Eagle Mountain - Woodfibre Gas Pipeline Project

BCER Waste Discharge Permit Weekly Report

Contents

Preamble

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

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

Introduction

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

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

Sampling Methodology

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

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

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

Permit Frequency	Parameters	Details
Daily	Visible Sheen	In field inspection
Daily (or per batch)	DO	Monitoring using YSI ProDSS
	ORP	Monitoring using YSI ProDSS
	Salinity	Monitoring using YSI ProDSS
Real Time (or per batch)	pH	Monitoring using GF Dryloc pH Series NPT
	Temperature	Monitoring using LevelPro PT100 Temperature and Signet 2350 Temp sensor
	NTU	Monitoring using Observator NEP9504GPI
	Electrical Conductivity	Monitoring using ProCon C450
Weekly (or per batch) Lab Samples	List prescribed in permit	Lab samples

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

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

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

Summary-BC Rail Site

Site Activities

- No discharges during this reporting period
- Water produced by the water treatment plant is being recirculated for tunneling and to create grout for tunneling.

Point of Discharge from Water Treatment System Monitoring

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

Table 3: Discharge from Water Treatment System Information

Location	Date of Discharge	Date of Lab Sample (for the discharge)	Real Time Monitored	Discharge Rate (batch)	Discharge Volume (batch)	Results
BC Rail- No discharges						

*Max discharge is 515 m3/day

Exceedances

No exceedances this reporting period.

Receiving Environment Monitoring

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

Table 4: Upstream Monitoring Information

Location	Date of Lab Sample	Real Time Monitored	Results
Squamish River Upstream	2024-09-23	Yes *	Full set of lab sample results, photo and documentation are provided in Appendix B.

Table 5: Downstream Monitoring Information

	Date of Lab Sample	Real Time Monitored	Results
Squamish River Downstream	2023-09-23	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 reinstalled on August 23rd further downstream (not the permitted location) and removed on September 6th due to non-EGP construction-related interference upstream. The sonde was reinstalled September 19th at the same location as August 23rd, but again there was observed to be work in proximity to the sonde location. The sonde data shows peaks unrelated to discharge.
- Included in Appendix C is data from the Water Treatment Plant as well as data collected from the YSI brand datalogger located downstream document water quality changes in the receiving environment.
- pH is outside of the range for short-term and long-term BCWG for Marine Aquatic Life (MAL).
- Total aluminum exceeds long-term BCWQG for Freshwater Aquatic Life (FAL).
- Dissolved Zinc exceeds short-term BCWQG for FAL.

Point of Discharge from Water Treatment System Monitoring

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

Table 3: Discharges from Water Treatment System

Location	Date of Discharge	Real Time Monitored and Daily Monitoring	Discharge Volume
Woodfibre	2024-09-23	Yes-Appendix C	285 m^3
Woodfibre	2024-09-24	Yes-Appendix C	316 m^3
Woodfibre	2024-09-25	Yes-Appendix C	245 m^3
Woodfibre	2024-09-26	Yes-Appendix C	316 m^3
Woodfibre	2024-09-27	Yes-Appendix C	256 m^3
Woodfibre	2024-09-28	Yes-Appendix C	263 m^3
Woodfibre	2024-09-29	Yes-Appendix C	265 m^3

*Max discharge is 1500m^3/day

Exceedances

As mentioned above, pH range was outside of the Short-Term and Long-Term guideline range. The dissolved zinc exceeds Short-Term guidelines and total aluminum exceeds Long-Term guidelines.

Receiving Environment Monitoring

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

Table 4: Upstream Monitoring Information

Location	Date of Lab Sample	Real Time Monitored	Results
Woodfibre Upstream	2024-09-24	Yes *	Full set of lab sample results, photo and documentation are provided in Appendix D.

Table 5: Downstream Monitoring Information

	Date of Lab Sample	Real Time Monitored	Results
Woodfibre Downstream	2024-09-24	No-Sonde Removed	Full set of lab sample results, photo and documentation are provided in Appendix D. Note that Sonde was removed on July 16th, 2024 due to dry conditions. Sonde was reinstalled at a lower location with water on August 22nd and removed on Sept 6th as WLNG was working in area. Reinstalled Sept 19th. The 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:	COLLEGE OF APPLIED BIOLOGISTS Farshad Shafiei RPBio 3781 CAB		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					VA24C5180-001	VA24C5180-002					
	Date Sampled					23-Sep-2024	23-Sep-2024					
	Time Sampled					09:52	11:01					
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	6.96	7.00		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]	-	10.8	10.1		Guideline is species-dependent. Short-term daily temperature guideline is 19°C for streams with unknown fish distribution. Refer to footnote 4 for background temperature range for 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	-	-	-	-	35	30					
Turbidity (field)	NTU	Varies with background, see note Guideline = 207.0	Varies with background, see note Guideline = 119.6 5-week discrete sampling average = 121.4 (DS)	Varies with background, see note Guideline = 207.0	Varies with background, see note Guideline = 119.6 5-week discrete sampling average = 121.4 (DS)	199.0	156.0		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	10.84	10.44		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	-	-	-	-	19.1	17.8					
Total Dissolved Solids	mg/L	-	-	-	-	36	33					
Total Suspended Solids	mg/L	Varies with background, see note Guideline = 175.0	Varies with background, see note Guideline = 111.1 5-week discrete sampling average = 98.28 (DS)	Varies with background, see note Guideline = 175.0	Varies with background, see note Guideline = 111.1 5-week discrete sampling average = 98.28 (DS)	150	138		Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 25 = DS guideline Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters. Calculation: US value + 10 = DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters.	Change from background of 5 mg/L @ one time for a druation of 30 days in clear flow. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.	Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 25 = DS guideline Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters. Calculation: US value + 10 = DS guideline Change from background of 10% when background is >	Change from background of 5 mg/L @ one time for a druation of 30 days in clear flow. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.
Dissolved Organic Carbon (DOC)	mg/L	-	-	-	-	0.54	< 0.50			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	9	8	The upstreamand downstream locations have high sensitivity to acid inputs (i.e. low buffering capacity).		Guideline is for alkalinity (as CaCO3) and categorizes the sensitivity of a water body to acid inputs. Alkalinity < 10 mg/L is considered highly sensitive to acid inputs; 10 - 20 mg/L is considered moderately sensitive to acid inputs; > 20 mg/L is considered low sensitivity.		
Total Sulfide (as S)	mg/L	-	-	-	-	< 0.0015	< 0.0015					
Total Sulfide (un-ionized as H_2S)	mg/L	-	0.002	-	-	< 0.0015	< 0.0015			Working guideline		
Total Sulfide (as H_2S)	mg/L	-	-	-	-	< 0.0016	< 0.0016					
Anions and Nutrients												
Ammonia	mg/L ammonia-N	Varies with pH and temperature. See note. Guideline = 20.3	Varies with pH and temperature. See note. Guideline = 1.83	Varies with pH, temperature and salinity. See note. Guideline = 131	Varies with pH, temperature and salinity. See note. Guideline = 20	0.103	0.039		Guideline for ammonia as N and is pH and temperature dependent. Refer to Table 27D in BC WQG for guideline values.	Guideline for ammonia as N and is pH and temperature dependent. Refer to Table 27C in BC WQG for guideline values.	Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent. Refer to Table 27F in BC WQG for guideline values.	Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent. Refer to Table 27E in BC WQG for guideline values.
Bromide	mg/L	-	-	-	-	< 0.050	< 0.050					
Chloride	mg/L	600	150	+/- 10% from BKG	+/- 10% from BKG	1.05	0.84				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 = 0.669	-	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	0.0158	0.0147					
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	-	-	-	-	0.191	0.099					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.200	0.136			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	-	-	2.87	2.45			Guidelines for hardness ranges below: Hardness 0 - 30: 128 Hardness 31 - 75: 218 Hardness 76 - 180: 309 Hardness 181 - 250: 429		
Total Metals												
Aluminum (Al)-Total	mg/L	-	Varies with pH, DOC, hardness Guideline = 0.033 5-week field average = **4.35** (US), **4.10** (DS)	-	-	***4.69***	***4.44***	**Total Al exceeds the long-term BCWG for FAL at both upstream and downstream locations.** However, this should not be deemed a reportable exceedance because the background total Al concentration at the upstream location exceeds the BCWG too. Discharge from BCR has not begun yet, so the high concentration is not attributable to BCR construction activities and is likely a characteristic of the Squamish River and the local geology.		Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated with the following equation: Guideline = (EXP((0.645 * LN(DOC)) + (2.255 * LN(hardness)) + (1.995 * pH) + (-0.284 * (LN(hardness) * pH))-9.898)/3/1000) If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.		
Antimony (Sb)-Total	mg/L	0.25	0.074	-	-	< 0.00010	< 0.00010					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.00042	0.00041					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.064	0.0628			Working guideline status		
Beryllium (Be)-Total	mg/L	-	0.00013	-	0.100	< 0.000100	< 0.000100			Working guideline status		Working guideline status
Bismuth (Bi)-Total	mg/L	-	-	-	-	< 0.00005	< 0.00005					
Boron (B)-Total	mg/L	-	1.2	-	1.2	< 0.010	< 0.010					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	0.0000195	0.0000144					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	4.95	4.44					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.000213	0.000216					
Chromium (Cr) - Total	mg/L	-	-	-	-	0.00165	0.00171					
Chromium (Cr(III))-Total	mg/L	-	0.0089	-	0.056	0.00165	0.00171			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	-	-	0.0014	0.00148					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002	<u>0.0077</u>	<u>0.0070</u>	**Total Cu exceeds the short and long-term BCWG for MAL at both upstream and downstream locations.** However, this should not be deemed a reportable exceedance because the discharge from BCR has not begun and US1 has higher concentration than DS1. Therefore, the high total Cu concentration may be characteristic of the Squamish River and the local geology.				
Iron (Fe)-Total	mg/L	1	-	-	-	**2.94**	**3.09**	**Total Fe exceeds the short-term BCWG for FAL at both upstream and downstream locations.** However, this should not be deemed a reportable exceedance because the background total Fe concentration at the upstream location exceeds the BCWG too. Discharge from BCR has not begun yet, so the high concentration is not attributable to BCR construction activities and is likely a characteristic of the Squamish River and the local geology.				
Lead (Pb)-Total	mg/L	Varies with hardness. See Note. Guideline = 0.0099	Varies with hardness. See Note. Guideline = 0.00369	0.14	0.002	0.000726	0.00068		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	-	-	-	-	0.0016	0.0015					
Magnesium (Mg)-Total	mg/L	-	-	-	-	1.64	1.64					
Manganese (Mn)-Total	mg/L	Varies with hardness Guideline = 0.715	Varies with hardness Guideline = 0.768	-	-	0.0764	0.0797		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	-	-	0.000438	0.000397					
Nickel (Ni)-Total	mg/L	-	Varies with hardness Guideline = 0.025	-	0.0083	0.00174	0.00169			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	-	-	0.202	0.168			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	-	-	-	-	1.81	1.75					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00524	0.00552					
Selenium (Se)-Total	mg/L	-	0.002	-	0.002	< 0.000050	< 0.000050			Guideline for freshwater aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guideliens for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guideliens and sampling guidance.		Guideline for marine aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guideliens for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guideliens and sampling guidance.
Silicon (Si)-Total	mg/L	-	-	-	-	9.22	8.37					
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	< 0.000013	< 0.000012		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	-	-	-	-	2.58	2.15					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0534	0.0496					
Sulfur (S)-Total	mg/L	-	-	-	-	0.74	0.53					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.0008	-	-	0.000034	0.000035			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	0.00023					
Tin (Sn)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Titanium (Ti)-Total	mg/L	-	-	-	-	0.193	0.208					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Total	mg/L	-	0.0085	-	-	0.00014	0.000143			Working guideline status		
Vanadium (V)-Total	mg/L	-	-	-	0.050	0.00784	0.00788					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	Guideline = 0.010 5-week field average = 0.00774 (US), 0.0087 (DS)	0.0091	0.0093					
Zirconium (Zr)-Total	mg/L	-	-	-	-	0.00067	0.00047					
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0465	0.0634					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00012	< 0.00012					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.0033	0.00376					
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 = 0.000107	Varies with hardness, see note Guideline = 0.000062	-	-	< 0.0000050	< 0.0000050		Guideline is hardness dependent. Guideline is appilcable to water hardness between 7.0 and 455 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(1.03 * (LN(hardness)) - 5.274)/1000) Lowest value for guideline is 0.000018 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.	Guideline is hardness dependent. Guideline is applicable to hardness between 3.4 and 285 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(0.736 * (LN(hardness)) - 4.943)/1000) Lowest value for guiedeline is 0.00004. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.		
Calcium (Ca)-Dissolved	mg/L	-	Categorical, see note	-	-	3.17	2.83	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	-	-	-	-	< 0.000010	< 0.000010					
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 = 0.0004	Guideline varies with other parameters, see note Guideline = 0.0002 5-week field average = **0.0004** (US), **0.0004** (DS)	-	-	**0.00061**	**0.00052**	**Dissolved Cu exceeds the long-term BCWG for FAL at both the upstream and downstream locations.** However, this should not be deemed a reportable exceedance because the discharge from BCR has not begun full-time. So, the high concentration is not attributable to BCR construction activities and may be characteristic of the Squamish River and the local geology.	Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date	Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date		
Iron (Fe)-Dissolved	mg/L	0.35	-	-	-	0.029	0.039					
Lead (Pb)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	< 0.0010	< 0.0010					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.394	0.35					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00497	0.00489					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.000420	0.000389					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.050	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	0.691	0.584					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00094	0.00084					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	2.56	2.24					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	1.37	1.15					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0204	0.0183					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	0.92	0.75					
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	-	-	-	-	0.00143	0.00222					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.000024	0.000026					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	0.00093	0.00083					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness Guideline = 0.009	Varies with pH, DOC, hardness Guideline = 0.0026 5-week field average = **0.0032** (US), 0.0013 (DS)	-	-	< 0.0010	< 0.0010	**Dissolved Zn exceeds the long-term BCWG for FAL at the upstream location.** However, this should not be deemed a reportable exceedance because this is the background site and the discharge from BCR has not yet begun. So, the high concentration is not attributable to BCR construction activities and may be characteristic of the Squamish River and the local geology.	Guideline varies with DOC and hardness. Guideline is calculated using the following formula: Guideline = (EXP((0.833 * (LN(hardness))) + (0.24 * (LN(DOC))) + 0.526)/2/1000) If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.	Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated using the following formula: Guideline = (EXP((0.974 * (LN(hardness))) - (0.815 * pH) + (0.398 * (LN(DOC))) + 4.625)/2/1000) Guideline only applies to water with pH between 6.5 and 8.13, DOC between 0.3 and 22.9 mg/L, anmd hardness between 23.4 and 399 mg/L. If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.		
Zirconium (Zr)-Dissolved	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Applied Guideline:		**British Columbia Approved and Working Water Quality Guidelines (NOV 2023) - BCAWWQG - Freshwater Aquatic Life** **British Columbia Approved and Working Water Quality Guidelines (NOV 2023) - BCAWWQG - Marine Aquatic Life**										
Color Key:	<u>**Exceeds both FAL and MAL Guidelines**</u>	**Exceeds FAL Short term Guideline**	***Exceeds FAL Long term Guideline***	**Exceeds MAL Short term Guideline**	***Exceeds MAL Long term Guideline***							
Color Key:		<u>**Exceeds Short and Long-Term Guideline**</u>		<u>**Exceeds MAL Short and Long-term Guidelines**</u>								

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

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

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

[4]Background temperature ranges: Dec-Feb: 2.0-4.0C; Mar-Apr: 4.0-6.0C; May-June: 6.0-12.0C; Jul-Sept: 9.0-12.0C; Oct-Nov: 3.0-5.0

Reference: Triton Environmental Consulants Ltd. 2023. Memo - Background water quality values for the BC Rail Discharge to Squamish River

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

Parameters Used to Calculate Guidelines

Analyte	Units	FAL-ST [1,2]	FAL-LT [1,2]	MAL-ST [1]	MAL-LT [1,2]	Values: SQU US1 (Upstream)	Values: SQU DS1 (Downstream)
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations				7.82	7.62
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations				10.8	10.1
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations				199.00	156.00
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				19.1	17.8
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations				0.54	0.5
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations				9	8
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations				1.05	0.84

BCR Site Receiving Environment Lab Documentation

ALS Canada Ltd.

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CERTIFICATE OF ANALYSIS

Work Order	: **VA24C5180**	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	: 23-Sep-2024 13:50
PO	: 11964-Task 20-Phase 3C-4C	Date Analysis Commenced	: 24-Sep-2024
C-O-C number	: ----	Issue Date	: 01-Oct-2024 22:22
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

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

General Comments

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

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

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

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

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

LOR: Limit of Reporting (detection limit).

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

<: less than.

>: greater than.

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

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

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

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US1	SQU DS 1	----	----	----
					Client sampling date / time	23-Sep-2024 09:52	23-Sep-2024 11:01	----	----	----
						VA24C5180-001	VA24C5180-002	--------	--------	--------
						Result	Result	----	----	----
Field Tests										
Conductivity, field	----	EF001/VA	0.10	µS/cm		35.000	30.000	----	----	----
pH, field	----	EF001/VA	0.10	pH units		6.96	7.00	----	----	----
Temperature, field	----	EF001/VA	0.10	°C		10.8	10.1	----	----	----
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/WT	0.60	mg/L		9.54	8.51	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/WT	0.60	mg/L		19.1	17.8	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		36	33	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		150	138	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		9.0	8.0	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L		0.103	0.0393	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L		1.05	0.84	----	----	----
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		0.0158	0.0147	----	----	----
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		0.191	0.099	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.200	0.136	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		2.87	2.45	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L		0.54	<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/WT	0.0030	mg/L		4.69	4.44	----	----	----
Antimony, total	7440-36-0	E420/WT	0.00010	mg/L		<0.00010	<0.00010	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US1	SQU DS 1	----	----	----
					Client sampling date / time	23-Sep-2024 09:52	23-Sep-2024 11:01	----	----	----
						VA24C5180-001	VA24C5180-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Arsenic, total	7440-38-2	E420/WT	0.00010	mg/L		0.00042	0.00041	----	----	----
Barium, total	7440-39-3	E420/WT	0.00010	mg/L		0.0640	0.0628	----	----	----
Beryllium, total	7440-41-7	E420/WT	0.000100	mg/L		<0.000100	<0.000100	----	----	----
Bismuth, total	7440-69-9	E420/WT	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Boron, total	7440-42-8	E420/WT	0.010	mg/L		<0.010	<0.010	----	----	----
Cadmium, total	7440-43-9	E420/WT	0.0000050	mg/L		0.0000195	0.0000144	----	----	----
Calcium, total	7440-70-2	E420/WT	0.050	mg/L		4.95	4.44	----	----	----
Cesium, total	7440-46-2	E420/WT	0.000010	mg/L		0.000213	0.000216	----	----	----
Chromium, total	7440-47-3	E420/WT	0.00050	mg/L		0.00165	0.00171	----	----	----
Cobalt, total	7440-48-4	E420/WT	0.00010	mg/L		0.00140	0.00148	----	----	----
Copper, total	7440-50-8	E420/WT	0.00050	mg/L		0.00768	0.00703	----	----	----
Iron, total	7439-89-6	E420/WT	0.010	mg/L		2.94	3.09	----	----	----
Lead, total	7439-92-1	E420/WT	0.000050	mg/L		0.000726	0.000680	----	----	----
Lithium, total	7439-93-2	E420/WT	0.0010	mg/L		0.0016	0.0015	----	----	----
Magnesium, total	7439-95-4	E420/WT	0.0050	mg/L		1.64	1.64	----	----	----
Manganese, total	7439-96-5	E420/WT	0.00010	mg/L		0.0764	0.0797	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Molybdenum, total	7439-98-7	E420/WT	0.000050	mg/L		0.000438	0.000397	----	----	----
Nickel, total	7440-02-0	E420/WT	0.00050	mg/L		0.00174	0.00169	----	----	----
Phosphorus, total	7723-14-0	E420/WT	0.050	mg/L		0.202	0.168	----	----	----
Potassium, total	7440-09-7	E420/WT	0.050	mg/L		1.81	1.75	----	----	----
Rubidium, total	7440-17-7	E420/WT	0.00020	mg/L		0.00524	0.00552	----	----	----
Selenium, total	7782-49-2	E420/WT	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Silicon, total	7440-21-3	E420/WT	0.10	mg/L		9.22	8.37	----	----	----
Silver, total	7440-22-4	E420/WT	0.000010	mg/L		0.000013	0.000012	----	----	----
Sodium, total	7440-23-5	E420/WT	0.050	mg/L		2.58	2.15	----	----	----
Strontium, total	7440-24-6	E420/WT	0.00020	mg/L		0.0534	0.0496	----	----	----
Sulfur, total	7704-34-9	E420/WT	0.50	mg/L		0.74	0.53	----	----	----
Tellurium, total	13494-80-9	E420/WT	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Thallium, total	7440-28-0	E420/WT	0.000010	mg/L		0.000034	0.000035	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US1	SQU DS 1	----	----	----
					Client sampling date / time	23-Sep-2024 09:52	23-Sep-2024 11:01	----	----	----
						VA24C5180-001	VA24C5180-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Thorium, total	7440-29-1	E420/WT	0.00010	mg/L		0.00022	0.00023	----	----	----
Tin, total	7440-31-5	E420/WT	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Titanium, total	7440-32-6	E420/WT	0.00030	mg/L		0.193	0.208	----	----	----
Tungsten, total	7440-33-7	E420/WT	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Uranium, total	7440-61-1	E420/WT	0.000010	mg/L		0.000140	0.000143	----	----	----
Vanadium, total	7440-62-2	E420/WT	0.00050	mg/L		0.00784	0.00788	----	----	----
Zinc, total	7440-66-6	E420/WT	0.0030	mg/L		0.0091	0.0093	----	----	----
Zirconium, total	7440-67-7	E420/WT	0.00020	mg/L		0.00067	0.00047	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		0.0465	0.0634	----	----	----
Antimony, dissolved	7440-36-0	E421/WT	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		0.00012	0.00012	----	----	----
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		0.00330	0.00376	----	----	----
Beryllium, dissolved	7440-41-7	E421/WT	0.000100	mg/L		<0.000100	<0.000100	----	----	----
Bismuth, dissolved	7440-69-9	E421/WT	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		<0.010	<0.010	----	----	----
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L		3.17	2.83	----	----	----
Cesium, dissolved	7440-46-2	E421/WT	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Cobalt, dissolved	7440-48-4	E421/WT	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L		0.00061	0.00052	----	----	----
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L		0.029	0.039	----	----	----
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Lithium, dissolved	7439-93-2	E421/WT	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		0.394	0.350	----	----	----
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		0.00497	0.00489	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Molybdenum, dissolved	7439-98-7	E421/WT	0.000050	mg/L		0.000420	0.000389	----	----	----
Nickel, dissolved	7440-02-0	E421/WT	0.00050	mg/L		<0.00050	<0.00050	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SQU US1	SQU DS 1	----	----	----
					Client sampling date / time	23-Sep-2024 09:52	23-Sep-2024 11:01	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C5180-001	VA24C5180-002	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
Phosphorus, dissolved	7723-14-0	E421/WT	0.050	mg/L		<0.050	<0.050	----	----	----
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		0.691	0.584	----	----	----
Rubidium, dissolved	7440-17-7	E421/WT	0.00020	mg/L		0.00094	0.00084	----	----	----
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		2.56	2.24	----	----	----
Silver, dissolved	7440-22-4	E421/WT	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		1.37	1.15	----	----	----
Strontium, dissolved	7440-24-6	E421/WT	0.00020	mg/L		0.0204	0.0183	----	----	----
Sulfur, dissolved	7704-34-9	E421/WT	0.50	mg/L		0.92	0.75	----	----	----
Tellurium, dissolved	13494-80-9	E421/WT	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Thallium, dissolved	7440-28-0	E421/WT	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Thorium, dissolved	7440-29-1	E421/WT	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Tin, dissolved	7440-31-5	E421/WT	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Titanium, dissolved	7440-32-6	E421/WT	0.00030	mg/L		0.00143	0.00222	----	----	----
Tungsten, dissolved	7440-33-7	E421/WT	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Uranium, dissolved	7440-61-1	E421/WT	0.000010	mg/L		0.000024	0.000026	----	----	----
Vanadium, dissolved	7440-62-2	E421/WT	0.00050	mg/L		0.00093	0.00083	----	----	----
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Zirconium, dissolved	7440-67-7	E421/WT	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-		Field	Field	----	----	----
Dissolved metals filtration location	----	EP421/WT	-	-		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		0.00165	0.00171	----	----	----

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	: **VA24C5180**	Page	: 1 of 14
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact	: Farshad Shafiei	Account Manager	: Can Dang
Address	: Suite 1730, 1111 West Georgia St Vancouver BC Canada V6E 4M3	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: 11964	Date Samples Received	: 23-Sep-2024 13:50
PO	: 11964-Task 20-Phase 3C-4C	Issue Date	: 01-Oct-2024 22:23
C-O-C number	: ----		
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU DS 1	E298	23-Sep-2024	26-Sep-2024	28 days	3 days	✓	27-Sep-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU US1	E298	23-Sep-2024	26-Sep-2024	28 days	3 days	✓	27-Sep-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU DS 1	E235.Br-L	23-Sep-2024	25-Sep-2024	28 days	2 days	✓	25-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU US1	E235.Br-L	23-Sep-2024	25-Sep-2024	28 days	2 days	✓	25-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SQU DS 1	E235.Cl	23-Sep-2024	25-Sep-2024	28 days	2 days	✓	25-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SQU US1	E235.Cl	23-Sep-2024	25-Sep-2024	28 days	2 days	✓	25-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE SQU DS 1	E235.F	23-Sep-2024	25-Sep-2024	28 days	2 days	✓	25-Sep-2024	28 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE SQU US1	E235.F	23-Sep-2024	25-Sep-2024	28 days	2 days	✓	25-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SQU DS 1	E235.NO3-L	23-Sep-2024	25-Sep-2024	3 days	2 days	✓	25-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SQU US1	E235.NO3-L	23-Sep-2024	25-Sep-2024	3 days	2 days	✓	25-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SQU DS 1	E235.NO2-L	23-Sep-2024	25-Sep-2024	3 days	2 days	✓	25-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SQU US1	E235.NO2-L	23-Sep-2024	25-Sep-2024	3 days	2 days	✓	25-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SQU DS 1	E235.SO4	23-Sep-2024	25-Sep-2024	28 days	2 days	✓	25-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SQU US1	E235.SO4	23-Sep-2024	25-Sep-2024	28 days	2 days	✓	25-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) SQU DS 1	E366	23-Sep-2024	26-Sep-2024	28 days	3 days	✓	27-Sep-2024	28 days	4 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) SQU US1	E366	23-Sep-2024	26-Sep-2024	28 days	3 days	✓	27-Sep-2024	28 days	4 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SQU DS 1	E372-U	23-Sep-2024	26-Sep-2024	28 days	3 days	✓	27-Sep-2024	28 days	4 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SQU US1	E372-U	23-Sep-2024	26-Sep-2024	28 days	3 days	✓	27-Sep-2024	28 days	4 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SQU DS 1	E509	23-Sep-2024	01-Oct-2024	28 days	8 days	✓	01-Oct-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SQU US1	E509	23-Sep-2024	01-Oct-2024	28 days	8 days	✓	01-Oct-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SQU DS 1	E421	23-Sep-2024	01-Oct-2024	180 days	8 days	✓	01-Oct-2024	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SQU US1	E421	23-Sep-2024	01-Oct-2024	180 days	8 days	✓	01-Oct-2024	180 days	8 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
SQU DS 1	EF001	23-Sep-2024	----	----	----		25-Sep-2024	----	2 days	
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
SQU US1	EF001	23-Sep-2024	----	----	----		25-Sep-2024	----	2 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
SQU DS 1	E358-L	23-Sep-2024	26-Sep-2024	28 days	3 days	✓	27-Sep-2024	28 days	4 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) SQU US1	E358-L	23-Sep-2024	26-Sep-2024	28 days	3 days	✓	27-Sep-2024	28 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SQU DS 1	E290	23-Sep-2024	25-Sep-2024	14 days	2 days	✓	25-Sep-2024	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SQU US1	E290	23-Sep-2024	25-Sep-2024	14 days	2 days	✓	25-Sep-2024	14 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SQU DS 1	E162	23-Sep-2024	----	----	----		28-Sep-2024	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SQU US1	E162	23-Sep-2024	----	----	----		28-Sep-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE SQU DS 1	E160	23-Sep-2024	----	----	----		28-Sep-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE SQU US1	E160	23-Sep-2024	----	----	----		28-Sep-2024	7 days	5 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide) SQU DS 1	E532	23-Sep-2024	----	----	----		27-Sep-2024	28 days	4 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide) SQU US1	E532	23-Sep-2024	----	----	----		27-Sep-2024	28 days	4 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
SQU DS 1	E508	23-Sep-2024	28-Sep-2024	28 days	5 days	✓	28-Sep-2024	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
SQU US1	E508	23-Sep-2024	28-Sep-2024	28 days	5 days	✓	28-Sep-2024	28 days	5 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SQU DS 1	E420	23-Sep-2024	28-Sep-2024	180 days	5 days	✓	28-Sep-2024	180 days	5 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SQU US1	E420	23-Sep-2024	28-Sep-2024	180 days	5 days	✓	28-Sep-2024	180 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
SQU DS 1	E395	23-Sep-2024	----	----	----		24-Sep-2024	7 days	1 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
SQU US1	E395	23-Sep-2024	----	----	----		24-Sep-2024	7 days	1 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1672088	1	8	12.5	5.0	✓
Ammonia by Fluorescence	E298	1675321	1	10	10.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1672093	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1672092	1	8	12.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1684271	1	14	7.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1681944	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1675324	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	1672091	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1672094	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1672095	1	8	12.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1672096	1	12	8.3	5.0	✓
TDS by Gravimetry	E162	1679267	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1677317	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1679305	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1678686	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1675322	1	2	50.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1675323	1	6	16.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1669647	1	10	10.0	5.0	✓
TSS by Gravimetry	E160	1679281	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1672088	1	8	12.5	5.0	✓
Ammonia by Fluorescence	E298	1675321	1	10	10.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1672093	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1672092	1	8	12.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1684271	1	14	7.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1681944	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1675324	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	1672091	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1672094	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1672095	1	8	12.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1672096	1	12	8.3	5.0	✓
TDS by Gravimetry	E162	1679267	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1677317	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1679305	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1678686	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1675322	1	2	50.0	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1675323	1	6	16.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1669647	1	10	10.0	5.0	✓
TSS by Gravimetry	E160	1679281	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1672088	1	8	12.5	5.0	✓
Ammonia by Fluorescence	E298	1675321	1	10	10.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1672093	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1672092	1	8	12.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1684271	1	14	7.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1681944	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1675324	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	1672091	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1672094	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1672095	1	8	12.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1672096	1	12	8.3	5.0	✓
TDS by Gravimetry	E162	1679267	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1677317	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1679305	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1678686	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1675322	1	2	50.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1675323	1	6	16.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1669647	1	10	10.0	5.0	✓
TSS by Gravimetry	E160	1679281	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1675321	1	10	10.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1672093	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1672092	1	8	12.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1684271	1	14	7.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1681944	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1675324	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	1672091	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1672094	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1672095	1	8	12.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1672096	1	12	8.3	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1677317	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1679305	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1678686	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1675322	1	2	50.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1675323	1	6	16.6	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Total Sulfide by Colourimetry (Automated Flow)	E395	1669647	1	10	10.0	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total 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 - Waterloo	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 - Waterloo	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 - Waterloo	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 - Waterloo	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 - Waterloo	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	: **VA24C5180**	Page	: 1 of 17
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	:
Address		Address	:
Telephone	: ----	Telephone	:
Project	: 11964	Date Samples Received	: 23-Sep-2024 13:50
PO	: 11964-Task 20-Phase 3C-4C	Date Analysis Commenced	: 24-Sep-2024
C-O-C number	: ----	Issue Date	: 01-Oct-2024 22:23
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*
		Waterloo Metals, Waterloo, Ontario
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Waterloo Inorganics, Waterloo, Ontario
		Waterloo Metals, Waterloo, Ontario
		Vancouver Administration, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1672088)											
VA24C5271-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	16.6	16.8	1.21%	20%	----
Physical Tests (QC Lot: 1679267)											
FJ2402882-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	1640	1650	0.486%	20%	----
Physical Tests (QC Lot: 1679281)											
FJ2402882-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1672091)											
VA24C5180-001	SQU US1	Fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1672092)											
VA24C5180-001	SQU US1	Chloride	16887-00-6	E235.Cl	0.50	mg/L	1.05	1.02	0.02	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1672093)											
VA24C5180-001	SQU US1	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1672094)											
VA24C5180-001	SQU US1	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0158	0.0155	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1672095)											
VA24C5180-001	SQU US1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1672096)											
VA24C5180-001	SQU US1	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	2.87	2.85	0.02	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1675321)											
FJ2402906-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0057	0.0051	0.0006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1675322)											
VA24C5180-001	SQU US1	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.191	0.185	0.005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1675323)											
VA24C5172-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1675324)											
VA24C5172-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.09	1.16	0.07	Diff <2x LOR	----
Total Sulfides (QC Lot: 1669647)											
FJ2402871-001	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: 1678686)											
KS2403867-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0031	0.0035	0.0004	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: 1678686) - continued											
KS2403867-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00052	0.00053	0.000004	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0330	0.0329	0.195%	20%	----
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000400	mg/L	<0.0000400	<0.0000400	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	58.4	58.5	0.211%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000011	0.000010	0.0000007	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	0.00372	0.00365	0.00006	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	16.0	16.2	0.769%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0148	0.0149	0.852%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.108	0.109	0.451%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	4.11	4.16	1.34%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00182	0.00187	0.00005	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	8.11	8.21	1.24%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	13.5	13.5	0.133%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.386	0.387	0.265%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	37.0	37.6	1.53%	20%	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	0.00062	0.00063	0.000003	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	0.00118	0.00117	0.816%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 1678686) - continued											
KS2403867-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00140	0.00141	0.00001	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1679305)											
VA24C5140-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0000108	0.0000105	0.0000003	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1681944)											
VA24C4697-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0028	0.0034	0.0007	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00013	0.00013	0.000002	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00099	0.00097	0.00002	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0674	0.0676	0.300%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000517	0.0000566	9.05%	20%	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	86.1	86.4	0.284%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00086	0.00088	0.00002	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000128	0.000126	0.000002	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0031	0.0032	0.00009	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	29.4	30.2	2.65%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00376	0.00382	1.72%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0114	0.0114	0.453%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.40	3.47	1.94%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000165	0.000163	0.000002	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	6.15	6.22	1.10%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	14.9	15.2	2.06%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.675	0.666	1.37%	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: 1681944) - continued											
VA24C4697-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	17.0	17.1	0.103%	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	0.000041	0.000039	0.000002	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00808	0.00793	1.87%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1684271)											
VA24C5172-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1677317)											
VA24C5180-001	SQU US1	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----

Method Blank (MB) Report

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

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1672088)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1679267)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1679281)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 1672091)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1672092)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1672093)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1672094)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1672095)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1672096)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1675321)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1675322)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1675323)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1675324)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1669647)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1678686)						
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: 1678686) - 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: 1679305)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1681944)						
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: 1681944) - 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: 1684271)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1677317)						
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: 1672088)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	101	85.0	115	----
Physical Tests (QCLot: 1679267)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	96.9	85.0	115	----
Physical Tests (QCLot: 1679281)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	92.7	85.0	115	----
Anions and Nutrients (QCLot: 1672091)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.4	90.0	110	----
Anions and Nutrients (QCLot: 1672092)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.7	90.0	110	----
Anions and Nutrients (QCLot: 1672093)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	99.9	85.0	115	----
Anions and Nutrients (QCLot: 1672094)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	98.9	90.0	110	----
Anions and Nutrients (QCLot: 1672095)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.3	90.0	110	----
Anions and Nutrients (QCLot: 1672096)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1675321)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.3	85.0	115	----
Anions and Nutrients (QCLot: 1675322)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	99.5	75.0	125	----
Anions and Nutrients (QCLot: 1675323)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	87.2	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1675324)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	96.2	80.0	120	----
Total Sulfides (QCLot: 1669647)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	116	80.0	120	----
Total Metals (QCLot: 1678686)									

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: 1678686) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	97.8	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	104	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	107	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.012 mg/L	103	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	95.1	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	102	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	95.9	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	104	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	97.8	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.002 mg/L	106	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.012 mg/L	104	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.012 mg/L	103	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.012 mg/L	103	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	102	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	104	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.012 mg/L	91.0	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	108	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.012 mg/L	102	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.012 mg/L	102	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	104	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	103	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	105	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	97.9	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	105	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	104	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	99.8	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	106	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.012 mg/L	102	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	98.5	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	98.6	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	103	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	104	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	105	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.012 mg/L	101	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	104	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0 mg/L	109	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: 1678686) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	105	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	101	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	101	80.0	120	----
Total Metals (QCLot: 1679305)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	98.2	80.0	120	----
Dissolved Metals (QCLot: 1681944)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	97.5	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	104	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	109	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.012 mg/L	106	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	98.5	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	101	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	97.9	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	104	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	102	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.002 mg/L	110	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.012 mg/L	103	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.012 mg/L	103	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.012 mg/L	103	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	103	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	103	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.012 mg/L	91.2	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	103	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.012 mg/L	104	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.012 mg/L	106	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	103	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	102	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	107	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	107	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	106	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	104	60.0	140	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	98.8	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	102	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.012 mg/L	106	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	107	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: 1681944) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	103	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	101	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	102	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	106	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.012 mg/L	101	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	105	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0 mg/L	105	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	104	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	102	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	107	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	96.5	80.0	120	----
Speciated Metals (QCLot: 1677317)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.025 mg/L	100	80.0	120	----

Matrix Spike (MS) Report

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

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1672091)										
VA24C5180-002	SQU DS 1	Fluoride	16984-48-8	E235.F	1.01 mg/L	1 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1672092)										
VA24C5180-002	SQU DS 1	Chloride	16887-00-6	E235.Cl	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1672093)										
VA24C5180-002	SQU DS 1	Bromide	24959-67-9	E235.Br-L	0.507 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1672094)										
VA24C5180-002	SQU DS 1	Nitrate (as N)	14797-55-8	E235.NO3-L	2.52 mg/L	2.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1672095)										
VA24C5180-002	SQU DS 1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.507 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1672096)										
VA24C5180-002	SQU DS 1	Sulfate (as SO4)	14808-79-8	E235.SO4	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1675321)										
FJ2402906-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0905 mg/L	0.1 mg/L	90.5	75.0	125	----
Anions and Nutrients (QCLot: 1675322)										
VA24C5180-002	SQU DS 1	Nitrogen, total	7727-37-9	E366	0.393 mg/L	0.4 mg/L	98.3	70.0	130	----
Anions and Nutrients (QCLot: 1675323)										
VA24C5172-003	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0457 mg/L	0.05 mg/L	91.3	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1675324)										
VA24C5172-003	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	4.86 mg/L	5 mg/L	97.2	70.0	130	----
Total Sulfides (QCLot: 1669647)										
FJ2402871-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.229 mg/L	0.2 mg/L	114	75.0	125	----
Total Metals (QCLot: 1678686)										
KS2403867-002	Anonymous	Aluminum, total	7429-90-5	E420	0.0939 mg/L	0.1 mg/L	93.9	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0522 mg/L	0.05 mg/L	104	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0534 mg/L	0.05 mg/L	107	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.00474 mg/L	0.005 mg/L	94.8	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0490 mg/L	0.05 mg/L	98.1	70.0	130	----
		Boron, total	7440-42-8	E420	0.050 mg/L	0.05 mg/L	99.9	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00506 mg/L	0.005 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	0.00264 mg/L	0.002 mg/L	105	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0131 mg/L	0.012 mg/L	105	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1678686) - continued										
KS2403867-002	Anonymous	Cobalt, total	7440-48-4	E420	0.0127 mg/L	0.012 mg/L	101	70.0	130	----
		Copper, total	7440-50-8	E420	0.0125 mg/L	0.012 mg/L	100	70.0	130	----
		Iron, total	7439-89-6	E420	0.051 mg/L	0.05 mg/L	101	70.0	130	----
		Lead, total	7439-92-1	E420	0.0248 mg/L	0.025 mg/L	99.4	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0120 mg/L	0.012 mg/L	96.3	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	----	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	ND mg/L	----	ND	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0254 mg/L	0.025 mg/L	102	70.0	130	----
		Phosphorus, total	7723-14-0	E420	0.527 mg/L	0.5 mg/L	105	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	----	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.00501 mg/L	0.005 mg/L	100	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0524 mg/L	0.05 mg/L	105	70.0	130	----
		Silicon, total	7440-21-3	E420	ND mg/L	----	ND	70.0	130	----
		Silver, total	7440-22-4	E420	0.00478 mg/L	0.005 mg/L	95.6	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	----	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	ND mg/L	----	ND	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.00472 mg/L	0.005 mg/L	94.4	70.0	130	----
		Thallium, total	7440-28-0	E420	0.0498 mg/L	0.05 mg/L	99.7	70.0	130	----
		Thorium, total	7440-29-1	E420	0.00513 mg/L	0.005 mg/L	103	70.0	130	----
		Tin, total	7440-31-5	E420	0.0262 mg/L	0.025 mg/L	105	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0129 mg/L	0.012 mg/L	103	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.00524 mg/L	0.005 mg/L	105	70.0	130	----
		Uranium, total	7440-61-1	E420	ND mg/L	----	ND	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0264 mg/L	0.025 mg/L	106	70.0	130	----
		Zinc, total	7440-66-6	E420	0.0238 mg/L	0.025 mg/L	95.0	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.00500 mg/L	0.005 mg/L	100	70.0	130	----
Total Metals (QCLot: 1679305)										
VA24C5140-002	Anonymous	Mercury, total	7439-97-6	E508	0.0000977 mg/L	0 mg/L	97.7	70.0	130	----
Dissolved Metals (QCLot: 1681944)										
VA24C4697-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0968 mg/L	0.1 mg/L	96.8	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0528 mg/L	0.05 mg/L	106	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0573 mg/L	0.05 mg/L	114	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.00517 mg/L	0.005 mg/L	103	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.0463 mg/L	0.05 mg/L	92.7	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.050 mg/L	0.05 mg/L	100.0	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00518 mg/L	0.005 mg/L	104	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00276 mg/L	0.002 mg/L	110	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0128 mg/L	0.012 mg/L	103	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0123 mg/L	0.012 mg/L	98.3	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1681944) - continued										
VA24C4697-002	Anonymous	Copper, dissolved	7440-50-8	E421	0.0120 mg/L	0.012 mg/L	95.8	70.0	130	----
		Iron, dissolved	7439-89-6	E421	0.050 mg/L	0.05 mg/L	100	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0246 mg/L	0.025 mg/L	98.6	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0120 mg/L	0.012 mg/L	96.1	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0122 mg/L	0.012 mg/L	97.6	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0126 mg/L	0.012 mg/L	101	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0241 mg/L	0.025 mg/L	96.3	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	0.598 mg/L	0.5 mg/L	120	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.00532 mg/L	0.005 mg/L	106	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0601 mg/L	0.05 mg/L	120	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	ND mg/L	----	ND	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00461 mg/L	0.005 mg/L	92.3	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	0.00527 mg/L	0.005 mg/L	105	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.0494 mg/L	0.05 mg/L	98.9	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.00507 mg/L	0.005 mg/L	101	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0264 mg/L	0.025 mg/L	105	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0128 mg/L	0.012 mg/L	103	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.00518 mg/L	0.005 mg/L	104	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	ND mg/L	----	ND	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0262 mg/L	0.025 mg/L	105	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.0255 mg/L	0.025 mg/L	102	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.00540 mg/L	0.005 mg/L	108	70.0	130	----
Dissolved Metals (QCLot: 1684271)										
VA24C5172-003	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000978 mg/L	0 mg/L	97.8	70.0	130	----
Speciated Metals (QCLot: 1677317)										
VA24C5180-001	SQU US1	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0394 mg/L	0.04 mg/L	98.4	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17 -

Page 1 of

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

Report Format / Distribution

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

Invoice Distribution

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

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

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

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

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

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm 01-OCT-2024

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

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

Analysis Request

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total metals + mercury	Dissolved metals + mercury	Total hexavalent chromium	Total trivalent chromium	TSS	TDS	Nutrients (ammonia, ammonium, total nitrogen, total phosphorus)	Total sulfide (low) (as H_2S), Unionized Sulfide (low)	Anions scan (Br, Cl, F, NO_2, NO_3, SO_4)	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	23-Sep-24	09:52	Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 6.96 cond: 35 µS/cm temp: 10.8 °C																	
	SQU DS 1	23-Sep-24	11:01	Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 7.00 cond: 30 µS/cm temp: 10.1 °C																	

Environmental Division Vancouver
Work Order Reference
VA24C5180
Telephone : +1 604 253 4188

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

Are samples taken from a Regulated DW System? ☐ ☑ NO
Are samples for human consumption/ use? ☐ ☑ NO

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

Triton Project # 11964

SAMPLE

Frozen ☐ | Ice Packs ☐ | Ice Cubes ☐ | Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C

FINAL COOLER TEMPERATURES °C: 10 °C

SHIPMENT RELEASE (client use)

Released by: | Date: 23 Sept 24 | Time: 13:50

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: | Date: | Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: | Date: 23/9/24 | Time: 1:50PM

REFER TO BACK PAGE FOR ADDITIONAL SERVICES AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY

SEPT 2017 FRONT

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

5 Bottles were filtered and preserved as usual with no preservatives added by us in the field.

BCR Site Receiving Environment Field Notes and Logs

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-9-23-Chycoski-77B20

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	09/23/2024	**Location:**	BC Rail Site
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.725177 -123.164347
Temperature(c):	Low 13 High 19	**Permit:**	AE 111824
Weather Conditions:	Light Rain	**Ground Conditions:**	Wet

Observations

Time: 11:01:00 **Flow Volume (visual):** moderate

Notes: Turbidity is in FNRU.

