7.14	367.25	8.55	0.54	12.12
8/19/2024 2:10	16.21	22.38	0.01	7.18	368.41	8.57	0.55	12.17
8/19/2024 2:00	16.23	22.44	0.01	7.13	366.64	8.56	0.58	12.17
8/19/2024 1:50	16.24	22.42	0.01	7.13	369.1	8.52	0.55	12.17
8/19/2024 1:40	16.26	22.5	0.01	7.16	366.83	8.55	0.87	12.17
8/19/2024 1:30	16.26	22.3	0.01	7.14	368.61	8.54	0.55	12.17
8/19/2024 1:20	16.28	22.49	0.01	7.14	366.82	8.54	0.55	12.07
8/19/2024 1:10	16.29	22.23	0.01	7.16	367.41	8.53	0.54	12.07
8/19/2024 1:00	16.3	22.54	0.01	7.15	367.15	8.54	0.55	12.19
8/19/2024 0:50	16.31	22.29	0.01	7.32	364.78	8.55	0.55	12.19
8/19/2024 0:40	16.32	22.42	0.01	7.16	366.62	8.53	0.54	12.19
8/19/2024 0:30	16.34	22.43	0.01	7.14	369.23	8.53	0.68	12.09
8/19/2024 0:20	16.35	22.51	0.01	7.13	365.86	8.53	0.55	12.19
8/19/2024 0:10	16.36	22.46	0.01	7.26	368.37	8.52	0.53	12.09
8/19/2024 0:00	16.37	22.47	0.01	7.17	366.38	8.52	0.54	12.19