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

Samples Collected - Parameters

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

Logger Maintenance

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

Describe Logger Maintenance

Cleaned sonde, installed Vulink transmitter to replace telemetry unit.

Photos

Photo: 1

Location: SQU DS 1

Description: US view

Photo: 2

Location: SQU DS 1

Description: Across view

Photos

Photo: 3

Location: SQU DS 1

Description: DS view

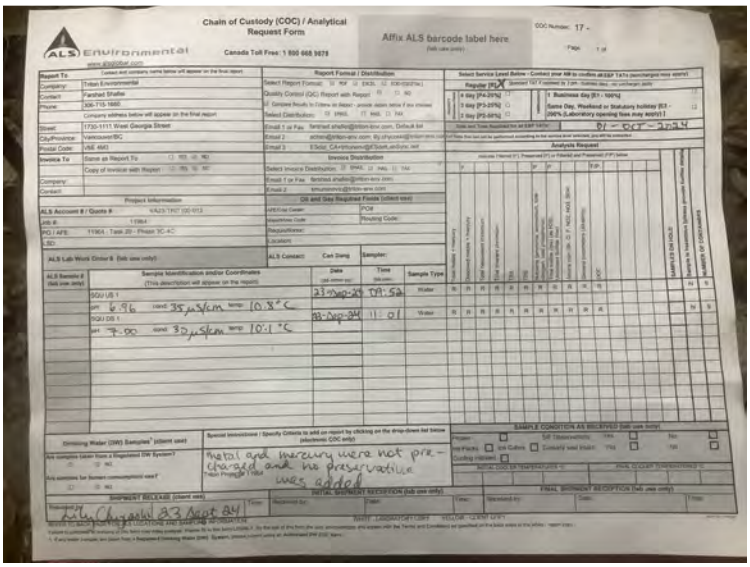

Photo: 4

Location: SQU DS 1

Description: Lab COC

Sign Off

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

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-9-23-Chycoski-97F20

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	09/23/2024	**Location:**	BC Rail Site
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.726866 -123.163912
Temperature(c):	Low 13 High 19	**Permit:**	AE 111824
Weather Conditions:	Light Rain	**Ground Conditions:**	Wet

Observations

Time: 09:52:00 **Flow Volume (visual):** moderate

Notes: Turbidity in FNRU due to NTU being over range.
Sonde was not able to be pulled from the river. Weight stuck amongst boulders.

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: SQU US 1

Description: US view

Photo: 2

Location: SQU US 1

Description: Across view

Photos

Photo: 3

Location: SQU US 1

Description: DS view

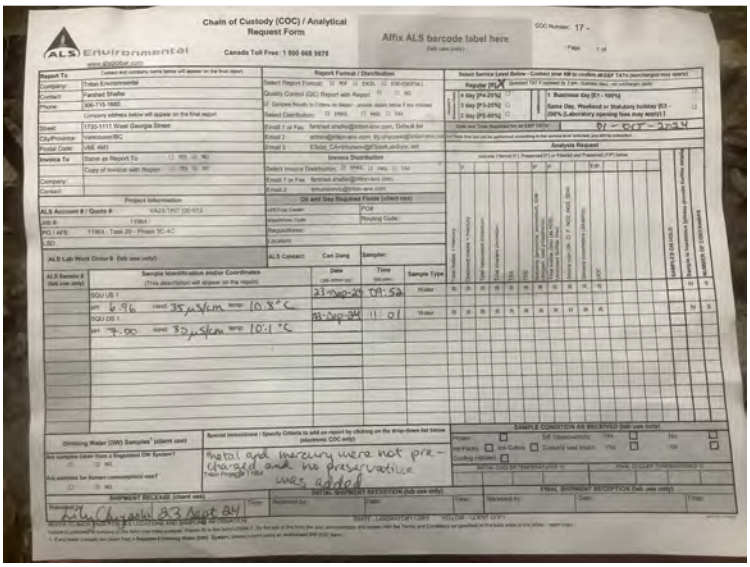

Photo: 4

Location: SQU US 1

Description: Lab COC

Sign Off

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

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

Woodfibre Site Sample Analysis

TRITON Environmental Consultants	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					VA24C5374-001					
	Date Sampled					24-Sep-2024					
	Time Sampled					12:34					
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	6.85	pH is outside of the range for short-term and long-term BCWG for MAL.	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	-	15.4		Guideline is species-dependent. Short-term daily temperature is 15°C for streams with Bull Trout &/or Dolly Varden, Max +/- 1°C from the optimum range as shown in Table 43B of the BCWG for aquatic life for each life history phase of the most sensitive salmoind species present, Mean Weekly Max Temperature guideline is18°C, Short-term daily temperature guideline is 19°C for streams with unknown fish distribution, or Max +/- 1°C from background. Refer to footnote 4 for background temperature range for East Creek.		Guideline for marine waters are based on natural ambient conditions. Refer to footnote 4 for background temperature range for East Creek. Calculation: US value +/- 1 = guideline range	
Conductivity (field)	µS/cm	-	-	-	-	165	Water treatment process has been increasing the Conductivity levels based on the levels seen at US1 site. Although this is not causing harm, but the treatment facility should be informed and asked to keep the levels like that of observed at US1.				
Turbidity (field)	NTU	Varies with background, see note US1 (background) guideline = 8.5	Varies with background, see note US1 (background) guideline = 3.65 5-week discrete sampling average = 7.0 (EOP)	Varies with background, see note US1 (background) guideline = 8.5	Varies with background, see note US1 (background) guideline = 3.65 5-week discrete sampling average = 7.0 (EOP)	14.9	Turbidity for WLNG EOP exceeds the short-term (if turbidity persist >24 hours) for BCWQ for FAL and MAL. Triton does not have access to continuous turbidity data from water treatment plant, therefore can't determine if there was a continuous discharge for longer than 24 hours at exceeding levels.	Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.	Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.
Dissolved Oxygen (field)	mg/L	Varies with life stage, see note	Varies with life stage, see note	Varies with life stage, see note	Varies with life stage, see note	-		Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L. Refer to BC Water Quality Guidelines for more information.
General Parameters											
Hardness (as $CaCO_3$) (total)	mg/L	-	-	-	-	62.3					
Total Dissolved Solids	mg/L	-	-	-	-	98					
Total Suspended Solids	mg/L	Varies with background, see note US1 (background) guideline = 28	Varies with background, see note US1 (background) guideline = 8.00 5-week discrete sampling average = 4.98 (EOP)	Varies with background, see note US1 (background) guideline = 28	Varies with background, see note US1 (background) guideline = 8.00 5-week discrete sampling average = 4.98 (EOP)	10.3		Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 25 = DS guideline Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters. Calculation: US value + 10 = DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 5 mg/L @ one time for a druation of 30 days in clear flow. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.	Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 25 = DS guideline Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters. Calculation: US value + 10 = DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 5 mg/L @ one time for a druation of 30 days in clear flow. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.
Dissolved Organic Carbon (DOC)	mg/L	-	-	-	-	0.6			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	-	-	66	Water treatment process has been increasing the total Alkalinity levels based on the levels seen at US1 site. Although this is not causing harm, but the treatment facility should be informed and asked to keep the levels like that of observed at US1. The WLNG EOP sample has low sensitivity to acid inputs (i.e. high buffering capacity).		Guideline is for alkalinity (as CaCO3) and categorizes the sensitivity of a water body to acid inputs. Alkalinity < 10 mg/L is considered highly sensitive to acid inputs; 10 - 20 mg/L is considered moderately sensitive to acid inputs; > 20 mg/L is considered low sensitivity.		
Total Sulfide (as S)	mg/L	-	-	-	-	< 0.0015					
Total Sulfide (un-ionized as H_2S)	mg/L	-	0.002	-	-	< 0.0015			Working guideline		
Total Sulfide (as H_2S)	mg/L	-	-	-	-	< 0.0016					
Anions and Nutrients											
Ammonia	mg/L ammonia-N	Varies with pH and temperature. See note. US1 (background) guideline = 15.3	Varies with pH and temperature. See note. US1 (background) guideline = 1.78	Varies with pH and temperature. See note. US1 (background) guideline = 35	Varies with pH, temperature and salinity. See note. US1 (background) guideline = 8.7	0.0089		Guideline for ammonia as N and is pH and temperature dependent. Refer to Table 27D in BC WQG for guideline values.	Guideline for ammonia as N and is pH and temperature dependent. Refer to Table 27C in BC WQG for guideline values.	Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent. Refer to Table 27F in BC WQG for guideline values.	Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent. Refer to Table 27E in BC WQG for guideline values.
Bromide	mg/L	-	-	-	-	< 0.050					
Chloride	mg/L	600	150	+/- 10% from BKG	+/- 10% from BKG	3.8				Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride expected at that time and depth.	Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride expected at that
Fluoride	mg/L	Varies with hardness US1 (background) guideline = 0.428	-	1.5	-	0.209		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	0.0157					
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	-	-	-	-	0.273					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.0087			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 = 218	-	-	7.04			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 = 0.143 5-week discrete sampling averages = EOP (0.150), US (0.087), DS (0.082)	-	-	0.359	Total aluminum exceeds long-term BCWG for FAL.		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	-	-	0.00142					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.0016					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.0162			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	0.025					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	0.0000375					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	23.1					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.000104					
Chromium (Cr) - Total	mg/L	-	-	-	-	< 0.00050					
Chromium (Cr(III))-Total	mg/L	-	0.0089	-	0.056	< 0.00050			Working guideline status		Working guideline status
Chromium (Cr(VI))-Total	mg/L	-	0.0025	-	0.0015	< 0.00050			Working guideline status		Working guideline status
Cobalt (Co)-Total	mg/L	0.11	0.004	-	-	0.00017					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002	0.00112					
Iron (Fe)-Total	mg/L	1	-	-	-	0.371					
Lead (Pb)-Total	mg/L	Varies with hardness. See Note. US1 (background) guideline = 0.004	Varies with hardness. See Note. US1 (background) guideline = 0.004 5-week discrete sampling averages = EOP (0.000190), US (0.000057), DS (0.00022)	0.14	0.002	0.000415		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	-	-	-	-	0.0076					
Magnesium (Mg)-Total	mg/L	-	-	-	-	1.12					
Manganese (Mn)-Total	mg/L	Varies with hardness US1 (background) guideline = 0.82	Varies with hardness US1 (background) guideline = 0.77 5-week discrete sampling averages = EOP (0.02), US (0.0060), DS (0.014)	-	-	0.0282		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	-	-	0.0203					
Nickel (Ni)-Total	mg/L	-	Varies with hardness US1 (background) guideline = 0.025 5-week discrete sampling averages = EOP (0.0006), US (0.00099), DS (0.00072)	-	0.008	0.00065			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	-	-	-	-	2.74					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00605					
Selenium (Se)-Total	mg/L	-	0.002	-	0.002	0.000072			Guideline for freshwater aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidleliens 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	-	-	-	-	6.95					
Silver (Ag)-Total	mg/L	Varies with hardness, see note US1 (background) guideline = 0.0001	Varies with hardness, see note US1 (background) guideline = 0.00005	0.003	0.0015	< 0.000010		Varies with hardness Guideline ranges: Hardness ≤ 100: 0.0001 Hardness > 100: 0.003	Varies with hardness Guideline ranges: Hardness ≤ 100: 0.00005 Hardness > 100: 0.0015		Guideline applies to open coast and estuaries. Guideline is applicable to the EGP site.
Sodium (Na)-Total	mg/L	-	-	-	-	5.58					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0485					
Sulfur (S)-Total	mg/L	-	-	-	-	2.41					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.00003	-	-	0.000032			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	-	-	-	-	0.00014					
Tin (Sn)-Total	mg/L	-	-	-	-	< 0.00010					
Titanium (Ti)-Total	mg/L	-	-	-	-	< 0.0180					
Tungsten (W)-Total	mg/L	-	-	-	-	0.00043					
Uranium (U)-Total	mg/L	0.0165	0.0075	-	-	0.00603			Working guideline status		
Vanadium (V)-Total	mg/L	-	0.06	-	0.005	0.00069					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	0.010	0.0232					
Zirconium (Zr)-Total	mg/L	-	-	-	-	< 0.00020					
Dissolved Metals											
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0078					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	0.00138					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.0014					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.0117					
Beryllium (Be)-Dissolved	mg/L	-	-	-	-	< 0.000100					
Bismuth (Bi)-Dissolved	mg/L	-	-	-	-	< 0.000050					
Boron (B)-Dissolved	mg/L	-	-	-	-	0.022					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note US1 (background) guideline = 0.000058	Varies with hardness, see note US1 (background) guideline = 0.000096	-	-	0.0000233		Guideline is hardness dependent. Guideline is appilcable to water hardness between 7.0 and 455 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(1.03 * (LN(hardness)) - 5.274)/1000) Lowest value for guideline is 0.000018 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.	Guideline is hardness dependent. Guideline is applicable to hardness between 3.4 and 285 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(0.736 * (LN(hardness)) - 4.943)/1000) Lowest value for guiedeline is 0.00004. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.		
Calcium (Ca)-Dissolved	mg/L	-	Categorical, see note	-	-	22.7	Water treatment process has been increasing the Ca levels based on the levels seen at US1 site. Although this is not causing harm, but the treatment facility should be informed and asked to keep the levels like that of observed at US1. The WLNG EOP sample has low sensitivity to acid inputs (i.e. high buffering capacity).		Guideline categorizes the sensitivity of a water body to acid inputs (i.e. buffering capacity). Standard is 4 mg/L dissolved Ca for the most sensitive waterbodies,5 - 8 mg/L for waterbodies with moderate sensitivity to acid inputs. Waterbodies with dissolved calcium > 8mg/L are considered to have low sensitivity to acid inputs.		
Cesium (Cs)-Dissolved	mg/L	-	-	-	-	0.000045					
Chromium (Cr)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Cobalt (Co)-Dissolved	mg/L	-	-	-	-	0.0001					
Copper (Cu)-Dissolved	mg/L	Guideline varies with other parameters, see note US1 (background) guideline = 0.0020	Guideline varies with other parameters, see note US1 (background) guideline = 0.0008 5-week discrete sampling averages = EOP (0.0002), US1 (0.0010), DS1 (0.0006)	-	-	0.00021		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	-	-	-	< 0.010					
Lead (Pb)-Dissolved	mg/L	-	-	-	-	< 0.000050					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	0.0074					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	1.04					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.0216					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.02					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	0.00057					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	2.54					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.0052					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	0.000069					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	6.43					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	5.42					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0446					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	2.06					
Tellurium (Te)-Dissolved	mg/L	-	-	-	-	< 0.00020					
Thallium (Tl)-Dissolved	mg/L	-	-	-	-	0.00002					
Thorium (Th)-Dissolved	mg/L	-	-	-	-	< 0.00010					
Tin (Sn)-Dissolved	mg/L	-	-	-	-	< 0.00010					
Titanium (Ti)-Dissolved	mg/L	-	-	-	-	< 0.00030					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	0.00032					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.00521					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness US1 (background) guideline = 0.008	Varies with pH, DOC, hardness US1 (background) guideline = 0.0075 5-week discrete sampling average = EOP (0.0069), US1 (0.0015), DS1 (0.0027)	-	-	0.0207	Dissolved zinc exceeds short-term BCWG for FAL.	Guideline varies with DOC and hardness. Guideline is calculated using the following formula: Guideline = (EXP((0.833 * (LN(hardness))) + (0.24 * (LN(DOC))) + 0.526)/2/1000) If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.	Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated using the following formula: Guideline = (EXP((0.974 * (LN(hardness))) - (0.815 * pH) + (0.398 * (LN(DOC))) + 4.625)/2/1000) Guideline only applies to water with pH between 6.5 and 8.13, DOC between 0.3 and 22.9 mg/L, anmd hardness between 23.4 and 399 mg/L. If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.		
Zirconium (Zr)-Dissolved	mg/L	-	-	-	-	< 0.00020					
Volatile Organic Compounds											
Chlorobenzene	µg/L	-	-	-	-	< 0.50					
Chloromethane	µg/L	-	-	-	-	< 5.0					
Dichlorobenzene, 1,2-	µg/L	-	0.7	-	42	< 0.50			Working guideline status		Working guideline status
Dichlorobenzene, 1,3-	µg/L	-	150	-	-	< 0.50			Working guideline status		
Dichlorobenzene, 1,4-	µg/L	-	26	-	-	< 0.50			Working guideline status		
Dichloropropane, 1,2-	µg/L	-	-	-	-	< 0.50					
Dichloropropylene, cis+trans-1,3-	µg/L	-	-	-	-	< 0.75					
Dichloropropylene, cis-1,3-	µg/L	-	-	-	-	< 0.50					
Tetrachloroethane, 1,1,1,2-	µg/L	-	-	-	-	< 0.50					
Tetrachloroethane, 1,1,2,2-	µg/L	-	-	-	-	<0.20					
Trichloroethane, 1,1,2-	µg/L	-	-	-	-	< 0.50					
Trichlorofluoromethane	µg/L	-	-	-	-	< 0.50					
Carbon tetrachloride	µg/L	-	-	-	-	< 0.50					
Chloroethane	µg/L	-	-	-	-	< 0.50					
Dichloroethane, 1,1-	µg/L	-	-	-	-	< 0.50					
Dichloroethane, 1,2-	µg/L	-	100	-	-	< 0.50			Working guideline status		
Dichloroethylene, 1,1-	µg/L	-	-	-	-	< 0.50					
Dichloroethylene, cis-1,2-	µg/L	-	-	-	-	< 0.50					
Dichloroethylene, trans-1,2-	µg/L	-	-	-	-	< 0.50					
Dichloromethane	µg/L	-	98.1	-	-	< 1.00			Working guideline status		
Dichloropropylene, trans-1,3-	µg/L	-		-	-	< 0.50					
Tetrachloroethylene	µg/L	-	110	-	-	1.46			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	-	-	2.3			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	0.146					Guideline is for total methylated napthalene and is presented here for reference.
Methylnaphthalene, 2-	µg/L	-	-	-	1	0.142					Guideline is for total methylated napthalene and is presented here for reference.
Naphthalene	µg/L	-	1	-	1	< 0.050					
Phenanthrene	µg/L	-	0.3	-	-	< 0.020					
Pyrene	µg/L	0.02	-	-	-	< 0.010					
Quinoline	µg/L	-	3.4	-	-	< 0.050		Working guideline status			
Glycols											
Ethylene glycol	mg/L	-	192	-	-	< 5.0					
Propylene glycol, 1,2-	mg/L	-	500	-	-	< 5.0					
Applied Guideline:		British Columbia Approved and Working Water Quality Guidelines (NOV 2023) - BCAWWQG - Freshwater Aquatic Life British Columbia Approved and Working Water Quality Guidelines (NOV 2023) - BCAWWQG - Marine Aquatic Life									
Color Key:	Exceeds both FAL and MAL Guidelines	Exceeds FAL Short term Guideline	*Exceeds FAL Long term Guideline*	Exceeds MAL Short term Guideline	*Exceeds MAL Long term Guideline*						
Color Key:		Exceeds FAL Short and Long-Term Guideline		Exceeds MAL Short and Long-term Guidelines							

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

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

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

[4]Background temperature ranges: Dec-Feb: 0.3-8.0C; Mar-Apr: 3.0-10.2C; May-June: 6.8-15.1C; Jul-present: 12.9-18.2C

Reference: AquaTROLL In-Situ Data Logger - Background water quality readings collected from Dec.-present.

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

Parameters Used to Calculate Guidelines

Analyte	Units	Measurement method	Values: WLNG EOP	Values: WLNG US 24-Sep-2024
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations	6.85	7.34
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations	15.4	15.8
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations	14.90	0.53
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	62.3	10.5
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations	0.6	1.63
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations	66	10.6
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations	3.8	0.77
Total Suspended Solids	mg/L	Laboratory tested total suspended solids tested at the lab used in guideline calculations	10.3	< 3.0

Woodfibre Site Sample Lab Documentation

CERTIFICATE OF ANALYSIS

Work Order	: **VA24C5374**		
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact	:	Account Manager	
Address	:	Address	
Telephone	:	Telephone	
Project	: 11964	Date Samples Received	: 24-Sep-2024 17:20
PO	: 11964-Task 30-Phase 3C-4C	Date Analysis Commenced	: 26-Sep-2024
C-O-C number	: ----	Issue Date	: 03-Oct-2024 15:46
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012		
No. of samples received	: 3		
No. of samples analysed	: 3		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
		Metals, Burnaby, British Columbia
		Inorganics, Edmonton, Alberta
		Inorganics, Burnaby, British Columbia
		Organics, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Administration, Burnaby, British Columbia
		Organics, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Organics, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Metals, Burnaby, British Columbia

General Comments

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

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

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

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

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

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

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

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

Qualifiers

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

Analytical Results

Sub-Matrix: Water (Matrix: Water)			Client sample ID		WLNG EOP	WLNG Quarry QO1	WLNG Quarry Q02	----	----
			Client sampling date / time		24-Sep-2024 12:34	24-Sep-2024 09:58	24-Sep-2024 09:32	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C5374-001	VA24C5374-002	VA24C5374-003	----	----
					Result	Result	Result	----	----
Field Tests									
Conductivity, field	----	EF001/VA	0.10	µS/cm	165.00	83.600	291.80	----	----
pH, field	----	EF001/VA	0.10	pH units	6.85	6.18	6.77	----	----
Temperature, field	----	EF001/VA	0.10	°C	15.4	13.7	15.2	----	----
Physical Tests									
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	66.0	16.0	90.7	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	61.0	15.8	90.8	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	62.3	14.6	93.6	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	98	28	178	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	10.3	<3.0	3.4	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0089	----	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	0.156	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	3.80	0.89	17.8	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.209	<0.020	0.042	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.0157	0.104	0.240	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	<0.0010	<0.0010	0.0027	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.273	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0087	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	7.04	1.44	21.1	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	0.60	1.05	3.76	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG EOP	WLNG Quarry QO1	WLNG Quarry Q02	----	----
					Client sampling date / time	24-Sep-2024 12:34	24-Sep-2024 09:58	24-Sep-2024 09:32	----	----
						VA24C5374-001	VA24C5374-002	VA24C5374-003	----	----
						Result	Result	Result	----	----
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		0.359	0.0783	0.129	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		0.00142	<0.00010	0.00018	----	----
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00160	<0.00010	0.00024	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.0162	0.0152	0.0358	----	----
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L		<0.000100	<0.000100	<0.000100	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L		0.025	<0.010	0.020	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		0.0000375	0.0000177	0.0000095	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		23.1	5.16	33.9	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000104	0.000012	0.000077	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		0.00017	<0.00010	0.00061	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00112	0.00060	0.00082	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.371	0.054	0.928	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000415	0.000083	0.000120	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0076	<0.0010	0.0022	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		1.12	0.421	2.18	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG EOP	WLNG Quarry QO1	WLNG Quarry Q02	----	----
					Client sampling date / time	24-Sep-2024 12:34	24-Sep-2024 09:58	24-Sep-2024 09:32	----	----
						VA24C5374-001	VA24C5374-002	VA24C5374-003	----	----
						Result	Result	Result	----	----
Total Metals										
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.0282	0.00476	0.651	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.0203	0.000157	0.00368	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		0.00065	0.00102	0.00050	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.050	<0.050	<0.050	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		2.74	0.226	4.13	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00605	0.00064	0.00632	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		0.000072	<0.000050	0.000065	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		6.95	3.72	5.91	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	<0.000010	0.000021	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		5.58	1.62	16.2	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0485	0.0220	0.142	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		2.41	<0.50	7.31	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		0.000032	<0.000010	0.000011	----	----
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		0.00014	<0.00010	<0.00010	----	----
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		<0.0180 DLM	0.00193	0.00327	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		0.00043	<0.00010	<0.00010	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.00603	0.000078	0.00176	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		0.00069	<0.00050	<0.00050	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG EOP	WLNG Quarry QO1	WLNG Quarry Q02	----	----
					Client sampling date / time	24-Sep-2024 12:34	24-Sep-2024 09:58	24-Sep-2024 09:32	----	----
						VA24C5374-001	VA24C5374-002	VA24C5374-003	----	----
						Result	Result	Result	----	----
Total Metals										
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		0.0232	<0.0030	0.0039	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0078	0.0312	0.0194	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		0.00138	<0.00010	0.00010	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00140	<0.00010	0.00020	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.0117	0.0148	0.0323	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L		<0.000100	<0.000100	<0.000100	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		0.022	<0.010	0.018	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		0.0000233	0.0000160	0.0000080	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		22.7	5.62	32.6	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.000045	<0.000010	0.000072	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		0.00010	<0.00010	0.00057	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		0.00021	0.00041	0.00047	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		<0.010	<0.010	0.625	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		0.0074	<0.0010	0.0022	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		1.04	0.423	2.29	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.0216	0.00223	0.551	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG EOP	WLNG Quarry QO1	WLNG Quarry Q02	----	----
					Client sampling date / time	24-Sep-2024 12:34	24-Sep-2024 09:58	24-Sep-2024 09:32	----	----
						VA24C5374-001	VA24C5374-002	VA24C5374-003	----	----
						Result	Result	Result	----	----
Dissolved Metals										
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.0200	0.000128	0.00367	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		0.00057	<0.00050	<0.00050	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	<0.050	<0.050	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		2.54	0.208	3.99	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00520	0.00060	0.00603	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		0.000069	<0.000050	0.000077	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		6.43	3.54	5.33	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		5.42	1.54	15.8	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0446	0.0221	0.140	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		2.06	<0.50	6.84	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		0.000020	<0.000010	<0.000010	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		<0.00030	<0.00030	0.00032	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		0.00032	<0.00010	<0.00010	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.00521	0.000052	0.00165	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0207	0.0026	0.0039	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG EOP	WLNG Quarry QO1	WLNG Quarry Q02	----	----
					Client sampling date / time	24-Sep-2024 12:34	24-Sep-2024 09:58	24-Sep-2024 09:32	----	----
						VA24C5374-001	VA24C5374-002	VA24C5374-003	----	----
						Result	Result	Result	----	----
Dissolved Metals										
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-		Field	Field	Field	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Field	Field	Field	----	----
Speciated Metals										
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/VA	0.00050	mg/L		<0.00050	----	----	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/VA	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	----	----	----	----
Dichlorobenzene, 1,3-	541-73-1	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichlorobenzene, 1,4-	106-46-7	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloropropane, 1,2-	78-87-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloropropylene, cis+trans-1,3-	542-75-6	E611C/VA	0.75	µg/L		<0.75	----	----	----	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C/VA	0.20	µg/L		<0.20	----	----	----	----
Trichloroethane, 1,1,2-	79-00-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Trichlorofluoromethane	75-69-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG EOP	WLNG Quarry QO1	WLNG Quarry Q02	----	----
					Client sampling date / time	24-Sep-2024 12:34	24-Sep-2024 09:58	24-Sep-2024 09:32	----	----
						VA24C5374-001	VA24C5374-002	VA24C5374-003	----	----
						Result	Result	Result	----	----
Volatile Organic Compounds [Drycleaning]										
Carbon tetrachloride	56-23-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Chloroethane	75-00-3	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethane, 1,1-	75-34-3	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethane, 1,2-	107-06-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethylene, 1,1-	75-35-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethylene, cis-1,2-	156-59-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethylene, trans-1,2-	156-60-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloromethane	75-09-2	E611C/VA	1.0	µg/L		<1.0	----	----	----	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Tetrachloroethylene	127-18-4	E611C/VA	0.50	µg/L		1.46	----	----	----	----
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		2.30	----	----	----	----
Toluene	108-88-3	E611C/VA	0.40	µg/L		<0.40	----	----	----	----
Xylene, m+p-	179601-23-1	E611C/VA	0.40	µg/L		<0.40	----	----	----	----
Xylene, o-	95-47-6	E611C/VA	0.30	µg/L		<0.30	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG EOP	WLNG Quarry QO1	WLNG Quarry Q02	----	----
					Client sampling date / time	24-Sep-2024 12:34	24-Sep-2024 09:58	24-Sep-2024 09:32	----	----
						VA24C5374-001	VA24C5374-002	VA24C5374-003	----	----
						Result	Result	Result	----	----
Volatile Organic Compounds [Fuels]										
Xylenes, total	1330-20-7	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Volatile Organic Compounds [THMs]										
Bromodichloromethane	75-27-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Bromoform	75-25-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Chloroform	67-66-3	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dibromochloromethane	124-48-1	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Hydrocarbons										
EPH (C10-C19)	----	E601A/VA	250	µg/L		<250	----	----	----	----
EPH (C19-C32)	----	E601A/VA	250	µg/L		<250	----	----	----	----
VHw (C6-C10)	----	E581.VH+F1/VA	100	µg/L		<100	----	----	----	----
HEPHw	----	EC600A/VA	250	µg/L		<250	----	----	----	----
LEPHw	----	EC600A/VA	250	µg/L		<250	----	----	----	----
VPHw	----	EC580A/VA	100	µg/L		<100	----	----	----	----
Hydrocarbons Surrogates										
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	1.0	%		81.5	----	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%		128	----	----	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%		95.2	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611C/VA	1.0	%		99.8	----	----	----	----
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	83-32-9	E641A/VA	0.010	µg/L		<0.010	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG EOP	WLNG Quarry QO1	WLNG Quarry Q02	----	----
					Client sampling date / time	24-Sep-2024 12:34	24-Sep-2024 09:58	24-Sep-2024 09:32	----	----
						VA24C5374-001	VA24C5374-002	VA24C5374-003	----	----
						Result	Result	Result	----	----
Polycyclic Aromatic Hydrocarbons										
Acenaphthylene	208-96-8	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Acridine	260-94-6	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Anthracene	120-12-7	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Benz(a)anthracene	56-55-3	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Benzo(a)pyrene	50-32-8	E641A/VA	0.0050	µg/L		<0.0050	----	----	----	----
Benzo(b+j)fluoranthene	n/a	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Benzo(b+j+k)fluoranthene	n/a	E641A/VA	0.015	µg/L		<0.015	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Benzo(k)fluoranthene	207-08-9	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Chrysene	218-01-9	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	E641A/VA	0.0050	µg/L		<0.0050	----	----	----	----
Fluoranthene	206-44-0	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Fluorene	86-73-7	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Methylnaphthalene, 1-	90-12-0	E641A/VA	0.010	µg/L		0.146	----	----	----	----
Methylnaphthalene, 2-	91-57-6	E641A/VA	0.010	µg/L		0.142	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG EOP	WLNG Quarry QO1	WLNG Quarry Q02	----	----
					Client sampling date / time	24-Sep-2024 12:34	24-Sep-2024 09:58	24-Sep-2024 09:32	----	----
						VA24C5374-001	VA24C5374-002	VA24C5374-003	----	----
						Result	Result	Result	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Chrysene-d12	1719-03-5	E641A/VA	0.1	%		91.0	----	----	----	----
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%		91.6	----	----	----	----
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%		98.2	----	----	----	----
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 Surrogates										
Propanediol, 1,3-	504-63-2	E680E/VA	1.0	%		97.3	----	----	----	----

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	: **VA24C5374**	Page	: 1 of 17
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 24-Sep-2024 17:20
PO	: 11964-Task 30-Phase 3C-4C	Issue Date	: 03-Oct-2024 15:46
C-O-C number	: ----		
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 3		
No. of samples analysed	: 3		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

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

Outliers : Frequency of Quality Control Samples

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

Analysis Holding Time Compliance

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

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

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

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

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) WLNG EOP	E562	24-Sep-2024	30-Sep-2024	28 days	6 days	✓	30-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG EOP	E298	24-Sep-2024	01-Oct-2024	28 days	7 days	✓	02-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG EOP	E235.Br-L	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG Quarry Q02	E235.Br-L	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG Quarry QO1	E235.Br-L	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG EOP	E235.Cl	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG Quarry Q02	E235.Cl	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG Quarry QO1	E235.Cl	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG EOP	E235.F	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG Quarry Q02	E235.F	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG Quarry QO1	E235.F	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG EOP	E235.NO3-L	24-Sep-2024	26-Sep-2024	3 days	2 days	✓	26-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG Quarry Q02	E235.NO3-L	24-Sep-2024	26-Sep-2024	3 days	2 days	✓	26-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG Quarry QO1	E235.NO3-L	24-Sep-2024	26-Sep-2024	3 days	2 days	✓	26-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG EOP	E235.NO2-L	24-Sep-2024	26-Sep-2024	3 days	2 days	✓	26-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG Quarry Q02	E235.NO2-L	24-Sep-2024	26-Sep-2024	3 days	2 days	✓	26-Sep-2024	3 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG Quarry QO1	E235.NO2-L	24-Sep-2024	26-Sep-2024	3 days	2 days	✓	26-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG EOP	E235.SO4	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG Quarry Q02	E235.SO4	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG Quarry QO1	E235.SO4	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WLNG EOP	E366	24-Sep-2024	01-Oct-2024	28 days	7 days	✓	02-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) WLNG EOP	E372-U	24-Sep-2024	01-Oct-2024	28 days	7 days	✓	02-Oct-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved) WLNG EOP	E509	24-Sep-2024	02-Oct-2024	28 days	8 days	✓	02-Oct-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) WLNG Quarry Q02	E509	24-Sep-2024	02-Oct-2024	28 days	8 days	✓	02-Oct-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) WLNG Quarry QO1	E509	24-Sep-2024	02-Oct-2024	28 days	8 days	✓	02-Oct-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
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
Glass vial dissolved (hydrochloric acid)										
WLNG Quarry QO1	E421	24-Sep-2024	01-Oct-2024	0 hrs	172 hrs	× UCP	01-Oct-2024	0 hrs	180 hrs	× UCP
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
Glass vial dissolved (hydrochloric acid)										
WLNG Quarry Q02	E421	24-Sep-2024	01-Oct-2024	0 hrs	172 hrs	× UCP	02-Oct-2024	0 hrs	189 hrs	× UCP
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
Glass vial - dissolved (lab preserved)										
WLNG EOP	E421	24-Sep-2024	30-Sep-2024	180 days	6 days	✓	01-Oct-2024	180 days	7 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
WLNG EOP	EF001	24-Sep-2024	----	----	----		27-Sep-2024	----	3 days	
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial total (hydrochloric acid) [ON MECP]										
WLNG Quarry Q02	EF001	24-Sep-2024	----	----	----		27-Sep-2024	----	3 days	
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial total (hydrochloric acid) [ON MECP]										
WLNG Quarry QO1	EF001	24-Sep-2024	----	----	----		27-Sep-2024	----	3 days	
Glycols : Glycols (4 analytes) by GC-FID										
Glass vial										
WLNG EOP	E680E	24-Sep-2024	26-Sep-2024	7 days	2 days	✓	27-Sep-2024	40 days	0 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate)										
WLNG EOP	E601A	24-Sep-2024	30-Sep-2024	14 days	6 days	✓	01-Oct-2024	40 days	1 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate)										
WLNG EOP	E581.VH+F1	24-Sep-2024	28-Sep-2024	14 days	4 days	✓	28-Sep-2024	14 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
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) WLNG EOP	E358-L	24-Sep-2024	01-Oct-2024	28 days	7 days	✓	01-Oct-2024	28 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) WLNG Quarry Q02	E358-L	24-Sep-2024	02-Oct-2024	28 days	8 days	✓	02-Oct-2024	28 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) WLNG Quarry QO1	E358-L	24-Sep-2024	02-Oct-2024	28 days	8 days	✓	02-Oct-2024	28 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WLNG EOP	E290	24-Sep-2024	26-Sep-2024	14 days	2 days	✓	27-Sep-2024	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WLNG Quarry Q02	E290	24-Sep-2024	26-Sep-2024	14 days	2 days	✓	27-Sep-2024	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WLNG Quarry QO1	E290	24-Sep-2024	26-Sep-2024	14 days	2 days	✓	27-Sep-2024	14 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE WLNG EOP	E162	24-Sep-2024	----	----	----		29-Sep-2024	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE WLNG Quarry QO1	E162	24-Sep-2024	----	----	----		29-Sep-2024	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE WLNG Quarry Q02	E162	24-Sep-2024	----	----	----		01-Oct-2024	7 days	7 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE WLNG EOP	E160	24-Sep-2024	----	----	----		29-Sep-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WLNG Quarry QO1	E160	24-Sep-2024	----	----	----		29-Sep-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WLNG Quarry Q02	E160	24-Sep-2024	----	----	----		01-Oct-2024	7 days	7 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate) WLNG EOP	E641A	24-Sep-2024	30-Sep-2024	14 days	6 days	✓	30-Sep-2024	40 days	0 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide) WLNG EOP	E532	24-Sep-2024	----	----	----		26-Sep-2024	28 days	2 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved) WLNG EOP	E508	24-Sep-2024	02-Oct-2024	28 days	8 days	✓	02-Oct-2024	28 days	8 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] WLNG Quarry Q02	E508	24-Sep-2024	02-Oct-2024	28 days	8 days	✓	02-Oct-2024	28 days	8 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] WLNG Quarry QO1	E508	24-Sep-2024	02-Oct-2024	28 days	8 days	✓	02-Oct-2024	28 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
Glass vial total (hydrochloric acid) [ON MECP] WLNG Quarry QO1	E420	24-Sep-2024	01-Oct-2024	0 hrs	176 hrs	× UCP	02-Oct-2024	0 hrs	191 hrs	× UCP

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 Metals in Water by CRC ICPMS										
Glass vial total (hydrochloric acid) [ON MECP]										
WLNG Quarry Q02	E420	24-Sep-2024	01-Oct-2024	0 hrs	176 hrs	× UCP	02-Oct-2024	0 hrs	192 hrs	× UCP
Total Metals : Total Metals in Water by CRC ICPMS										
Glass vial - total (lab preserved)										
WLNG EOP	E420	24-Sep-2024	01-Oct-2024	180 days	7 days	✓	01-Oct-2024	180 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG EOP	E395	24-Sep-2024	----	----	----		26-Sep-2024	7 days	2 days	✓
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
WLNG EOP	E611C	24-Sep-2024	28-Sep-2024	14 days	4 days	✓	28-Sep-2024	14 days	4 days	✓

Legend & Qualifier Definitions

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

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1675197	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1684223	1	3	33.3	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1675203	1	16	6.2	5.0	✓
Chloride in Water by IC	E235.Cl	1675202	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1684456	2	12	16.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1674912	2	40	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1684180	2	31	6.4	5.0	✓
Fluoride in Water by IC	E235.F	1675201	1	18	5.5	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1675949	1	5	20.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1675199	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1675200	1	17	5.8	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1681210	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1675204	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	1680464	2	40	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1676452	1	13	7.6	5.0	✓
Total Mercury in Water by CVAAS	E508	1686138	2	14	14.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1674812	2	40	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1684222	1	1	100.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1684221	1	5	20.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1674157	1	15	6.6	5.0	✓
TSS by Gravimetry	E160	1680471	2	40	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1679004	1	19	5.2	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1679005	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1675197	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1684223	1	3	33.3	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1680957	1	14	7.1	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1675203	1	16	6.2	5.0	✓
Chloride in Water by IC	E235.Cl	1675202	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1684456	2	12	16.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1674912	2	40	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1684180	2	31	6.4	5.0	✓
Fluoride in Water by IC	E235.F	1675201	1	18	5.5	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1675949	1	5	20.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1675199	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1675200	1	17	5.8	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	1680958	1	15	6.6	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1681210	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1675204	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	1680464	2	40	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1676452	1	13	7.6	5.0	✓
Total Mercury in Water by CVAAS	E508	1686138	2	14	14.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1674812	2	40	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1684222	1	1	100.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1684221	1	5	20.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1674157	1	15	6.6	5.0	✓
TSS by Gravimetry	E160	1680471	2	40	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1679004	1	19	5.2	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1679005	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1675197	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1684223	1	3	33.3	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1680957	1	14	7.1	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1675203	1	16	6.2	5.0	✓
Chloride in Water by IC	E235.Cl	1675202	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1684456	2	12	16.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1674912	2	40	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1684180	2	31	6.4	5.0	✓
Fluoride in Water by IC	E235.F	1675201	1	18	5.5	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1675949	1	5	20.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1675199	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1675200	1	17	5.8	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1680958	1	15	6.6	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1681210	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1675204	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	1680464	2	40	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1676452	1	13	7.6	5.0	✓
Total Mercury in Water by CVAAS	E508	1686138	2	14	14.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1674812	2	40	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1684222	1	1	100.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1684221	1	5	20.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1674157	1	15	6.6	5.0	✓
TSS by Gravimetry	E160	1680471	2	40	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1679004	1	19	5.2	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1679005	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	1684223	1	3	33.3	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1675203	1	16	6.2	5.0	✓
Chloride in Water by IC	E235.Cl	1675202	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1684456	2	12	16.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1674912	2	40	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1684180	2	31	6.4	5.0	✓
Fluoride in Water by IC	E235.F	1675201	1	18	5.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1675199	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1675200	1	17	5.8	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1681210	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1675204	1	16	6.2	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1676452	1	13	7.6	5.0	✓
Total Mercury in Water by CVAAS	E508	1686138	2	14	14.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1674812	2	40	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1684222	0	1	0.0	5.0	✗
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1684221	1	5	20.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1674157	1	15	6.6	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1679004	1	19	5.2	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1679005	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 - Vancouver	Water	APHA 3500-Cr C (Ion Chromatography)	Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection. Results are based on an un-filtered, field-preserved sample.
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 - Vancouver	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
VPH: VH-BTEX-Styrene	EC580A ALS Environmental - Vancouver	Water	BC MOE Lab Manual (VPH in Water and Solids) (mod)	Volatile Petroleum Hydrocarbons (VPH) is calculated as follows: VPHw = Volatile Hydrocarbons (VH C6-C10) minus benzene, toluene, ethylbenzene, xylenes (BTEX) and styrene.
LEPH and HEPH: EPH-PAH	EC600A ALS Environmental - Vancouver	Water	BC MOE Lab Manual (LEPH and HEPH)	Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are calculated as follows: LEPH = Extractable Petroleum Hydrocarbons (EPH10-19) minus Acenaphthene, Acridine, Anthracene, Fluorene, Naphthalene and Phenanthrene; HEPH = Extractable Petroleum Hydrocarbons (EPH19-32) minus Benz(a)anthracene, Benzo(a)pyrene, Fluoranthene, and Pyrene.
Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3 or Chloramine measurements provided by client and recorded on ALS report may affect the validity of results.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Nitrogen in water	EP366 ALS Environmental - Vancouver	Water	APHA 4500-P J (mod)	Samples for total nitrogen analysis are digested using a heated persulfate digestion. Nitrogen compounds are converted to nitrate in this digestion.
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Vancouver	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID.
PHCs and PAHs Hexane Extraction	EP601 ALS Environmental - Vancouver	Water	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.
Glycols Extraction and Derivatization (BC Only)	EP680E ALS Environmental - Vancouver	Water	EPA 8015D (mod)	Aqueous sample is derivatized and extracted with orgaic solvent.

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **VA24C5374**	Page	: 1 of 32
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 24-Sep-2024 17:20
PO	: 11964-Task 30-Phase 3C-4C	Date Analysis Commenced	: 26-Sep-2024
C-O-C number	: ----	Issue Date	: 03-Oct-2024 15:46
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 3		
No. of samples analysed	: 3		

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
		Vancouver Metals, Burnaby, British Columbia
		Edmonton Inorganics, Edmonton, Alberta
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Organics, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Administration, Burnaby, British Columbia
		Vancouver Organics, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Organics, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1675197)											
KS2403973-003	Anonymous	Alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	222	219	1.68%	20%	----
Physical Tests (QC Lot: 1680464)											
FJ2402918-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	937	950	1.32%	20%	----
Physical Tests (QC Lot: 1680471)											
FJ2402918-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	4.1	3.5	0.6	Diff <2x LOR	----
Physical Tests (QC Lot: 1682807)											
FJ2402933-002	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	688	657	4.68%	20%	----
Physical Tests (QC Lot: 1682851)											
FJ2402933-002	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	59.0	55.6	5.93%	20%	----
Anions and Nutrients (QC Lot: 1675199)											
KS2403973-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	<0.0250	<0.0250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1675200)											
KS2403973-001	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: 1675201)											
KS2403973-001	Anonymous	Fluoride	16984-48-8	E235.F	0.100	mg/L	0.133	0.129	0.004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1675202)											
KS2403973-001	Anonymous	Chloride	16887-00-6	E235.Cl	2.50	mg/L	13.4	13.2	0.10	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1675203)											
KS2403973-001	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: 1675204)											
KS2403973-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	166	165	0.545%	20%	----
Anions and Nutrients (QC Lot: 1684221)											
VA24C5302-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1684222)											
VA24C5374-001	WLNG EOP	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.273	0.275	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1684223)											
VA24C5374-001	WLNG EOP	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0089	0.0087	0.0002	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1684180)											
VA24C5051-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.77	2.69	0.08	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1684388)											

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: 1684388) - continued											
VA24C5060-004	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	7.77	7.86	1.23%	20%	----
Total Sulfides (QC Lot: 1674157)											
HA2402274-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0019	0.0020	0.0001	Diff <2x LOR	----
Total Metals (QC Lot: 1674812)											
VA24C4926-001	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	----
		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	----

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: 1674812) - continued											
VA24C4926-001	Anonymous	Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<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: 1677714)											
VA24C5067-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0546	0.0581	6.17%	20%	----
		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	0.00076	0.00076	0.0000008	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.103	0.104	1.49%	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	0.035	0.035	0.0001	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000100	mg/L	<0.0000100	<0.0000100	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	161	160	0.599%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000013	0.000014	0.0000009	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	0.00017	0.00016	0.000003	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00260	0.00265	0.00005	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.101	0.107	5.99%	20%	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0098	0.0096	0.0001	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.100	mg/L	49.6	49.4	0.435%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0541	0.0544	0.636%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0428	0.0420	2.08%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	0.00054	0.00004	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.300	mg/L	<0.300	<0.300	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	12.3	12.2	1.27%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00156	0.00154	0.00002	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000741	0.000752	1.46%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 1677714) - continued											
VA24C5067-001	Anonymous	Silicon, total	7440-21-3	E420	0.10	mg/L	13.0	13.2	1.29%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	78.8	79.9	1.48%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	1.12	1.13	0.749%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	184	189	2.77%	20%	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.00335	0.00322	3.82%	20%	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00203	0.00206	0.00003	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: 1686138)											
VA24C5153-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0000120	0.0000129	0.0000009	Diff <2x LOR	----
Total Metals (QC Lot: 1686866)											
VA24C5374-002	WLNG Quarry QO1	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1674912)											
KS2403858-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0019	0.0025	0.0006	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00020	0.00021	0.000007	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.0132	0.0132	0.161%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0182	0.0183	0.750%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.049	0.050	0.0009	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000150	mg/L	<0.0000150	<0.0000150	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	55.4	54.4	1.72%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000080	0.000089	0.000009	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	0.00018	0.00018	0.000004	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00085	0.00083	0.00002	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.133	0.135	1.42%	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: 1674912) - continued											
KS2403858-001	Anonymous	Lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000265	0.000267	0.000002	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0049	0.0050	0.00005	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	9.18	9.14	0.456%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0808	0.0802	0.738%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0889	0.0896	0.768%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00177	0.00174	0.00002	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	0.859	0.838	2.45%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.65	3.64	0.132%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00220	0.00218	1.33%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000054	0.000073	0.000019	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	8.44	8.50	0.700%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	211	211	0.0247%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.269	0.279	3.57%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	159	159	0.156%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	0.00057	0.00059	0.00002	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	0.00031	0.00032	0.00001	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00189	0.00193	2.12%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00055	0.00054	0.000008	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0022	0.0022	0.0000002	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1678047)											
FJ2402872-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.500	0.510	1.86%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00021	0.00021	0.000002	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00322	0.00319	0.727%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.129	0.129	0.380%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000531	0.0000562	5.77%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 1678047) - continued											
FJ2402872-002	Anonymous	Calcium, dissolved	7440-70-2	E421	0.050	mg/L	61.8	61.2	0.995%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000030	0.000030	0.0000002	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	0.00106	0.00106	0.000002	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00365	0.00370	1.30%	20%	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00372	0.00369	0.774%	20%	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	9.16	9.20	0.477%	20%	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000269	0.000269	0.0000001	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0261	0.0251	3.75%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	6.98	6.87	1.59%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.862	0.870	0.847%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00182	0.00181	0.644%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00907	0.00907	0.0536%	20%	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	0.178	0.155	0.023	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.88	4.91	0.653%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00158	0.00172	0.00014	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000271	0.000284	0.000012	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.86	4.75	2.32%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	72.8	71.8	1.28%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.163	0.163	0.197%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	5.17	5.29	2.26%	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	0.000014	0.000013	0.000002	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	0.00018	0.00017	0.00001	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	0.00037	0.00038	0.00001	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.0150	mg/L	<0.0150	<0.0150	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000438	0.000430	1.76%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00244	0.00234	0.00010	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0125	0.0129	2.79%	20%	----
		Zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	0.00154	0.00157	0.00003	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1684456)											
VA24C5168-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.000100	mg/L	0.00218	0.00220	0.912%	20%	----
Dissolved Metals (QC Lot: 1686865)											

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: 1686865) - continued											
VA24C5374-002	WLNG Quarry QO1	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1676452)											
VA24C5204-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 1681210)											
BF2400347-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1679005)											
VA24C5059-001	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	3.36	3.45	2.70%	30%	----
		Chloromethane	74-87-3	E611C	5.0	µg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, trans-1,2-	156-60-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E611C	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		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	----

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: 1679005) - continued											
VA24C5059-001	Anonymous	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: 1679004)											
VA24C5059-001	Anonymous	VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----
Glycols (QC Lot: 1675949)											
VA24C5374-001	WLNG EOP	Diethylene glycol	111-46-6	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Ethylene glycol	107-21-1	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Propylene glycol, 1,2-	57-55-6	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Triethylene glycol	112-27-6	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----

Method Blank (MB) Report

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

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1675197)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1680464)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1680471)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1682807)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1682851)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 1675199)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1675200)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1675201)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1675202)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1675203)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1675204)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1684221)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1684222)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1684223)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1684180)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1684388)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1674157)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Sulfides (QCLot: 1674157) - continued						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1674812)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1674812) - continued						
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 1677714)						
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1677714) - continued						
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 1686138)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Total Metals (QCLot: 1686866)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1674912)						
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1674912) - continued						
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
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: 1678047)						
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1678047) - continued						
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
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: 1684456)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1686865)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1676452)						
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	<0.00050	----
Aggregate Organics (QCLot: 1681210)						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
Volatile Organic Compounds (QCLot: 1679005)						
Benzene	71-43-2	E611C	0.5	µg/L	<0.50	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1679005) - continued						
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	<0.50	----
Bromoform	75-25-2	E611C	0.5	µg/L	<0.50	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	<0.50	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	<0.50	----
Chloroethane	75-00-3	E611C	0.5	µg/L	<0.50	----
Chloroform	67-66-3	E611C	0.5	µg/L	<0.50	----
Chloromethane	74-87-3	E611C	5	µg/L	<5.0	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	<0.50	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	<0.50	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	<0.50	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	<0.50	----
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	<0.50	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	<0.50	----
Dichloromethane	75-09-2	E611C	1	µg/L	<1.0	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	<0.50	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	<0.50	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	<0.50	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	<0.50	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	<0.50	----
Styrene	100-42-5	E611C	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	<0.20	----
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: 1679004)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Hydrocarbons (QCLot: 1679004) - continued						
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----
Hydrocarbons (QCLot: 1680957)						
EPH (C10-C19)	----	E601A	250	µg/L	<250	----
EPH (C19-C32)	----	E601A	250	µg/L	<250	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1680958)						
Acenaphthene	83-32-9	E641A	0.01	µg/L	<0.010	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	<0.010	----
Acridine	260-94-6	E641A	0.01	µg/L	<0.010	----
Anthracene	120-12-7	E641A	0.01	µg/L	<0.010	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	<0.010	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	<0.0050	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	<0.010	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	<0.010	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	<0.010	----
Chrysene	218-01-9	E641A	0.01	µg/L	<0.010	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	<0.0050	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	<0.010	----
Fluorene	86-73-7	E641A	0.01	µg/L	<0.010	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	<0.010	----
Naphthalene	91-20-3	E641A	0.05	µg/L	<0.050	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	<0.020	----
Pyrene	129-00-0	E641A	0.01	µg/L	<0.010	----
Quinoline	91-22-5	E641A	0.05	µg/L	<0.050	----
Glycols (QCLot: 1675949)						
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: 1675197)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1680464)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1680471)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	102	85.0	115	----
Physical Tests (QCLot: 1682807)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1682851)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 1675199)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.0	90.0	110	----
Anions and Nutrients (QCLot: 1675200)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1675201)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.0	90.0	110	----
Anions and Nutrients (QCLot: 1675202)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.8	90.0	110	----
Anions and Nutrients (QCLot: 1675203)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 1675204)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 1684221)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	89.4	80.0	120	----
Anions and Nutrients (QCLot: 1684222)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1684223)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	90.3	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1684180)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	97.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1684388)									

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike: Target Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Organic / Inorganic Carbon (QCLot: 1684388) - continued									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	101	80.0	120	----
Total Sulfides (QCLot: 1674157)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	104	80.0	120	----
Total Metals (QCLot: 1674812)									
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	97.8	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	102	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	94.4	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	96.1	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	100	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	92.7	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	97.3	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	99.7	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	94.2	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	97.4	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	98.8	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	96.7	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	95.2	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	94.8	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	97.5	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	95.2	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	97.8	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	92.5	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	99.7	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	96.5	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	98.9	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	97.6	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	91.2	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	99.6	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	96.5	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	95.8	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	101	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1674812) - continued									
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	102	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	98.1	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	99.6	80.0	120	----
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	102	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	99.6	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	98.2	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	95.3	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	96.4	80.0	120	----
Total Metals (QCLot: 1677714)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	99.9	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	97.1	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	104	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	94.8	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	101	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	96.5	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	98.8	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	98.2	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	98.8	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	99.5	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	93.8	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	97.7	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	99.6	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	90.9	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	98.9	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	99.4	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	93.0	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	99.4	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	96.8	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	90.2	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1677714) - continued									
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	102	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	101	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	91.8	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	94.4	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	101	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	98.2	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	91.8	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	98.4	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	100	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	96.9	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	97.1	80.0	120	----
Total Metals (QCLot: 1686138)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	102	80.0	120	----
Total Metals (QCLot: 1686866)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	97.6	80.0	120	----
Dissolved Metals (QCLot: 1674912)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	102	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	100	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	104	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	97.5	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	99.0	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	102	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	95.4	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	98.0	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	96.9	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	94.4	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	99.6	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	97.0	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.9	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	95.4	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	103	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	97.5	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	98.0	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1674912) - continued									
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	98.0	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	95.5	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	99.8	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	102	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	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	104	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	99.7	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	90.9	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	97.5	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	96.1	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	95.0	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	100	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	95.9	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	90.3	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	99.4	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	98.7	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	99.2	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	100	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Dissolved Metals (QCLot: 1678047)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	100	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	95.1	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	99.2	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	91.3	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	92.1	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	84.9	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	95.2	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	94.2	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	93.8	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	96.0	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	96.1	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	94.8	80.0	120	----

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
Dissolved Metals (QCLot: 1678047) - continued									
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	96.8	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	96.4	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	96.0	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	97.9	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	99.0	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	96.1	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	94.6	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	99.2	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	93.0	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	96.5	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	102	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	98.8	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	87.7	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	92.7	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	94.8	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	91.8	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	98.7	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	93.2	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	93.8	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	93.2	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	100	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	98.9	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	97.8	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	91.3	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	100.0	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	97.0	80.0	120	----
Speciated Metals (QCLot: 1676452)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.25 mg/L	99.2	80.0	120	----
Aggregate Organics (QCLot: 1681210)									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	98.2	85.0	115	----
Volatile Organic Compounds (QCLot: 1679005)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1679005) - continued									
Benzene	71-43-2	E611C	0.5	µg/L	100 µg/L	105	70.0	130	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	100 µg/L	108	70.0	130	----
Bromoform	75-25-2	E611C	0.5	µg/L	100 µg/L	103	70.0	130	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	100 µg/L	108	70.0	130	----
Chloroethane	75-00-3	E611C	0.5	µg/L	100 µg/L	107	60.0	140	----
Chloroform	67-66-3	E611C	0.5	µg/L	100 µg/L	109	70.0	130	----
Chloromethane	74-87-3	E611C	5	µg/L	100 µg/L	91.6	60.0	140	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	100 µg/L	110	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	100 µg/L	96.4	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	100 µg/L	100	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	100 µg/L	97.2	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	100 µg/L	117	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	100 µg/L	97.0	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	100 µg/L	106	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	100 µg/L	95.3	70.0	130	----
Dichloromethane	75-09-2	E611C	1	µg/L	100 µg/L	108	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	100 µg/L	113	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	100 µg/L	106	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	100 µg/L	107	70.0	130	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	100 µg/L	110	70.0	130	----
Styrene	100-42-5	E611C	0.5	µg/L	100 µg/L	107	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	100 µg/L	109	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	100 µg/L	105	70.0	130	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	100 µg/L	97.5	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	105	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	100 µg/L	113	70.0	130	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	100 µg/L	103	70.0	130	----
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	100 µg/L	60.8	60.0	140	----
Vinyl chloride	75-01-4	E611C	0.4	µg/L	100 µg/L	92.9	60.0	140	----
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	200 µg/L	107	70.0	130	----
Xylene, o-	95-47-6	E611C	0.3	µg/L	100 µg/L	105	70.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Hydrocarbons (QCLot: 1679004)									
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	120	70.0	130	----
Hydrocarbons (QCLot: 1680957)									
EPH (C10-C19)	----	E601A	250	µg/L	6490 µg/L	106	70.0	130	----
EPH (C19-C32)	----	E601A	250	µg/L	3360 µg/L	108	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1680958)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.5 µg/L	109	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.5 µg/L	116	60.0	130	----
Acridine	260-94-6	E641A	0.01	µg/L	0.5 µg/L	127	60.0	130	----
Anthracene	120-12-7	E641A	0.01	µg/L	0.5 µg/L	119	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.5 µg/L	103	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	0.5 µg/L	111	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	0.5 µg/L	120	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.5 µg/L	108	60.0	130	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	0.5 µg/L	121	60.0	130	----
Chrysene	218-01-9	E641A	0.01	µg/L	0.5 µg/L	108	60.0	130	----
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	110	60.0	130	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.5 µg/L	107	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.5 µg/L	100	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.5 µg/L	107	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.5 µg/L	118	60.0	130	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.5 µg/L	111	50.0	130	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	0.5 µg/L	115	60.0	130	----
Pyrene	129-00-0	E641A	0.01	µg/L	0.5 µg/L	110	60.0	130	----
Quinoline	91-22-5	E641A	0.05	µg/L	0.5 µg/L	128	60.0	130	----
Glycols (QCLot: 1675949)									
Diethylene glycol	111-46-6	E680E	5	mg/L	25 mg/L	99.2	70.0	130	----
Ethylene glycol	107-21-1	E680E	5	mg/L	25 mg/L	98.8	70.0	130	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	25 mg/L	99.7	70.0	130	----
Triethylene glycol	112-27-6	E680E	5	mg/L	25 mg/L	98.7	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: 1675199)										
KS2403973-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.52 mg/L	2.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1675200)										
KS2403973-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.504 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1675201)										
KS2403973-002	Anonymous	Fluoride	16984-48-8	E235.F	1.01 mg/L	1 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1675202)										
KS2403973-002	Anonymous	Chloride	16887-00-6	E235.Cl	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1675203)										
KS2403973-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.515 mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1675204)										
KS2403973-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1684221)										
VA24C5302-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0491 mg/L	0.05 mg/L	98.3	70.0	130	----
Anions and Nutrients (QCLot: 1684223)										
YL2401600-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1684180)										
VA24C5137-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1684388)										
VA24C5060-005	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1674157)										
HA2402274-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.195 mg/L	0.2 mg/L	97.3	75.0	125	----
Total Metals (QCLot: 1674812)										
VA24C4926-002	Anonymous	Aluminum, total	7429-90-5	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0178 mg/L	0.02 mg/L	89.2	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Barium, total	7440-39-3	E420	0.0182 mg/L	0.02 mg/L	90.8	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0380 mg/L	0.04 mg/L	95.0	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00956 mg/L	0.01 mg/L	95.6	70.0	130	----
		Boron, total	7440-42-8	E420	0.097 mg/L	0.1 mg/L	97.2	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00388 mg/L	0.004 mg/L	97.1	70.0	130	----
		Calcium, total	7440-70-2	E420	3.82 mg/L	4 mg/L	95.5	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00968 mg/L	0.01 mg/L	96.8	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: 1674812) - continued										
VA24C4926-002	Anonymous	Chromium, total	7440-47-3	E420	0.0386 mg/L	0.04 mg/L	96.5	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0199 mg/L	0.02 mg/L	99.5	70.0	130	----
		Copper, total	7440-50-8	E420	0.0197 mg/L	0.02 mg/L	98.5	70.0	130	----
		Iron, total	7439-89-6	E420	1.96 mg/L	2 mg/L	98.0	70.0	130	----
		Lead, total	7439-92-1	E420	0.0196 mg/L	0.02 mg/L	98.1	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0902 mg/L	0.1 mg/L	90.2	70.0	130	----
		Magnesium, total	7439-95-4	E420	0.970 mg/L	1 mg/L	97.0	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0399 mg/L	0.04 mg/L	99.7	70.0	130	----
		Phosphorus, total	7723-14-0	E420	9.82 mg/L	10 mg/L	98.2	70.0	130	----
		Potassium, total	7440-09-7	E420	3.96 mg/L	4 mg/L	99.0	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0394 mg/L	0.04 mg/L	98.5	70.0	130	----
		Silicon, total	7440-21-3	E420	9.76 mg/L	10 mg/L	97.6	70.0	130	----
		Silver, total	7440-22-4	E420	0.00385 mg/L	0.004 mg/L	96.2	70.0	130	----
		Sodium, total	7440-23-5	E420	2.03 mg/L	2 mg/L	102	70.0	130	----
		Strontium, total	7440-24-6	E420	0.0197 mg/L	0.02 mg/L	98.5	70.0	130	----
		Sulfur, total	7704-34-9	E420	19.2 mg/L	20 mg/L	96.1	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0370 mg/L	0.04 mg/L	92.5	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00382 mg/L	0.004 mg/L	95.6	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Tin, total	7440-31-5	E420	0.0190 mg/L	0.02 mg/L	94.8	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00378 mg/L	0.004 mg/L	94.5	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0972 mg/L	0.1 mg/L	97.2	70.0	130	----
		Zinc, total	7440-66-6	E420	0.391 mg/L	0.4 mg/L	97.7	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0393 mg/L	0.04 mg/L	98.3	70.0	130	----
Total Metals (QCLot: 1677714)										
VA24C5200-001	Anonymous	Aluminum, total	7429-90-5	E420	0.188 mg/L	0.2 mg/L	93.8	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0372 mg/L	0.04 mg/L	93.1	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0103 mg/L	0.01 mg/L	103	70.0	130	----
		Boron, total	7440-42-8	E420	0.095 mg/L	0.1 mg/L	94.8	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00390 mg/L	0.004 mg/L	97.6	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0103 mg/L	0.01 mg/L	103	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0415 mg/L	0.04 mg/L	104	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		Copper, total	7440-50-8	E420	0.0197 mg/L	0.02 mg/L	98.5	70.0	130	----
		Iron, total	7439-89-6	E420	2.01 mg/L	2 mg/L	100	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: 1677714) - continued										
VA24C5200-001	Anonymous	Lead, total	7439-92-1	E420	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0974 mg/L	0.1 mg/L	97.4	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	----	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		Phosphorus, total	7723-14-0	E420	10.2 mg/L	10 mg/L	102	70.0	130	----
		Potassium, total	7440-09-7	E420	3.96 mg/L	4 mg/L	98.9	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0199 mg/L	0.02 mg/L	99.7	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0381 mg/L	0.04 mg/L	95.4	70.0	130	----
		Silicon, total	7440-21-3	E420	9.62 mg/L	10 mg/L	96.2	70.0	130	----
		Silver, total	7440-22-4	E420	0.00398 mg/L	0.004 mg/L	99.6	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	----	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	19.4 mg/L	20 mg/L	97.0	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0387 mg/L	0.04 mg/L	96.9	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00380 mg/L	0.004 mg/L	95.1	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0207 mg/L	0.02 mg/L	103	70.0	130	----
		Tin, total	7440-31-5	E420	0.0200 mg/L	0.02 mg/L	100.0	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0397 mg/L	0.04 mg/L	99.3	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0191 mg/L	0.02 mg/L	95.5	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00385 mg/L	0.004 mg/L	96.2	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Zinc, total	7440-66-6	E420	0.382 mg/L	0.4 mg/L	95.6	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
Total Metals (QCLot: 1686138)										
VA24C5298-001	Anonymous	Mercury, total	7439-97-6	E508	0.000101 mg/L	0 mg/L	101	70.0	130	----
Total Metals (QCLot: 1686866)										
VA24C5374-003	WLNG Quarry Q02	Mercury, total	7439-97-6	E508	0.0000920 mg/L	0 mg/L	92.0	70.0	130	----
Dissolved Metals (QCLot: 1674912)										
VA24C4980-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.197 mg/L	0.2 mg/L	98.6	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0371 mg/L	0.04 mg/L	92.8	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.0100 mg/L	0.01 mg/L	100	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.092 mg/L	0.1 mg/L	92.5	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00390 mg/L	0.004 mg/L	97.4	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00943 mg/L	0.01 mg/L	94.3	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0384 mg/L	0.04 mg/L	96.1	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0190 mg/L	0.02 mg/L	95.2	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0191 mg/L	0.02 mg/L	95.5	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1674912) - continued										
VA24C4980-001	Anonymous	Iron, dissolved	7439-89-6	E421	2.00 mg/L	2 mg/L	100	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0916 mg/L	0.1 mg/L	91.6	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0190 mg/L	0.02 mg/L	95.2	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	11.0 mg/L	10 mg/L	110	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.84 mg/L	4 mg/L	96.1	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0196 mg/L	0.02 mg/L	98.2	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0398 mg/L	0.04 mg/L	99.5	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.45 mg/L	10 mg/L	94.5	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00386 mg/L	0.004 mg/L	96.4	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	19.1 mg/L	20 mg/L	95.5	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00369 mg/L	0.004 mg/L	92.4	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0182 mg/L	0.02 mg/L	91.2	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0367 mg/L	0.04 mg/L	91.7	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00370 mg/L	0.004 mg/L	92.6	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0984 mg/L	0.1 mg/L	98.4	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.391 mg/L	0.4 mg/L	97.8	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0415 mg/L	0.04 mg/L	104	70.0	130	----
Dissolved Metals (QCLot: 1678047)										
FJ2402872-003	Anonymous	Aluminum, dissolved	7429-90-5	E421	ND mg/L	----	ND	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0390 mg/L	0.04 mg/L	97.5	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00861 mg/L	0.01 mg/L	86.1	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.095 mg/L	0.1 mg/L	95.1	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00385 mg/L	0.004 mg/L	96.3	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.0100 mg/L	0.01 mg/L	100	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0192 mg/L	0.02 mg/L	96.1	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0185 mg/L	0.02 mg/L	92.5	70.0	130	----
		Iron, dissolved	7439-89-6	E421	ND mg/L	----	ND	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		Magnesium, dissolved	7439-95-4	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: 1678047) - continued										
FJ2402872-003	Anonymous	Manganese, dissolved	7439-96-5	E421	ND mg/L	----	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0375 mg/L	0.04 mg/L	93.7	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	11.0 mg/L	10 mg/L	110	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0197 mg/L	0.02 mg/L	98.5	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0405 mg/L	0.04 mg/L	101	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.51 mg/L	10 mg/L	95.1	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00390 mg/L	0.004 mg/L	97.5	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	19.4 mg/L	20 mg/L	97.2	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00381 mg/L	0.004 mg/L	95.3	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0209 mg/L	0.02 mg/L	104	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0421 mg/L	0.04 mg/L	105	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0210 mg/L	0.02 mg/L	105	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00395 mg/L	0.004 mg/L	98.8	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.408 mg/L	0.4 mg/L	102	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0417 mg/L	0.04 mg/L	104	70.0	130	----
Dissolved Metals (QCLot: 1684456)										
VA24C5214-001	Anonymous	Mercury, dissolved	7439-97-6	E509	ND mg/L	----	ND	70.0	130	----
Dissolved Metals (QCLot: 1686865)										
VA24C5374-003	WLNG Quarry Q02	Mercury, dissolved	7439-97-6	E509	0.0000762 mg/L	0 mg/L	76.2	70.0	130	----
Speciated Metals (QCLot: 1676452)										
VA24C5374-001	WLNG EOP	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.261 mg/L	0.25 mg/L	104	70.0	130	----
Aggregate Organics (QCLot: 1681210)										
BF2400347-002	Anonymous	Phenols, total (4AAP)	----	E562	0.0219 mg/L	0.02 mg/L	110	75.0	125	----
Volatile Organic Compounds (QCLot: 1679005)										
VA24C5059-002	Anonymous	Benzene	71-43-2	E611C	92.0 µg/L	100 µg/L	92.0	60.0	140	----
		Bromodichloromethane	75-27-4	E611C	93.2 µg/L	100 µg/L	93.2	60.0	140	----
		Bromoform	75-25-2	E611C	92.2 µg/L	100 µg/L	92.2	60.0	140	----
		Carbon tetrachloride	56-23-5	E611C	90.5 µg/L	100 µg/L	90.5	60.0	140	----
		Chlorobenzene	108-90-7	E611C	95.1 µg/L	100 µg/L	95.1	60.0	140	----
		Chloroethane	75-00-3	E611C	94.5 µg/L	100 µg/L	94.5	50.0	150	----
		Chloroform	67-66-3	E611C	95.9 µg/L	100 µg/L	95.9	60.0	140	----
		Chloromethane	74-87-3	E611C	78.6 µg/L	100 µg/L	78.6	50.0	150	----
		Dibromochloromethane	124-48-1	E611C	94.7 µg/L	100 µg/L	94.7	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	91.5 µg/L	100 µg/L	91.5	60.0	140	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1679005) - continued										
VA24C5059-002	Anonymous	Dichlorobenzene, 1,3-	541-73-1	E611C	88.7 µg/L	100 µg/L	88.7	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	91.4 µg/L	100 µg/L	91.4	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611C	85.8 µg/L	100 µg/L	85.8	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611C	86.8 µg/L	100 µg/L	86.8	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	92.7 µg/L	100 µg/L	92.7	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611C	85.2 µg/L	100 µg/L	85.2	60.0	140	----
		Dichloromethane	75-09-2	E611C	94.0 µg/L	100 µg/L	94.0	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611C	98.4 µg/L	100 µg/L	98.4	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	94.2 µg/L	100 µg/L	94.2	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	96.0 µg/L	100 µg/L	96.0	60.0	140	----
		Ethylbenzene	100-41-4	E611C	91.2 µg/L	100 µg/L	91.2	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	100 µg/L	100 µg/L	100	60.0	140	----
		Styrene	100-42-5	E611C	93.3 µg/L	100 µg/L	93.3	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	95.0 µg/L	100 µg/L	95.0	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	90.0 µg/L	100 µg/L	90.0	60.0	140	----
		Tetrachloroethylene	127-18-4	E611C	87.8 µg/L	100 µg/L	87.8	60.0	140	----
		Toluene	108-88-3	E611C	90.0 µg/L	100 µg/L	90.0	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	93.3 µg/L	100 µg/L	93.3	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	96.0 µg/L	100 µg/L	96.0	60.0	140	----
		Trichloroethylene	79-01-6	E611C	91.0 µg/L	100 µg/L	91.0	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611C	83.6 µg/L	100 µg/L	83.6	50.0	150	----
		Vinyl chloride	75-01-4	E611C	80.1 µg/L	100 µg/L	80.1	50.0	150	----
		Xylene, m+p-	179601-23-1	E611C	192 µg/L	200 µg/L	95.9	60.0	140	----
		Xylene, o-	95-47-6	E611C	93.1 µg/L	100 µg/L	93.1	60.0	140	----
Hydrocarbons (QCLot: 1679004)										
VA24C5059-003	Anonymous	VHw (C6-C10)	----	E581.VH+F1	7000 µg/L	6310 µg/L	111	60.0	140	----

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number: 2

Page of

Environmental Division
Vancouver
Work Order Reference
VA24C5374

Telephone : +1 604 253 4188

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

Reports / Recipients

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

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

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

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Email 3

Select Invoice D

Email 1 or Fax

Email 2

Turnaround Time (TAT) Re

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

Additional fees may apply to rush req... ...sts.

Date and Time Required for all E&P TATs: 02-Oct-24 17:00

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

LABEL HERE

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):	VA24C5374	ALS Contact:	Sampler:

Analysis Request

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

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Total metals + mercury (F)	Dissolved metals + mercury (F)	Total hexavalent chromium	Total trivalent chromium	TSS, TDS, T-Alkalinity, Anions scan (Br, Cl, F, NO2, NO3, SO4) (P)	Total sulfide (low) (as H2S), Unionized Sulfide (low) (P)	Nutrients (ammonia, ammonium, total nitrogen, total phosphorus, phenols) (P)	VOC/PH (P)	EPH, PAH, LEPH/HEPH (P)	DOC (F/P)	Glycols	General parameters (alkalinity)	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	WLNG EOP	24-SEP-24	12:34	Water	15	R	R	R	R	R	R	R	R	R	R	R	R			
	pH: 6.85 cond: 165 µs/cm temp: 15.4 °C																			
	~~Duplicate~~			Water	15	R	R	R	R	R	R	R	R	R	R	R	R			
	WLNG Quarry QØ1	24-SEP-24	09:58	Water	7	R	R			R		R			R		R			
	pH: 6.18 cond: 83.6 µs/cm temp: 13.7 °C																			
	WLNG Quarry QØ2	24-SEP-24	09:32	Water	7	R	R			R		R			R		R			
	pH: 6.77 cond: 291.8 µs/cm temp: 15.2 °C																			

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

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

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

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

ESDAT EDD to ESdat_CA+tritonenv@ESdatLabSync.net

SAMPLE RECEIPT DETAILS (ALS use only)

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

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

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

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				12			

RELEASE (client use)

Date: 24 Sept 24 Time: 17:19

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by: RJ Date: Sep-24 Time: 17:22

...ONS 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

2024-9-24-Chycoski-147FA

Project Component:	Tunnel	**Site Name:**	WLNG Treatment Discharge
Inspection Date:	09/24/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	
Temperature(c):	Low 19 High 24	**Permit:**	PE 110136
Weather Conditions:	Clear	**Ground Conditions:**	Damp

Observations

Time: 12:34:00 **Flow Volume (visual):** N/A

Notes:

Odour Detected?:	No	**Notes:**	
Unusual Colour?	Yes	**Notes:**	
Unusual Observations?	No	**Notes:**	Observed a fan of grey sediment around the discharge location. Not previously observed at this site to this magnitude. Operator claims it is built up over time.
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

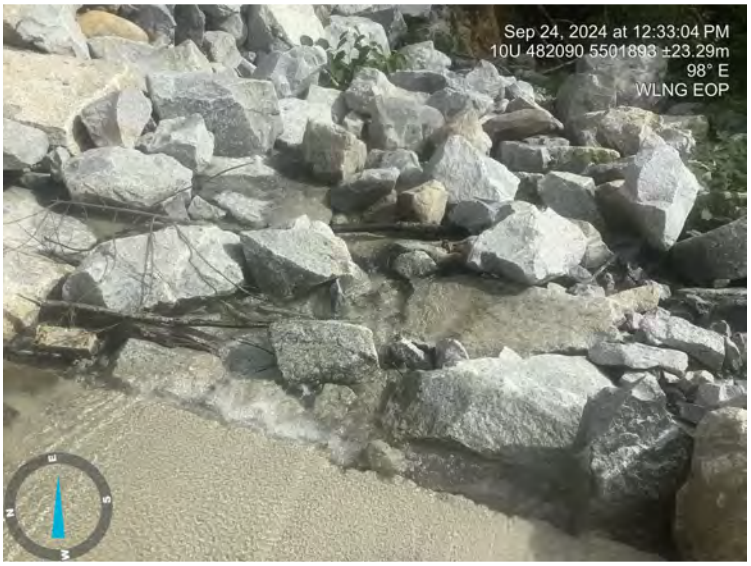

Photo: 3

Location: WLNG EOP

Description: DS view

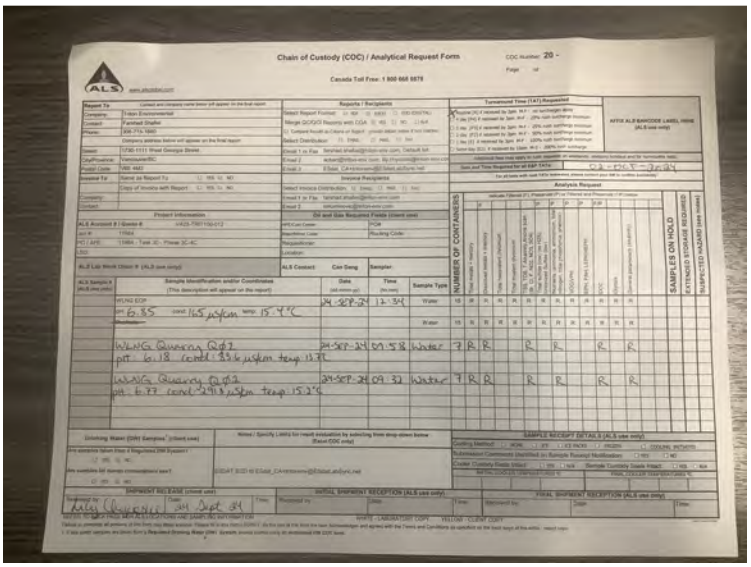

Photo: 4

Location: WLNG EOP

Description: Lab COC

Photos

Photo: 5

Location: WLNG EOP

Description: Fan of sediment at discharge pipe.

Sign Off

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

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

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Appendices:

1. Executive Summary and Field Notes:

The discharged water consistently remained within regulatory guidelines. The discharged water NTU remained within 8 NTU above background levels, with FKM continuously monitoring the sondes data and not discharging 24 hours a day. Other key parameters, including temperature, pH, salinity, conductivity, and oxidation-reduction potential (ORP), were monitored throughout the discharge process and remained within the prescribed limits. All relevant parameters were measured using YSI instruments and WTP probes. The total discharge volume up to September 23rd was 7,554 m³.

Daily Volume Summary:

Table 1: Discharge Volumes Daily Summary

Date	Location	Volume (m3)	Comments
September 23	WoodFibre (WF)	285	None
September 24	WF	316	None
September 25	WF	245	None
September 26	WF	316	None
September 27	WF	256	None
September 28	WF	263	None
September 29	WF	265	None
Total		1946	None

2. Discharge Parameter Summary:

Table 2: Discharge Parameter Summary

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/23/2024	0:00:00	7.2	0.306	0.9	7,554	17.7	260
9/23/2024	0:15:00	7.2	0.302	3.1	7,559	18	260
9/23/2024	0:30:00	7.2	0.302	3.8	7,564	18.6	260
9/23/2024	0:45:00	6.9	0.299	7.7	7,568	18.1	257
9/23/2024	1:00:00	7	0.302	8.6	7,573	16.4	260
9/23/2024	1:15:00	7.1	0.299	8.7	7,578	16.4	260
9/23/2024	1:30:00	7.1	0.302	9.7	7,583	16.7	260
9/23/2024	1:45:00	7.1	0.314	3.9	7,587	16.9	262
9/23/2024	2:00:00	7.1	0.299	3.2	7,592	17.2	262
9/23/2024	2:15:00	7.3	0.310	18.4	7,597	17	260
9/23/2024	10:00:00	7.3	0.348	17.9	7,611	15.2	266
9/23/2024	10:15:00	7.3	0.336	13.5	7,616	15.4	266
9/23/2024	10:30:00	7.2	0.336	11.2	7,621	15.7	268
9/23/2024	10:45:00	7.2	0.325	10	7,626	16	268
9/23/2024	11:00:00	7.2	0.318	12.8	7,631	16.3	268
9/23/2024	11:15:00	7.2	0.321	12.2	7,635	16.5	268
9/23/2024	11:30:00	7.2	0.318	10.8	7,640	16.7	268
9/23/2024	11:45:00	7.2	0.321	9.6	7,645	17	268
9/23/2024	12:00:00	7.2	0.344	9.5	7,650	17.2	268
9/23/2024	12:15:00	7.2	0.340	10.6	7,655	17.3	268
9/23/2024	12:30:00	7.2	0.367	10.5	7,661	17.5	270
9/23/2024	12:45:00	7.2	0.370	10	7,666	17.6	272
9/23/2024	13:00:00	7.2	0.374	9.5	7,672	17.8	270
9/23/2024	13:15:00	7.2	0.374	9.3	7,677	17.9	271
9/23/2024	13:30:00	7.2	0.386	8.6	7,682	18	272
9/23/2024	13:45:00	7.2	0.370	9.5	7,688	18.2	272
9/23/2024	14:00:00	7.2	0.374	8.6	7,693	18.3	272

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/23/2024	14:15:00	7.2	0.370	7.4	7,699	18.5	272
9/23/2024	14:30:00	7.2	0.370	7.9	7,704	18.6	272
9/23/2024	14:45:00	7.2	0.370	7.8	7,710	18.7	272
9/23/2024	15:00:00	7.2	0.374	8.2	7,715	18.8	271
9/23/2024	16:15:00	7.1	0.280	13.5	7,722	16	265
9/23/2024	16:30:00	7.1	0.284	16.6	7,726	16.3	265
9/23/2024	16:45:00	7.1	0.287	8.9	7,730	16.7	263
9/23/2024	17:00:00	7.1	0.287	13.2	7,734	17.1	264
9/23/2024	17:15:00	7.1	0.287	8.6	7,738	17.5	262
9/23/2024	17:30:00	7.1	0.280	7.3	7,742	17.8	264
9/23/2024	17:45:00	7.1	0.287	6.3	7,747	18.2	262
9/23/2024	18:00:00	7.1	0.284	4.5	7,751	18.5	262
9/23/2024	18:15:00	7.2	0.412	29.7	7,755	16.3	262
9/23/2024	18:30:00	7.3	0.423	20.2	7,762	15.9	267
9/23/2024	18:45:00	7	0.423	17.2	7,768	15.7	272
9/23/2024	19:00:00	7.2	0.416	17.5	7,774	15.7	270
9/23/2024	19:15:00	7.3	0.427	16.2	7,780	15.6	268
9/23/2024	19:30:00	7.1	0.295	19.3	7,786	15.7	270
9/23/2024	20:45:00	7.1	0.306	23	7,790	15.4	268
9/23/2024	21:00:00	7	0.325	18.4	7,794	15.9	272
9/23/2024	21:15:00	7	0.318	14.8	7,799	16.2	270
9/23/2024	21:30:00	7	0.321	16.1	7,804	16.9	270
9/23/2024	21:45:00	7	0.329	15	7,809	17.4	272
9/23/2024	22:00:00	7	0.325	11.7	7,813	17.7	270
9/23/2024	22:15:00	7	0.325	9.9	7,818	17.9	272
9/23/2024	22:30:00	7	0.000	8.2	7,821	18.1	272
9/23/2024	22:45:00	7	0.344	6.6	7,823	18.2	272
9/23/2024	23:00:00	7	0.185	9	7,826	18.4	272
9/23/2024	23:15:00	7	0.329	9.3	7,829	18.5	272
9/23/2024	23:30:00	7	0.325	8.9	7,834	18.7	272
9/23/2024	23:45:00	7	0.325	7.8	7,839	18.8	272
9/24/2024	0:00:00	7	0.318	7.3	7,844	18.9	272
9/24/2024	0:15:00	7	0.318	7.7	7,848	19	270

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/24/2024	0:30:00	7	0.314	6.7	7,853	19	272
9/24/2024	2:00:00	7.2	0.310	6.8	7,862	15.6	260
9/24/2024	2:15:00	7.2	0.318	9.3	7,867	16	260
9/24/2024	2:30:00	7.1	0.306	13.3	7,872	16.4	258
9/24/2024	2:45:00	7.1	0.291	17.2	7,876	16.7	258
9/24/2024	3:00:00	7.1	0.291	6.6	7,880	17	258
9/24/2024	3:15:00	7.1	0.284	7.9	7,884	17.3	260
9/24/2024	3:30:00	7.1	0.295	7.8	7,888	17.5	258
9/24/2024	3:45:00	7.1	0.299	6.9	7,893	17.7	258
9/24/2024	4:00:00	7.1	0.287	5.2	7,897	17.9	259
9/24/2024	4:15:00	7.1	0.284	2.7	7,901	18.1	257
9/24/2024	4:30:00	7.1	0.284	1	7,906	18.2	257
9/24/2024	4:45:00	7.1	0.291	0	7,910	18.3	257
9/24/2024	5:00:00	7.1	0.291	0	7,914	18.5	258
9/24/2024	5:15:00	7.1	0.284	0	7,918	18.6	258
9/24/2024	5:30:00	7.1	0.291	0	7,922	18.7	258
9/24/2024	5:45:00	7.1	0.280	0	7,927	18.7	258
9/24/2024	6:00:00	7.1	0.291	0	7,931	18.8	258
9/24/2024	6:15:00	7.1	0.287	0	7,935	18.9	258
9/24/2024	6:30:00	7.1	0.287	0	7,939	18.9	258
9/24/2024	6:45:00	7.1	0.287	0	7,943	18.9	258
9/24/2024	7:00:00	7.1	0.291	0	7,948	19	258
9/24/2024	7:15:00	7.1	0.284	0	7,952	19	259
9/24/2024	7:30:00	7.1	0.284	0	7,956	19.1	258
9/24/2024	7:45:00	7.1	0.231	0	7,959	19.1	258
9/24/2024	8:00:00	7.1	0.231	0	7,963	19.1	258
9/24/2024	8:15:00	7.1	0.231	0	7,966	19.1	258
9/24/2024	8:30:00	7	0.231	4.9	7,969	19.1	114
9/24/2024	10:30:00	7.2	0.261	20.7	7,972	14.7	262
9/24/2024	10:45:00	7.4	0.268	26.4	7,977	14.7	263
9/24/2024	11:30:00	6.9	0.261	24.9	7,980	15.9	268
9/24/2024	12:15:00	7.3	0.374	27.8	7,984	17	264
9/24/2024	12:30:00	7.3	0.378	25.4	7,989	17.3	262

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/24/2024	12:45:00	7.3	0.374	19.7	7,995	17.8	262
9/24/2024	13:00:00	7.3	0.249	20.5	8,000	18.3	262
9/24/2024	13:15:00	7.3	0.253	17.5	8,004	18.7	262
9/24/2024	13:30:00	7.3	0.257	14.8	8,008	19.1	262
9/24/2024	13:45:00	7.3	0.257	13.5	8,012	19.4	262
9/24/2024	14:00:00	7.2	0.268	15.6	8,016	20	264
9/24/2024	14:15:00	7.2	0.272	13	8,021	20.2	264
9/24/2024	14:30:00	7.2	0.272	11.8	8,025	20.3	266
9/24/2024	14:45:00	7.2	0.268	10.8	8,029	20.5	266
9/24/2024	15:00:00	7.2	0.265	12	8,033	20.6	267
9/24/2024	15:15:00	7.2	0.268	12.5	8,037	20.7	266
9/24/2024	15:30:00	7.2	0.268	11.9	8,041	20.8	264
9/24/2024	15:45:00	7.2	0.272	11.2	8,045	20.9	264
9/24/2024	16:00:00	7.2	0.268	9.2	8,049	20.9	264
9/24/2024	16:30:00	7.2	0.302	9	8,053	21	264
9/24/2024	17:00:00	7.1	0.231	8.9	8,057	21.1	264
9/24/2024	17:15:00	7.1	0.231	9.8	8,061	21.1	264
9/24/2024	17:30:00	7.1	0.234	9.1	8,064	21.1	264
9/24/2024	17:45:00	7.1	0.227	9.9	8,067	21.1	266
9/24/2024	18:00:00	7.1	0.234	10.1	8,071	21	265
9/24/2024	18:15:00	7.1	0.231	8.3	8,074	21	266
9/24/2024	18:30:00	7.1	0.246	8	8,078	21	265
9/24/2024	18:45:00	7.1	0.336	8.3	8,082	20.9	264
9/24/2024	19:00:00	7.1	0.344	7.6	8,087	20.9	264
9/24/2024	19:15:00	7.1	0.340	7.4	8,092	20.8	265
9/24/2024	19:30:00	7.1	0.340	7.6	8,097	20.8	267
9/24/2024	19:45:00	7.1	0.340	7.2	8,103	20.7	267
9/24/2024	20:00:00	7.1	0.336	7.4	8,108	20.7	267
9/24/2024	20:15:00	7.1	0.340	7	8,113	20.6	267
9/24/2024	20:30:00	7.1	0.336	7.4	8,118	20.6	267
9/24/2024	20:45:00	7.1	0.344	7.4	8,122	20.5	267
9/24/2024	21:00:00	7.1	0.336	7.1	8,127	20.5	267
9/24/2024	21:15:00	7.1	0.333	6.7	8,132	20.4	267

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/24/2024	21:30:00	7.1	0.336	7	8,137	20.4	267
9/24/2024	21:45:00	7.1	0.325	6.7	8,142	20.3	267
9/24/2024	23:15:00	7.1	0.336	23.5	8,145	15.4	257
9/24/2024	23:30:00	7.1	0.329	21.5	8,150	15.7	261
9/24/2024	23:45:00	7	0.329	17.4	8,155	16	259
9/25/2024	0:00:00	7	0.333	17.7	8,160	16.3	261
9/25/2024	0:15:00	7	0.329	17.3	8,165	16.6	259
9/25/2024	0:30:00	7	0.329	15.6	8,169	16.8	262
9/25/2024	0:45:00	7	0.325	16.7	8,174	17	262
9/25/2024	1:00:00	7	0.329	18.4	8,179	17.2	262
9/25/2024	1:15:00	7	0.336	17.2	8,184	17.4	260
9/25/2024	1:30:00	7	0.325	17.1	8,188	17.5	260
9/25/2024	1:45:00	7	0.333	16.4	8,193	17.7	258
9/25/2024	2:00:00	7	0.336	15.8	8,198	17.8	262
9/25/2024	2:15:00	7	0.333	14.9	8,203	17.9	262
9/25/2024	2:30:00	7	0.336	15.1	8,207	18	262
9/25/2024	2:45:00	7	0.378	14.6	8,213	18.1	260
9/25/2024	3:00:00	7	0.374	15.5	8,219	18.2	260
9/25/2024	3:15:00	7	0.378	13.9	8,224	18.2	262
9/25/2024	3:45:00	7.6	0.374	14.7	8,230	15.3	252
9/25/2024	4:00:00	7.6	0.382	14.5	8,236	15.7	250
9/25/2024	4:15:00	7.6	0.374	9.3	8,241	16	250
9/25/2024	4:30:00	7.5	0.370	8.4	8,247	16.2	253
9/25/2024	4:45:00	7.5	0.367	9.9	8,252	16.5	250
9/25/2024	5:00:00	7.5	0.370	10	8,258	16.7	253
9/25/2024	5:15:00	7.5	0.363	10.6	8,263	16.9	253
9/25/2024	5:30:00	7.5	0.344	9.4	8,268	17	253
9/25/2024	5:45:00	7.5	0.336	8.8	8,274	17.2	253
9/25/2024	6:00:00	7.5	0.340	9	8,279	17.3	253
9/25/2024	6:15:00	7.5	0.344	8	8,284	17.5	253
9/25/2024	6:30:00	7.5	0.344	8.7	8,289	17.6	253
9/25/2024	6:45:00	7.5	0.344	8.9	8,294	17.7	253
9/25/2024	7:00:00	7.5	0.329	9.1	8,299	17.8	253

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/25/2024	7:15:00	7.5	0.336	5.8	8,304	17.9	253
9/25/2024	7:30:00	7.4	0.336	7	8,309	17.9	253
9/25/2024	7:45:00	7.4	0.333	5.7	8,314	18	253
9/25/2024	8:00:00	7.4	0.336	5.8	8,319	18.1	252
9/25/2024	8:15:00	7.4	0.333	5.9	8,323	18.1	251
9/25/2024	8:30:00	7.4	0.329	5.2	8,328	18.2	252
9/25/2024	8:45:00	7.4	0.333	5.3	8,333	18.4	252
9/25/2024	9:00:00	7.4	0.329	8.9	8,338	18.6	252
9/25/2024	9:15:00	7.4	0.333	9.2	8,343	18.8	252
9/25/2024	9:30:00	7.4	0.321	8.9	8,347	18.9	252
9/25/2024	9:45:00	7.4	0.336	9.3	8,352	19.1	252
9/25/2024	10:00:00	7.4	0.321	10	8,357	19.2	252
9/25/2024	10:15:00	7.4	0.336	10	8,362	19.3	252
9/25/2024	11:15:00	7.1	0.276	26.8	8,370	15.4	270
9/25/2024	11:30:00	7.2	0.276	23.3	8,374	15.8	268
9/25/2024	11:45:00	7.2	0.276	21.4	8,378	16.3	268
9/25/2024	14:30:00	7.6	0.336	0.8	8,380	17.3	278
9/25/2024	20:30:00	7.1	0.367	205.6	8,386	14.9	267
9/25/2024	20:45:00	7.1	0.363	207.2	8,391	15.3	266
9/25/2024	23:15:00	7.3	0.352	121	8,396	14.6	260
9/25/2024	23:45:00	7.3	0.359	73.7	8,400	15.6	260
9/26/2024	0:00:00	7.3	0.355	66.5	8,406	15.9	258
9/26/2024	0:15:00	7.3	0.355	54.1	8,411	16.2	258
9/26/2024	0:30:00	7.3	0.265	44.7	8,416	16.5	258
9/26/2024	1:15:00	7.3	0.257	36.2	8,422	17.1	262
9/26/2024	1:30:00	7.3	0.249	37.2	8,426	17.3	260
9/26/2024	1:45:00	7.3	0.257	26.9	8,430	17.4	260
9/26/2024	2:00:00	7.3	0.261	20.7	8,434	17.6	260
9/26/2024	2:15:00	7.3	0.355	21.8	8,439	17.7	260
9/26/2024	2:30:00	7.3	0.363	22.6	8,445	17.8	260
9/26/2024	2:45:00	7.3	0.355	21.1	8,450	17.9	262
9/26/2024	3:00:00	7.3	0.336	17.9	8,455	18.1	262
9/26/2024	3:15:00	7.3	0.348	17.3	8,461	18.1	262

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/26/2024	3:30:00	7.3	0.348	18	8,466	18.2	262
9/26/2024	3:45:00	7.3	0.344	16.6	8,471	18.3	262
9/26/2024	4:00:00	7.3	0.340	16.9	8,476	18.3	262
9/26/2024	4:45:00	7.2	0.329	25.4	8,481	14.2	257
9/26/2024	5:00:00	7.3	0.325	15.6	8,486	14.7	257
9/26/2024	5:15:00	7.3	0.318	20.3	8,491	15	256
9/26/2024	5:30:00	7.2	0.310	18.7	8,495	16	256
9/26/2024	5:45:00	7.2	0.318	15.6	8,500	16.2	257
9/26/2024	6:00:00	7.2	0.318	15.5	8,505	16.5	257
9/26/2024	6:15:00	7.2	0.325	14.6	8,509	16.6	255
9/26/2024	6:30:00	7.2	0.318	13.9	8,514	16.8	255
9/26/2024	6:45:00	7.2	0.310	14.6	8,519	17.1	257
9/26/2024	7:00:00	7.2	0.314	14	8,524	17.2	256
9/26/2024	7:15:00	7.2	0.310	15	8,528	17.3	255
9/26/2024	7:30:00	7.2	0.310	12.8	8,533	17.4	255
9/26/2024	7:45:00	7.2	0.318	12.3	8,538	17.6	257
9/26/2024	8:00:00	7.2	0.318	12.3	8,543	17.7	257
9/26/2024	8:15:00	7.2	0.314	10.2	8,547	17.8	257
9/26/2024	8:30:00	7.2	0.306	10.1	8,552	18	255
9/26/2024	8:45:00	7.2	0.302	11.1	8,557	18.1	258
9/26/2024	9:00:00	7.2	0.306	10.4	8,562	18.1	258
9/26/2024	10:45:00	7.1	0.302	29.7	8,565	13.7	256
9/26/2024	11:00:00	7.3	0.306	28.9	8,569	13.7	114
9/26/2024	11:15:00	7.1	0.299	36.7	8,574	13.7	254
9/26/2024	11:30:00	7	0.318	31.4	8,579	13.8	258
9/26/2024	12:30:00	7	0.302	41.4	8,585	13.7	257
9/26/2024	12:45:00	7	0.306	54.9	8,589	13.8	261
9/26/2024	13:00:00	7.2	0.310	52.8	8,594	13.7	257
9/26/2024	17:00:00	6.8	0.189	15.2	8,600	15	262
9/26/2024	17:15:00	6.8	0.189	19	8,602	15.5	262
9/26/2024	17:30:00	6.8	0.219	11	8,605	15.8	259
9/26/2024	17:45:00	6.8	0.219	9.3	8,609	16.2	263
9/26/2024	18:00:00	6.7	0.223	9.4	8,612	16.5	265

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/26/2024	18:15:00	6.7	0.219	10.1	8,615	16.7	265
9/26/2024	18:30:00	6.7	0.227	9.4	8,619	16.9	262
9/26/2024	18:45:00	6.7	0.367	12.1	8,622	17.1	265
9/26/2024	19:00:00	6.7	0.389	11.5	8,628	17.2	263
9/26/2024	19:15:00	6.7	0.378	12.1	8,634	17.4	262
9/26/2024	19:30:00	6.7	0.382	12.9	8,639	17.5	264
9/26/2024	19:45:00	6.7	0.378	10.3	8,645	17.7	264
9/26/2024	20:00:00	6.7	0.469	11.6	8,651	17.8	263
9/26/2024	20:15:00	6.7	0.495	10.7	8,659	17.9	264
9/26/2024	20:30:00	6.7	0.363	9.6	8,665	18	263
9/26/2024	20:45:00	6.7	0.355	10.3	8,670	18.1	265
9/26/2024	21:00:00	6.7	0.348	10.4	8,675	18.1	263
9/26/2024	21:15:00	6.7	0.355	9.3	8,681	18.1	261
9/26/2024	21:30:00	6.7	0.223	9.2	8,685	18.2	263
9/26/2024	21:45:00	6.7	0.223	9.8	8,689	18.4	264
9/26/2024	22:00:00	6.7	0.227	9.7	8,692	18.7	264
9/26/2024	22:15:00	6.7	0.223	8.9	8,695	19	262
9/26/2024	22:30:00	6.7	0.223	7.7	8,699	19.1	262
9/26/2024	22:45:00	6.7	0.231	7.3	8,702	19.3	264
9/26/2024	23:00:00	6.7	0.227	7.1	8,705	19.5	264
9/26/2024	23:15:00	6.7	0.227	8	8,709	19.6	262
9/26/2024	23:30:00	6.7	0.231	6.2	8,712	19.6	262
9/26/2024	23:45:00	6.7	0.227	5.9	8,716	19.9	264
9/27/2024	0:45:00	7.2	0.299	18.2	8,719	14.3	259
9/27/2024	1:00:00	7.2	0.318	11.6	8,724	14.9	262
9/27/2024	1:15:00	7.2	0.348	12.2	8,729	15.6	259
9/27/2024	1:30:00	7.2	0.359	8.9	8,735	16.4	257
9/27/2024	1:45:00	7.2	0.355	8.6	8,740	17	259
9/27/2024	2:00:00	7.2	0.352	2.9	8,745	17.3	259
9/27/2024	2:15:00	7.2	0.355	1.9	8,751	17.6	259
9/27/2024	2:30:00	7.2	0.355	2.2	8,756	17.9	259
9/27/2024	2:45:00	7.2	0.280	1.9	8,761	18.1	259
9/27/2024	3:00:00	7.2	0.276	2.3	8,765	18.4	259

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/27/2024	3:15:00	7.2	0.287	6.2	8,769	18.9	259
9/27/2024	3:30:00	7.2	0.284	2.6	8,773	19.3	259
9/27/2024	3:45:00	7.2	0.276	0.6	8,777	19.7	259
9/27/2024	4:00:00	7.2	0.284	4.8	8,781	20	259
9/27/2024	4:15:00	7.2	0.272	2.6	8,785	20.4	259
9/27/2024	5:45:00	7.1	0.272	1.9	8,789	21.1	258
9/27/2024	6:00:00	7.1	0.280	2.9	8,793	21.1	259
9/27/2024	6:15:00	7.1	0.291	2.9	8,797	21	262
9/27/2024	6:30:00	7.1	0.280	3	8,801	21.1	264
9/27/2024	6:45:00	7.1	0.276	1.9	8,806	20.9	262
9/27/2024	7:00:00	7.1	0.276	2.1	8,810	21	264
9/27/2024	7:15:00	7.1	0.280	2.1	8,814	21	262
9/27/2024	7:30:00	7.1	0.280	2.1	8,818	21	262
9/27/2024	7:45:00	7.1	0.284	1.4	8,822	21	262
9/27/2024	8:00:00	7.1	0.276	1	8,826	20.9	262
9/27/2024	8:15:00	7.1	0.268	0.8	8,830	20.9	262
9/27/2024	8:30:00	7.1	0.280	1.2	8,834	20.9	263
9/27/2024	8:45:00	7.1	0.276	1	8,838	21	262
9/27/2024	9:00:00	7.1	0.284	15.9	8,842	20.9	263
9/27/2024	9:15:00	7.1	0.287	1.2	8,846	21	262
9/27/2024	10:00:00	7.1	0.295	1.1	8,854	20.6	263
9/27/2024	10:15:00	7.1	0.295	1.1	8,859	20.4	266
9/27/2024	10:30:00	7.1	0.302	0.8	8,863	20.3	265
9/27/2024	10:45:00	7.1	0.306	0.8	8,868	20.2	266
9/27/2024	11:00:00	7.1	0.295	1.1	8,873	20.1	267
9/27/2024	11:15:00	7.1	0.386	0.7	8,878	20.1	267
9/27/2024	11:30:00	7.1	0.378	1.1	8,883	20	267
9/27/2024	11:45:00	7.1	0.318	0.7	8,888	20	267
9/27/2024	12:30:00	7.1	0.268	1.8	8,892	20.2	264
9/27/2024	12:45:00	7.1	0.265	0.4	8,896	20.3	264
9/27/2024	13:00:00	7.1	0.234	1.3	8,900	20.4	264
9/27/2024	13:15:00	7.1	0.249	0.3	8,904	20.5	262
9/27/2024	13:30:00	7.1	0.246	0	8,907	20.6	262

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/27/2024	13:45:00	7.1	0.238	0.4	8,911	20.7	264
9/27/2024	14:00:00	7.1	0.242	0.3	8,915	20.8	266
9/27/2024	14:15:00	7	0.246	0.1	8,918	20.8	266
9/27/2024	14:30:00	7	0.242	1	8,922	20.8	266
9/27/2024	14:45:00	7.1	0.249	0.5	8,926	20.8	265
9/27/2024	15:00:00	7.1	0.242	0	8,929	20.8	266
9/27/2024	15:15:00	7.1	0.249	0	8,933	20.8	266
9/27/2024	15:30:00	7.1	0.246	0	8,937	20.7	265
9/27/2024	15:45:00	7.1	0.242	0	8,941	20.7	265
9/27/2024	16:00:00	7.1	0.249	0.2	8,945	20.7	265
9/27/2024	16:15:00	7.1	0.249	0.4	8,949	20.7	266
9/27/2024	16:30:00	7.1	0.242	0	8,953	20.7	266
9/27/2024	16:45:00	7.1	0.253	0.3	8,956	20.8	266
9/27/2024	19:30:00	7.3	0.314	40.6	8,958	14.8	261
9/27/2024	22:15:00	7	0.314	49.8	8,961	14.8	262
9/27/2024	22:45:00	7	0.363	40	8,966	15.1	262
9/27/2024	23:00:00	7	0.370	38.8	8,972	15.1	262
9/28/2024	1:30:00	7	0.284	13.5	8,977	16.6	263
9/28/2024	1:45:00	7	0.287	19.2	8,981	17.1	261
9/28/2024	2:00:00	7	0.284	13.1	8,986	17.6	261
9/28/2024	2:15:00	7	0.295	8.2	8,990	18	262
9/28/2024	2:30:00	7	0.295	6.3	8,994	18.3	261
9/28/2024	2:45:00	7	0.291	6.4	8,999	18.5	262
9/28/2024	3:00:00	7	0.295	7.7	9,003	18.8	262
9/28/2024	3:15:00	7	0.291	13	9,007	19	262
9/28/2024	3:30:00	7	0.276	10.5	9,011	19.2	263
9/28/2024	3:45:00	7	0.291	10.1	9,015	19.3	264
9/28/2024	4:00:00	7	0.178	10.4	9,019	19.5	264
9/28/2024	5:15:00	7.1	0.291	26.5	9,020	14	259
9/28/2024	6:30:00	7.2	0.318	17.3	9,024	14.5	260
9/28/2024	6:45:00	7.1	0.318	15.8	9,029	15.2	259
9/28/2024	7:00:00	7.1	0.314	12.4	9,034	15.9	257
9/28/2024	7:15:00	7.1	0.310	7.8	9,038	16.3	259

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/28/2024	7:30:00	7.1	0.318	7.5	9,043	16.8	257
9/28/2024	7:45:00	7.1	0.314	8.6	9,048	17.4	257
9/28/2024	8:00:00	7.1	0.310	6.3	9,053	17.7	256
9/28/2024	8:15:00	7.1	0.318	5.9	9,057	18.1	257
9/28/2024	8:30:00	7.1	0.314	3.8	9,062	18.4	257
9/28/2024	8:45:00	7.1	0.314	6	9,067	18.9	256
9/28/2024	9:00:00	7.1	0.318	4.8	9,072	19.2	259
9/28/2024	9:15:00	7.1	0.310	5.9	9,076	19.5	259
9/28/2024	9:30:00	7.1	0.314	4.2	9,081	19.7	257
9/28/2024	9:45:00	7.1	0.310	3.1	9,086	20	257
9/28/2024	10:00:00	7.1	0.302	1.4	9,091	20.3	257
9/28/2024	10:15:00	7	0.310	6.2	9,095	20.5	257
9/28/2024	10:30:00	7	0.306	4.9	9,100	20.6	259
9/28/2024	11:45:00	7.4	0.249	12.7	9,103	17.9	256
9/28/2024	12:00:00	7.3	0.242	12.2	9,106	18.5	256
9/28/2024	12:15:00	7.3	0.249	11.8	9,110	19.1	256
9/28/2024	12:30:00	7.3	0.246	3.2	9,113	19.6	256
9/28/2024	12:45:00	7.3	0.249	2.5	9,117	19.9	256
9/28/2024	13:00:00	7.3	0.249	2.5	9,121	20.1	256
9/28/2024	13:15:00	7.3	0.310	13.9	9,125	21	257
9/28/2024	13:45:00	7.2	0.318	7.2	9,130	21.2	258
9/28/2024	14:00:00	7.2	0.321	4.4	9,135	21.5	258
9/28/2024	15:15:00	7.1	0.340	9.5	9,138	22.7	257
9/28/2024	16:15:00	7.1	0.359	11.6	9,144	22.3	259
9/28/2024	16:30:00	7.1	0.378	7.8	9,149	22.4	259
9/28/2024	16:45:00	7.1	0.355	5.4	9,155	22.5	259
9/28/2024	17:00:00	7	0.363	8.8	9,160	22.4	259
9/28/2024	17:15:00	7	0.363	8.6	9,166	22.5	259
9/28/2024	17:30:00	7	0.359	8.9	9,171	22.5	261
9/28/2024	17:45:00	7	0.363	8.4	9,177	22.5	261
9/28/2024	18:00:00	7	0.355	7.9	9,182	22.6	261
9/28/2024	18:15:00	7	0.359	7.9	9,188	22.4	261
9/28/2024	18:30:00	7	0.140	6.9	9,190	22.6	261

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/28/2024	18:45:00	7	0.140	6.4	9,192	22.7	259
9/28/2024	19:00:00	7	0.318	6.1	9,195	22.7	261
9/28/2024	19:15:00	7	0.329	6.1	9,200	22.8	262
9/28/2024	19:30:00	7	0.321	5.3	9,205	22.8	262
9/28/2024	19:45:00	7	0.321	5	9,210	22.8	262
9/28/2024	20:00:00	7	0.325	4	9,214	22.9	262
9/28/2024	20:15:00	7	0.321	4.6	9,219	22.9	262
9/28/2024	20:30:00	7	0.333	4.3	9,224	22.9	262
9/28/2024	20:45:00	7	0.321	3.7	9,229	22.9	263
9/28/2024	23:45:00	7.2	0.310	17.1	9,235	18.6	258
9/29/2024	0:00:00	7.2	0.314	14.9	9,240	18.9	258
9/29/2024	0:15:00	7.2	0.310	13.7	9,245	19.3	256
9/29/2024	0:30:00	7.2	0.318	16.5	9,250	19.5	255
9/29/2024	1:15:00	7.2	0.310	15	9,254	20.2	258
9/29/2024	1:30:00	7.2	0.318	13.5	9,259	20.4	258
9/29/2024	1:45:00	7.2	0.352	12.7	9,264	20.7	258
9/29/2024	2:00:00	7.2	0.348	11.1	9,269	20.9	258
9/29/2024	2:15:00	7.2	0.344	13	9,275	21	260
9/29/2024	2:30:00	7.2	0.348	12.5	9,280	21.2	259
9/29/2024	2:45:00	7.2	0.336	12.6	9,285	21.3	261
9/29/2024	3:00:00	7.2	0.333	12.6	9,290	21.4	261
9/29/2024	3:15:00	7.2	0.340	12	9,295	21.5	261
9/29/2024	3:30:00	7.2	0.344	11.8	9,301	21.7	261
9/29/2024	3:45:00	7.1	0.344	11.2	9,306	21.7	261
9/29/2024	4:00:00	7.1	0.355	10.9	9,311	21.8	261
9/29/2024	4:15:00	7.1	0.348	10.1	9,317	21.9	261
9/29/2024	4:30:00	7.1	0.336	10.8	9,322	21.9	260
9/29/2024	4:45:00	7.1	0.336	8.7	9,327	22.1	261
9/29/2024	5:00:00	7.1	0.329	8.1	9,332	22.1	261
9/29/2024	5:15:00	7.1	0.325	8	9,337	22.1	261
9/29/2024	5:30:00	7.1	0.333	8.3	9,342	22.1	261
9/29/2024	5:45:00	7.1	0.333	9	9,346	22.1	261
9/29/2024	6:00:00	7.1	0.340	7.8	9,351	22.1	261

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/29/2024	6:15:00	7.1	0.333	6.3	9,356	22.1	260
9/29/2024	6:30:00	7.1	0.340	6.8	9,361	22	261
9/29/2024	6:45:00	7.1	0.333	6.4	9,366	21.9	261
9/29/2024	7:00:00	7.1	0.340	6.3	9,371	21.9	257
9/29/2024	7:15:00	7.1	0.325	6.4	9,376	21.8	259
9/29/2024	7:30:00	7.1	0.333	8.1	9,380	21.7	257
9/29/2024	7:45:00	7.1	0.333	7.8	9,385	21.6	257
9/29/2024	8:00:00	7.1	0.329	6.6	9,390	21.5	261
9/29/2024	8:15:00	7.1	0.336	6	9,395	21.5	258
9/29/2024	11:30:00	7.1	0.238	7.6	9,398	17.1	268
9/29/2024	11:45:00	7.1	0.227	4.7	9,401	17.8	269
9/29/2024	12:00:00	7	0.280	7.1	9,405	18	265
9/29/2024	12:15:00	7	0.272	15.2	9,409	18.1	266
9/29/2024	12:30:00	7	0.276	13.7	9,413	18.2	268
9/29/2024	12:45:00	7	0.280	13.6	9,417	18.3	268
9/29/2024	13:00:00	7.1	0.280	14.7	9,421	18.4	268
9/29/2024	13:15:00	7.1	0.284	14.1	9,425	18.5	268
9/29/2024	13:30:00	7.1	0.276	13.8	9,429	18.6	268
9/29/2024	13:45:00	7.1	0.276	13.3	9,433	18.6	268
9/29/2024	14:00:00	7.1	0.280	11.4	9,437	18.7	268
9/29/2024	14:15:00	7.1	0.284	11.9	9,442	18.8	270
9/29/2024	14:30:00	7.1	0.280	10	9,446	18.9	267
9/29/2024	14:45:00	7.1	0.280	9.5	9,450	19	267
9/29/2024	15:00:00	7.1	0.284	10.5	9,454	19.2	269
9/29/2024	15:15:00	7.1	0.280	11.4	9,458	19.3	269
9/29/2024	15:30:00	7.1	0.276	8.4	9,462	19.5	269
9/29/2024	15:45:00	7.1	0.284	12	9,466	19.6	267
9/29/2024	16:00:00	7.1	0.284	7	9,470	19.7	268
9/29/2024	16:15:00	7.1	0.280	9.2	9,474	19.8	269
9/29/2024	16:30:00	7.1	0.284	8.4	9,478	19.8	270
9/29/2024	16:45:00	7.1	0.284	8.3	9,482	19.9	269
9/29/2024	17:00:00	7.1	0.284	4.7	9,486	19.9	268
9/29/2024	17:15:00	7.1	0.284	7	9,490	19.8	269

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/29/2024	23:00:00	7.2	0.363	50	9,494	14.6	261
9/29/2024	23:15:00	7.2	0.431	38.7	9,500	15	259

Table 3. In-Situ Parameters

Date	Time	Temperature (°C)	DO (mg/L)	Conductivity (uS/cm)	Salinity (ppt)	ORP (mV)	Visible Sheen
9/23/2024	11:34:09 AM	13.9	10.00	178.97	0.07	130.0	No
9/24/2024	08:12:27 PM	14.7	10.09	169.9	0.07	123.3	No
9/25/2024	01:26:59 PM	14.9	10.10	157.8	0.07	107.0	No
9/26/2024	12:25:57PM	13.4	10.51	133.7	0.06	117.1	No
9/27/2024	01:54:22AM	13.4	10.84	138.6	0.07	141.4	No
9/28/2024	06:43:15PM	15.9	9.47	206.3	0.10	201.8	No
9/29/2024	10:26:10PM	16.5	9.45	158.9	0.08	215.6	No

3. Calibration Log:

Table 4. Calibration Log

Date	Unit	pH	Conductivity/Temp.	Salinity	NTU
9/23/2024	YSI	✓	✓	✓	✓
9/25/2024	WTP	✓	✓	N/A	✓

APPENDIX A: WTP LOG

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/23/2024	0:00:00	7.2	0.306	0.9	7,554	Closed	Open	17.7	260
9/23/2024	0:15:00	7.2	0.302	3.1	7,559	Closed	Open	18	260
9/23/2024	0:30:00	7.2	0.302	3.8	7,564	Closed	Open	18.6	260
9/23/2024	0:45:00	6.9	0.299	7.7	7,568	Closed	Open	18.1	257
9/23/2024	1:00:00	7	0.302	8.6	7,573	Closed	Open	16.4	260
9/23/2024	1:15:00	7.1	0.299	8.7	7,578	Closed	Open	16.4	260
9/23/2024	1:30:00	7.1	0.302	9.7	7,583	Closed	Open	16.7	260
9/23/2024	1:45:00	7.1	0.314	3.9	7,587	Closed	Open	16.9	262
9/23/2024	2:00:00	7.1	0.299	3.2	7,592	Closed	Open	17.2	262
9/23/2024	2:15:00	7.3	0.310	18.4	7,597	Closed	Open	17	260
9/23/2024	2:30:00	7.4	0.302	45.9	7,597	Open	Closed	14.7	258
9/23/2024	2:45:00	7.1	0.310	58.1	7,597	Open	Closed	14.6	265
9/23/2024	3:00:00	7	0.000	47.6	7,597	Open	Closed	14.8	267
9/23/2024	3:15:00	7.1	0.314	76.9	7,597	Open	Closed	14.6	267
9/23/2024	3:30:00	7.3	0.329	136.5	7,597	Open	Closed	14.7	264
9/23/2024	3:45:00	7.3	0.567	402.2	7,598	Open	Closed	14.6	267
9/23/2024	4:00:00	7.2	0.268	402.2	7,598	Open	Closed	14.5	270
9/23/2024	4:15:00	7.1	0.352	402.1	7,598	Open	Closed	14.6	273
9/23/2024	4:30:00	7.3	0.340	402.2	7,600	Closed	Open	15	272

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/23/2024	4:45:00	7.3	0.340	402.2	7,606	Closed	Open	15.7	272
9/23/2024	5:00:00	7.1	0.321	402.2	7,608	Open	Closed	15	275
9/23/2024	5:15:00	7	0.340	402.1	7,608	Open	Closed	15.4	280
9/23/2024	5:30:00	7.4	0.314	402.1	7,608	Open	Closed	14.7	275
9/23/2024	5:45:00	7.1	0.336	402.3	7,608	Open	Closed	14.7	278
9/23/2024	6:00:00	7.1	0.348	402.3	7,608	Open	Closed	14.9	279
9/23/2024	6:15:00	7.3	0.340	402.2	7,608	Open	Closed	14.8	275
9/23/2024	6:30:00	7.2	0.000	402.1	7,608	Open	Closed	14.9	275
9/23/2024	6:45:00	7.1	0.174	402.1	7,608	Open	Closed	15	278
9/23/2024	7:00:00	7.1	0.900	402.3	7,608	Open	Closed	14.9	278
9/23/2024	7:15:00	7.3	0.941	402.2	7,608	Open	Closed	14.6	275
9/23/2024	7:30:00	7.2	0.117	286.6	7,608	Open	Closed	14.7	275
9/23/2024	7:45:00	7.1	0.189	206.8	7,608	Open	Closed	15.1	275
9/23/2024	8:00:00	7	0.132	166.2	7,608	Open	Closed	15.3	275
9/23/2024	8:15:00	7	0.140	150.2	7,608	Open	Closed	15.6	275
9/23/2024	8:30:00	7.1	0.140	110.5	7,608	Open	Closed	15.8	275
9/23/2024	8:45:00	7.3	0.117	118.7	7,608	Open	Closed	15.8	272
9/23/2024	9:00:00	7.3	0.125	112.7	7,608	Open	Closed	16.1	270
9/23/2024	9:15:00	7.2	0.911	143.9	7,608	Open	Closed	16	268
9/23/2024	9:30:00	7.1	0.306	109.2	7,608	Open	Closed	16.5	268
9/23/2024	9:45:00	7.3	0.397	22.2	7,608	Open	Closed	15	268

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Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/23/2024	10:00:00	7.3	0.348	17.9	7,611	Closed	Open	15.2	266
9/23/2024	10:15:00	7.3	0.336	13.5	7,616	Closed	Open	15.4	266
9/23/2024	10:30:00	7.2	0.336	11.2	7,621	Closed	Open	15.7	268
9/23/2024	10:45:00	7.2	0.325	10	7,626	Closed	Open	16	268
9/23/2024	11:00:00	7.2	0.318	12.8	7,631	Closed	Open	16.3	268
9/23/2024	11:15:00	7.2	0.321	12.2	7,635	Closed	Open	16.5	268
9/23/2024	11:30:00	7.2	0.318	10.8	7,640	Closed	Open	16.7	268
9/23/2024	11:45:00	7.2	0.321	9.6	7,645	Closed	Open	17	268
9/23/2024	12:00:00	7.2	0.344	9.5	7,650	Closed	Open	17.2	268
9/23/2024	12:15:00	7.2	0.340	10.6	7,655	Closed	Open	17.3	268
9/23/2024	12:30:00	7.2	0.367	10.5	7,661	Closed	Open	17.5	270
9/23/2024	12:45:00	7.2	0.370	10	7,666	Closed	Open	17.6	272
9/23/2024	13:00:00	7.2	0.374	9.5	7,672	Closed	Open	17.8	270
9/23/2024	13:15:00	7.2	0.374	9.3	7,677	Closed	Open	17.9	271
9/23/2024	13:30:00	7.2	0.386	8.6	7,682	Closed	Open	18	272
9/23/2024	13:45:00	7.2	0.370	9.5	7,688	Closed	Open	18.2	272
9/23/2024	14:00:00	7.2	0.374	8.6	7,693	Closed	Open	18.3	272
9/23/2024	14:15:00	7.2	0.370	7.4	7,699	Closed	Open	18.5	272
9/23/2024	14:30:00	7.2	0.370	7.9	7,704	Closed	Open	18.6	272
9/23/2024	14:45:00	7.2	0.370	7.8	7,710	Closed	Open	18.7	272
9/23/2024	15:00:00	7.2	0.374	8.2	7,715	Closed	Open	18.8	271

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/23/2024	15:15:00	7.2	0.000	6.2	7,718	Open	Closed	19	270
9/23/2024	15:30:00	7.2	0.000	5.9	7,718	Open	Closed	19.1	270
9/23/2024	15:45:00	7.2	0.000	6.3	7,718	Open	Closed	19.2	270
9/23/2024	16:00:00	7	0.276	26.7	7,720	Open	Closed	16	264
9/23/2024	16:15:00	7.1	0.280	13.5	7,722	Closed	Open	16	265
9/23/2024	16:30:00	7.1	0.284	16.6	7,726	Closed	Open	16.3	265
9/23/2024	16:45:00	7.1	0.287	8.9	7,730	Closed	Open	16.7	263
9/23/2024	17:00:00	7.1	0.287	13.2	7,734	Closed	Open	17.1	264
9/23/2024	17:15:00	7.1	0.287	8.6	7,738	Closed	Open	17.5	262
9/23/2024	17:30:00	7.1	0.280	7.3	7,742	Closed	Open	17.8	264
9/23/2024	17:45:00	7.1	0.287	6.3	7,747	Closed	Open	18.2	262
9/23/2024	18:00:00	7.1	0.284	4.5	7,751	Closed	Open	18.5	262
9/23/2024	18:15:00	7.2	0.412	29.7	7,755	Closed	Open	16.3	262
9/23/2024	18:30:00	7.3	0.423	20.2	7,762	Closed	Open	15.9	267
9/23/2024	18:45:00	7	0.423	17.2	7,768	Closed	Open	15.7	272
9/23/2024	19:00:00	7.2	0.416	17.5	7,774	Closed	Open	15.7	270
9/23/2024	19:15:00	7.3	0.427	16.2	7,780	Closed	Open	15.6	268
9/23/2024	19:30:00	7.1	0.295	19.3	7,786	Closed	Open	15.7	270
9/23/2024	19:45:00	7.1	0.582	30.8	7,789	Open	Closed	16.1	272
9/23/2024	20:00:00	7.4	0.000	164.8	7,789	Open	Closed	15.4	267
9/23/2024	20:15:00	7.5	0.231	269.7	7,789	Open	Closed	15.4	265

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/23/2024	20:30:00	7.4	0.000	49.7	7,789	Open	Closed	15.3	265
9/23/2024	20:45:00	7.1	0.306	23	7,790	Closed	Open	15.4	268
9/23/2024	21:00:00	7	0.325	18.4	7,794	Closed	Open	15.9	272
9/23/2024	21:15:00	7	0.318	14.8	7,799	Closed	Open	16.2	270
9/23/2024	21:30:00	7	0.321	16.1	7,804	Closed	Open	16.9	270
9/23/2024	21:45:00	7	0.329	15	7,809	Closed	Open	17.4	272
9/23/2024	22:00:00	7	0.325	11.7	7,813	Closed	Open	17.7	270
9/23/2024	22:15:00	7	0.325	9.9	7,818	Closed	Open	17.9	272
9/23/2024	22:30:00	7	0.000	8.2	7,821	Closed	Open	18.1	272
9/23/2024	22:45:00	7	0.344	6.6	7,823	Closed	Open	18.2	272
9/23/2024	23:00:00	7	0.185	9	7,826	Closed	Open	18.4	272
9/23/2024	23:15:00	7	0.329	9.3	7,829	Closed	Open	18.5	272
9/23/2024	23:30:00	7	0.325	8.9	7,834	Closed	Open	18.7	272
9/23/2024	23:45:00	7	0.325	7.8	7,839	Closed	Open	18.8	272
9/24/2024	0:00:00	7	0.318	7.3	7,844	Closed	Open	18.9	272
9/24/2024	0:15:00	7	0.318	7.7	7,848	Closed	Open	19	270
9/24/2024	0:30:00	7	0.314	6.7	7,853	Closed	Open	19	272
9/24/2024	0:45:00	7.1	0.000	19.4	7,858	Open	Closed	17.9	255
9/24/2024	1:00:00	7.4	0.000	28.7	7,858	Open	Closed	15.3	257
9/24/2024	1:15:00	7.5	0.000	84.9	7,858	Open	Closed	16.2	116
9/24/2024	1:30:00	7.5	0.000	47.2	7,858	Open	Closed	14.7	258

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Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/24/2024	1:45:00	7.3	0.310	401.9	7,858	Open	Closed	15.2	260
9/24/2024	2:00:00	7.2	0.310	6.8	7,862	Closed	Open	15.6	260
9/24/2024	2:15:00	7.2	0.318	9.3	7,867	Closed	Open	16	260
9/24/2024	2:30:00	7.1	0.306	13.3	7,872	Closed	Open	16.4	258
9/24/2024	2:45:00	7.1	0.291	17.2	7,876	Closed	Open	16.7	258
9/24/2024	3:00:00	7.1	0.291	6.6	7,880	Closed	Open	17	258
9/24/2024	3:15:00	7.1	0.284	7.9	7,884	Closed	Open	17.3	260
9/24/2024	3:30:00	7.1	0.295	7.8	7,888	Closed	Open	17.5	258
9/24/2024	3:45:00	7.1	0.299	6.9	7,893	Closed	Open	17.7	258
9/24/2024	4:00:00	7.1	0.287	5.2	7,897	Closed	Open	17.9	259
9/24/2024	4:15:00	7.1	0.284	2.7	7,901	Closed	Open	18.1	257
9/24/2024	4:30:00	7.1	0.284	1	7,906	Closed	Open	18.2	257
9/24/2024	4:45:00	7.1	0.291	0	7,910	Closed	Open	18.3	257
9/24/2024	5:00:00	7.1	0.291	0	7,914	Closed	Open	18.5	258
9/24/2024	5:15:00	7.1	0.284	0	7,918	Closed	Open	18.6	258
9/24/2024	5:30:00	7.1	0.291	0	7,922	Closed	Open	18.7	258
9/24/2024	5:45:00	7.1	0.280	0	7,927	Closed	Open	18.7	258
9/24/2024	6:00:00	7.1	0.291	0	7,931	Closed	Open	18.8	258
9/24/2024	6:15:00	7.1	0.287	0	7,935	Closed	Open	18.9	258
9/24/2024	6:30:00	7.1	0.287	0	7,939	Closed	Open	18.9	258
9/24/2024	6:45:00	7.1	0.287	0	7,943	Closed	Open	18.9	258

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/24/2024	7:00:00	7.1	0.291	0	7,948	Closed	Open	19	258
9/24/2024	7:15:00	7.1	0.284	0	7,952	Closed	Open	19	259
9/24/2024	7:30:00	7.1	0.284	0	7,956	Closed	Open	19.1	258
9/24/2024	7:45:00	7.1	0.231	0	7,959	Closed	Open	19.1	258
9/24/2024	8:00:00	7.1	0.231	0	7,963	Closed	Open	19.1	258
9/24/2024	8:15:00	7.1	0.231	0	7,966	Closed	Open	19.1	258
9/24/2024	8:30:00	7	0.231	4.9	7,969	Closed	Open	19.1	114
9/24/2024	8:45:00	7.4	0.212	22	7,971	Open	Closed	19.1	258
9/24/2024	9:00:00	7.4	0.215	0	7,971	Open	Closed	19.1	258
9/24/2024	9:15:00	7.3	0.000	0.1	7,971	Open	Closed	19.1	253
9/24/2024	9:30:00	7.1	0.000	122.1	7,971	Open	Closed	16.1	258
9/24/2024	9:45:00	6.9	0.000	94.3	7,971	Open	Closed	16.5	262
9/24/2024	10:00:00	6.9	0.284	61.9	7,971	Open	Closed	15.9	259
9/24/2024	10:15:00	7	0.280	27.7	7,971	Open	Closed	14.7	263
9/24/2024	10:30:00	7.2	0.261	20.7	7,972	Closed	Open	14.7	262
9/24/2024	10:45:00	7.4	0.268	26.4	7,977	Closed	Open	14.7	263
9/24/2024	11:00:00	7.8	0.253	13.2	7,980	Open	Closed	15.2	265
9/24/2024	11:15:00	7	0.000	26.7	7,980	Open	Closed	15.5	268
9/24/2024	11:30:00	6.9	0.261	24.9	7,980	Closed	Open	15.9	268
9/24/2024	11:45:00	6.9	0.801	21.9	7,981	Open	Closed	16.3	268
9/24/2024	12:00:00	7.2	0.722	30.1	7,981	Open	Closed	15.6	265

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Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/24/2024	12:15:00	7.3	0.374	27.8	7,984	Closed	Open	17	264
9/24/2024	12:30:00	7.3	0.378	25.4	7,989	Closed	Open	17.3	262
9/24/2024	12:45:00	7.3	0.374	19.7	7,995	Closed	Open	17.8	262
9/24/2024	13:00:00	7.3	0.249	20.5	8,000	Closed	Open	18.3	262
9/24/2024	13:15:00	7.3	0.253	17.5	8,004	Closed	Open	18.7	262
9/24/2024	13:30:00	7.3	0.257	14.8	8,008	Closed	Open	19.1	262
9/24/2024	13:45:00	7.3	0.257	13.5	8,012	Closed	Open	19.4	262
9/24/2024	14:00:00	7.2	0.268	15.6	8,016	Closed	Open	20	264
9/24/2024	14:15:00	7.2	0.272	13	8,021	Closed	Open	20.2	264
9/24/2024	14:30:00	7.2	0.272	11.8	8,025	Closed	Open	20.3	266
9/24/2024	14:45:00	7.2	0.268	10.8	8,029	Closed	Open	20.5	266
9/24/2024	15:00:00	7.2	0.265	12	8,033	Closed	Open	20.6	267
9/24/2024	15:15:00	7.2	0.268	12.5	8,037	Closed	Open	20.7	266
9/24/2024	15:30:00	7.2	0.268	11.9	8,041	Closed	Open	20.8	264
9/24/2024	15:45:00	7.2	0.272	11.2	8,045	Closed	Open	20.9	264
9/24/2024	16:00:00	7.2	0.268	9.2	8,049	Closed	Open	20.9	264
9/24/2024	16:15:00	7.2	0.000	8.5	8,052	Open	Closed	21	264
9/24/2024	16:30:00	7.2	0.302	9	8,053	Closed	Open	21	264
9/24/2024	16:45:00	7.2	0.227	10.2	8,055	Open	Closed	21.1	264
9/24/2024	17:00:00	7.1	0.231	8.9	8,057	Closed	Open	21.1	264
9/24/2024	17:15:00	7.1	0.231	9.8	8,061	Closed	Open	21.1	264

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Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/24/2024	17:30:00	7.1	0.234	9.1	8,064	Closed	Open	21.1	264
9/24/2024	17:45:00	7.1	0.227	9.9	8,067	Closed	Open	21.1	266
9/24/2024	18:00:00	7.1	0.234	10.1	8,071	Closed	Open	21	265
9/24/2024	18:15:00	7.1	0.231	8.3	8,074	Closed	Open	21	266
9/24/2024	18:30:00	7.1	0.246	8	8,078	Closed	Open	21	265
9/24/2024	18:45:00	7.1	0.336	8.3	8,082	Closed	Open	20.9	264
9/24/2024	19:00:00	7.1	0.344	7.6	8,087	Closed	Open	20.9	264
9/24/2024	19:15:00	7.1	0.340	7.4	8,092	Closed	Open	20.8	265
9/24/2024	19:30:00	7.1	0.340	7.6	8,097	Closed	Open	20.8	267
9/24/2024	19:45:00	7.1	0.340	7.2	8,103	Closed	Open	20.7	267
9/24/2024	20:00:00	7.1	0.336	7.4	8,108	Closed	Open	20.7	267
9/24/2024	20:15:00	7.1	0.340	7	8,113	Closed	Open	20.6	267
9/24/2024	20:30:00	7.1	0.336	7.4	8,118	Closed	Open	20.6	267
9/24/2024	20:45:00	7.1	0.344	7.4	8,122	Closed	Open	20.5	267
9/24/2024	21:00:00	7.1	0.336	7.1	8,127	Closed	Open	20.5	267
9/24/2024	21:15:00	7.1	0.333	6.7	8,132	Closed	Open	20.4	267
9/24/2024	21:30:00	7.1	0.336	7	8,137	Closed	Open	20.4	267
9/24/2024	21:45:00	7.1	0.325	6.7	8,142	Closed	Open	20.3	267
9/24/2024	22:00:00	7.4	0.000	38.3	8,142	Open	Closed	15.8	257
9/24/2024	22:15:00	7.4	0.000	99.9	8,142	Open	Closed	15.3	257
9/24/2024	22:30:00	7.4	0.000	107.6	8,142	Open	Closed	15.7	257

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/24/2024	22:45:00	7.3	0.000	54.3	8,142	Open	Closed	15.3	257
9/24/2024	23:00:00	7.2	0.000	36.1	8,142	Open	Closed	15.4	257
9/24/2024	23:15:00	7.1	0.336	23.5	8,145	Closed	Open	15.4	257
9/24/2024	23:30:00	7.1	0.329	21.5	8,150	Closed	Open	15.7	261
9/24/2024	23:45:00	7	0.329	17.4	8,155	Closed	Open	16	259
9/25/2024	0:00:00	7	0.333	17.7	8,160	Closed	Open	16.3	261
9/25/2024	0:15:00	7	0.329	17.3	8,165	Closed	Open	16.6	259
9/25/2024	0:30:00	7	0.329	15.6	8,169	Closed	Open	16.8	262
9/25/2024	0:45:00	7	0.325	16.7	8,174	Closed	Open	17	262
9/25/2024	1:00:00	7	0.329	18.4	8,179	Closed	Open	17.2	262
9/25/2024	1:15:00	7	0.336	17.2	8,184	Closed	Open	17.4	260
9/25/2024	1:30:00	7	0.325	17.1	8,188	Closed	Open	17.5	260
9/25/2024	1:45:00	7	0.333	16.4	8,193	Closed	Open	17.7	258
9/25/2024	2:00:00	7	0.336	15.8	8,198	Closed	Open	17.8	262
9/25/2024	2:15:00	7	0.333	14.9	8,203	Closed	Open	17.9	262
9/25/2024	2:30:00	7	0.336	15.1	8,207	Closed	Open	18	262
9/25/2024	2:45:00	7	0.378	14.6	8,213	Closed	Open	18.1	260
9/25/2024	3:00:00	7	0.374	15.5	8,219	Closed	Open	18.2	260
9/25/2024	3:15:00	7	0.378	13.9	8,224	Closed	Open	18.2	262
9/25/2024	3:30:00	7.5	0.000	51.8	8,228	Open	Closed	15.2	252
9/25/2024	3:45:00	7.6	0.374	14.7	8,230	Closed	Open	15.3	252

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/25/2024	4:00:00	7.6	0.382	14.5	8,236	Closed	Open	15.7	250
9/25/2024	4:15:00	7.6	0.374	9.3	8,241	Closed	Open	16	250
9/25/2024	4:30:00	7.5	0.370	8.4	8,247	Closed	Open	16.2	253
9/25/2024	4:45:00	7.5	0.367	9.9	8,252	Closed	Open	16.5	250
9/25/2024	5:00:00	7.5	0.370	10	8,258	Closed	Open	16.7	253
9/25/2024	5:15:00	7.5	0.363	10.6	8,263	Closed	Open	16.9	253
9/25/2024	5:30:00	7.5	0.344	9.4	8,268	Closed	Open	17	253
9/25/2024	5:45:00	7.5	0.336	8.8	8,274	Closed	Open	17.2	253
9/25/2024	6:00:00	7.5	0.340	9	8,279	Closed	Open	17.3	253
9/25/2024	6:15:00	7.5	0.344	8	8,284	Closed	Open	17.5	253
9/25/2024	6:30:00	7.5	0.344	8.7	8,289	Closed	Open	17.6	253
9/25/2024	6:45:00	7.5	0.344	8.9	8,294	Closed	Open	17.7	253
9/25/2024	7:00:00	7.5	0.329	9.1	8,299	Closed	Open	17.8	253
9/25/2024	7:15:00	7.5	0.336	5.8	8,304	Closed	Open	17.9	253
9/25/2024	7:30:00	7.4	0.336	7	8,309	Closed	Open	17.9	253
9/25/2024	7:45:00	7.4	0.333	5.7	8,314	Closed	Open	18	253
9/25/2024	8:00:00	7.4	0.336	5.8	8,319	Closed	Open	18.1	252
9/25/2024	8:15:00	7.4	0.333	5.9	8,323	Closed	Open	18.1	251
9/25/2024	8:30:00	7.4	0.329	5.2	8,328	Closed	Open	18.2	252
9/25/2024	8:45:00	7.4	0.333	5.3	8,333	Closed	Open	18.4	252
9/25/2024	9:00:00	7.4	0.329	8.9	8,338	Closed	Open	18.6	252

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/25/2024	9:15:00	7.4	0.333	9.2	8,343	Closed	Open	18.8	252
9/25/2024	9:30:00	7.4	0.321	8.9	8,347	Closed	Open	18.9	252
9/25/2024	9:45:00	7.4	0.336	9.3	8,352	Closed	Open	19.1	252
9/25/2024	10:00:00	7.4	0.321	10	8,357	Closed	Open	19.2	252
9/25/2024	10:15:00	7.4	0.336	10	8,362	Closed	Open	19.3	252
9/25/2024	10:30:00	7.4	0.000	8.9	8,366	Open	Closed	19.4	253
9/25/2024	10:45:00	6.9	0.268	47.4	8,366	Open	Closed	15	263
9/25/2024	11:00:00	6.9	0.268	25.8	8,366	Open	Closed	15.2	268
9/25/2024	11:15:00	7.1	0.276	26.8	8,370	Closed	Open	15.4	270
9/25/2024	11:30:00	7.2	0.276	23.3	8,374	Closed	Open	15.8	268
9/25/2024	11:45:00	7.2	0.276	21.4	8,378	Closed	Open	16.3	268
9/25/2024	12:00:00	7.4	0.238	23.4	8,378	Open	Closed	15.2	268
9/25/2024	12:15:00	7.5	0.238	22.2	8,378	Open	Closed	15.7	268
9/25/2024	12:30:00	7.5	0.215	21.9	8,378	Open	Closed	16.2	268
9/25/2024	12:45:00	7.2	0.291	64.5	8,378	Open	Closed	15.5	268
9/25/2024	13:00:00	6.9	0.291	37.4	8,378	Open	Closed	14.9	278
9/25/2024	13:15:00	7.5	0.166	0.8	8,378	Open	Closed	15.3	278
9/25/2024	13:30:00	7.5	0.163	3.6	8,378	Open	Closed	15.8	275
9/25/2024	13:45:00	7.5	0.159	4.8	8,378	Open	Closed	16.2	277
9/25/2024	14:00:00	7.5	0.163	5.3	8,378	Open	Closed	16.6	277
9/25/2024	14:15:00	7.5	0.140	4.6	8,378	Open	Closed	17	278

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/25/2024	14:30:00	7.6	0.336	0.8	8,380	Closed	Open	17.3	278
9/25/2024	14:45:00	7.6	0.556	0	8,384	Open	Closed	17.6	277
9/25/2024	15:00:00	6.8	0.612	127.8	8,384	Open	Closed	15.7	280
9/25/2024	15:15:00	7.3	0.578	72.2	8,384	Open	Closed	14.8	272
9/25/2024	15:30:00	7.1	0.563	76.1	8,384	Open	Closed	14.8	272
9/25/2024	15:45:00	7.2	0.200	52.3	8,384	Open	Closed	14.9	272
9/25/2024	16:00:00	7.3	0.200	65	8,384	Open	Closed	14.8	272
9/25/2024	16:15:00	7	0.200	58.7	8,384	Open	Closed	14.8	273
9/25/2024	16:30:00	7.1	0.200	55.8	8,384	Open	Closed	14.9	272
9/25/2024	16:45:00	7.3	0.200	58	8,384	Open	Closed	14.9	270
9/25/2024	17:00:00	7.1	0.204	66.1	8,384	Open	Closed	14.9	270
9/25/2024	17:15:00	7	0.212	74.8	8,384	Open	Closed	14.9	272
9/25/2024	17:30:00	7.1	0.212	101.7	8,384	Open	Closed	14.9	272
9/25/2024	17:45:00	7.3	0.208	112.2	8,384	Open	Closed	14.9	268
9/25/2024	18:00:00	7.1	0.208	135	8,384	Open	Closed	14.9	268
9/25/2024	18:15:00	7	0.212	125.9	8,384	Open	Closed	14.9	272
9/25/2024	18:30:00	7.2	0.340	175	8,384	Open	Closed	14.8	270
9/25/2024	18:45:00	7.2	0.370	146.6	8,384	Open	Closed	14.8	268
9/25/2024	19:00:00	7.1	0.374	138.8	8,384	Open	Closed	14.8	270
9/25/2024	19:15:00	7.3	0.370	149	8,384	Open	Closed	14.7	268
9/25/2024	19:30:00	7.1	0.144	408.9	8,384	Open	Closed	14.6	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	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/25/2024	19:45:00	7.2	0.000	217.6	8,384	Open	Closed	14.7	268
9/25/2024	20:00:00	7.3	0.340	269.8	8,384	Open	Closed	14.8	265
9/25/2024	20:15:00	7.1	0.495	252.2	8,384	Open	Closed	14.8	267
9/25/2024	20:30:00	7.1	0.367	205.6	8,386	Closed	Open	14.9	267
9/25/2024	20:45:00	7.1	0.363	207.2	8,391	Closed	Open	15.3	266
9/25/2024	21:00:00	7.1	0.363	202.9	8,393	Open	Closed	15.8	266
9/25/2024	21:15:00	7.2	0.363	198.5	8,393	Open	Closed	16	267
9/25/2024	21:30:00	7.4	0.355	176.6	8,393	Open	Closed	15.1	265
9/25/2024	21:45:00	7.1	0.352	149.4	8,393	Open	Closed	14.9	263
9/25/2024	22:00:00	7.1	0.355	159	8,393	Open	Closed	14.5	264
9/25/2024	22:15:00	7.3	0.363	127.3	8,393	Open	Closed	14.7	267
9/25/2024	22:30:00	7.1	0.355	92.5	8,393	Open	Closed	14.8	265
9/25/2024	22:45:00	7	0.000	116.1	8,393	Open	Closed	14.4	264
9/25/2024	23:00:00	7.3	0.034	201.4	8,393	Open	Closed	14.1	261
9/25/2024	23:15:00	7.3	0.352	121	8,396	Closed	Open	14.6	260
9/25/2024	23:30:00	7.3	0.363	84.4	8,397	Open	Closed	15.2	263
9/25/2024	23:45:00	7.3	0.359	73.7	8,400	Closed	Open	15.6	260
9/26/2024	0:00:00	7.3	0.355	66.5	8,406	Closed	Open	15.9	258
9/26/2024	0:15:00	7.3	0.355	54.1	8,411	Closed	Open	16.2	258
9/26/2024	0:30:00	7.3	0.265	44.7	8,416	Closed	Open	16.5	258
9/26/2024	0:45:00	7.3	0.253	46.1	8,420	Open	Closed	16.7	262

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/26/2024	1:00:00	7.3	0.257	41	8,420	Open	Closed	16.9	263
9/26/2024	1:15:00	7.3	0.257	36.2	8,422	Closed	Open	17.1	262
9/26/2024	1:30:00	7.3	0.249	37.2	8,426	Closed	Open	17.3	260
9/26/2024	1:45:00	7.3	0.257	26.9	8,430	Closed	Open	17.4	260
9/26/2024	2:00:00	7.3	0.261	20.7	8,434	Closed	Open	17.6	260
9/26/2024	2:15:00	7.3	0.355	21.8	8,439	Closed	Open	17.7	260
9/26/2024	2:30:00	7.3	0.363	22.6	8,445	Closed	Open	17.8	260
9/26/2024	2:45:00	7.3	0.355	21.1	8,450	Closed	Open	17.9	262
9/26/2024	3:00:00	7.3	0.336	17.9	8,455	Closed	Open	18.1	262
9/26/2024	3:15:00	7.3	0.348	17.3	8,461	Closed	Open	18.1	262
9/26/2024	3:30:00	7.3	0.348	18	8,466	Closed	Open	18.2	262
9/26/2024	3:45:00	7.3	0.344	16.6	8,471	Closed	Open	18.3	262
9/26/2024	4:00:00	7.3	0.340	16.9	8,476	Closed	Open	18.3	262
9/26/2024	4:15:00	7	0.408	109.9	8,477	Open	Closed	13.8	262
9/26/2024	4:30:00	7.2	0.000	39	8,477	Open	Closed	14	258
9/26/2024	4:45:00	7.2	0.329	25.4	8,481	Closed	Open	14.2	257
9/26/2024	5:00:00	7.3	0.325	15.6	8,486	Closed	Open	14.7	257
9/26/2024	5:15:00	7.3	0.318	20.3	8,491	Closed	Open	15	256
9/26/2024	5:30:00	7.2	0.310	18.7	8,495	Closed	Open	16	256
9/26/2024	5:45:00	7.2	0.318	15.6	8,500	Closed	Open	16.2	257
9/26/2024	6:00:00	7.2	0.318	15.5	8,505	Closed	Open	16.5	257

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/26/2024	6:15:00	7.2	0.325	14.6	8,509	Closed	Open	16.6	255
9/26/2024	6:30:00	7.2	0.318	13.9	8,514	Closed	Open	16.8	255
9/26/2024	6:45:00	7.2	0.310	14.6	8,519	Closed	Open	17.1	257
9/26/2024	7:00:00	7.2	0.314	14	8,524	Closed	Open	17.2	256
9/26/2024	7:15:00	7.2	0.310	15	8,528	Closed	Open	17.3	255
9/26/2024	7:30:00	7.2	0.310	12.8	8,533	Closed	Open	17.4	255
9/26/2024	7:45:00	7.2	0.318	12.3	8,538	Closed	Open	17.6	257
9/26/2024	8:00:00	7.2	0.318	12.3	8,543	Closed	Open	17.7	257
9/26/2024	8:15:00	7.2	0.314	10.2	8,547	Closed	Open	17.8	257
9/26/2024	8:30:00	7.2	0.306	10.1	8,552	Closed	Open	18	255
9/26/2024	8:45:00	7.2	0.302	11.1	8,557	Closed	Open	18.1	258
9/26/2024	9:00:00	7.2	0.306	10.4	8,562	Closed	Open	18.1	258
9/26/2024	9:15:00	7.2	0.000	11.3	8,562	Open	Closed	18.2	258
9/26/2024	9:30:00	7.2	0.000	9.9	8,562	Open	Closed	18.3	257
9/26/2024	9:45:00	7.2	0.144	11	8,562	Open	Closed	18.4	257
9/26/2024	10:00:00	7.2	0.140	10.4	8,562	Open	Closed	18.4	257
9/26/2024	10:15:00	6.9	0.272	49.1	8,562	Open	Closed	14.1	258
9/26/2024	10:30:00	6.9	0.302	38.5	8,562	Open	Closed	13.9	258
9/26/2024	10:45:00	7.1	0.302	29.7	8,565	Closed	Open	13.7	256
9/26/2024	11:00:00	7.3	0.306	28.9	8,569	Closed	Open	13.7	114
9/26/2024	11:15:00	7.1	0.299	36.7	8,574	Closed	Open	13.7	254

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/26/2024	11:30:00	7	0.318	31.4	8,579	Closed	Open	13.8	258
9/26/2024	11:45:00	7	0.000	24	8,581	Open	Closed	14.2	259
9/26/2024	12:00:00	7.1	0.302	36.6	8,581	Open	Closed	14	256
9/26/2024	12:15:00	7.3	0.295	42.7	8,581	Open	Closed	13.7	256
9/26/2024	12:30:00	7	0.302	41.4	8,585	Closed	Open	13.7	257
9/26/2024	12:45:00	7	0.306	54.9	8,589	Closed	Open	13.8	261
9/26/2024	13:00:00	7.2	0.310	52.8	8,594	Closed	Open	13.7	257
9/26/2024	13:15:00	7.3	0.302	37.9	8,598	Open	Closed	13.8	257
9/26/2024	13:30:00	7.3	0.302	35.1	8,598	Open	Closed	14.1	256
9/26/2024	13:45:00	6.9	0.306	59	8,598	Open	Closed	13.7	259
9/26/2024	14:00:00	7	0.310	53	8,598	Open	Closed	13.7	257
9/26/2024	14:15:00	7.3	0.284	52.6	8,598	Open	Closed	13.6	256
9/26/2024	14:30:00	7.3	0.170	66.7	8,598	Open	Closed	13.9	257
9/26/2024	14:45:00	7	0.170	39.9	8,598	Open	Closed	13.7	259
9/26/2024	15:00:00	6.9	0.166	40.9	8,598	Open	Closed	13.7	261
9/26/2024	15:15:00	7	0.174	37.8	8,598	Open	Closed	13.9	261
9/26/2024	15:30:00	7.2	0.170	28.5	8,598	Open	Closed	13.7	257
9/26/2024	15:45:00	7.3	0.178	29.5	8,598	Open	Closed	14	256
9/26/2024	16:00:00	7.3	0.178	20.9	8,598	Open	Closed	14.4	255
9/26/2024	16:15:00	7.2	0.178	20.9	8,598	Open	Closed	15.2	255
9/26/2024	16:30:00	6.9	0.178	26.9	8,598	Open	Closed	14.2	256

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/26/2024	16:45:00	6.8	0.178	18.3	8,598	Open	Closed	14.6	261
9/26/2024	17:00:00	6.8	0.189	15.2	8,600	Closed	Open	15	262
9/26/2024	17:15:00	6.8	0.189	19	8,602	Closed	Open	15.5	262
9/26/2024	17:30:00	6.8	0.219	11	8,605	Closed	Open	15.8	259
9/26/2024	17:45:00	6.8	0.219	9.3	8,609	Closed	Open	16.2	263
9/26/2024	18:00:00	6.7	0.223	9.4	8,612	Closed	Open	16.5	265
9/26/2024	18:15:00	6.7	0.219	10.1	8,615	Closed	Open	16.7	265
9/26/2024	18:30:00	6.7	0.227	9.4	8,619	Closed	Open	16.9	262
9/26/2024	18:45:00	6.7	0.367	12.1	8,622	Closed	Open	17.1	265
9/26/2024	19:00:00	6.7	0.389	11.5	8,628	Closed	Open	17.2	263
9/26/2024	19:15:00	6.7	0.378	12.1	8,634	Closed	Open	17.4	262
9/26/2024	19:30:00	6.7	0.382	12.9	8,639	Closed	Open	17.5	264
9/26/2024	19:45:00	6.7	0.378	10.3	8,645	Closed	Open	17.7	264
9/26/2024	20:00:00	6.7	0.469	11.6	8,651	Closed	Open	17.8	263
9/26/2024	20:15:00	6.7	0.495	10.7	8,659	Closed	Open	17.9	264
9/26/2024	20:30:00	6.7	0.363	9.6	8,665	Closed	Open	18	263
9/26/2024	20:45:00	6.7	0.355	10.3	8,670	Closed	Open	18.1	265
9/26/2024	21:00:00	6.7	0.348	10.4	8,675	Closed	Open	18.1	263
9/26/2024	21:15:00	6.7	0.355	9.3	8,681	Closed	Open	18.1	261
9/26/2024	21:30:00	6.7	0.223	9.2	8,685	Closed	Open	18.2	263
9/26/2024	21:45:00	6.7	0.223	9.8	8,689	Closed	Open	18.4	264

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/26/2024	22:00:00	6.7	0.227	9.7	8,692	Closed	Open	18.7	264
9/26/2024	22:15:00	6.7	0.223	8.9	8,695	Closed	Open	19	262
9/26/2024	22:30:00	6.7	0.223	7.7	8,699	Closed	Open	19.1	262
9/26/2024	22:45:00	6.7	0.231	7.3	8,702	Closed	Open	19.3	264
9/26/2024	23:00:00	6.7	0.227	7.1	8,705	Closed	Open	19.5	264
9/26/2024	23:15:00	6.7	0.227	8	8,709	Closed	Open	19.6	262
9/26/2024	23:30:00	6.7	0.231	6.2	8,712	Closed	Open	19.6	262
9/26/2024	23:45:00	6.7	0.227	5.9	8,716	Closed	Open	19.9	264
9/27/2024	0:00:00	7	0.367	66.7	8,718	Open	Closed	14	252
9/27/2024	0:15:00	7.4	0.374	163.5	8,718	Open	Closed	13.2	116
9/27/2024	0:30:00	7.3	0.265	55.4	8,718	Open	Closed	13.5	260
9/27/2024	0:45:00	7.2	0.299	18.2	8,719	Closed	Open	14.3	259
9/27/2024	1:00:00	7.2	0.318	11.6	8,724	Closed	Open	14.9	262
9/27/2024	1:15:00	7.2	0.348	12.2	8,729	Closed	Open	15.6	259
9/27/2024	1:30:00	7.2	0.359	8.9	8,735	Closed	Open	16.4	257
9/27/2024	1:45:00	7.2	0.355	8.6	8,740	Closed	Open	17	259
9/27/2024	2:00:00	7.2	0.352	2.9	8,745	Closed	Open	17.3	259
9/27/2024	2:15:00	7.2	0.355	1.9	8,751	Closed	Open	17.6	259
9/27/2024	2:30:00	7.2	0.355	2.2	8,756	Closed	Open	17.9	259
9/27/2024	2:45:00	7.2	0.280	1.9	8,761	Closed	Open	18.1	259
9/27/2024	3:00:00	7.2	0.276	2.3	8,765	Closed	Open	18.4	259

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/27/2024	3:15:00	7.2	0.287	6.2	8,769	Closed	Open	18.9	259
9/27/2024	3:30:00	7.2	0.284	2.6	8,773	Closed	Open	19.3	259
9/27/2024	3:45:00	7.2	0.276	0.6	8,777	Closed	Open	19.7	259
9/27/2024	4:00:00	7.2	0.284	4.8	8,781	Closed	Open	20	259
9/27/2024	4:15:00	7.2	0.272	2.6	8,785	Closed	Open	20.4	259
9/27/2024	4:30:00	7.2	0.265	0.3	8,789	Open	Closed	20.6	259
9/27/2024	4:45:00	7.2	0.261	0	8,789	Open	Closed	20.9	261
9/27/2024	5:00:00	7.2	0.268	0	8,789	Open	Closed	21.1	259
9/27/2024	5:15:00	7.1	0.272	2.5	8,789	Open	Closed	21.2	260
9/27/2024	5:30:00	7.1	0.268	3.1	8,789	Open	Closed	21.1	261
9/27/2024	5:45:00	7.1	0.272	1.9	8,789	Closed	Open	21.1	258
9/27/2024	6:00:00	7.1	0.280	2.9	8,793	Closed	Open	21.1	259
9/27/2024	6:15:00	7.1	0.291	2.9	8,797	Closed	Open	21	262
9/27/2024	6:30:00	7.1	0.280	3	8,801	Closed	Open	21.1	264
9/27/2024	6:45:00	7.1	0.276	1.9	8,806	Closed	Open	20.9	262
9/27/2024	7:00:00	7.1	0.276	2.1	8,810	Closed	Open	21	264
9/27/2024	7:15:00	7.1	0.280	2.1	8,814	Closed	Open	21	262
9/27/2024	7:30:00	7.1	0.280	2.1	8,818	Closed	Open	21	262
9/27/2024	7:45:00	7.1	0.284	1.4	8,822	Closed	Open	21	262
9/27/2024	8:00:00	7.1	0.276	1	8,826	Closed	Open	20.9	262
9/27/2024	8:15:00	7.1	0.268	0.8	8,830	Closed	Open	20.9	262

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/27/2024	8:30:00	7.1	0.280	1.2	8,834	Closed	Open	20.9	263
9/27/2024	8:45:00	7.1	0.276	1	8,838	Closed	Open	21	262
9/27/2024	9:00:00	7.1	0.284	15.9	8,842	Closed	Open	20.9	263
9/27/2024	9:15:00	7.1	0.287	1.2	8,846	Closed	Open	21	262
9/27/2024	9:30:00	7.1	0.280	0.6	8,849	Open	Closed	20.9	262
9/27/2024	9:45:00	7.1	0.272	1.5	8,850	Open	Closed	20.8	263
9/27/2024	10:00:00	7.1	0.295	1.1	8,854	Closed	Open	20.6	263
9/27/2024	10:15:00	7.1	0.295	1.1	8,859	Closed	Open	20.4	266
9/27/2024	10:30:00	7.1	0.302	0.8	8,863	Closed	Open	20.3	265
9/27/2024	10:45:00	7.1	0.306	0.8	8,868	Closed	Open	20.2	266
9/27/2024	11:00:00	7.1	0.295	1.1	8,873	Closed	Open	20.1	267
9/27/2024	11:15:00	7.1	0.386	0.7	8,878	Closed	Open	20.1	267
9/27/2024	11:30:00	7.1	0.378	1.1	8,883	Closed	Open	20	267
9/27/2024	11:45:00	7.1	0.318	0.7	8,888	Closed	Open	20	267
9/27/2024	12:00:00	7.1	0.227	1.1	8,891	Open	Closed	20.1	267
9/27/2024	12:15:00	7.1	0.268	0.4	8,891	Open	Closed	20.2	265
9/27/2024	12:30:00	7.1	0.268	1.8	8,892	Closed	Open	20.2	264
9/27/2024	12:45:00	7.1	0.265	0.4	8,896	Closed	Open	20.3	264
9/27/2024	13:00:00	7.1	0.234	1.3	8,900	Closed	Open	20.4	264
9/27/2024	13:15:00	7.1	0.249	0.3	8,904	Closed	Open	20.5	262
9/27/2024	13:30:00	7.1	0.246	0	8,907	Closed	Open	20.6	262

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/27/2024	13:45:00	7.1	0.238	0.4	8,911	Closed	Open	20.7	264
9/27/2024	14:00:00	7.1	0.242	0.3	8,915	Closed	Open	20.8	266
9/27/2024	14:15:00	7	0.246	0.1	8,918	Closed	Open	20.8	266
9/27/2024	14:30:00	7	0.242	1	8,922	Closed	Open	20.8	266
9/27/2024	14:45:00	7.1	0.249	0.5	8,926	Closed	Open	20.8	265
9/27/2024	15:00:00	7.1	0.242	0	8,929	Closed	Open	20.8	266
9/27/2024	15:15:00	7.1	0.249	0	8,933	Closed	Open	20.8	266
9/27/2024	15:30:00	7.1	0.246	0	8,937	Closed	Open	20.7	265
9/27/2024	15:45:00	7.1	0.242	0	8,941	Closed	Open	20.7	265
9/27/2024	16:00:00	7.1	0.249	0.2	8,945	Closed	Open	20.7	265
9/27/2024	16:15:00	7.1	0.249	0.4	8,949	Closed	Open	20.7	266
9/27/2024	16:30:00	7.1	0.242	0	8,953	Closed	Open	20.7	266
9/27/2024	16:45:00	7.1	0.253	0.3	8,956	Closed	Open	20.8	266
9/27/2024	17:00:00	7.1	0.246	0	8,957	Open	Closed	20.8	266
9/27/2024	17:15:00	7.1	0.249	0	8,957	Open	Closed	20.8	266
9/27/2024	17:30:00	7.1	0.000	0	8,957	Open	Closed	20.7	265
9/27/2024	17:45:00	7.1	0.284	0	8,957	Open	Closed	20.6	264
9/27/2024	18:00:00	7.1	0.397	0	8,957	Open	Closed	20.4	264
9/27/2024	18:15:00	7.4	0.178	35.7	8,957	Open	Closed	15.2	262
9/27/2024	18:30:00	7.3	0.147	27.4	8,957	Open	Closed	15.6	263
9/27/2024	18:45:00	7.1	0.000	30	8,957	Open	Closed	15.7	264

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/27/2024	19:00:00	6.9	0.265	41	8,957	Open	Closed	15	268
9/27/2024	19:15:00	7	0.299	53	8,957	Open	Closed	14.9	266
9/27/2024	19:30:00	7.3	0.314	40.6	8,958	Closed	Open	14.8	261
9/27/2024	19:45:00	7.3	0.318	27.9	8,959	Open	Closed	15	261
9/27/2024	20:00:00	7.1	0.306	59	8,959	Open	Closed	14.8	261
9/27/2024	20:15:00	6.9	0.318	33.3	8,959	Open	Closed	14.9	266
9/27/2024	20:30:00	7.1	0.302	60.7	8,959	Open	Closed	14.7	264
9/27/2024	20:45:00	7.3	0.314	64.5	8,959	Open	Closed	14.6	262
9/27/2024	21:00:00	7.2	0.310	38.2	8,959	Open	Closed	14.8	261
9/27/2024	21:15:00	7.1	0.000	39.8	8,959	Open	Closed	15	261
9/27/2024	21:30:00	6.9	0.000	218.3	8,959	Open	Closed	14.4	262
9/27/2024	21:45:00	7	0.246	78	8,959	Open	Closed	14.5	262
9/27/2024	22:00:00	7	0.325	66.2	8,959	Open	Closed	14.7	262
9/27/2024	22:15:00	7	0.314	49.8	8,961	Closed	Open	14.8	262
9/27/2024	22:30:00	7	0.231	43.7	8,963	Open	Closed	14.9	262
9/27/2024	22:45:00	7	0.363	40	8,966	Closed	Open	15.1	262
9/27/2024	23:00:00	7	0.370	38.8	8,972	Closed	Open	15.1	262
9/27/2024	23:15:00	7	0.359	36.7	8,973	Open	Closed	15.2	262
9/27/2024	23:30:00	7	0.367	36	8,973	Open	Closed	15.2	261
9/27/2024	23:45:00	7	0.359	36.1	8,973	Open	Closed	15.3	262
9/28/2024	0:00:00	7	0.355	29.8	8,973	Open	Closed	15.3	262

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/28/2024	0:15:00	7	0.318	22.6	8,973	Open	Closed	15.3	262
9/28/2024	0:30:00	7	0.314	24.7	8,973	Open	Closed	15.3	262
9/28/2024	0:45:00	7	0.318	22.5	8,973	Open	Closed	15.3	264
9/28/2024	1:00:00	7	0.310	20.4	8,973	Open	Closed	15.7	262
9/28/2024	1:15:00	7	0.310	14.6	8,973	Open	Closed	16.1	263
9/28/2024	1:30:00	7	0.284	13.5	8,977	Closed	Open	16.6	263
9/28/2024	1:45:00	7	0.287	19.2	8,981	Closed	Open	17.1	261
9/28/2024	2:00:00	7	0.284	13.1	8,986	Closed	Open	17.6	261
9/28/2024	2:15:00	7	0.295	8.2	8,990	Closed	Open	18	262
9/28/2024	2:30:00	7	0.295	6.3	8,994	Closed	Open	18.3	261
9/28/2024	2:45:00	7	0.291	6.4	8,999	Closed	Open	18.5	262
9/28/2024	3:00:00	7	0.295	7.7	9,003	Closed	Open	18.8	262
9/28/2024	3:15:00	7	0.291	13	9,007	Closed	Open	19	262
9/28/2024	3:30:00	7	0.276	10.5	9,011	Closed	Open	19.2	263
9/28/2024	3:45:00	7	0.291	10.1	9,015	Closed	Open	19.3	264
9/28/2024	4:00:00	7	0.178	10.4	9,019	Closed	Open	19.5	264
9/28/2024	4:15:00	7.4	0.000	152.2	9,020	Open	Closed	13.4	115
9/28/2024	4:30:00	7.4	0.000	59.3	9,020	Open	Closed	13.9	257
9/28/2024	4:45:00	7.3	0.000	31.2	9,020	Open	Closed	14.6	257
9/28/2024	5:00:00	7.3	0.291	49	9,020	Open	Closed	13.5	256
9/28/2024	5:15:00	7.1	0.291	26.5	9,020	Open	Open	14	259

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/28/2024	5:30:00	7.1	0.287	24	9,020	Open	Closed	14.7	260
9/28/2024	5:45:00	7.3	0.280	24.5	9,020	Open	Closed	13.5	116
9/28/2024	6:00:00	7.4	0.318	19.9	9,020	Open	Closed	13.6	117
9/28/2024	6:15:00	7.2	0.321	17	9,020	Open	Closed	13.8	259
9/28/2024	6:30:00	7.2	0.318	17.3	9,024	Closed	Open	14.5	260
9/28/2024	6:45:00	7.1	0.318	15.8	9,029	Closed	Open	15.2	259
9/28/2024	7:00:00	7.1	0.314	12.4	9,034	Closed	Open	15.9	257
9/28/2024	7:15:00	7.1	0.310	7.8	9,038	Closed	Open	16.3	259
9/28/2024	7:30:00	7.1	0.318	7.5	9,043	Closed	Open	16.8	257
9/28/2024	7:45:00	7.1	0.314	8.6	9,048	Closed	Open	17.4	257
9/28/2024	8:00:00	7.1	0.310	6.3	9,053	Closed	Open	17.7	256
9/28/2024	8:15:00	7.1	0.318	5.9	9,057	Closed	Open	18.1	257
9/28/2024	8:30:00	7.1	0.314	3.8	9,062	Closed	Open	18.4	257
9/28/2024	8:45:00	7.1	0.314	6	9,067	Closed	Open	18.9	256
9/28/2024	9:00:00	7.1	0.318	4.8	9,072	Closed	Open	19.2	259
9/28/2024	9:15:00	7.1	0.310	5.9	9,076	Closed	Open	19.5	259
9/28/2024	9:30:00	7.1	0.314	4.2	9,081	Closed	Open	19.7	257
9/28/2024	9:45:00	7.1	0.310	3.1	9,086	Closed	Open	20	257
9/28/2024	10:00:00	7.1	0.302	1.4	9,091	Closed	Open	20.3	257
9/28/2024	10:15:00	7	0.310	6.2	9,095	Closed	Open	20.5	257
9/28/2024	10:30:00	7	0.306	4.9	9,100	Closed	Open	20.6	259

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/28/2024	10:45:00	7	0.155	3.2	9,100	Open	Closed	20.8	259
9/28/2024	11:00:00	7.1	0.151	43.1	9,100	Open	Closed	19.5	252
9/28/2024	11:15:00	7.4	0.121	26.9	9,100	Open	Closed	15.6	256
9/28/2024	11:30:00	7.4	0.000	23.8	9,100	Open	Closed	17.4	256
9/28/2024	11:45:00	7.4	0.249	12.7	9,103	Closed	Open	17.9	256
9/28/2024	12:00:00	7.3	0.242	12.2	9,106	Closed	Open	18.5	256
9/28/2024	12:15:00	7.3	0.249	11.8	9,110	Closed	Open	19.1	256
9/28/2024	12:30:00	7.3	0.246	3.2	9,113	Closed	Open	19.6	256
9/28/2024	12:45:00	7.3	0.249	2.5	9,117	Closed	Open	19.9	256
9/28/2024	13:00:00	7.3	0.249	2.5	9,121	Closed	Open	20.1	256
9/28/2024	13:15:00	7.3	0.310	13.9	9,125	Closed	Open	21	257
9/28/2024	13:30:00	7.3	0.310	10.1	9,126	Open	Closed	20.9	258
9/28/2024	13:45:00	7.2	0.318	7.2	9,130	Closed	Open	21.2	258
9/28/2024	14:00:00	7.2	0.321	4.4	9,135	Closed	Open	21.5	258
9/28/2024	14:15:00	7.2	0.306	7.9	9,136	Open	Closed	21.8	256
9/28/2024	14:30:00	7.2	0.318	8.4	9,136	Open	Closed	22.2	256
9/28/2024	14:45:00	7.2	0.314	8.1	9,136	Open	Closed	22.3	256
9/28/2024	15:00:00	7.2	0.000	7.5	9,136	Open	Closed	22.9	258
9/28/2024	15:15:00	7.1	0.340	9.5	9,138	Closed	Open	22.7	257
9/28/2024	15:30:00	7.1	0.000	8.1	9,140	Open	Closed	22.7	257
9/28/2024	15:45:00	7.1	0.242	10.5	9,140	Open	Closed	22.2	257

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/28/2024	16:00:00	7	0.265	9.6	9,140	Open	Closed	22.1	257
9/28/2024	16:15:00	7.1	0.359	11.6	9,144	Closed	Open	22.3	259
9/28/2024	16:30:00	7.1	0.378	7.8	9,149	Closed	Open	22.4	259
9/28/2024	16:45:00	7.1	0.355	5.4	9,155	Closed	Open	22.5	259
9/28/2024	17:00:00	7	0.363	8.8	9,160	Closed	Open	22.4	259
9/28/2024	17:15:00	7	0.363	8.6	9,166	Closed	Open	22.5	259
9/28/2024	17:30:00	7	0.359	8.9	9,171	Closed	Open	22.5	261
9/28/2024	17:45:00	7	0.363	8.4	9,177	Closed	Open	22.5	261
9/28/2024	18:00:00	7	0.355	7.9	9,182	Closed	Open	22.6	261
9/28/2024	18:15:00	7	0.359	7.9	9,188	Closed	Open	22.4	261
9/28/2024	18:30:00	7	0.140	6.9	9,190	Closed	Open	22.6	261
9/28/2024	18:45:00	7	0.140	6.4	9,192	Closed	Open	22.7	259
9/28/2024	19:00:00	7	0.318	6.1	9,195	Closed	Open	22.7	261
9/28/2024	19:15:00	7	0.329	6.1	9,200	Closed	Open	22.8	262
9/28/2024	19:30:00	7	0.321	5.3	9,205	Closed	Open	22.8	262
9/28/2024	19:45:00	7	0.321	5	9,210	Closed	Open	22.8	262
9/28/2024	20:00:00	7	0.325	4	9,214	Closed	Open	22.9	262
9/28/2024	20:15:00	7	0.321	4.6	9,219	Closed	Open	22.9	262
9/28/2024	20:30:00	7	0.333	4.3	9,224	Closed	Open	22.9	262
9/28/2024	20:45:00	7	0.321	3.7	9,229	Closed	Open	22.9	263
9/28/2024	21:00:00	7	0.321	10.8	9,233	Open	Closed	23	262

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 23rd to September 29th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **October 17th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/28/2024	21:15:00	7.3	0.321	31.7	9,233	Open	Closed	22.4	266
9/28/2024	21:30:00	7.2	0.333	123.7	9,233	Open	Closed	15	261
9/28/2024	21:45:00	7.1	0.382	170	9,233	Open	Closed	14.6	260
9/28/2024	22:00:00	7.3	0.310	82.5	9,233	Open	Closed	14.4	258
9/28/2024	22:15:00	7.3	0.306	99	9,233	Open	Closed	14.8	256
9/28/2024	22:30:00	7.2	0.295	37.7	9,233	Open	Closed	15.6	255
9/28/2024	22:45:00	7.2	0.348	29.9	9,233	Open	Closed	16.3	257
9/28/2024	23:00:00	7.2	0.295	24.5	9,233	Open	Closed	17	257
9/28/2024	23:15:00	7.2	0.306	19	9,233	Open	Closed	17.6	258
9/28/2024	23:30:00	7.2	0.318	25.3	9,235	Open	Closed	18.1	258
9/28/2024	23:45:00	7.2	0.310	17.1	9,235	Closed	Open	18.6	258
9/29/2024	0:00:00	7.2	0.314	14.9	9,240	Closed	Open	18.9	258
9/29/2024	0:15:00	7.2	0.310	13.7	9,245	Closed	Open	19.3	256
9/29/2024	0:30:00	7.2	0.318	16.5	9,250	Closed	Open	19.5	255
9/29/2024	0:45:00	7.2	0.310	19.8	9,252	Open	Closed	19.7	257
9/29/2024	1:00:00	7.2	0.314	18	9,252	Open	Closed	19.9	258
9/29/2024	1:15:00	7.2	0.310	15	9,254	Closed	Open	20.2	258
9/29/2024	1:30:00	7.2	0.318	13.5	9,259	Closed	Open	20.4	258
9/29/2024	1:45:00	7.2	0.352	12.7	9,264	Closed	Open	20.7	258
9/29/2024	2:00:00	7.2	0.348	11.1	9,269	Closed	Open	20.9	258
9/29/2024	2:15:00	7.2	0.344	13	9,275	Closed	Open	21	260

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/29/2024	2:30:00	7.2	0.348	12.5	9,280	Closed	Open	21.2	259
9/29/2024	2:45:00	7.2	0.336	12.6	9,285	Closed	Open	21.3	261
9/29/2024	3:00:00	7.2	0.333	12.6	9,290	Closed	Open	21.4	261
9/29/2024	3:15:00	7.2	0.340	12	9,295	Closed	Open	21.5	261
9/29/2024	3:30:00	7.2	0.344	11.8	9,301	Closed	Open	21.7	261
9/29/2024	3:45:00	7.1	0.344	11.2	9,306	Closed	Open	21.7	261
9/29/2024	4:00:00	7.1	0.355	10.9	9,311	Closed	Open	21.8	261
9/29/2024	4:15:00	7.1	0.348	10.1	9,317	Closed	Open	21.9	261
9/29/2024	4:30:00	7.1	0.336	10.8	9,322	Closed	Open	21.9	260
9/29/2024	4:45:00	7.1	0.336	8.7	9,327	Closed	Open	22.1	261
9/29/2024	5:00:00	7.1	0.329	8.1	9,332	Closed	Open	22.1	261
9/29/2024	5:15:00	7.1	0.325	8	9,337	Closed	Open	22.1	261
9/29/2024	5:30:00	7.1	0.333	8.3	9,342	Closed	Open	22.1	261
9/29/2024	5:45:00	7.1	0.333	9	9,346	Closed	Open	22.1	261
9/29/2024	6:00:00	7.1	0.340	7.8	9,351	Closed	Open	22.1	261
9/29/2024	6:15:00	7.1	0.333	6.3	9,356	Closed	Open	22.1	260
9/29/2024	6:30:00	7.1	0.340	6.8	9,361	Closed	Open	22	261
9/29/2024	6:45:00	7.1	0.333	6.4	9,366	Closed	Open	21.9	261
9/29/2024	7:00:00	7.1	0.340	6.3	9,371	Closed	Open	21.9	257
9/29/2024	7:15:00	7.1	0.325	6.4	9,376	Closed	Open	21.8	259
9/29/2024	7:30:00	7.1	0.333	8.1	9,380	Closed	Open	21.7	257

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Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/29/2024	7:45:00	7.1	0.333	7.8	9,385	Closed	Open	21.6	257
9/29/2024	8:00:00	7.1	0.329	6.6	9,390	Closed	Open	21.5	261
9/29/2024	8:15:00	7.1	0.336	6	9,395	Closed	Open	21.5	258
9/29/2024	8:30:00	7.1	0.321	5	9,396	Open	Closed	21.5	261
9/29/2024	8:45:00	7.4	0.174	5.9	9,396	Open	Closed	21.5	261
9/29/2024	9:00:00	7.4	0.000	104.6	9,396	Open	Closed	21.9	118
9/29/2024	9:15:00	7.4	0.000	28.8	9,396	Open	Closed	21.9	119
9/29/2024	9:30:00	7.2	0.306	74.4	9,396	Open	Closed	18.1	253
9/29/2024	9:45:00	7	0.306	58.9	9,396	Open	Closed	17.6	254
9/29/2024	10:00:00	7	0.234	35.6	9,396	Open	Closed	14.8	266
9/29/2024	10:15:00	7.3	0.110	30	9,396	Open	Closed	14.7	263
9/29/2024	10:30:00	7.3	0.851	19.5	9,396	Open	Closed	15.7	262
9/29/2024	10:45:00	7.2	0.249	31.6	9,396	Open	Closed	15.5	262
9/29/2024	11:00:00	7.1	0.174	16.9	9,396	Open	Closed	15.6	269
9/29/2024	11:15:00	7.1	0.000	17.1	9,396	Open	Closed	16.4	268
9/29/2024	11:30:00	7.1	0.238	7.6	9,398	Closed	Open	17.1	268
9/29/2024	11:45:00	7.1	0.227	4.7	9,401	Closed	Open	17.8	269
9/29/2024	12:00:00	7	0.280	7.1	9,405	Closed	Open	18	265
9/29/2024	12:15:00	7	0.272	15.2	9,409	Closed	Open	18.1	266
9/29/2024	12:30:00	7	0.276	13.7	9,413	Closed	Open	18.2	268
9/29/2024	12:45:00	7	0.280	13.6	9,417	Closed	Open	18.3	268

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/29/2024	13:00:00	7.1	0.280	14.7	9,421	Closed	Open	18.4	268
9/29/2024	13:15:00	7.1	0.284	14.1	9,425	Closed	Open	18.5	268
9/29/2024	13:30:00	7.1	0.276	13.8	9,429	Closed	Open	18.6	268
9/29/2024	13:45:00	7.1	0.276	13.3	9,433	Closed	Open	18.6	268
9/29/2024	14:00:00	7.1	0.280	11.4	9,437	Closed	Open	18.7	268
9/29/2024	14:15:00	7.1	0.284	11.9	9,442	Closed	Open	18.8	270
9/29/2024	14:30:00	7.1	0.280	10	9,446	Closed	Open	18.9	267
9/29/2024	14:45:00	7.1	0.280	9.5	9,450	Closed	Open	19	267
9/29/2024	15:00:00	7.1	0.284	10.5	9,454	Closed	Open	19.2	269
9/29/2024	15:15:00	7.1	0.280	11.4	9,458	Closed	Open	19.3	269
9/29/2024	15:30:00	7.1	0.276	8.4	9,462	Closed	Open	19.5	269
9/29/2024	15:45:00	7.1	0.284	12	9,466	Closed	Open	19.6	267
9/29/2024	16:00:00	7.1	0.284	7	9,470	Closed	Open	19.7	268
9/29/2024	16:15:00	7.1	0.280	9.2	9,474	Closed	Open	19.8	269
9/29/2024	16:30:00	7.1	0.284	8.4	9,478	Closed	Open	19.8	270
9/29/2024	16:45:00	7.1	0.284	8.3	9,482	Closed	Open	19.9	269
9/29/2024	17:00:00	7.1	0.284	4.7	9,486	Closed	Open	19.9	268
9/29/2024	17:15:00	7.1	0.284	7	9,490	Closed	Open	19.8	269
9/29/2024	17:30:00	7.3	0.291	49.3	9,491	Open	Closed	18.5	268
9/29/2024	17:45:00	7.3	0.000	43.4	9,491	Open	Closed	18.5	267
9/29/2024	18:00:00	7.3	0.000	41.7	9,491	Open	Closed	18.5	266

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/29/2024	18:15:00	7.4	0.000	41.4	9,491	Open	Closed	18.4	266
9/29/2024	18:30:00	7.4	0.000	39.3	9,491	Open	Closed	18.3	266
9/29/2024	18:45:00	7.4	0.000	37.2	9,491	Open	Closed	18.2	267
9/29/2024	19:00:00	7.4	0.386	33.5	9,491	Open	Closed	18.1	267
9/29/2024	19:15:00	7.4	0.333	32.9	9,491	Open	Closed	18	268
9/29/2024	19:30:00	7.4	0.352	29.6	9,491	Open	Closed	17.9	267
9/29/2024	19:45:00	7.4	0.333	31.2	9,491	Open	Closed	17.8	269
9/29/2024	20:00:00	7.4	0.321	22.4	9,491	Open	Closed	17.6	269
9/29/2024	20:15:00	7.4	0.325	24.9	9,491	Open	Closed	17.5	271
9/29/2024	20:30:00	7.4	0.325	21.8	9,491	Open	Closed	17.4	269
9/29/2024	20:45:00	7.4	0.325	22.9	9,491	Open	Closed	17.2	269
9/29/2024	21:00:00	7.4	0.325	23.6	9,491	Open	Closed	17.1	269
9/29/2024	21:15:00	7	0.370	146	9,491	Open	Closed	15	260
9/29/2024	21:30:00	7.2	0.344	83.3	9,491	Open	Closed	14.9	258
9/29/2024	21:45:00	7.3	0.359	50	9,491	Open	Closed	14.8	258
9/29/2024	22:00:00	7.3	0.359	49	9,491	Open	Closed	14.9	258
9/29/2024	22:15:00	7.1	0.000	54	9,491	Open	Closed	14.5	262
9/29/2024	22:30:00	7.1	0.000	72.6	9,491	Open	Closed	14.4	262
9/29/2024	22:45:00	7.2	0.370	57.1	9,491	Open	Closed	14.4	260
9/29/2024	23:00:00	7.2	0.363	50	9,494	Closed	Open	14.6	261
9/29/2024	23:15:00	7.2	0.431	38.7	9,500	Closed	Open	15	259

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Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/29/2024	23:30:00	7.2	0.839	85.7	9,506	Open	Closed	15.3	255
9/29/2024	23:45:00	7.4	0.200	94.6	9,506	Open	Closed	14.4	258

Appendix B: Photos

Photo 1: No visible sheen observed in the WTP tank, September 23rd

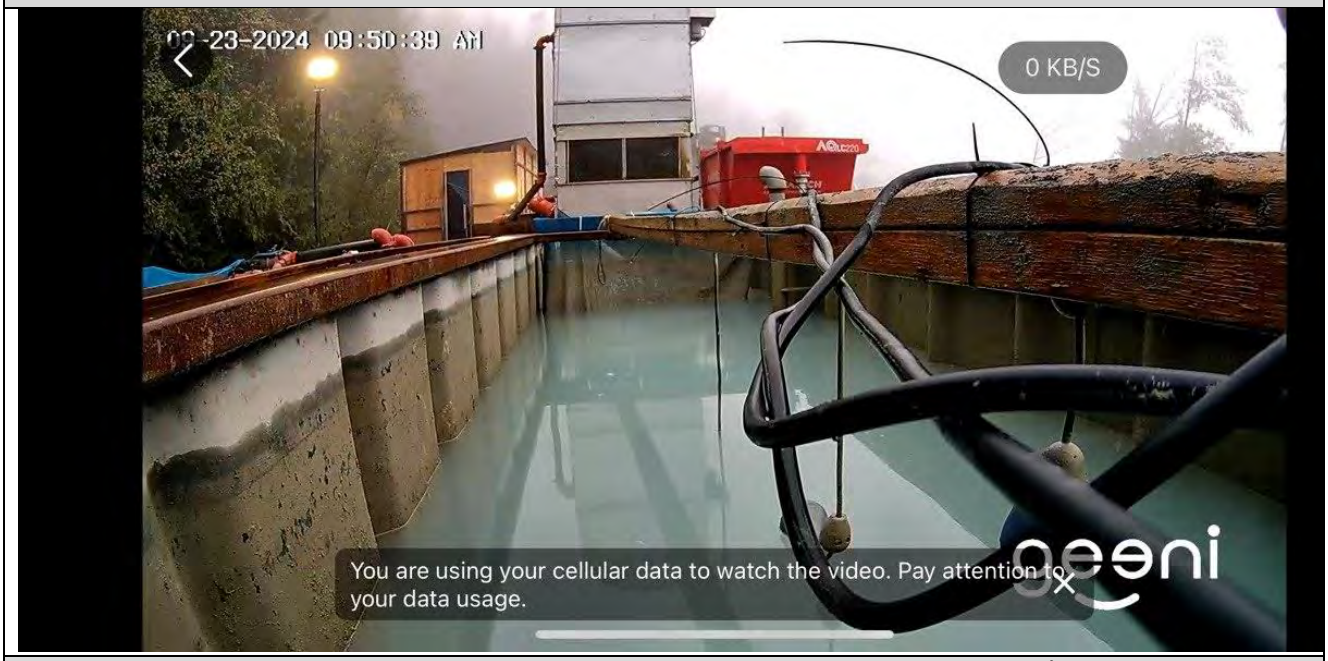

Photo 2: No visible sheen observed in the WTP water, September 24th

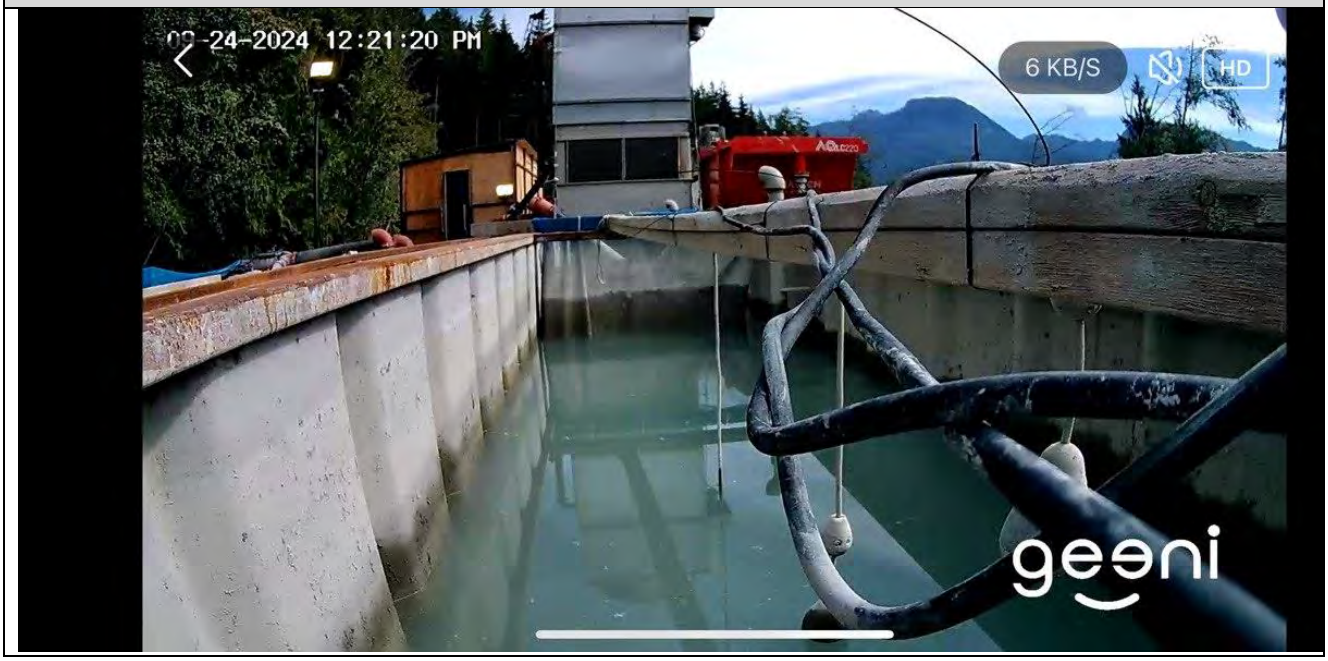

Photo 3: No visible sheen observed in the WTP water, September 25th

Photo 4: No visible sheen observed in the WTP water, September 26th

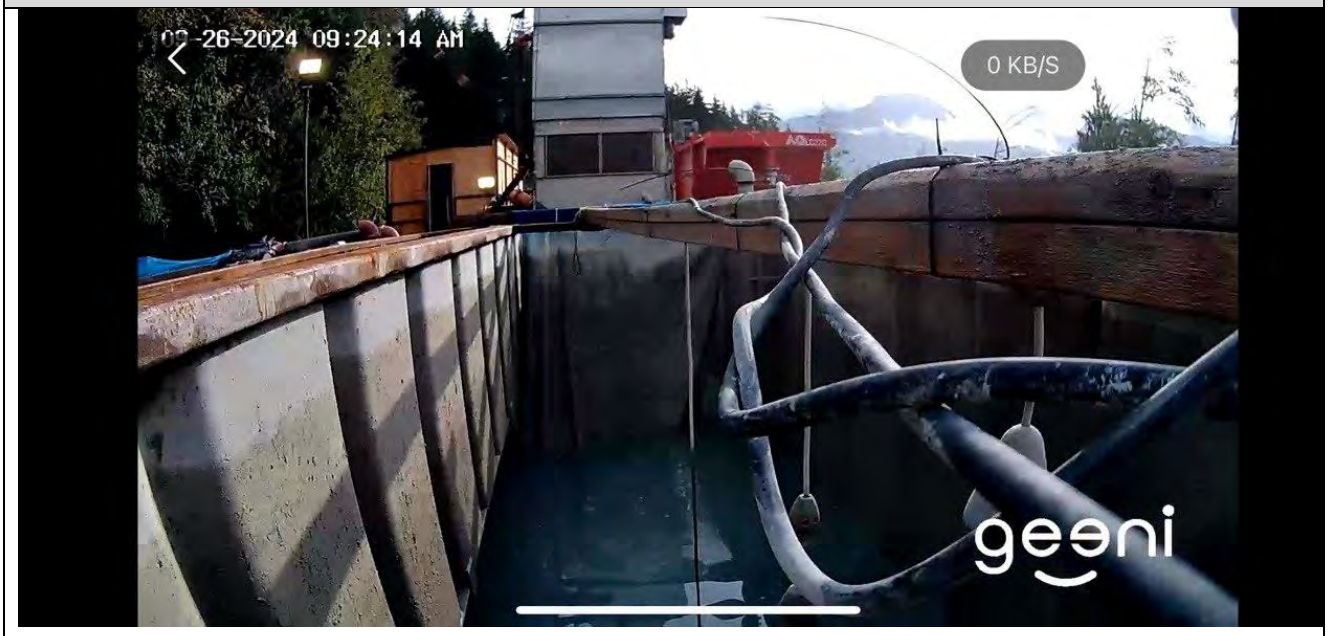

Photo 5: No visible sheen observed in the WTP water, September 27th

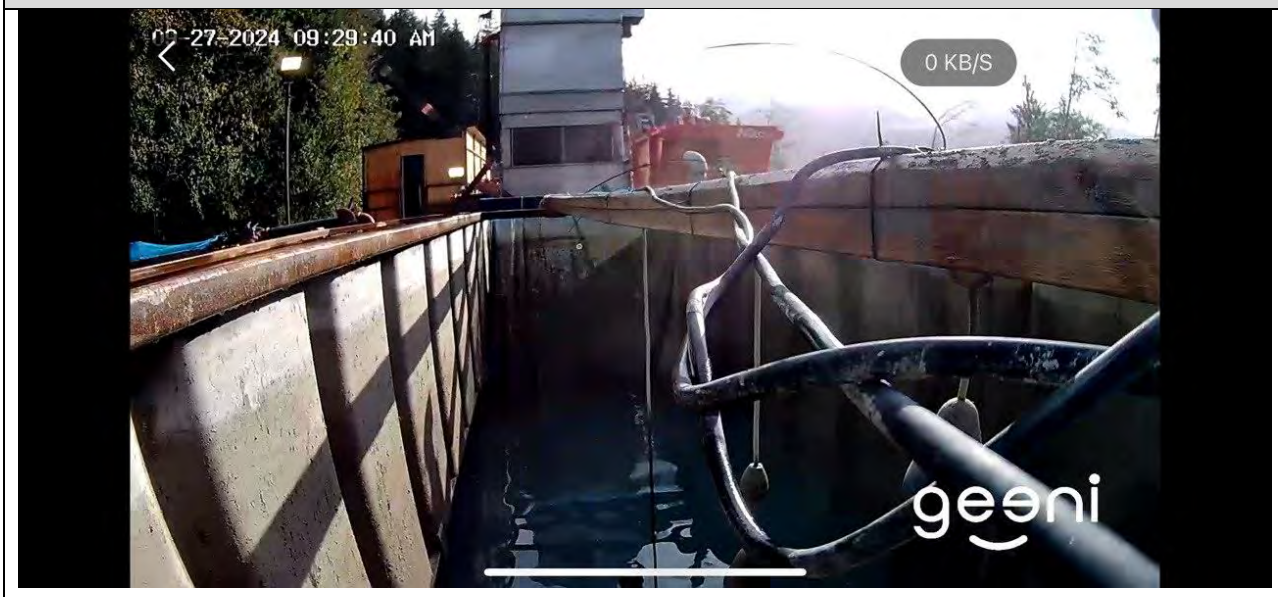

Photo 6: No visible sheen observed in the WTP water, September 29th

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					VA24C5344-001	VA24C5344-002					
	Date Sampled					24-Sep-2024	24-Sep-2024					
	Time Sampled					11:37	10:54					
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	7.34	7.60		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]	-	15.8 (5 week average is 15.3)	15.1 (5 week average is 15.5)		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	-	-	-	-	36	136					
Turbidity (field)	NTU	Varies with background, see note Guideline = 8.5	Varies with background, see note Guideline = 3.65 5-week discrete sampling average = 2.80 (DS)	Varies with background, see note Guideline = 8.5	Varies with background, see note Guideline = 3.65 5-week discrete sampling average = 2.80 (DS)	0.53	2.39		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	8.82	8.88		Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L. Refer to BC Water Quality Guidelines for more information.
General Parameters												
Hardness (as $CaCO_3$) (total)	mg/L	-	-	-	-	10.5	50.2					
Total Dissolved Solids	mg/L	-	-	-	-	33	80					
Total Suspended Solids	mg/L	Varies with background, see note Guideline = 28	Varies with background, see note Guideline = 8.00 5-week discrete sampling average = 3.46 (DS)	Varies with background, see note Guideline = 28	Varies with background, see note Guideline = 8.00 5-week discrete sampling average = 3.46 (DS)	< 3.0	< 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	-	-	-	-	1.63	0.54			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	10.6	52.4	The upstream location has high sensitivity to acid inputs (i.e. low buffering capacity), while the downstream has low sensitivity to acid inputs.		Guideline is for alkalinity (as CaCO3) and categorizes the sensitivity of a water body to acid inputs. Alkalinity < 10 mg/L is considered highly sensitive to acid inputs; 10 - 20 mg/L is considered moderately sensitive to acid inputs; > 20 mg/L is considered low sensitivity.		
Total Sulfide (as S)	mg/L	-	-	-	-	< 0.0015	< 0.0015					
Total Sulfide (un-ionized as H_2S)	mg/L	-	0.002	-	-	< 0.0015	< 0.0015			Working guideline		
Total Sulfide (as H_2S)	mg/L	-	-	-	-	< 0.0016	< 0.0016					
Anions and Nutrients												
Ammonia	mg/L ammonia-N	Varies with pH and temperature. See note. Guideline = 15.3	Varies with pH and temperature. See note. Guideline = 1.78	Varies with pH and temperature. See note. Guideline = 35	Varies with pH, temperature and salinity. See note. Guideline = 8.7	< 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	0.77	2.06				Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride expected at that time and depth.	Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride expected at that
Fluoride	mg/L	Varies with hardness Guideline =0.428	-	1.5	-	0.021	0.134		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	0.034	0.267					
Nitrite (as N)	mg/L	Varies with chloride. Table 27B, see note. Guideline = 0.06	Varies with chloride. Table 27B, see note. Guideline = 0.04	-	-	< 0.0010	< 0.0010		Varies with chloride. Refer to Table 27B in BC WQG for guideline values.	Varies with chloride. Refer to Table 27B in BC WQG for guideline values.		
Total Nitrogen	mg/L	-	-	-	-	0.112	0.35					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.0046	0.0058			Guideline is for lakes, refer to BCWQ guideline for nutrients and algae for more information. Guideline does not apply to site.		
Sulfate (as SO_4)	mg/L	-	Varies with hardness. See note. Guideline = 218	-	-	2.85	6.44			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 = 0.143 5-week field average = 0.087 (US), 0.082 (DS)	-	-	0.0402	0.0502			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	0.00064					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.00016	0.00055					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.00513	0.0121			Working guideline status		
Beryllium (Be)-Total	mg/L	-	0.00013	-	0.100	< 0.000100	< 0.000100			Working guideline status		Working guideline status
Bismuth (Bi)-Total	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Boron (B)-Total	mg/L	-	1.2	-	1.2	< 0.010	0.021					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	< 0.0000050	0.0000108					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	3.53	18.4					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.000012	0.000026					
Chromium (Cr) - Total	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Chromium (Cr(III))-Total	mg/L	-	0.0089	-	0.056	< 0.00050	< 0.00050			Working guideline status		Working guideline status
Chromium (Cr(VI))-Total	mg/L	-	0.0025	-	0.0015	< 0.00050	< 0.00050			Working guideline status		Working guideline status
Cobalt (Co)-Total	mg/L	0.11	0.004	-	-	< 0.00010	< 0.00010					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002 5-week field average = 0.0012 (US), 0.0009 (DS)	0.00058	0.00052					
Iron (Fe)-Total	mg/L	1	-	-	-	0.070	0.060					
Lead (Pb)-Total	mg/L	Varies with hardness. See Note. Guideline = 0.005	Varies with hardness. See Note. Guideline = 0.004	0.14	0.002	< 0.000050	0.000078		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	0.0033					
Magnesium (Mg)-Total	mg/L	-	-	-	-	0.417	1.04					
Manganese (Mn)-Total	mg/L	Varies with hardness Guideline = 0.82	Varies with hardness Guideline = 0.77	-	-	0.00164	0.00362		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	-	-	0.000563	0.0108					
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	-	-	-	-	0.32	1.72					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00084	0.00356					
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	-	-	-	-	4.91	5.75					
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	-	-	-	-	2.12	4.56					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0179	0.0481					
Sulfur (S)-Total	mg/L	-	-	-	-	0.9	2.26					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.0008	-	-	< 0.000010	< 0.000200			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	< 0.00001					
Tin (Sn)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Titanium (Ti)-Total	mg/L	-	-	-	-	0.00054	0.00121					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00010	0.00018					
Uranium (U)-Total	mg/L	-	0.0085	-	-	0.000061	0.00192			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	0.0040					
Zirconium (Zr)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.032	0.0205					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	< 0.00010	0.00072					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00013	0.00066					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.00521	0.0126					
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	0.02					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note Guideline = 0.000058	Varies with hardness, see note Guideline = 0.000096	-	-	< 0.0000050	0.0000123		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	-	-	3.46	18.3	The upstream location has high sensitivity to acid inputs (i.e. low buffering capacity), while the downstream location has low sensitivity to acid inputs.		Guideline categorizes the sensitivity of a water body to acid inputs (i.e. buffering capacity). Standard is 4 mg/L dissolved Ca for the most sensitive waterbodies,5 - 8 mg/L for waterbodies with moderate sensitivity to acid inputs. Waterbodies with dissolved calcium > 8mg/L are considered to have low sensitivity to acid inputs.		
Cesium (Cs)-Dissolved	mg/L	-	-	-	-	0.000012	0.000025					
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 = 0.0020	Guideline varies with other parameters, see note Guideline = 0.0008 5-week field average = **0.0010** (US), 0.0006 (DS)	-	-	***0.00053***	0.00036	**Dissolved copper at the upstream location exceeds long-term BCWG for FAL.** Because this is the upstream location, this is likely naturally occurring and was not due to site discharges.	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	-	-	-	0.052	< 0.010					
Lead (Pb)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	< 0.0010	0.0036					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.402	1.03					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00108	0.0015					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.000567	0.0122					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	< 0.0005	< 0.0005					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.0500	< 0.0500					
Potassium (K)-Dissolved	mg/L	-	-	-	-	0.322	1.87					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00079	0.00391					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	4.82	5.8					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	2.01	4.39					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0176	0.0478					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	0.70	2.03					
Tellurium (Te)-Dissolved	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Dissolved	mg/L	-	-	-	-	< 0.000010	0.000010					
Thorium (Th)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Tin (Sn)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Titanium (Ti)-Dissolved	mg/L	-	-	-	-	< 0.00030	< 0.00030					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	< 0.00010	0.00021					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.000062	0.00259					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness Guideline = 0.008	Varies with pH, DOC, hardness Guideline = 0.0075	-	-	< 0.0010	0.0036		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

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				7.34	7.6
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations				15.8 (5 week average is 15.3)	(5 week average is 15.5)
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations				0.53	2.39
Hardness (as CaCO3) (total)	mg/L	aboratory tested total hardness taken at each respective sample site on the day of sampling used in guideline calculations				10.5	50.2
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations				1.63	0.54
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations				10.6	52.4
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations				0.77	2.06

Woodfibre Site Receiving Environment Lab Documentation

CERTIFICATE OF ANALYSIS

Work Order	: **VA24C5344**			
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	:	ALS Environmental - Vancouver
Contact	:	Account Manager		
Address	:	Address		
Telephone	:	Telephone		
Project	: 11964	Date Samples Received	:	24-Sep-2024 17:20
PO	: 11964 - Task 20 - Phase 3C -4C	Date Analysis Commenced	:	25-Sep-2024
C-O-C number	: ----	Issue Date	:	04-Oct-2024 14:33
Sampler	: ----			
Site	: Water Analysis			
Quote number	: VA23-TRIT100-012			
No. of samples received	: 2			
No. of samples analysed	: 2			

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

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

General Comments

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

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

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

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

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

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

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

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

Analytical Results

Sub-Matrix: Water (Matrix: Water)			Client sample ID		WLNG US 1	WLNG DS 1	----	----	----
			Client sampling date / time		24-Sep-2024 11:37	24-Sep-2024 10:54	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C5344-001	VA24C5344-002	----	----	----
					Result	Result	----	----	----
Field Tests									
Conductivity, field	----	EF001/VA	0.10	µS/cm	36.000	136.00	----	----	----
pH, field	----	EF001/VA	0.10	pH units	7.34	7.60	----	----	----
Temperature, field	----	EF001/VA	0.10	°C	15.8	15.1	----	----	----
Physical Tests									
Hardness (as CaCO3), dissolved	----	EC100/WT	0.60	mg/L	10.3	49.9	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/WT	0.60	mg/L	10.5	50.2	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	33	80	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	10.6	52.4	----	----	----
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	0.77	2.06	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.021	0.134	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.0340	0.267	----	----	----
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	0.112	0.350	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0046	0.0058	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	2.85	6.44	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	1.63	0.54	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	24-Sep-2024 11:37	24-Sep-2024 10:54	----	----	----
						VA24C5344-001	VA24C5344-002	----	----	----
						Result	Result	----	----	----
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L		<0.0015	<0.0015	----	----	----
Sulfide, un-ionized (as H2S), from total	7783-06-4	EC395/VA	0.0015	mg/L		<0.0015	<0.0015	----	----	----
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L		<0.0016	<0.0016	----	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/WT	0.0030	mg/L		0.0402	0.0502	----	----	----
Antimony, total	7440-36-0	E420/WT	0.00010	mg/L		<0.00010	0.00064	----	----	----
Arsenic, total	7440-38-2	E420/WT	0.00010	mg/L		0.00016	0.00055	----	----	----
Barium, total	7440-39-3	E420/WT	0.00010	mg/L		0.00513	0.0121	----	----	----
Beryllium, total	7440-41-7	E420/WT	0.000100	mg/L		<0.000100	<0.000100	----	----	----
Bismuth, total	7440-69-9	E420/WT	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Boron, total	7440-42-8	E420/WT	0.010	mg/L		<0.010	0.021	----	----	----
Cadmium, total	7440-43-9	E420/WT	0.0000050	mg/L		<0.0000050	0.0000108	----	----	----
Calcium, total	7440-70-2	E420/WT	0.050	mg/L		3.53	18.4	----	----	----
Cesium, total	7440-46-2	E420/WT	0.000010	mg/L		0.000012	0.000026	----	----	----
Chromium, total	7440-47-3	E420/WT	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Cobalt, total	7440-48-4	E420/WT	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Copper, total	7440-50-8	E420/WT	0.00050	mg/L		0.00058	0.00052	----	----	----
Iron, total	7439-89-6	E420/WT	0.010	mg/L		0.070	0.060	----	----	----
Lead, total	7439-92-1	E420/WT	0.000050	mg/L		<0.000050	0.000078	----	----	----
Lithium, total	7439-93-2	E420/WT	0.0010	mg/L		<0.0010	0.0033	----	----	----
Magnesium, total	7439-95-4	E420/WT	0.0050	mg/L		0.417	1.04	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	24-Sep-2024 11:37	24-Sep-2024 10:54	----	----	----
						VA24C5344-001	VA24C5344-002	----	----	----
						Result	Result	----	----	----
Total Metals										
Manganese, total	7439-96-5	E420/WT	0.00010	mg/L		0.00164	0.00362	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Molybdenum, total	7439-98-7	E420/WT	0.000050	mg/L		0.000563	0.0108	----	----	----
Nickel, total	7440-02-0	E420/WT	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Phosphorus, total	7723-14-0	E420/WT	0.050	mg/L		<0.050	<0.050	----	----	----
Potassium, total	7440-09-7	E420/WT	0.050	mg/L		0.320	1.72	----	----	----
Rubidium, total	7440-17-7	E420/WT	0.00020	mg/L		0.00084	0.00356	----	----	----
Selenium, total	7782-49-2	E420/WT	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Silicon, total	7440-21-3	E420/WT	0.10	mg/L		4.91	5.75	----	----	----
Silver, total	7440-22-4	E420/WT	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Sodium, total	7440-23-5	E420/WT	0.050	mg/L		2.12	4.56	----	----	----
Strontium, total	7440-24-6	E420/WT	0.00020	mg/L		0.0179	0.0481	----	----	----
Sulfur, total	7704-34-9	E420/WT	0.50	mg/L		0.90	2.26	----	----	----
Tellurium, total	13494-80-9	E420/WT	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Thallium, total	7440-28-0	E420/WT	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Thorium, total	7440-29-1	E420/WT	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Tin, total	7440-31-5	E420/WT	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Titanium, total	7440-32-6	E420/WT	0.00030	mg/L		0.00054	0.00121	----	----	----
Tungsten, total	7440-33-7	E420/WT	0.00010	mg/L		<0.00010	0.00018	----	----	----
Uranium, total	7440-61-1	E420/WT	0.000010	mg/L		0.000061	0.00192	----	----	----
Vanadium, total	7440-62-2	E420/WT	0.00050	mg/L		<0.00050	<0.00050	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	24-Sep-2024 11:37	24-Sep-2024 10:54	----	----	----
						VA24C5344-001	VA24C5344-002	----	----	----
						Result	Result	----	----	----
Total Metals										
Zinc, total	7440-66-6	E420/WT	0.0030	mg/L		<0.0030	0.0040	----	----	----
Zirconium, total	7440-67-7	E420/WT	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		0.0320	0.0205	----	----	----
Antimony, dissolved	7440-36-0	E421/WT	0.00010	mg/L		<0.00010	0.00072	----	----	----
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		0.00013	0.00066	----	----	----
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		0.00521	0.0126	----	----	----
Beryllium, dissolved	7440-41-7	E421/WT	0.000100	mg/L		<0.000100	<0.000100	----	----	----
Bismuth, dissolved	7440-69-9	E421/WT	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		<0.010	0.020	----	----	----
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L		<0.0000050	0.0000123	----	----	----
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L		3.46	18.3	----	----	----
Cesium, dissolved	7440-46-2	E421/WT	0.000010	mg/L		0.000012	0.000025	----	----	----
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Cobalt, dissolved	7440-48-4	E421/WT	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L		0.00053	0.00036	----	----	----
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L		0.052	<0.010	----	----	----
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Lithium, dissolved	7439-93-2	E421/WT	0.0010	mg/L		<0.0010	0.0036	----	----	----
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		0.402	1.03	----	----	----
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		0.00108	0.00150	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	24-Sep-2024 11:37	24-Sep-2024 10:54	----	----	----
						VA24C5344-001	VA24C5344-002	----	----	----
						Result	Result	----	----	----
Dissolved Metals										
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Molybdenum, dissolved	7439-98-7	E421/WT	0.000050	mg/L		0.000567	0.0122	----	----	----
Nickel, dissolved	7440-02-0	E421/WT	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Phosphorus, dissolved	7723-14-0	E421/WT	0.050	mg/L		<0.050	<0.050	----	----	----
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		0.322	1.87	----	----	----
Rubidium, dissolved	7440-17-7	E421/WT	0.00020	mg/L		0.00079	0.00391	----	----	----
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		4.82	5.80	----	----	----
Silver, dissolved	7440-22-4	E421/WT	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		2.01	4.39	----	----	----
Strontium, dissolved	7440-24-6	E421/WT	0.00020	mg/L		0.0176	0.0478	----	----	----
Sulfur, dissolved	7704-34-9	E421/WT	0.50	mg/L		0.70	2.03	----	----	----
Tellurium, dissolved	13494-80-9	E421/WT	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Thallium, dissolved	7440-28-0	E421/WT	0.000010	mg/L		<0.000010	0.000010	----	----	----
Thorium, dissolved	7440-29-1	E421/WT	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Tin, dissolved	7440-31-5	E421/WT	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Titanium, dissolved	7440-32-6	E421/WT	0.00030	mg/L		<0.00030	<0.00030	----	----	----
Tungsten, dissolved	7440-33-7	E421/WT	0.00010	mg/L		<0.00010	0.00021	----	----	----
Uranium, dissolved	7440-61-1	E421/WT	0.000010	mg/L		0.000062	0.00259	----	----	----
Vanadium, dissolved	7440-62-2	E421/WT	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		<0.0010	0.0036	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)			Client sample ID		WLNG US 1	WLNG DS 1	----	----	----
			Client sampling date / time		24-Sep-2024 11:37	24-Sep-2024 10:54	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C5344-001	VA24C5344-002	----	----	----
					Result	Result	----	----	----
Dissolved Metals									
Zirconium, dissolved	7440-67-7	E421/WT	0.00020	mg/L	<0.00020	<0.00020	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-	Field	Field	----	----	----
Dissolved metals filtration location	----	EP421/WT	-	-	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	: **VA24C5344**	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	: 24-Sep-2024 17:20
PO	: 11964 - Task 20 - Phase 3C -4C	Issue Date	: 04-Oct-2024 14:33
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

- 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 US 1	E298	24-Sep-2024	29-Sep-2024	28 days	5 days	✓	01-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG DS 1	E298	24-Sep-2024	29-Sep-2024	28 days	5 days	✓	01-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG US 1	E235.Br-L	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG DS 1	E235.Br-L	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG US 1	E235.Cl	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG DS 1	E235.Cl	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG US 1	E235.F	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
WLNG DS 1	E235.F	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
WLNG US 1	E235.NO3-L	24-Sep-2024	26-Sep-2024	3 days	2 days	✓	26-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
WLNG DS 1	E235.NO3-L	24-Sep-2024	26-Sep-2024	3 days	2 days	✓	26-Sep-2024	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
WLNG US 1	E235.NO2-L	24-Sep-2024	26-Sep-2024	3 days	2 days	✓	26-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
WLNG DS 1	E235.NO2-L	24-Sep-2024	26-Sep-2024	3 days	2 days	✓	26-Sep-2024	3 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
WLNG US 1	E235.SO4	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
WLNG DS 1	E235.SO4	24-Sep-2024	26-Sep-2024	28 days	2 days	✓	26-Sep-2024	28 days	3 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
WLNG DS 1	E366	24-Sep-2024	29-Sep-2024	28 days	5 days	✓	01-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
WLNG US 1	E366	24-Sep-2024	29-Sep-2024	28 days	5 days	✓	01-Oct-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 DS 1	E372-U	24-Sep-2024	29-Sep-2024	28 days	5 days	✓	01-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WLNG US 1	E372-U	24-Sep-2024	29-Sep-2024	28 days	5 days	✓	01-Oct-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
WLNG DS 1	E509	24-Sep-2024	03-Oct-2024	28 days	9 days	✓	03-Oct-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
WLNG US 1	E509	24-Sep-2024	03-Oct-2024	28 days	9 days	✓	03-Oct-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
WLNG DS 1	E421	24-Sep-2024	02-Oct-2024	180 days	8 days	✓	04-Oct-2024	180 days	10 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
WLNG US 1	E421	24-Sep-2024	02-Oct-2024	180 days	8 days	✓	04-Oct-2024	180 days	10 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
HDPE - total (lab preserved)										
WLNG DS 1	EF001	24-Sep-2024	----	----	----		27-Sep-2024	----	3 days	
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
HDPE - total (lab preserved)										
WLNG US 1	EF001	24-Sep-2024	----	----	----		27-Sep-2024	----	3 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
WLNG DS 1	E358-L	24-Sep-2024	29-Sep-2024	28 days	5 days	✓	30-Sep-2024	28 days	6 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
WLNG US 1	E358-L	24-Sep-2024	29-Sep-2024	28 days	5 days	✓	30-Sep-2024	28 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG DS 1	E290	24-Sep-2024	26-Sep-2024	14 days	2 days	✓	27-Sep-2024	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG US 1	E290	24-Sep-2024	26-Sep-2024	14 days	2 days	✓	27-Sep-2024	14 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
WLNG DS 1	E162	24-Sep-2024	----	----	----		29-Sep-2024	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
WLNG US 1	E162	24-Sep-2024	----	----	----		29-Sep-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
WLNG DS 1	E160	24-Sep-2024	----	----	----		29-Sep-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
WLNG US 1	E160	24-Sep-2024	----	----	----		29-Sep-2024	7 days	5 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
WLNG DS 1	E532	24-Sep-2024	----	----	----		27-Sep-2024	28 days	3 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
WLNG US 1	E532	24-Sep-2024	----	----	----		27-Sep-2024	28 days	3 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAAS										
HDPE - total (lab preserved) WLNG DS 1	E508	24-Sep-2024	03-Oct-2024	0 hrs	211 hrs	× UCP	03-Oct-2024	0 hrs	211 hrs	× UCP
Total Metals : Total Mercury in Water by CVAAS										
HDPE - total (lab preserved) WLNG US 1	E508	24-Sep-2024	03-Oct-2024	0 hrs	211 hrs	× UCP	03-Oct-2024	0 hrs	211 hrs	× UCP
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) WLNG DS 1	E420	24-Sep-2024	27-Sep-2024	180 days	3 days	✓	28-Sep-2024	180 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) WLNG US 1	E420	24-Sep-2024	27-Sep-2024	180 days	3 days	✓	28-Sep-2024	180 days	4 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) WLNG DS 1	E395	24-Sep-2024	----	----	----		25-Sep-2024	7 days	1 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) WLNG US 1	E395	24-Sep-2024	----	----	----		25-Sep-2024	7 days	1 days	✓

Legend & Qualifier Definitions

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

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1676424	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	1680498	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1676421	1	11	9.0	5.0	✓
Chloride in Water by IC	E235.Cl	1676415	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1687187	2	28	7.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1685817	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1680495	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1676419	1	18	5.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1676416	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1676417	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1676418	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1680464	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1677317	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1687093	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1676857	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1680492	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1680497	1	19	5.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1672639	1	6	16.6	5.0	✓
TSS by Gravimetry	E160	1680471	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1676424	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	1680498	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1676421	1	11	9.0	5.0	✓
Chloride in Water by IC	E235.Cl	1676415	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1687187	2	28	7.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1685817	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1680495	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1676419	1	18	5.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1676416	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1676417	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1676418	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1680464	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1677317	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1687093	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1676857	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1680492	1	20	5.0	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1680497	1	19	5.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1672639	1	6	16.6	5.0	✓
TSS by Gravimetry	E160	1680471	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1676424	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	1680498	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1676421	1	11	9.0	5.0	✓
Chloride in Water by IC	E235.Cl	1676415	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1687187	2	28	7.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1685817	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1680495	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1676419	1	18	5.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1676416	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1676417	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1676418	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1680464	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1677317	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1687093	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1676857	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1680492	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1680497	1	19	5.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1672639	1	6	16.6	5.0	✓
TSS by Gravimetry	E160	1680471	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1680498	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1676421	1	11	9.0	5.0	✓
Chloride in Water by IC	E235.Cl	1676415	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1687187	2	28	7.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1685817	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1680495	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1676419	1	18	5.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1676416	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1676417	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1676418	1	18	5.5	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1677317	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1687093	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1676857	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1680492	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1680497	1	19	5.2	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Total Sulfide by Colourimetry (Automated Flow)	E395	1672639	1	6	16.6	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Nitrogen by Colourimetry	E366 ALS Environmental - Vancouver	Water	Chinchilla Scientific Nitrate Method, 2011	Following digestion, total nitrogen is is determined colourimetrically using a discrete analyzer utilizing the vanadium chloride reduction method. This method of analysis is approved under US EPA 40 CFR Part 136 (May 2021).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methlyene blue colourimetric method. Results expressed "as H2S" if reported represent the maximum possible H2S concentration based on the total sulfide concentration in the sample. The H2S calculation converts Total Sulphide as (S2-) and reports it as Total Sulphide as (H2S)
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Waterloo	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 - Waterloo	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 - Waterloo	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 - Waterloo	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 - Waterloo	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	: **VA24C5344**	Page	: 1 of 17
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project	: 11964	Date Samples Received	: 24-Sep-2024 17:20
PO	: 11964 - Task 20 - Phase 3C -4C	Date Analysis Commenced	: 25-Sep-2024
C-O-C number	: ----	Issue Date	: 04-Oct-2024 14:34
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*
		Waterloo Inorganics, Waterloo, Ontario
		Waterloo Metals, Waterloo, Ontario
		Vancouver Metals, Burnaby, British Columbia
		Waterloo Metals, Waterloo, Ontario
		Vancouver Administration, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1676424)											
VA24C5314-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	128	129	0.701%	20%	----
Physical Tests (QC Lot: 1680464)											
FJ2402918-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	937	950	1.32%	20%	----
Physical Tests (QC Lot: 1680471)											
FJ2402918-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	4.1	3.5	0.6	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1676415)											
VA24C5344-001	WLNG US 1	Chloride	16887-00-6	E235.Cl	0.50	mg/L	0.77	0.78	0.009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1676416)											
VA24C5344-001	WLNG US 1	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0340	0.0334	0.0006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1676417)											
VA24C5344-001	WLNG US 1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1676418)											
VA24C5344-001	WLNG US 1	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	2.85	2.85	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1676419)											
VA24C5314-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.220	0.217	1.36%	20%	----
Anions and Nutrients (QC Lot: 1676421)											
VA24C5344-001	WLNG US 1	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1680492)											
VA24C5300-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.228	0.225	0.003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1680497)											
VA24C5300-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0025	0.0021	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1680498)											
VA24C5300-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1680495)											
VA24C5300-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.70	2.87	0.17	Diff <2x LOR	----
Total Sulfides (QC Lot: 1672639)											
VA24C5261-001	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: 1676857)											
KS2403924-001	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: 1676857) - continued											
KS2403924-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00148	0.00153	3.51%	20%	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0223	0.0223	0.0354%	20%	----
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	46.0	46.0	0.0107%	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	0.00059	0.00061	0.00002	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	0.0536	0.0539	0.723%	20%	----
		Iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000668	0.000683	2.26%	20%	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0018	0.0017	0.00006	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	24.6	24.8	0.838%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00421	0.00416	1.12%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00189	0.00182	3.67%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	1.99	2.00	0.736%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00071	0.00074	0.00003	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000152	0.000182	0.000030	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	8.58	8.48	1.17%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	10.1	10.0	0.242%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.336	0.332	1.19%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	9.96	9.74	2.24%	20%	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	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	0.00163	0.00165	0.945%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 1676857) - continued											
KS2403924-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00096	0.00096	0.000006	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	0.0076	0.0077	0.00003	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: 1687093)											
VA24C5293-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.000108	0.000108	0.0930%	20%	----
Dissolved Metals (QC Lot: 1685817)											
VA24C5204-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0105	0.0105	0.325%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00044	0.00045	0.000004	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00346	0.00341	1.48%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0375	0.0368	1.93%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000152	0.0000156	0.0000004	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	38.0	37.6	1.07%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00091	0.00090	0.00002	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00058	0.00057	0.00001	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.049	0.048	0.0004	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0052	0.0048	0.0004	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	13.5	13.2	2.20%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0552	0.0541	2.10%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000227	0.000234	0.000007	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00139	0.00138	0.000003	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.959	0.947	1.18%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00073	0.00074	0.000001	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000170	0.000194	0.000023	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.11	4.06	1.28%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	1.78	1.76	1.06%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.195	0.198	1.37%	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: 1685817) - continued											
VA24C5204-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	22.6	22.7	0.280%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00112	0.00115	2.41%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0019	0.0018	0.00005	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1687187)											
VA24C5276-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1687188)											
VA24C5344-002	WLNG DS 1	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1677317)											
VA24C5180-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----

Method Blank (MB) Report

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

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1676424)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1680464)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1680471)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 1676415)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1676416)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1676417)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1676418)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1676419)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1676421)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1680492)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1680497)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1680498)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1680495)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1672639)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1676857)						
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: 1676857) - 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: 1687093)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1685817)						
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: 1685817) - 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: 1687187)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1687188)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1677317)						
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: 1676424)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	105	85.0	115	----
Physical Tests (QCLot: 1680464)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1680471)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1676415)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.7	90.0	110	----
Anions and Nutrients (QCLot: 1676416)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.8	90.0	110	----
Anions and Nutrients (QCLot: 1676417)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.1	90.0	110	----
Anions and Nutrients (QCLot: 1676418)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1676419)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.9	90.0	110	----
Anions and Nutrients (QCLot: 1676421)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 1680492)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	98.5	75.0	125	----
Anions and Nutrients (QCLot: 1680497)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	88.8	80.0	120	----
Anions and Nutrients (QCLot: 1680498)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1680495)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	110	80.0	120	----
Total Sulfides (QCLot: 1672639)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	105	80.0	120	----
Total Metals (QCLot: 1676857)									

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: 1676857) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	98.0	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	103	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	111	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.012 mg/L	109	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	98.6	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	101	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	102	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	104	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	103	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.002 mg/L	103	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.012 mg/L	106	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.012 mg/L	106	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.012 mg/L	106	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	105	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	104	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.012 mg/L	99.8	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	116	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.012 mg/L	105	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.012 mg/L	107	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	107	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	109	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	104	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	106	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	108	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	108	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	96.5	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	109	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.012 mg/L	108	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	107	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	108	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	103	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	96.5	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	104	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.012 mg/L	103	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	98.1	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0 mg/L	101	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1676857) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	109	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	106	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	102	80.0	120	----
Total Metals (QCLot: 1687093)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	100	80.0	120	----
Dissolved Metals (QCLot: 1685817)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	102	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	105	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	109	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.012 mg/L	107	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	104	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	104	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	101	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	106	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	102	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.002 mg/L	108	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.012 mg/L	109	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.012 mg/L	105	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.012 mg/L	105	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	104	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	104	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.012 mg/L	103	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	111	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.012 mg/L	103	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.012 mg/L	103	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	104	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	112	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	107	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	105	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	102	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	105	60.0	140	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	101	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	108	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.012 mg/L	103	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	102	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1685817) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	101	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	103	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	102	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	106	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.012 mg/L	103	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	107	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0 mg/L	107	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	106	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	104	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	105	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	100	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	97.8	80.0	120	----
Speciated Metals (QCLot: 1677317)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.025 mg/L	100	80.0	120	----

Matrix Spike (MS) Report

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

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1676415)										
VA24C5344-002	WLNG DS 1	Chloride	16887-00-6	E235.Cl	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1676416)										
VA24C5344-002	WLNG DS 1	Nitrate (as N)	14797-55-8	E235.NO3-L	2.54 mg/L	2.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1676417)										
VA24C5344-002	WLNG DS 1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.505 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1676418)										
VA24C5344-002	WLNG DS 1	Sulfate (as SO4)	14808-79-8	E235.SO4	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1676419)										
VA24C5344-002	WLNG DS 1	Fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1676421)										
VA24C5344-002	WLNG DS 1	Bromide	24959-67-9	E235.Br-L	0.516 mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1680492)										
VA24C5300-002	Anonymous	Nitrogen, total	7727-37-9	E366	0.392 mg/L	0.4 mg/L	97.9	70.0	130	----
Anions and Nutrients (QCLot: 1680497)										
VA24C5300-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0473 mg/L	0.05 mg/L	94.5	70.0	130	----
Anions and Nutrients (QCLot: 1680498)										
VA24C5300-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.104 mg/L	0.1 mg/L	104	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1680495)										
VA24C5300-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	5.24 mg/L	5 mg/L	105	70.0	130	----
Total Sulfides (QCLot: 1672639)										
VA24C5261-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.214 mg/L	0.2 mg/L	107	75.0	125	----
Total Metals (QCLot: 1676857)										
FJ2402891-007	Anonymous	Aluminum, total	7429-90-5	E420	0.0913 mg/L	0.1 mg/L	91.3	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0528 mg/L	0.05 mg/L	106	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0538 mg/L	0.05 mg/L	108	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.00508 mg/L	0.005 mg/L	102	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0486 mg/L	0.05 mg/L	97.3	70.0	130	----
		Boron, total	7440-42-8	E420	0.051 mg/L	0.05 mg/L	102	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00510 mg/L	0.005 mg/L	102	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00273 mg/L	0.002 mg/L	109	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0129 mg/L	0.012 mg/L	103	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: 1676857) - continued										
FJ2402891-007	Anonymous	Cobalt, total	7440-48-4	E420	0.0126 mg/L	0.012 mg/L	101	70.0	130	----
		Copper, total	7440-50-8	E420	0.0122 mg/L	0.012 mg/L	97.2	70.0	130	----
		Iron, total	7439-89-6	E420	ND mg/L	----	ND	70.0	130	----
		Lead, total	7439-92-1	E420	0.0250 mg/L	0.025 mg/L	99.9	70.0	130	----
		Lithium, total	7439-93-2	E420	ND mg/L	----	ND	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0127 mg/L	0.012 mg/L	102	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0137 mg/L	0.012 mg/L	110	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0247 mg/L	0.025 mg/L	98.7	70.0	130	----
		Phosphorus, total	7723-14-0	E420	0.529 mg/L	0.5 mg/L	106	70.0	130	----
		Potassium, total	7440-09-7	E420	2.57 mg/L	2.5 mg/L	103	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.00500 mg/L	0.005 mg/L	100	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0496 mg/L	0.05 mg/L	99.1	70.0	130	----
		Silicon, total	7440-21-3	E420	ND mg/L	----	ND	70.0	130	----
		Silver, total	7440-22-4	E420	0.00498 mg/L	0.005 mg/L	99.6	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	----	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	ND mg/L	----	ND	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.00489 mg/L	0.005 mg/L	97.8	70.0	130	----
		Thallium, total	7440-28-0	E420	0.0500 mg/L	0.05 mg/L	100.0	70.0	130	----
		Thorium, total	7440-29-1	E420	0.00508 mg/L	0.005 mg/L	102	70.0	130	----
		Tin, total	7440-31-5	E420	0.0266 mg/L	0.025 mg/L	106	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0131 mg/L	0.012 mg/L	105	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.00538 mg/L	0.005 mg/L	108	70.0	130	----
		Uranium, total	7440-61-1	E420	ND mg/L	----	ND	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0264 mg/L	0.025 mg/L	106	70.0	130	----
		Zinc, total	7440-66-6	E420	0.0228 mg/L	0.025 mg/L	91.4	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.00530 mg/L	0.005 mg/L	106	70.0	130	----
Total Metals (QCLot: 1687093)										
VA24C5342-001	Anonymous	Mercury, total	7439-97-6	E508	0.000101 mg/L	0 mg/L	101	70.0	130	----
Dissolved Metals (QCLot: 1685817)										
VA24C5344-001	WLNG US 1	Aluminum, dissolved	7429-90-5	E421	0.0971 mg/L	0.1 mg/L	97.1	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0515 mg/L	0.05 mg/L	103	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0564 mg/L	0.05 mg/L	113	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0133 mg/L	0.012 mg/L	106	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.00503 mg/L	0.005 mg/L	101	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.0502 mg/L	0.05 mg/L	100	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.048 mg/L	0.05 mg/L	97.2	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00531 mg/L	0.005 mg/L	106	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00262 mg/L	0.002 mg/L	105	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0132 mg/L	0.012 mg/L	105	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0130 mg/L	0.012 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: 1685817) - continued										
VA24C5344-001	WLNG US 1	Copper, dissolved	7440-50-8	E421	0.0132 mg/L	0.012 mg/L	106	70.0	130	----
		Iron, dissolved	7439-89-6	E421	ND mg/L	----	ND	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0259 mg/L	0.025 mg/L	104	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0125 mg/L	0.012 mg/L	100	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	2.69 mg/L	2.5 mg/L	107	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0130 mg/L	0.012 mg/L	104	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0127 mg/L	0.012 mg/L	102	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0258 mg/L	0.025 mg/L	103	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	0.552 mg/L	0.5 mg/L	110	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	2.64 mg/L	2.5 mg/L	106	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.00518 mg/L	0.005 mg/L	104	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0575 mg/L	0.05 mg/L	115	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	ND mg/L	----	ND	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00491 mg/L	0.005 mg/L	98.3	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	2.52 mg/L	2.5 mg/L	101	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	2.65 mg/L	2.5 mg/L	106	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.00519 mg/L	0.005 mg/L	104	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.0511 mg/L	0.05 mg/L	102	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.00495 mg/L	0.005 mg/L	99.0	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0259 mg/L	0.025 mg/L	104	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0128 mg/L	0.012 mg/L	102	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.00528 mg/L	0.005 mg/L	106	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.000255 mg/L	0 mg/L	102	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0262 mg/L	0.025 mg/L	105	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.0274 mg/L	0.025 mg/L	110	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.00513 mg/L	0.005 mg/L	103	70.0	130	----
Dissolved Metals (QCLot: 1687187)										
VA24C5276-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.000101 mg/L	0 mg/L	101	70.0	130	----
Dissolved Metals (QCLot: 1687188)										
VA24C5445-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000907 mg/L	0 mg/L	90.7	70.0	130	----
Speciated Metals (QCLot: 1677317)										
VA24C5180-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0394 mg/L	0.04 mg/L	98.4	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 17 -

Page 1 of

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

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

Select Service Level Below - Contact your AM to 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)] ☐

ATs: 02-OCT-2024

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

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

Analysis Request

d (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
												P			F/P							
	WLNG US 1	24 Sept 24	11:37	Water	R	R	R	R	R	R	R	R	R	R	R						N	9
	pH: 7.34 cond: 36 µS/cm temp: 15.8 °C																					
	WLNG DS 1	24 Sept 24	10:54	Water	R	R	R	R	R	R	R	R	R	R	R						N	9
	pH: 7.60 cond: 136 µS/cm temp: 15.1 °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
VA24C5344

Telephone : +1 604 253 4188

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

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

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

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C				
					13				

LEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Date: 24 Sept 24	Time: 17:19	Received by:	Date:	Time:	Received by: KJ	Date: Sep-24	Time: 17:20

IONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

SEPT 2017 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 Receiving Environment Field Notes and Logs

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-9-24-Chycoski-1FABE

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	09/24/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.669455 -123.25087
Temperature(c):	Low 19 High 24	**Permit:**	PE 110136
Weather Conditions:	Clear	**Ground Conditions:**	Damp

Observations

Time: 11:37:00 **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

Calibrated sonde for pH, turbidity, and conductivity

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

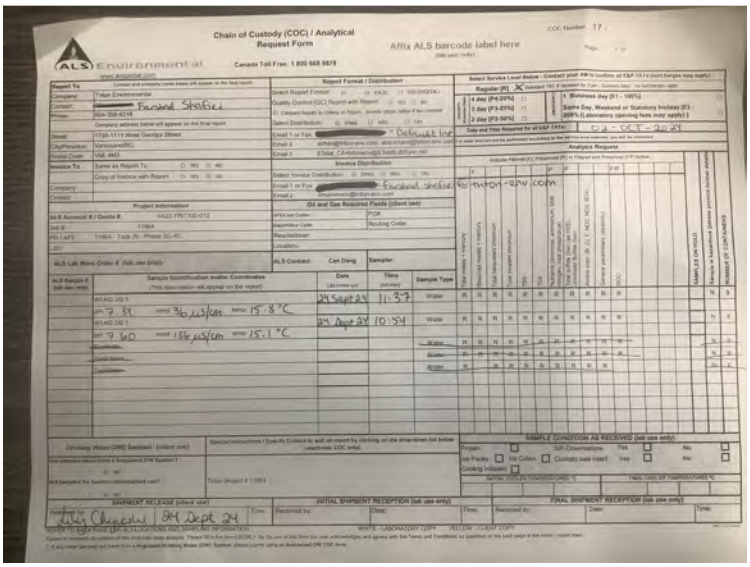

Photo: 4

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:			

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-9-24-Chycoski-B5CC2

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	09/24/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.668692 -123.248636
Temperature(c):	Low 19 High 24	**Permit:**	PE 110136
Weather Conditions:	Clear	**Ground Conditions:**	Damp

Observations

Time: 10:54:00 **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?	Yes	**Photo of COC with Lab Signature?**	Yes

Describe Logger Maintenance

Calibrated sonde for turbidity and pH

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

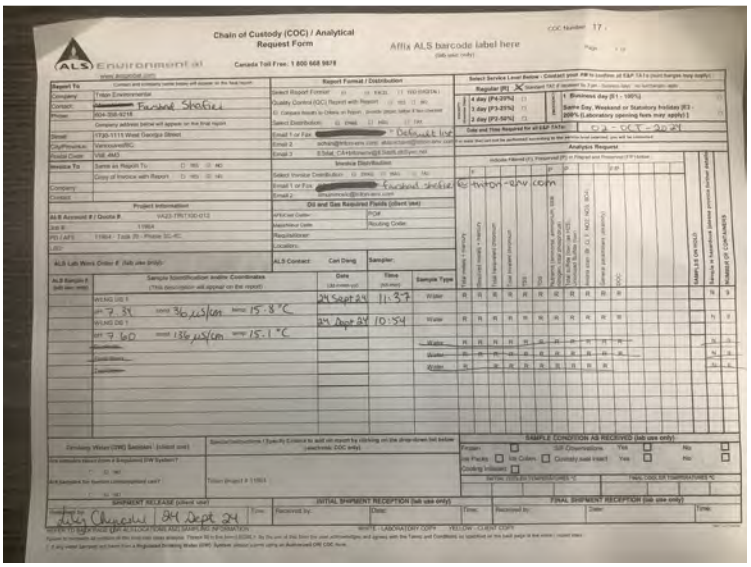

Photo: 4

Location: EAS DS 1

Description: Lab COC

Photos

Photo: 5

Location: EAS DS 1

Description: Poorly implemented sediment fence next to East Creek

Sign Off

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

EGP-STU-003 (WLNG US) 2024-09-23 to 2024-09-29

Received	Temperature C	Specific Conductivity ÂµS/cm	Salinity PSU	pH pH	ORP mV	Dissolved Oxygen Concentration mg/L	Turbidity NTU	TL Battery V
9/29/2024 23:50	11.75	28.69	0.01	7.02	430.4	9.66	0.28	12.17
9/29/2024 23:40	11.78	28.6	0.01	7	431.9	9.64	0.31	12.19
9/29/2024 23:30	11.81	28.77	0.01	7.02	430.24	9.65	0.32	12.19
9/29/2024 23:20	11.85	28.91	0.01	6.99	432.64	9.62	0.3	12.19
9/29/2024 23:10	11.87	29.12	0.01	7.03	429.51	9.61	0.29	12.19
9/29/2024 23:00	11.9	28.78	0.01	7.02	430.35	9.63	0.31	12.19
9/29/2024 22:50	11.93	29.26	0.01	7.01	430.27	9.61	0.32	12.19
9/29/2024 22:40	11.95	29.14	0.01	7	431.13	9.61	0.31	12.19
9/29/2024 22:30	11.99	29.41	0.01	7.02	428.9	9.58	0.32	12.19
9/29/2024 22:20	12.02	29.35	0.01	7.01	430.02	9.58	0.31	12.19
9/29/2024 22:10	12.04	29.48	0.01	7.02	428.95	9.57	0.31	12.21
9/29/2024 22:00	12.06	29.58	0.01	7.01	429.37	9.56	0.31	12.19
9/29/2024 21:50	12.09	29.8	0.01	7.02	428.27	9.54	0.32	12.09
9/29/2024 21:40	12.12	29.83	0.01	7.01	429.04	9.54	0.31	12.19
9/29/2024 21:30	12.15	30.02	0.01	7.01	427.97	9.55	0.33	12.12
9/29/2024 21:20	12.18	29.91	0.01	7.01	428.09	9.54	0.34	12.12
9/29/2024 21:10	12.22	30.27	0.01	7.03	426.14	9.52	0.32	12.21
9/29/2024 21:00	12.25	30.35	0.01	7.01	427.29	9.49	0.63	12.14
9/29/2024 20:50	12.29	30.73	0.01	7.03	425.61	9.51	0.32	12.21
9/29/2024 20:40	12.33	30.72	0.01	7.02	425.98	9.48	0.32	12.14
9/29/2024 20:30	12.38	31.1	0.02	7.02	425.26	9.49	0.36	12.24
9/29/2024 20:20	12.42	30.94	0.02	7	426.17	9.47	0.35	12.14
9/29/2024 20:10	12.46	31.5	0.02	7.02	424.21	9.47	0.35	12.26
9/29/2024 20:00	12.5	31.58	0.02	7.01	425.01	9.45	0.34	12.26
9/29/2024 19:50	12.55	32.07	0.02	7.03	422.66	9.44	0.36	12.26
9/29/2024 19:40	12.59	32.03	0.02	7.01	423.64	9.41	0.41	12.26
9/29/2024 19:30	12.63	32.59	0.02	7.02	422.1	9.4	0.38	12.26
9/29/2024 19:20	12.67	32.6	0.02	7.03	421.5	9.4	0.34	12.19
9/29/2024 19:10	12.71	33.17	0.02	7.04	419.77	9.39	0.36	12.29
9/29/2024 19:00	12.75	33.21	0.02	7.01	421.25	9.39	0.34	12.29
9/29/2024 18:50	12.79	33.82	0.02	7.03	418.99	9.38	0.34	12.29
9/29/2024 18:40	12.83	33.59	0.02	7.02	419.97	9.37	0.34	12.31
9/29/2024 18:30	12.87	34.44	0.02	7.04	417.23	9.38	0.35	12.21
9/29/2024 18:20	12.91	34.81	0.02	7.02	417.98	9.36	0.35	12.21
9/29/2024 18:10	12.94	35.6	0.02	7.04	415.76	9.38	0.35	12.33
9/29/2024 18:00	12.98	35.89	0.02	7.04	415.86	9.36	0.35	12.29
9/29/2024 17:50	13.01	36.46	0.02	7.05	414.17	9.36	0.35	12.33
9/29/2024 17:40	13.04	36.64	0.02	7.03	415.27	9.39	0.36	12.48
9/29/2024 17:30	13.06	37.5	0.02	7.06	412.67	9.39	0.35	12.65
9/29/2024 17:20	13.07	37.52	0.02	7.03	414.27	9.39	0.34	12.62
9/29/2024 17:10	13.08	38.03	0.02	7.06	411.42	9.37	0.37	12.53

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9/29/2024 17:00	13.08	38.1	0.02	7.05	411.83	9.38	0.37	12.43
9/29/2024 16:50	13.1	38.47	0.02	7.07	409.26	9.38	0.37	12.38
9/29/2024 16:40	13.12	38.44	0.02	7.06	409.93	9.38	0.36	12.6
9/29/2024 16:30	13.13	38.67	0.02	7.08	407.37	9.4	0.34	12.76
9/29/2024 16:20	13.13	38.35	0.02	7.07	407.98	9.39	0.34	13.08
9/29/2024 16:10	13.12	38.9	0.02	7.07	406.69	9.39	0.37	12.98
9/29/2024 16:00	13.11	39.02	0.02	7.06	407.12	9.4	0.38	12.67
9/29/2024 15:50	13.11	39.29	0.02	7.08	404.61	9.43	0.37	12.67
9/29/2024 15:40	13.11	39.6	0.02	7.07	405.47	9.44	0.37	12.79
9/29/2024 15:30	13.1	40.23	0.02	7.09	402.77	9.45	0.34	13.46
9/29/2024 15:20	13.07	40.44	0.02	7.07	404.21	9.42	0.34	13
9/29/2024 15:10	13.08	41.31	0.02	7.09	401.66	9.46	0.37	13.6
9/29/2024 15:00	13.09	41.17	0.02	7.08	402.58	9.44	0.36	13.34
9/29/2024 14:50	13.1	42.3	0.02	7.1	399.79	9.45	0.36	13.53
9/29/2024 14:40	13.11	42.34	0.02	7.09	400.42	9.45	0.35	13.56
9/29/2024 14:30	13.14	43	0.02	7.1	399.23	9.47	0.36	13.53
9/29/2024 14:20	13.11	42.98	0.02	7.12	398.79	9.51	0.35	13.44
9/29/2024 14:10	13.03	43.75	0.02	7.09	400.01	9.48	0.35	13.56
9/29/2024 14:00	13	44.01	0.02	7.08	401.1	9.49	0.35	13.56
9/29/2024 13:50	12.92	44.4	0.02	7.1	399.45	9.53	0.36	13.6
9/29/2024 13:40	12.84	44.57	0.02	7.09	400.88	9.53	0.36	13.63
9/29/2024 13:30	12.83	45.03	0.02	7.1	399.06	9.55	0.34	13.6
9/29/2024 13:20	12.82	45.23	0.02	7.1	399.66	9.55	0.34	13.51
9/29/2024 13:10	12.84	45.63	0.02	7.11	397.87	9.56	0.33	13.6
9/29/2024 13:00	12.8	45.69	0.02	7.09	399.79	9.56	0.54	13.63
9/29/2024 12:50	12.79	46.54	0.02	7.1	399.17	9.55	0.36	13.51
9/29/2024 12:40	12.72	46.53	0.02	7.09	400.96	9.58	0.31	13.65
9/29/2024 12:30	12.68	47.12	0.02	7.08	401.21	9.59	0.32	13.67
9/29/2024 12:20	12.62	46.47	0.02	7.07	402.78	9.59	0.34	13.67
9/29/2024 12:10	12.6	47.91	0.02	7.11	400.32	9.61	0.32	13.67
9/29/2024 12:00	12.56	48.19	0.02	7.09	402.39	9.6	0.33	13.67
9/29/2024 11:50	12.58	48.75	0.02	7.11	400.92	9.63	0.34	13.7
9/29/2024 11:40	12.55	48.84	0.02	7.1	403.62	9.62	0.33	13.6
9/29/2024 11:30	12.49	49.66	0.03	7.09	404.1	9.63	0.32	13.72
9/29/2024 11:20	12.42	49.43	0.03	7.08	406.7	9.6	0.44	13.63
9/29/2024 11:10	12.38	49.92	0.03	7.09	405.28	9.6	0.3	13.46
9/29/2024 11:00	12.37	49.83	0.03	7.07	407.18	9.57	0.33	13.41
9/29/2024 10:50	12.37	50.12	0.03	7.09	405.61	9.59	0.31	13.56
9/29/2024 10:40	12.39	49.91	0.03	7.08	406.02	9.59	0.33	13.27
9/29/2024 10:30	12.43	50.35	0.03	7.09	404.71	9.62	0.46	13.24
9/29/2024 10:20	12.45	49.78	0.03	7.1	405.5	9.61	0.49	13.58
9/29/2024 10:10	12.44	50.45	0.03	7.1	405.63	9.63	0.3	13.67
9/29/2024 10:00	12.5	49.89	0.03	7.11	407.26	9.65	0.34	13.67
9/29/2024 9:50	12.44	50.87	0.03	7.11	408.72	9.64	0.33	13.7
9/29/2024 9:40	12.35	50.75	0.03	7.09	413.11	9.65	0.31	13.72
9/29/2024 9:30	12.24	51.03	0.03	7.09	414.47	9.63	0.33	13.72
9/29/2024 9:20	12.2	51.41	0.03	7.07	417.74	9.62	0.33	13.2

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9/29/2024 9:10	12.17	51.83	0.03	7.08	417.35	9.62	0.31	13.72
9/29/2024 9:00	12.15	51.62	0.03	7.07	419.74	9.61	0.3	13.58
9/29/2024 8:50	12.16	52.55	0.03	7.08	419.26	9.62	0.32	13.15
9/29/2024 8:40	12.14	51.73	0.03	7.06	422.16	9.58	0.33	13.72
9/29/2024 8:30	12.12	53.18	0.03	7.06	422.25	9.55	0.34	13.32
9/29/2024 8:20	12.12	52.81	0.03	7.05	424.03	9.56	0.32	13.2
9/29/2024 8:10	12.13	53.85	0.03	7.06	423.62	9.54	0.32	12.74
9/29/2024 8:00	12.15	53.89	0.03	7.05	424.85	9.51	0.32	12.17
9/29/2024 7:50	12.18	54.65	0.03	7.06	424.09	9.51	0.33	12.05
9/29/2024 7:40	12.21	54.23	0.03	7.03	426.42	9.49	0.31	12.02
9/29/2024 7:30	12.24	54.84	0.03	7.05	425.07	9.51	0.34	12.12
9/29/2024 7:20	12.27	54.57	0.03	7.05	425.4	9.46	0.32	12.09
9/29/2024 7:10	12.3	54.87	0.03	7.04	425.28	9.46	0.4	12.12
9/29/2024 7:00	12.33	54.2	0.03	7.06	424.98	9.44	0.33	12.12
9/29/2024 6:50	12.36	55.6	0.03	7.06	424.13	9.44	0.34	12.12
9/29/2024 6:40	12.38	55.61	0.03	7.05	424.93	9.42	0.34	12.12
9/29/2024 6:30	12.41	56.42	0.03	7.06	423.79	9.44	0.35	12.02
9/29/2024 6:20	12.44	56.27	0.03	7.05	424.98	9.4	0.33	12.12
9/29/2024 6:10	12.47	56.66	0.03	7.06	423.74	9.42	0.33	12.12
9/29/2024 6:00	12.49	56.29	0.03	7.04	424.69	9.41	0.37	11.95
9/29/2024 5:50	12.5	57.37	0.03	7.06	423.19	9.4	0.32	12.12
9/29/2024 5:40	12.51	57.6	0.03	7.05	423.87	9.41	0.34	12.12
9/29/2024 5:30	12.52	58.08	0.03	7.06	423.07	9.38	0.34	12.12
9/29/2024 5:20	12.53	58.06	0.03	7.09	421.93	9.38	0.37	12.02
9/29/2024 5:10	12.55	58.85	0.03	7.06	422.79	9.38	0.36	12.12
9/29/2024 5:00	12.56	58.41	0.03	7.05	423.6	9.37	0.35	12.12
9/29/2024 4:50	12.57	59.77	0.03	7.06	422.14	9.4	0.34	12.12
9/29/2024 4:40	12.58	59.85	0.03	7.05	423.29	9.39	0.35	12.05
9/29/2024 4:30	12.59	60.48	0.03	7.07	421.51	9.37	0.36	12.12
9/29/2024 4:20	12.6	60.62	0.03	7.05	422.94	9.39	0.35	12.12
9/29/2024 4:10	12.61	61.16	0.03	7.07	421.62	9.36	0.33	12.02
9/29/2024 4:00	12.62	61.28	0.03	7.06	422.41	9.37	0.35	12.12
9/29/2024 3:50	12.63	61.7	0.03	7.07	421.38	9.36	0.36	12.14
9/29/2024 3:40	12.63	62.12	0.03	7.07	421.57	9.37	0.36	12.14
9/29/2024 3:30	12.64	62.77	0.03	7.06	421.16	9.37	0.32	12.14
9/29/2024 3:20	12.65	62.36	0.03	7.06	421.38	9.37	0.36	12.14
9/29/2024 3:10	12.66	63.25	0.03	7.08	420.04	9.36	0.35	12.14
9/29/2024 3:00	12.67	63.32	0.03	7.06	421.44	9.35	0.34	12.14
9/29/2024 2:50	12.68	63.68	0.03	7.07	420.18	9.37	0.35	12.14
9/29/2024 2:40	12.69	64.1	0.03	7.07	420.1	9.35	0.51	12.14
9/29/2024 2:30	12.7	64.44	0.03	7.07	418.95	9.35	0.34	12.05
9/29/2024 2:20	12.7	64.54	0.03	7.06	420.09	9.35	0.33	12.07
9/29/2024 2:10	12.7	64.78	0.03	7.07	418.46	9.34	0.33	12.07
9/29/2024 2:00	12.7	64.37	0.03	7.06	419.41	9.35	0.35	12.07
9/29/2024 1:50	12.7	65.46	0.03	7.07	418.29	9.34	0.35	12.17
9/29/2024 1:40	12.71	65.4	0.03	7.07	418.49	9.34	0.37	12.14
9/29/2024 1:30	12.71	66.18	0.03	7.07	417.49	9.34	0.36	12.14

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9/29/2024 1:20	12.71	66.12	0.03	7.05	419.06	9.33	0.36	12.05
9/29/2024 1:10	12.71	66.78	0.03	7.08	417.12	9.34	0.33	12.09
9/29/2024 1:00	12.71	66.07	0.03	7.04	419.18	9.33	0.36	12.19
9/29/2024 0:50	12.71	67.57	0.03	7.07	416.96	9.34	0.37	12.19
9/29/2024 0:40	12.71	66.19	0.03	7.06	417.47	9.34	0.35	12.17
9/29/2024 0:30	12.72	68.14	0.04	7.07	416.41	9.35	0.37	12.19
9/29/2024 0:20	12.72	67.94	0.04	7.06	417.35	9.32	0.37	12.19
9/29/2024 0:10	12.72	68.82	0.04	7.07	416.15	9.33	0.35	12.19
9/29/2024 0:00	12.73	68.91	0.04	7.06	416.95	9.34	0.34	12.19
9/28/2024 23:50	12.75	70.03	0.04	7.07	415.98	9.35	0.37	12.09
9/28/2024 23:40	12.76	70.13	0.04	7.06	416.45	9.32	0.38	12.19
9/28/2024 23:30	12.78	71.05	0.04	7.07	414.6	9.31	0.39	12.09
9/28/2024 23:20	12.8	70.83	0.04	7.06	414.85	9.29	0.34	12.09
9/28/2024 23:10	12.82	72.27	0.04	7.06	397.21	9.31	0.35	12.19
9/28/2024 23:00	12.83	72.27	0.04	7.07	416.29	9.3	0.36	12.21
9/28/2024 22:50	12.85	73.21	0.04	7.08	415.16	9.3	0.36	12.19
9/28/2024 22:40	12.87	73.12	0.04	7.06	416.05	9.29	0.37	12.17
9/28/2024 22:30	12.88	73.93	0.04	7.08	414.62	9.27	0.37	12.12
9/28/2024 22:20	12.9	73.89	0.04	7.06	415.7	9.27	0.35	12.24
9/28/2024 22:10	12.91	74.67	0.04	7.07	414.41	9.28	0.36	12.21
9/28/2024 22:00	12.91	74.16	0.04	7.07	414.73	9.28	0.38	12.24
9/28/2024 21:50	12.92	75.19	0.04	7.07	413.73	9.29	0.35	12.24
9/28/2024 21:40	12.92	75.32	0.04	7.07	414.11	9.27	0.39	12.14
9/28/2024 21:30	12.93	76.1	0.04	7.08	412.57	9.28	0.36	12.14
9/28/2024 21:20	12.93	75.98	0.04	7.07	413.24	9.27	0.59	12.14
9/28/2024 21:10	12.94	76.51	0.04	7.08	411.77	9.28	0.38	12.24
9/28/2024 21:00	12.95	76.58	0.04	7.07	412.32	9.28	0.36	12.24
9/28/2024 20:50	12.96	77.12	0.04	7.08	411.31	9.27	0.36	12.26
9/28/2024 20:40	12.97	77.74	0.04	7.06	412.03	9.26	0.35	12.26
9/28/2024 20:30	12.98	78.51	0.04	7.08	410.08	9.25	0.36	12.26
9/28/2024 20:20	13	78.5	0.04	7.07	410.91	9.26	0.37	12.17
9/28/2024 20:10	13.01	79.02	0.04	7.08	409.35	9.26	0.37	12.26
9/28/2024 20:00	13.01	78.42	0.04	7.06	409.79	9.23	0.37	12.24
9/28/2024 19:50	13.03	79.35	0.04	7.08	407.92	9.28	0.36	12.17
9/28/2024 19:40	13.04	79.23	0.04	7.08	408.36	9.25	0.35	12.29
9/28/2024 19:30	13.05	80.24	0.04	7.09	406.26	9.23	0.67	12.29
9/28/2024 19:20	13.07	80.02	0.04	7.08	406.76	9.24	0.41	12.21
9/28/2024 19:10	13.08	80.71	0.04	7.09	405.25	9.24	0.38	12.29
9/28/2024 19:00	13.09	80.49	0.04	7.08	405.31	9.24	0.37	12.29
9/28/2024 18:50	13.11	81.03	0.04	7.09	403.87	9.24	0.39	12.29
9/28/2024 18:40	13.12	81.14	0.04	7.08	403.73	9.25	0.37	12.33
9/28/2024 18:30	13.13	81.92	0.04	7.1	401.34	9.25	0.38	12.36
9/28/2024 18:20	13.14	81.85	0.04	7.09	401.67	9.25	0.37	12.38
9/28/2024 18:10	13.15	82.52	0.04	7.11	399.66	9.27	0.37	12.43
9/28/2024 18:00	13.15	82.07	0.04	7.09	400.02	9.28	0.37	12.43
9/28/2024 17:50	13.16	82.82	0.04	7.1	398.73	9.27	0.39	12.41
9/28/2024 17:40	13.16	81.17	0.04	7.09	398.92	9.25	0.37	12.31

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9/28/2024 17:30	13.17	83.81	0.04	7.1	397.23	9.26	0.35	12.48
9/28/2024 17:20	13.17	83.75	0.04	7.09	397.94	9.3	0.37	12.62
9/28/2024 17:10	13.18	84.39	0.04	7.1	396.78	9.29	0.38	12.5
9/28/2024 17:00	13.18	84.45	0.04	7.1	397	9.28	0.37	12.5
9/28/2024 16:50	13.18	85.16	0.04	7.11	395.69	9.29	0.4	12.53
9/28/2024 16:40	13.18	85.11	0.04	7.1	395.95	9.28	0.35	12.53
9/28/2024 16:30	13.18	86.06	0.04	7.1	395.13	9.28	0.36	12.48
9/28/2024 16:20	13.18	85.87	0.04	7.1	394.89	9.28	0.36	12.55
9/28/2024 16:10	13.18	86.98	0.05	7.11	393.64	9.3	0.39	12.53
9/28/2024 16:00	13.17	86.18	0.05	7.1	393.74	9.29	0.4	12.65
9/28/2024 15:50	13.17	87.63	0.05	7.12	391.81	9.31	0.39	12.69
9/28/2024 15:40	13.17	87.33	0.05	7.11	392.39	9.33	0.36	12.74
9/28/2024 15:30	13.17	87.99	0.05	7.13	390.38	9.32	0.36	12.96
9/28/2024 15:20	13.16	87.89	0.05	7.13	390.67	9.33	0.37	13.29
9/28/2024 15:10	13.17	88.8	0.05	7.13	389.92	9.35	0.42	13.17
9/28/2024 15:00	13.16	89.36	0.05	7.12	391.29	9.35	0.36	13.67
9/28/2024 14:50	13.15	89.89	0.05	7.13	390.3	9.33	0.37	12.98
9/28/2024 14:40	13.15	90.44	0.05	7.11	390.93	9.33	0.37	12.88
9/28/2024 14:30	13.14	91.34	0.05	7.13	389.42	9.33	0.35	12.86
9/28/2024 14:20	13.14	90.9	0.05	7.12	389.89	9.35	0.36	12.69
9/28/2024 14:10	13.14	92.22	0.05	7.14	387.92	9.35	0.37	13
9/28/2024 14:00	13.14	92.87	0.05	7.14	387.83	9.36	0.37	12.69
9/28/2024 13:50	13.15	93.84	0.05	7.15	386.43	9.38	0.39	13.7
9/28/2024 13:40	13.15	94.39	0.05	7.14	387.22	9.37	0.38	13.65
9/28/2024 13:30	13.14	95.34	0.05	7.14	387.43	9.37	0.38	13.53
9/28/2024 13:20	13.13	95.93	0.05	7.13	387.84	9.36	0.39	12.93
9/28/2024 13:10	13.14	97.2	0.05	7.15	386.49	9.35	0.38	12.84
9/28/2024 13:00	13.13	97.8	0.05	7.13	387.99	9.35	0.35	13.08
9/28/2024 12:50	13.12	98.96	0.05	7.14	386.05	9.37	0.37	12.76
9/28/2024 12:40	13.12	97.96	0.05	7.13	386.68	9.38	0.38	12.84
9/28/2024 12:30	13.11	100.96	0.05	7.15	384.46	9.39	0.35	13.48
9/28/2024 12:20	13.09	100.85	0.05	7.14	385.05	9.4	0.41	13.2
9/28/2024 12:10	13.08	102.23	0.05	7.15	384.05	9.39	0.65	13.67
9/28/2024 12:00	13.06	102.85	0.05	7.13	385.66	9.4	0.38	13.32
9/28/2024 11:50	13.04	103.74	0.05	7.15	384.22	9.41	0.37	13.67
9/28/2024 11:40	13.01	104.52	0.06	7.15	385	9.42	0.42	13.36
9/28/2024 11:30	13	105.18	0.06	7.17	383.82	9.43	0.37	13.24
9/28/2024 11:20	12.97	105.43	0.06	7.14	386.37	9.45	0.35	13.7
9/28/2024 11:10	12.92	106.24	0.06	7.15	386.37	9.44	0.38	13.2
9/28/2024 11:00	12.89	106.43	0.06	7.15	387.39	9.43	0.51	12.81
9/28/2024 10:50	12.86	106.95	0.06	7.16	386.88	9.43	0.39	12.74
9/28/2024 10:40	12.83	107.1	0.06	7.15	387.93	9.43	0.36	12.74
9/28/2024 10:30	12.79	107.74	0.06	7.15	387.43	9.45	0.34	12.76
9/28/2024 10:20	12.76	107.29	0.06	7.15	388.64	9.45	0.36	12.81
9/28/2024 10:10	12.74	107.97	0.06	7.16	387.6	9.47	0.36	12.86
9/28/2024 10:00	12.71	107.88	0.06	7.17	388.67	9.5	0.37	13.24
9/28/2024 9:50	12.68	108.45	0.06	7.16	389.32	9.51	0.36	12.96

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9/28/2024 9:40	12.63	108.43	0.06	7.15	390.83	9.48	0.36	13.05
9/28/2024 9:30	12.61	108.99	0.06	7.16	390.68	9.5	0.42	12.84
9/28/2024 9:20	12.58	109.14	0.06	7.16	392.32	9.51	0.42	13
9/28/2024 9:10	12.56	109.92	0.06	7.17	392.44	9.51	0.36	13.12
9/28/2024 9:00	12.53	108.04	0.06	7.15	394.63	9.49	0.44	13.1
9/28/2024 8:50	12.51	111.12	0.06	7.16	394.66	9.49	0.42	12.74
9/28/2024 8:40	12.49	109	0.06	7.15	396.41	9.48	0.52	12.55
9/28/2024 8:30	12.49	111.67	0.06	7.16	395.77	9.48	1.93	12.55
9/28/2024 8:20	12.48	111.83	0.06	7.15	397.57	9.48	0.36	12.38
9/28/2024 8:10	12.47	112.84	0.06	7.15	397.78	9.47	0.34	12.24
9/28/2024 8:00	12.47	112.47	0.06	7.15	398.66	9.46	0.34	12.21
9/28/2024 7:50	12.48	113.62	0.06	7.15	397.9	9.44	0.34	12.19
9/28/2024 7:40	12.48	113.67	0.06	7.14	398.65	9.45	0.52	12.17
9/28/2024 7:30	12.48	114.2	0.06	7.15	397.83	9.45	0.35	12.17
9/28/2024 7:20	12.48	113.55	0.06	7.14	398.62	9.45	0.36	12.07
9/28/2024 7:10	12.49	114.88	0.06	7.16	397.63	9.45	0.38	12.14
9/28/2024 7:00	12.49	115.06	0.06	7.15	398.27	9.46	0.36	12.14
9/28/2024 6:50	12.49	116.12	0.06	7.16	397.69	9.46	0.34	12.07
9/28/2024 6:40	12.5	115.19	0.06	7.15	397.93	9.45	0.36	12.17
9/28/2024 6:30	12.52	117.06	0.06	7.16	397.11	9.45	0.34	12.17
9/28/2024 6:20	12.52	116.75	0.06	7.15	397.6	9.44	0.35	12.17
9/28/2024 6:10	12.53	118.37	0.06	7.17	396.39	9.46	0.44	12.07
9/28/2024 6:00	12.53	118.15	0.06	7.16	397.05	9.45	0.42	12.14
9/28/2024 5:50	12.55	118.87	0.06	7.16	396.41	9.44	0.4	12.17
9/28/2024 5:40	12.56	117.99	0.06	7.15	397.39	9.43	0.35	12.17
9/28/2024 5:30	12.56	119.58	0.06	7.17	395.62	9.44	0.35	12.17
9/28/2024 5:20	12.57	118.35	0.06	7.16	395.99	9.45	0.36	12.17
9/28/2024 5:10	12.58	120	0.06	7.16	395.64	9.45	0.4	12.17
9/28/2024 5:00	12.58	118.4	0.06	7.15	396.4	9.43	0.37	12.17
9/28/2024 4:50	12.6	120.74	0.06	7.17	394.68	9.42	0.37	12.17
9/28/2024 4:40	12.6	120.82	0.06	7.16	395.33	9.43	0.4	12.17
9/28/2024 4:30	12.61	120.85	0.06	7.18	394.13	9.46	0.37	12.19
9/28/2024 4:20	12.62	120.88	0.06	7.17	394.76	9.45	0.39	12.17
9/28/2024 4:10	12.64	121.85	0.06	7.18	393.67	9.45	0.39	12.19
9/28/2024 4:00	12.66	121.93	0.06	7.17	394.17	9.43	0.39	12.19
9/28/2024 3:50	12.67	122.53	0.06	7.18	393.1	9.42	0.38	12.17
9/28/2024 3:40	12.67	120.59	0.06	7.17	393.72	9.44	0.38	12.17
9/28/2024 3:30	12.69	123.82	0.07	7.18	392.35	9.44	0.38	12.17
9/28/2024 3:20	12.7	123.49	0.07	7.16	393.53	9.43	0.39	12.17
9/28/2024 3:10	12.71	124.71	0.07	7.17	392.17	9.42	0.41	12.17
9/28/2024 3:00	12.72	124.2	0.07	7.17	392.32	9.44	0.41	12.17
9/28/2024 2:50	12.74	125.77	0.07	7.18	391.32	9.42	0.37	12.19
9/28/2024 2:40	12.75	125.85	0.07	7.17	391.64	9.42	0.38	12.19
9/28/2024 2:30	12.77	126.98	0.07	7.19	390.03	9.43	0.37	12.19
9/28/2024 2:20	12.79	125.77	0.07	7.18	390.69	9.43	0.44	12.19
9/28/2024 2:10	12.81	128.02	0.07	7.19	389.52	9.41	0.38	12.09
9/28/2024 2:00	12.83	128.67	0.07	7.19	389.69	9.42	0.52	12.09

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9/28/2024 1:50	12.85	129.46	0.07	7.19	389.04	9.41	0.37	12.19
9/28/2024 1:40	12.87	129.64	0.07	7.19	389.32	9.41	0.39	12.19
9/28/2024 1:30	12.89	130.95	0.07	7.19	388.37	9.41	0.44	12.19
9/28/2024 1:20	12.91	130.08	0.07	7.18	388.95	9.43	0.38	12.12
9/28/2024 1:10	12.93	131.52	0.07	7.19	387.75	9.4	0.44	12.12
9/28/2024 1:00	12.95	130.39	0.07	7.19	387.9	9.42	0.39	12.12
9/28/2024 0:50	12.96	132.17	0.07	7.2	386.6	9.39	0.4	12.09
9/28/2024 0:40	12.98	132.4	0.07	7.19	387.15	9.4	0.43	12.12
9/28/2024 0:30	13	132.67	0.07	7.2	385.98	9.39	0.4	12.21
9/28/2024 0:20	13.01	133.57	0.07	7.2	386.32	9.39	0.52	12.21
9/28/2024 0:10	13.03	135.17	0.07	7.2	385.32	9.38	0.38	12.21
9/28/2024 0:00	13.05	135.96	0.07	7.2	385.34	9.39	0.4	12.24
9/27/2024 23:50	13.07	137.17	0.07	7.21	383.82	9.41	0.42	12.24
9/27/2024 23:40	13.09	135.51	0.07	7.2	384.5	9.39	0.52	12.24
9/27/2024 23:30	13.11	137.57	0.07	7.21	383.44	9.39	0.4	12.24
9/27/2024 23:20	13.12	138.52	0.07	7.2	384.18	9.39	0.4	12.24
9/27/2024 23:10	13.14	139.16	0.07	7.21	382.87	9.37	0.4	12.24
9/27/2024 23:00	13.16	139.16	0.07	7.21	382.94	9.38	0.43	12.24
9/27/2024 22:50	13.19	140.7	0.07	7.21	382.51	9.37	0.46	12.24
9/27/2024 22:40	13.21	140.21	0.07	7.21	382.66	9.39	0.53	12.14
9/27/2024 22:30	13.25	141.82	0.08	7.22	381.87	9.38	0.48	12.24
9/27/2024 22:20	13.27	141.71	0.08	7.21	382.27	9.38	0.44	12.24
9/27/2024 22:10	13.3	143.09	0.08	7.22	381.48	9.36	0.45	12.14
9/27/2024 22:00	13.33	143.87	0.08	7.21	382.07	9.35	0.45	12.14
9/27/2024 21:50	13.36	145.51	0.08	7.22	381.42	9.37	0.44	12.21
9/27/2024 21:40	13.39	145.93	0.08	7.21	382.21	9.35	0.42	12.26
9/27/2024 21:30	13.41	147.18	0.08	7.21	381.71	9.34	0.4	12.26
9/27/2024 21:20	13.43	146.31	0.08	7.22	381.5	9.34	0.48	12.17
9/27/2024 21:10	13.46	148.88	0.08	7.21	381.04	9.35	0.46	12.24
9/27/2024 21:00	13.48	149.22	0.08	7.21	381.34	9.34	0.46	12.24
9/27/2024 20:50	13.5	150.59	0.08	7.22	380.17	9.33	0.55	12.29
9/27/2024 20:40	13.53	148.45	0.08	7.21	380.15	9.33	0.41	12.29
9/27/2024 20:30	13.56	152.66	0.08	7.22	378.94	9.31	1.55	12.29
9/27/2024 20:20	13.59	152.81	0.08	7.22	378.99	9.32	0.45	12.29
9/27/2024 20:10	13.62	154.43	0.08	7.22	377.99	9.32	0.48	12.29
9/27/2024 20:00	13.65	154.03	0.08	7.22	378.15	9.29	0.44	12.29
9/27/2024 19:50	13.68	157.28	0.08	7.23	376.72	9.31	0.53	12.29
9/27/2024 19:40	13.71	156.88	0.08	7.22	376.66	9.3	0.45	12.21
9/27/2024 19:30	13.74	159.7	0.08	7.23	375.51	9.29	0.48	12.21
9/27/2024 19:20	13.78	160.88	0.09	7.23	375.02	9.27	0.47	12.31
9/27/2024 19:10	13.81	163.74	0.09	7.23	373.95	9.27	0.47	12.31
9/27/2024 19:00	13.84	164.47	0.09	7.23	373.72	9.25	0.46	12.21
9/27/2024 18:50	13.87	167.01	0.09	7.23	372.53	9.25	0.45	12.24
9/27/2024 18:40	13.9	167.54	0.09	7.23	371.96	9.25	0.47	12.31
9/27/2024 18:30	13.93	169.56	0.09	7.24	370.35	9.26	0.59	12.26
9/27/2024 18:20	13.96	170.05	0.09	7.24	370.17	9.26	0.47	12.26
9/27/2024 18:10	13.99	173.36	0.09	7.24	369.51	9.24	0.68	12.38

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9/27/2024 18:00	14.01	174.34	0.09	7.24	369.33	9.25	0.45	12.41
9/27/2024 17:50	14.04	175.61	0.09	7.24	368.2	9.23	0.46	12.43
9/27/2024 17:40	14.07	176.84	0.09	7.24	368.25	9.22	0.51	12.43
9/27/2024 17:30	14.1	178.63	0.1	7.24	367.38	9.21	0.45	12.43
9/27/2024 17:20	14.13	179.85	0.1	7.24	366.84	9.23	0.55	12.36
9/27/2024 17:10	14.14	181.73	0.1	7.25	365.36	9.23	0.5	12.36
9/27/2024 17:00	14.16	182.72	0.1	7.25	365.12	9.22	0.5	12.48
9/27/2024 16:50	14.17	184.41	0.1	7.25	364.05	9.23	0.5	12.65
9/27/2024 16:40	14.17	186.94	0.1	7.26	363.64	9.23	0.5	12.74
9/27/2024 16:30	14.16	188.74	0.1	7.26	362.49	9.24	0.54	12.62
9/27/2024 16:20	14.16	189.49	0.1	7.26	362.42	9.26	0.48	12.79
9/27/2024 16:10	14.15	191.42	0.1	7.27	360.84	9.26	0.46	13.22
9/27/2024 16:00	14.14	192.29	0.1	7.26	361.28	9.27	0.48	12.86
9/27/2024 15:50	14.14	194.49	0.1	7.28	359.43	9.26	0.51	13
9/27/2024 15:40	14.14	196.22	0.1	7.27	359.32	9.26	0.5	13.1
9/27/2024 15:30	14.15	199.31	0.11	7.29	358.11	9.28	0.49	13.12
9/27/2024 15:20	14.15	199.97	0.11	7.29	358	9.28	1.09	13.48
9/27/2024 15:10	14.15	202.96	0.11	7.29	357.31	9.3	0.51	13.56
9/27/2024 15:00	14.14	201.13	0.11	7.29	357.46	9.28	0.53	13.56
9/27/2024 14:50	14.12	204.73	0.11	7.29	357.06	9.29	0.48	13.53
9/27/2024 14:40	14.11	206.62	0.11	7.28	358.53	9.29	0.51	13.56
9/27/2024 14:30	14.11	207.73	0.11	7.29	357.18	9.29	0.48	13.53
9/27/2024 14:20	14.13	208.12	0.11	7.29	357.2	9.29	0.53	13.53
9/27/2024 14:10	14.15	208.91	0.11	7.3	355.87	9.27	0.64	13.51
9/27/2024 14:00	14.21	210.75	0.11	7.31	355.19	9.28	0.52	13.51
9/27/2024 13:50	14.21	212.6	0.11	7.3	354.69	9.28	0.51	13.46
9/27/2024 13:40	14.25	214.23	0.11	7.31	353.37	9.28	0.5	13.39
9/27/2024 13:30	14.3	218.24	0.12	7.32	350.99	9.28	0.49	13.41
9/27/2024 13:20	14.32	220.22	0.12	7.33	350.74	9.29	0.57	13.44
9/27/2024 13:10	14.29	224.2	0.12	7.33	350.6	9.31	0.52	13.34
9/27/2024 13:00	14.24	227.17	0.12	7.33	350.93	9.31	0.51	13.39
9/27/2024 12:50	14.21	232.78	0.12	7.35	350	9.31	0.54	13.48
9/27/2024 12:40	14.16	234.19	0.13	7.35	350.09	9.31	0.49	13.51
9/27/2024 12:30	14.13	238.68	0.13	7.36	348.96	9.33	0.47	13.48
9/27/2024 12:20	14.11	240.26	0.13	7.35	349.36	9.34	0.55	13.41
9/27/2024 12:10	14.06	249.17	0.13	7.37	348.35	9.34	0.72	13.51
9/27/2024 12:00	14.06	247.08	0.13	7.37	348.77	9.36	0.71	13.53
9/27/2024 11:50	14.03	253.97	0.14	7.38	348.06	9.37	0.53	13.53
9/27/2024 11:40	13.99	255.95	0.14	7.38	348.69	9.37	0.54	13.51
9/27/2024 11:30	14	262.54	0.14	7.4	347.97	9.35	0.56	13.39
9/27/2024 11:20	13.99	264.66	0.14	7.4	348.47	9.36	0.59	13.51
9/27/2024 11:10	14.01	273.03	0.15	7.42	347.62	9.38	0.67	13.51
9/27/2024 11:00	13.95	277.53	0.15	7.43	348.85	9.36	0.89	13.51
9/27/2024 10:50	13.97	285.39	0.15	7.44	348.38	9.37	0.66	13.51
9/27/2024 10:40	13.94	290.76	0.16	7.45	349.52	9.38	0.49	13.41
9/27/2024 10:30	13.92	295.88	0.16	7.46	349.59	9.39	0.57	13.53
9/27/2024 10:20	13.88	301.6	0.16	7.47	350.72	9.39	1.59	13.53

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9/27/2024 10:10	13.85	308.52	0.17	7.49	350.6	9.41	0.81	13.56
9/27/2024 10:00	13.81	309.45	0.17	7.49	351.69	9.4	0.59	13.56
9/27/2024 9:50	13.73	324.69	0.18	7.51	351.56	9.41	0.59	13.05
9/27/2024 9:40	13.73	331.52	0.18	7.52	351.84	9.42	0.9	13.51
9/27/2024 9:30	13.68	339.73	0.18	7.54	352.15	9.41	3	13.44
9/27/2024 9:20	13.64	343.31	0.19	7.54	352.94	9.43	0.88	13.56
9/27/2024 9:10	13.61	356.43	0.19	7.55	352.83	9.43	0.8	13.32
9/27/2024 9:00	13.59	356.54	0.19	7.56	353.02	9.41	0.81	12.5
9/27/2024 8:50	13.58	362.16	0.2	7.56	352.84	9.38	0.82	12.14
9/27/2024 8:40	13.58	363.92	0.2	7.57	352.62	9.39	3.39	12.33
9/27/2024 8:30	13.58	378.85	0.21	7.6	351.1	9.4	1.15	12.26
9/27/2024 8:20	13.57	389.45	0.21	7.6	350.93	9.4	0.91	12
9/27/2024 8:10	13.56	406.93	0.22	7.62	349.99	9.39	1.1	11.97
9/27/2024 8:00	13.54	388	0.21	7.6	350.59	9.39	1.64	11.88
9/27/2024 7:50	13.55	402.9	0.22	7.62	349.67	9.38	1.02	11.95
9/27/2024 7:40	13.57	419.71	0.23	7.63	349.15	9.37	5.69	11.95
9/27/2024 7:30	13.57	443.23	0.24	7.66	347.82	9.36	1.19	11.95
9/27/2024 7:20	13.59	465.29	0.25	7.67	347.1	9.37	1.21	11.95
9/27/2024 7:10	13.6	491.51	0.27	7.69	345.65	9.35	1.09	11.95
9/27/2024 7:00	13.61	506.23	0.28	7.7	345.07	9.36	1.64	11.95
9/27/2024 6:50	13.6	524.26	0.29	7.71	344.16	9.34	2.41	11.85
9/27/2024 6:40	13.59	522.14	0.29	7.71	344.1	9.36	8.48	11.93
9/27/2024 6:30	13.58	521.52	0.29	7.71	343.75	9.34	1.96	11.85
9/27/2024 6:20	13.56	522.26	0.29	7.69	344.43	9.35	2.8	11.95
9/27/2024 6:10	13.51	440.25	0.24	7.63	346.69	9.34	1.81	11.97
9/27/2024 6:00	13.51	428.64	0.23	7.62	347.18	9.34	1.01	11.97
9/27/2024 5:50	13.53	439.55	0.24	7.64	346.35	9.34	1	11.95
9/27/2024 5:40	13.54	453.36	0.25	7.65	345.77	9.35	1.24	11.88
9/27/2024 5:30	13.55	467.38	0.25	7.67	344.74	9.33	0.96	11.88
9/27/2024 5:20	13.56	485.29	0.26	7.68	344.17	9.34	0.86	11.97
9/27/2024 5:10	13.57	507.14	0.28	7.69	343.15	9.33	0.86	11.88
9/27/2024 5:00	13.58	525.91	0.29	7.71	342.59	9.31	0.98	12
9/27/2024 4:50	13.58	543.97	0.3	7.72	341.28	9.32	1	12
9/27/2024 4:40	13.59	555.3	0.3	7.73	340.8	9.32	1.43	12.02
9/27/2024 4:30	13.59	582.05	0.32	7.74	339.61	9.31	1.59	12.02
9/27/2024 4:20	13.57	569.78	0.31	7.73	339.73	9.33	1.42	12.02
9/27/2024 4:10	13.55	558.33	0.31	7.72	339.65	9.31	1.57	12.05
9/27/2024 4:00	13.54	568.44	0.31	7.71	339.46	9.32	1.84	12.07
9/27/2024 3:50	13.51	550.93	0.3	7.69	339.44	9.33	1.35	12.07
9/27/2024 3:40	13.48	507.41	0.28	7.65	340.8	9.32	2.46	12.07
9/27/2024 3:30	13.45	445.87	0.24	7.6	342.36	9.33	0.97	12.07
9/27/2024 3:20	13.44	415.94	0.23	7.57	343.04	9.33	0.69	12.07
9/27/2024 3:10	13.44	420.23	0.23	7.57	342.86	9.32	0.73	12.07
9/27/2024 3:00	13.43	406.22	0.22	7.56	343.43	9.31	0.65	11.97
9/27/2024 2:50	13.43	412.3	0.22	7.56	342.51	9.32	0.65	11.97
9/27/2024 2:40	13.42	412.32	0.22	7.56	343.19	9.32	0.68	12.05
9/27/2024 2:30	13.42	407.39	0.22	7.56	342.98	9.32	0.96	12

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9/27/2024 2:20	13.41	406.46	0.22	7.56	343.39	9.31	0.59	12.12
9/27/2024 2:10	13.41	414.05	0.22	7.58	342.8	9.3	0.48	12.12
9/27/2024 2:00	13.4	413.07	0.22	7.58	343.33	9.31	0.99	12.02
9/27/2024 1:50	13.39	424.82	0.23	7.59	342.93	9.32	0.61	12
9/27/2024 1:40	13.38	428.79	0.23	7.59	343.67	9.32	0.59	12
9/27/2024 1:30	13.38	441.93	0.24	7.61	342.9	9.31	0.62	12
9/27/2024 1:20	13.37	450.82	0.25	7.61	343.11	9.32	0.81	12.12
9/27/2024 1:10	13.37	457.97	0.25	7.63	342.43	9.31	0.59	12.12
9/27/2024 1:00	13.35	449.57	0.24	7.61	343.09	9.32	0.65	12.05
9/27/2024 0:50	13.34	447.7	0.24	7.61	342.67	9.31	0.93	12.14
9/27/2024 0:40	13.32	446.86	0.24	7.62	342.81	9.34	0.66	12.14
9/27/2024 0:30	13.31	453.55	0.25	7.63	342.39	9.31	0.66	12.12
9/27/2024 0:20	13.29	457.81	0.25	7.63	342.63	9.35	1.75	12.02
9/27/2024 0:10	13.26	436.68	0.24	7.64	343.12	9.32	1.42	12.12
9/27/2024 0:00	13.24	478.78	0.26	7.65	343.45	9.32	0.81	12.05
9/26/2024 23:50	13.23	501.76	0.27	7.67	342.37	9.35	0.82	12.14
9/26/2024 23:40	13.2	506.36	0.28	7.68	342.08	9.34	0.93	12.14
9/26/2024 23:30	13.18	505.01	0.28	7.67	341.98	9.35	0.81	12.14
9/26/2024 23:20	13.15	491.6	0.27	7.66	342.46	9.35	3.72	12.05
9/26/2024 23:10	13.13	513.75	0.28	7.68	341.55	9.36	0.77	12.07
9/26/2024 23:00	13.12	529.72	0.29	7.69	341.08	9.34	0.97	12.12
9/26/2024 22:50	13.1	548.77	0.3	7.71	340.55	9.37	0.92	12.17
9/26/2024 22:40	13.08	563.03	0.31	7.71	340.55	9.37	1.08	12.17
9/26/2024 22:30	13.06	586.17	0.32	7.73	339.9	9.35	1.05	12.17
9/26/2024 22:20	13.04	605.85	0.33	7.74	339.54	9.38	2.13	12.17
9/26/2024 22:10	13.01	595.92	0.33	7.73	339.52	9.37	1.66	12.14
9/26/2024 22:00	13	585.97	0.32	7.73	339.43	9.38	1.76	12.07
9/26/2024 21:50	13.01	609.95	0.34	7.74	339.26	9.38	1.43	12.07
9/26/2024 21:40	13.01	631.72	0.35	7.74	339.28	9.36	1.04	12.09
9/26/2024 21:30	13.01	639.17	0.35	7.74	339.53	9.34	1.95	12.17
9/26/2024 21:20	13.01	620.44	0.34	7.72	340.14	9.35	1.72	12.09
9/26/2024 21:10	13.01	629.86	0.35	7.72	340.1	9.35	1.15	12.09
9/26/2024 21:00	13.03	654.04	0.36	7.73	339.83	9.34	1.13	12.17
9/26/2024 20:50	13.03	679.15	0.37	7.73	339.57	9.34	0.88	12.09
9/26/2024 20:40	13.02	680.82	0.38	7.73	339.64	9.33	2.27	12.09
9/26/2024 20:30	13.02	688.81	0.38	7.74	339.55	9.31	1.12	12.09
9/26/2024 20:20	13.02	688.71	0.38	7.73	339.68	9.32	1.07	12.17
9/26/2024 20:10	13.02	678.45	0.37	7.72	340.05	9.33	1.3	12.19
9/26/2024 20:00	13.02	668.35	0.37	7.7	340.82	9.31	1.67	12.12
9/26/2024 19:50	13.03	632.21	0.35	7.67	341.78	9.32	1.17	12.12
9/26/2024 19:40	13.04	612.1	0.34	7.65	342.83	9.31	1.23	12.21
9/26/2024 19:30	13.06	599.96	0.33	7.63	343.3	9.3	1.01	12.21
9/26/2024 19:20	13.08	612.72	0.34	7.61	343.85	9.31	1.11	12.21
9/26/2024 19:10	13.07	572.15	0.31	7.57	345.43	9.3	0.88	12.19
9/26/2024 19:00	13.07	438.66	0.24	7.49	348.19	9.3	0.79	12.21
9/26/2024 18:50	13.08	426.61	0.23	7.47	347.92	9.29	0.52	12.21
9/26/2024 18:40	13.09	432.95	0.24	7.47	347.73	9.28	0.6	12.21

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9/26/2024 18:30	13.12	434.02	0.24	7.46	347.74	9.28	0.51	12.14
9/26/2024 18:20	13.13	412	0.22	7.44	348.7	9.27	0.5	12.21
9/26/2024 18:10	13.14	389.73	0.21	7.43	348.94	9.27	0.45	12.24
9/26/2024 18:00	13.14	358.56	0.19	7.41	349.69	9.27	0.52	12.24
9/26/2024 17:50	13.16	356.35	0.19	7.4	349	9.26	0.51	12.21
9/26/2024 17:40	13.17	359.63	0.19	7.41	349.41	9.28	0.53	12.14
9/26/2024 17:30	13.18	374.55	0.2	7.41	348.98	9.28	0.51	12.26
9/26/2024 17:20	13.2	383.08	0.21	7.41	349.6	9.27	0.44	12.26
9/26/2024 17:10	13.21	378.55	0.21	7.4	349.69	9.28	0.46	12.26
9/26/2024 17:00	13.21	358.5	0.19	7.39	350.39	9.28	0.44	12.19
9/26/2024 16:50	13.22	336.95	0.18	7.38	350.46	9.28	0.49	12.19
9/26/2024 16:40	13.22	305.06	0.16	7.36	351.6	9.29	0.48	12.21
9/26/2024 16:30	13.22	295.12	0.16	7.35	351.22	9.29	0.47	12.31
9/26/2024 16:20	13.24	292.25	0.16	7.34	351.44	9.29	0.46	12.36
9/26/2024 16:10	13.26	290.34	0.16	7.35	350.9	9.31	0.44	12.38
9/26/2024 16:00	13.27	293.63	0.16	7.35	351.5	9.3	0.5	12.41
9/26/2024 15:50	13.28	303.13	0.16	7.36	351.15	9.28	0.45	12.36
9/26/2024 15:40	13.29	309.17	0.17	7.36	351.71	9.29	0.49	12.41
9/26/2024 15:30	13.31	316.14	0.17	7.36	351.52	9.29	0.45	12.45
9/26/2024 15:20	13.32	320.61	0.17	7.36	352.25	9.3	0.43	12.31
9/26/2024 15:10	13.33	320.19	0.17	7.36	352.25	9.28	0.43	12.41
9/26/2024 15:00	13.33	300.76	0.16	7.34	353.29	9.27	0.46	12.38
9/26/2024 14:50	13.35	284.44	0.15	7.33	353.17	9.27	0.54	12.26
9/26/2024 14:40	13.36	277.74	0.15	7.32	353.9	9.27	0.46	12.36
9/26/2024 14:30	13.37	277.34	0.15	7.33	352.68	9.29	0.47	12.29
9/26/2024 14:20	13.38	263.03	0.14	7.32	353.73	9.29	0.45	12.33
9/26/2024 14:10	13.39	244.53	0.13	7.3	353.84	9.31	0.46	12.29
9/26/2024 14:00	13.39	222.78	0.12	7.29	354.56	9.29	0.46	12.38
9/26/2024 13:50	13.4	208.95	0.11	7.28	353.67	9.29	0.48	12.38
9/26/2024 13:40	13.41	202.76	0.11	7.28	353.34	9.29	0.46	12.33
9/26/2024 13:30	13.43	203.36	0.11	7.28	352.73	9.29	0.48	12.45
9/26/2024 13:20	13.44	202.23	0.11	7.28	352.93	9.29	0.45	12.48
9/26/2024 13:10	13.46	200.15	0.11	7.28	351.72	9.28	0.44	12.48
9/26/2024 13:00	13.47	193.13	0.1	7.27	352.2	9.28	0.42	12.38
9/26/2024 12:50	13.49	193.45	0.1	7.27	351.21	9.28	0.48	12.5
9/26/2024 12:40	13.5	190.5	0.1	7.27	351.13	9.29	4.08	12.57
9/26/2024 12:30	13.5	192.45	0.1	7.29	349.61	9.31	0.45	12.62
9/26/2024 12:20	13.51	190.67	0.1	7.28	350.19	9.32	0.44	12.62
9/26/2024 12:10	13.52	193.99	0.1	7.29	349.65	9.31	0.44	12.57
9/26/2024 12:00	13.53	192.14	0.1	7.29	349.43	9.3	0.47	12.6
9/26/2024 11:50	13.53	195.95	0.1	7.29	348.56	9.3	0.5	12.6
9/26/2024 11:40	13.53	195.68	0.1	7.29	348.45	9.31	0.43	12.5
9/26/2024 11:30	13.54	199.04	0.11	7.3	347.02	9.32	0.46	12.5
9/26/2024 11:20	13.55	199.81	0.11	7.31	346.49	9.32	0.45	12.5
9/26/2024 11:10	13.56	202.23	0.11	7.32	345.23	9.34	0.46	12.62
9/26/2024 11:00	13.56	203.88	0.11	7.32	345.47	9.33	0.72	12.69
9/26/2024 10:50	13.57	208.17	0.11	7.33	344.27	9.35	0.43	12.72

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9/26/2024 10:40	13.56	209.05	0.11	7.33	344.74	9.35	0.9	12.81
9/26/2024 10:30	13.56	210.89	0.11	7.33	344.29	9.34	0.42	12.74
9/26/2024 10:20	13.57	210.98	0.11	7.33	343.84	9.35	0.46	12.6
9/26/2024 10:10	13.6	215.04	0.11	7.34	342.61	9.36	0.51	12.91
9/26/2024 10:00	13.61	214.99	0.11	7.34	344.36	9.38	0.44	13.48
9/26/2024 9:50	13.61	215.26	0.12	7.34	344.85	9.36	0.53	13.46
9/26/2024 9:40	13.57	213.5	0.11	7.33	347.63	9.37	0.43	13.53
9/26/2024 9:30	13.52	214.09	0.11	7.34	348.21	9.34	0.97	13.17
9/26/2024 9:20	13.5	212.81	0.11	7.33	347.63	9.34	0.43	13.12
9/26/2024 9:10	13.48	212.06	0.11	7.34	347.32	9.38	0.48	13.36
9/26/2024 9:00	13.46	208.96	0.11	7.33	347.5	9.39	0.51	13.27
9/26/2024 8:50	13.42	211.71	0.11	7.33	347.83	9.34	0.48	12.69
9/26/2024 8:40	13.41	211.27	0.11	7.32	347.73	9.34	0.45	12.38
9/26/2024 8:30	13.41	212.19	0.11	7.33	347.1	9.33	0.48	12.31
9/26/2024 8:20	13.41	211.18	0.11	7.32	347.16	9.32	0.52	12.17
9/26/2024 8:10	13.42	213.53	0.11	7.33	345.83	9.31	0.56	12.09
9/26/2024 8:00	13.42	212.26	0.11	7.32	345.54	9.3	0.49	11.9
9/26/2024 7:50	13.43	215.14	0.12	7.32	344.14	9.29	0.52	11.88
9/26/2024 7:40	13.43	212.57	0.11	7.32	343.53	9.32	0.73	11.95
9/26/2024 7:30	13.43	216.12	0.12	7.33	342.13	9.31	0.5	11.93
9/26/2024 7:20	13.44	214.31	0.11	7.33	341.77	9.3	0.48	11.83
9/26/2024 7:10	13.45	217.18	0.12	7.33	341.12	9.28	1.23	11.93
9/26/2024 7:00	13.45	216.75	0.12	7.32	341.11	9.29	0.51	11.93
9/26/2024 6:50	13.46	218.64	0.12	7.33	339.78	9.31	0.48	11.93
9/26/2024 6:40	13.47	217.74	0.12	7.32	340.09	9.28	0.56	11.93
9/26/2024 6:30	13.47	220.13	0.12	7.33	339.42	9.29	0.53	11.9
9/26/2024 6:20	13.48	220.6	0.12	7.33	339.89	9.29	0.55	11.93
9/26/2024 6:10	13.48	221.47	0.12	7.33	340.08	9.3	0.77	11.93
9/26/2024 6:00	13.49	220.48	0.12	7.32	342.05	9.3	0.5	11.93
9/26/2024 5:50	13.49	221.99	0.12	7.33	341.89	9.31	0.52	11.93
9/26/2024 5:40	13.5	220.8	0.12	7.33	343.47	9.3	0.55	11.93
9/26/2024 5:30	13.5	224.11	0.12	7.34	343.35	9.31	0.57	11.93
9/26/2024 5:20	13.51	221.8	0.12	7.33	344.4	9.29	0.52	11.93
9/26/2024 5:10	13.52	225.06	0.12	7.34	343.86	9.29	11.81	11.83
9/26/2024 5:00	13.53	226	0.12	7.33	344.58	9.28	0.53	11.93
9/26/2024 4:50	13.54	228.24	0.12	7.34	343.6	9.29	0.64	11.93
9/26/2024 4:40	13.56	228.51	0.12	7.33	344.34	9.27	0.56	11.85
9/26/2024 4:30	13.58	229.65	0.12	7.34	343.03	9.28	0.58	11.93
9/26/2024 4:20	13.59	230	0.12	7.34	343.43	9.26	0.59	11.83
9/26/2024 4:10	13.61	233.6	0.13	7.35	342.56	9.28	0.49	11.83
9/26/2024 4:00	13.62	233.02	0.12	7.35	343.17	9.27	0.52	11.9
9/26/2024 3:50	13.64	237.76	0.13	7.35	342.54	9.26	0.6	11.93
9/26/2024 3:40	13.65	238.26	0.13	7.35	343.14	9.27	0.61	11.85
9/26/2024 3:30	13.66	244.53	0.13	7.36	341.91	9.27	0.71	11.93
9/26/2024 3:20	13.67	246.7	0.13	7.36	342.42	9.27	1.31	11.95
9/26/2024 3:10	13.68	251.32	0.13	7.37	341.43	9.26	0.6	11.95
9/26/2024 3:00	13.69	254.11	0.14	7.36	341.88	9.27	0.63	11.95

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9/26/2024 2:50	13.7	250.14	0.13	7.36	341.48	9.25	1.09	11.93
9/26/2024 2:40	13.71	238.87	0.13	7.35	341.83	9.26	0.63	11.93
9/26/2024 2:30	13.72	239.4	0.13	7.35	340.88	9.24	0.84	11.83
9/26/2024 2:20	13.72	237.44	0.13	7.35	341.43	9.24	1.04	11.83
9/26/2024 2:10	13.73	240.03	0.13	7.35	340.51	9.26	0.66	11.83
9/26/2024 2:00	13.73	237.68	0.13	7.36	340.36	9.26	0.63	11.95
9/26/2024 1:50	13.73	241.32	0.13	7.36	339.59	9.26	0.66	11.83
9/26/2024 1:40	13.73	242.44	0.13	7.35	340.38	9.23	1.97	11.93
9/26/2024 1:30	13.73	244.51	0.13	7.36	338.95	9.27	0.61	11.83
9/26/2024 1:20	13.74	243.54	0.13	7.35	339.28	9.24	0.98	11.83
9/26/2024 1:10	13.75	246.3	0.13	7.36	338.57	9.24	1.61	11.83
9/26/2024 1:00	13.76	245.16	0.13	7.36	338.86	9.25	0.66	11.93
9/26/2024 0:50	13.78	247.92	0.13	7.37	338.52	9.25	1.35	11.95
9/26/2024 0:40	13.8	246.76	0.13	7.37	338.7	9.24	0.82	11.95
9/26/2024 0:30	13.82	249.35	0.13	7.37	338.25	9.24	0.98	11.95
9/26/2024 0:20	13.83	248.14	0.13	7.37	338.69	9.23	0.54	11.95
9/26/2024 0:10	13.85	253.49	0.14	7.38	337.98	9.25	0.7	11.95
9/26/2024 0:00	13.86	253.67	0.14	7.38	337.68	9.22	0.61	11.95
9/25/2024 23:50	13.88	256.88	0.14	7.38	336.97	9.21	1.02	11.93
9/25/2024 23:40	13.9	254.87	0.14	7.38	337.39	9.22	0.66	11.95
9/25/2024 23:30	13.92	260.76	0.14	7.38	337.61	9.2	0.71	11.95
9/25/2024 23:20	13.95	263.41	0.14	7.39	337.74	9.2	0.66	11.85
9/25/2024 23:10	13.98	265.87	0.14	7.39	337.29	9.2	0.72	11.95
9/25/2024 23:00	14	266.32	0.14	7.39	338.24	9.18	1.04	11.95
9/25/2024 22:50	14.02	268.66	0.14	7.39	338.31	9.2	0.67	11.95
9/25/2024 22:40	14.04	267.38	0.14	7.39	338.58	9.18	0.8	11.88
9/25/2024 22:30	14.06	273.09	0.15	7.4	337.77	9.18	0.97	11.95
9/25/2024 22:20	14.07	273.94	0.15	7.4	338.64	9.15	0.79	11.97
9/25/2024 22:10	14.09	275.95	0.15	7.41	338.3	9.16	0.7	11.97
9/25/2024 22:00	14.1	276.44	0.15	7.41	338.91	9.17	0.82	11.97
9/25/2024 21:50	14.12	279.56	0.15	7.42	338.55	9.14	1.56	11.97
9/25/2024 21:40	14.14	278.54	0.15	7.42	339.55	9.14	0.95	11.85
9/25/2024 21:30	14.16	282.29	0.15	7.43	339.18	9.15	1.05	11.85
9/25/2024 21:20	14.18	283.23	0.15	7.43	339.28	9.16	0.8	11.95
9/25/2024 21:10	14.2	286.45	0.15	7.44	338.82	9.17	0.8	11.97
9/25/2024 21:00	14.23	285.11	0.15	7.44	339.84	9.15	0.86	12
9/25/2024 20:50	14.25	292.48	0.16	7.45	339.66	9.13	1.41	12
9/25/2024 20:40	14.27	291.15	0.16	7.46	339.95	9.13	1.03	12
9/25/2024 20:30	14.3	298.56	0.16	7.48	339.38	9.13	1.27	12
9/25/2024 20:20	14.32	298.19	0.16	7.48	339.57	9.12	0.98	11.97
9/25/2024 20:10	14.35	305.42	0.16	7.5	338.72	9.12	1.01	11.97
9/25/2024 20:00	14.37	309.55	0.17	7.52	337.91	9.11	1.26	11.97
9/25/2024 19:50	14.4	316.52	0.17	7.54	337.27	9.11	0.99	11.9
9/25/2024 19:40	14.43	324.74	0.17	7.56	336.81	9.09	1.54	11.9
9/25/2024 19:30	14.45	333.84	0.18	7.58	335.96	9.1	1.15	11.97
9/25/2024 19:20	14.48	339.27	0.18	7.58	335.8	9.08	1.09	11.97
9/25/2024 19:10	14.5	345.31	0.19	7.59	335.04	9.09	1.99	12

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9/25/2024 19:00	14.52	347.03	0.19	7.59	335	9.09	1.57	11.93
9/25/2024 18:50	14.55	354.42	0.19	7.6	334.42	9.08	1.2	12
9/25/2024 18:40	14.57	359.43	0.19	7.61	334.35	9.09	1.59	12
9/25/2024 18:30	14.59	366.93	0.2	7.61	334.1	9.09	2.34	12.07
9/25/2024 18:20	14.61	372.3	0.2	7.62	334.1	9.1	1.52	12.09
9/25/2024 18:10	14.63	378.85	0.2	7.62	333.79	9.08	2.21	12.07
9/25/2024 18:00	14.65	384.97	0.21	7.63	333.33	9.07	2.98	12.05
9/25/2024 17:50	14.67	395.25	0.21	7.64	332.48	9.07	2.64	11.95
9/25/2024 17:40	14.69	399.19	0.22	7.64	331.92	9.08	4.31	11.97
9/25/2024 17:30	14.72	406.97	0.22	7.65	330.72	9.08	5.79	12.02
9/25/2024 17:20	14.73	410.64	0.22	7.65	330.38	9.07	3.25	12.09
9/25/2024 17:10	14.75	411.36	0.22	7.66	329.32	9.07	3.99	12.09
9/25/2024 17:00	14.77	414.47	0.22	7.66	328.2	9.07	5.06	12.12
9/25/2024 16:50	14.8	424.33	0.23	7.67	326.72	9.06	8.12	12.12
9/25/2024 16:40	14.82	428.75	0.23	7.68	325.4	9.06	7.61	12.12
9/25/2024 16:30	14.86	439.45	0.24	7.69	323.6	9.06	8.98	12.09
9/25/2024 16:20	14.89	458.52	0.25	7.7	321.55	9.05	12.99	12
9/25/2024 16:10	14.92	478.48	0.26	7.72	319.29	9.03	18.05	12.02
9/25/2024 16:00	14.94	491.36	0.27	7.73	317.94	9.03	17.98	12.12
9/25/2024 15:50	14.99	514.33	0.28	7.74	316.68	9.01	17.54	12.24
9/25/2024 15:40	15.04	545.64	0.3	7.76	315.42	8.99	36.41	12.26
9/25/2024 15:30	15.05	547.95	0.3	7.76	314.6	8.96	15.6	12.24
9/25/2024 15:20	15.08	563.65	0.31	7.75	313.72	8.96	21.3	12.21
9/25/2024 15:10	15.08	579.64	0.32	7.76	312.36	8.94	20.4	12.24
9/25/2024 15:00	15.08	583.85	0.32	7.75	311.37	8.96	20.2	12.31
9/25/2024 14:50	15.05	593.77	0.33	7.75	310.02	8.95	19.78	12.31
9/25/2024 14:40	15.04	580.83	0.32	7.75	309.66	8.93	13.35	12.36
9/25/2024 14:30	15.04	584.96	0.32	7.74	310.42	8.94	8.62	12.33
9/25/2024 14:20	15.03	569.87	0.31	7.73	311.63	8.93	9.67	12.31
9/25/2024 14:10	15.01	558.22	0.31	7.72	313.44	8.93	9.78	12.21
9/25/2024 14:00	14.98	534.35	0.29	7.71	313.96	8.94	7.93	12.29
9/25/2024 13:50	14.96	515.65	0.28	7.69	314.89	8.93	6.19	12.17
9/25/2024 13:40	14.94	499.86	0.27	7.68	315.58	8.94	6.06	12.12
9/25/2024 13:30	14.91	478.22	0.26	7.67	318.18	8.95	9.67	12.14
9/25/2024 13:20	14.89	441.2	0.24	7.65	319.81	8.95	4.63	12.36
9/25/2024 13:10	14.87	406.12	0.22	7.64	320.81	8.95	5.5	12.21
9/25/2024 13:00	14.86	383.8	0.21	7.62	321.71	8.94	4	12.17
9/25/2024 12:50	14.87	374.26	0.2	7.63	321.88	8.94	4.13	12.12
9/25/2024 12:40	14.88	366.02	0.2	7.62	323	8.94	3.94	12.12
9/25/2024 12:30	14.89	371.31	0.2	7.63	323.26	8.93	4.86	12.12
9/25/2024 12:20	14.9	378.25	0.2	7.63	324	8.95	5.75	12.14
9/25/2024 12:10	14.92	394.81	0.21	7.65	324.49	8.94	7.47	12.31
9/25/2024 12:00	14.94	409.34	0.22	7.66	324.87	8.93	10.91	12.21
9/25/2024 11:50	14.97	432.73	0.23	7.68	324.68	8.91	11.32	12.41
9/25/2024 11:40	15	466.82	0.25	7.69	325.49	8.88	14.36	12.36
9/25/2024 11:30	15.02	487.78	0.27	7.69	327.95	8.87	13.4	12.29
9/25/2024 11:20	15.04	493.98	0.27	7.7	330.17	8.86	13.88	12.24

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9/25/2024 11:10	15.06	504.33	0.27	7.7	332.64	8.85	14.23	12.09
9/25/2024 11:00	15.07	507.59	0.28	7.7	336.23	8.85	14.79	12.17
9/25/2024 10:50	15.06	514.92	0.28	7.7	338.89	8.86	14.26	12.14
9/25/2024 10:40	15.02	498.77	0.27	7.68	343.4	8.83	17.39	12.14
9/25/2024 10:30	14.97	458.87	0.25	7.66	348.03	8.84	15.02	12.12
9/25/2024 10:20	14.93	405.28	0.22	7.62	354.22	8.82	8.01	12.07
9/25/2024 10:10	14.92	394.42	0.21	7.61	356.49	8.81	4.2	11.97
9/25/2024 10:00	14.92	406.77	0.22	7.61	357.63	8.77	3.05	12.07
9/25/2024 9:50	14.91	406.66	0.22	7.59	358.67	8.79	2.46	11.97
9/25/2024 9:40	14.89	381.73	0.21	7.56	360.16	8.8	1.63	12.05
9/25/2024 9:30	14.86	357.02	0.19	7.53	361.17	8.79	1.35	12
9/25/2024 9:20	14.81	296.58	0.16	7.45	364.41	8.81	0.82	12
9/25/2024 9:10	14.78	177.78	0.09	7.37	367.38	8.8	0.79	12.05
9/25/2024 9:00	14.77	88.39	0.05	7.31	369	8.78	0.85	12.05
9/25/2024 8:50	14.78	77.74	0.04	7.32	367.47	8.76	0.65	11.97
9/25/2024 8:40	14.78	76.24	0.04	7.31	368.81	8.76	0.72	11.97
9/25/2024 8:30	14.79	77.28	0.04	7.32	368.98	8.75	0.64	12.07
9/25/2024 8:20	14.79	77.95	0.04	7.31	371.06	8.74	0.62	12.09
9/25/2024 8:10	14.79	78.97	0.04	7.31	372.2	8.73	0.7	12.09
9/25/2024 8:00	14.79	78.75	0.04	7.32	373.08	8.72	0.55	12.09
9/25/2024 7:50	14.8	78.53	0.04	7.34	371.97	8.73	0.6	12.09
9/25/2024 7:40	14.8	77.47	0.04	7.32	373.41	8.72	0.57	12.09
9/25/2024 7:30	14.81	76.79	0.04	7.33	372.21	8.73	0.53	12.09
9/25/2024 7:20	14.81	75.02	0.04	7.32	372.38	8.73	0.53	12
9/25/2024 7:10	14.82	74.22	0.04	7.32	371.22	8.72	0.53	12
9/25/2024 7:00	14.82	73.05	0.04	7.3	371.6	8.73	0.55	12.07
9/25/2024 6:50	14.83	73.54	0.04	7.33	369.47	8.73	0.59	12.07
9/25/2024 6:40	14.83	72.97	0.04	7.32	369.85	8.72	0.55	12.09
9/25/2024 6:30	14.84	73.67	0.04	7.33	368.85	8.73	0.6	12.12
9/25/2024 6:20	14.84	73.61	0.04	7.33	369.23	8.73	0.59	12.12
9/25/2024 6:10	14.85	73.89	0.04	7.34	368.03	8.74	0.57	12.02
9/25/2024 6:00	14.85	74.29	0.04	7.34	368.26	8.73	0.6	12.09
9/25/2024 5:50	14.86	75.04	0.04	7.35	366.45	8.75	0.58	12.12
9/25/2024 5:40	14.86	75.49	0.04	7.34	367.67	8.74	0.65	12.12
9/25/2024 5:30	14.86	76.49	0.04	7.36	365.84	8.76	0.61	12.12
9/25/2024 5:20	14.87	77.24	0.04	7.34	367.19	8.75	0.66	12.14
9/25/2024 5:10	14.87	79.08	0.04	7.36	365.93	8.78	0.66	12.14
9/25/2024 5:00	14.88	80.01	0.04	7.37	366.13	8.78	0.7	12.14
9/25/2024 4:50	14.88	81.38	0.04	7.36	366.76	8.77	0.67	12.05
9/25/2024 4:40	14.89	81.91	0.04	7.35	367.72	8.76	0.79	12.07
9/25/2024 4:30	14.89	85.32	0.04	7.37	366.35	8.76	1.3	12.17
9/25/2024 4:20	14.9	87.23	0.05	7.36	367.36	8.75	0.97	12.17
9/25/2024 4:10	14.91	90.32	0.05	7.38	365.3	8.76	1.19	12.17
9/25/2024 4:00	14.92	92.83	0.05	7.37	364.91	8.78	1.08	12.17
9/25/2024 3:50	14.93	97.53	0.05	7.39	362.64	8.77	1.56	12.17
9/25/2024 3:40	14.94	101.03	0.05	7.41	361.7	8.79	1.33	12.07
9/25/2024 3:30	14.96	107.19	0.06	7.4	360.72	8.76	2.13	12.07

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9/25/2024 3:20	14.97	112.44	0.06	7.41	359.44	8.78	2.43	12.14
9/25/2024 3:10	14.99	120.84	0.06	7.42	358.06	8.76	2.38	12.07
9/25/2024 3:00	15.02	129.25	0.07	7.42	357.35	8.75	3.29	12.07
9/25/2024 2:50	15.04	139.35	0.07	7.44	355.46	8.75	4.4	12.17
9/25/2024 2:40	15.07	153.53	0.08	7.44	355.12	8.73	3.65	12.19
9/25/2024 2:30	15.12	173.52	0.09	7.47	352.25	8.73	5	12.09
9/25/2024 2:20	15.15	192.36	0.1	7.48	351.09	8.72	4.45	12.09
9/25/2024 2:10	15.2	223.49	0.12	7.51	349.14	8.71	5.62	12.09
9/25/2024 2:00	15.24	249.98	0.13	7.53	348.04	8.69	5.44	12.07
9/25/2024 1:50	15.28	281.65	0.15	7.54	346.28	8.68	6	12.19
9/25/2024 1:40	15.31	306.84	0.16	7.55	345.22	8.69	9.74	12.19
9/25/2024 1:30	15.33	330.2	0.18	7.57	343.12	8.67	8.74	12.19
9/25/2024 1:20	15.34	338.48	0.18	7.57	341.19	8.67	8.14	12.19
9/25/2024 1:10	15.36	348.58	0.19	7.58	338.99	8.69	8.48	12.19
9/25/2024 1:00	15.37	379.2	0.2	7.59	337.67	8.67	8.89	12.09
9/25/2024 0:50	15.36	406.74	0.22	7.6	337.54	8.66	8.46	12.09
9/25/2024 0:40	15.32	409.46	0.22	7.59	339.37	8.66	9.83	12.12
9/25/2024 0:30	15.27	405.43	0.22	7.56	341.35	8.69	8.65	12.21
9/25/2024 0:20	15.21	397.94	0.22	7.54	343.08	8.66	7.22	12.21
9/25/2024 0:10	15.13	351.9	0.19	7.48	346.18	8.7	5.46	12.21
9/25/2024 0:00	15.07	299.03	0.16	7.44	348.61	8.7	3.83	12.21
9/24/2024 23:50	15.04	244.56	0.13	7.39	353.46	8.68	2.29	12.21
9/24/2024 23:40	15.03	242.38	0.13	7.35	358.91	8.63	1.89	12.21
9/24/2024 23:30	15.02	241.21	0.13	7.33	364.65	8.6	1.8	12.21
9/24/2024 23:20	15.01	226.03	0.12	7.29	371.74	8.6	1.14	12.21
9/24/2024 23:10	15.01	177.31	0.09	7.24	378.56	8.61	0.99	12.21
9/24/2024 23:00	15	111.78	0.06	7.18	385.04	8.61	0.82	12.14
9/24/2024 22:50	15.01	54.27	0.03	7.14	386.69	8.62	0.72	12.21
9/24/2024 22:40	15.02	27.62	0.01	7.11	387.56	8.63	0.68	12.21
9/24/2024 22:30	15.04	24.3	0.01	7.08	387.35	8.59	0.67	12.21
9/24/2024 22:20	15.05	23.97	0.01	7.11	384.44	8.59	0.69	12.12
9/24/2024 22:10	15.07	24.08	0.01	7.12	382.53	8.56	0.67	12.21
9/24/2024 22:00	15.08	23.98	0.01	7.09	384.03	8.55	0.65	12.12
9/24/2024 21:50	15.09	24.08	0.01	7.13	381.16	8.57	0.67	12.14
9/24/2024 21:40	15.1	23.98	0.01	7.11	382.56	8.57	0.67	12.14
9/24/2024 21:30	15.11	24.11	0.01	7.13	380.63	8.56	0.64	12.24
9/24/2024 21:20	15.12	23.93	0.01	7.11	382.61	8.55	0.62	12.14
9/24/2024 21:10	15.13	24.19	0.01	7.12	383.1	8.55	0.64	12.17
9/24/2024 21:00	15.14	24.19	0.01	7.12	386.73	8.55	0.62	12.24
9/24/2024 20:50	15.15	24.34	0.01	7.14	387.95	8.56	0.64	12.12
9/24/2024 20:40	15.16	24.19	0.01	7.12	391.53	8.55	0.62	12.26
9/24/2024 20:30	15.17	24.41	0.01	7.14	391.27	8.54	0.63	12.26
9/24/2024 20:20	15.17	24.3	0.01	7.13	393.41	8.54	0.64	12.26
9/24/2024 20:10	15.18	24.35	0.01	7.13	394.99	8.54	0.65	12.26
9/24/2024 20:00	15.19	24.36	0.01	7.15	397.18	8.53	0.62	12.26
9/24/2024 19:50	15.2	24.55	0.01	7.15	399.36	8.56	0.62	12.29
9/24/2024 19:40	15.21	24.52	0.01	7.14	403.36	8.56	0.63	12.26

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9/24/2024 19:30	15.21	24.6	0.01	7.15	404.83	8.56	0.63	12.29
9/24/2024 19:20	15.22	24.61	0.01	7.16	405.14	8.55	0.62	12.29
9/24/2024 19:10	15.23	24.73	0.01	7.15	406.02	8.57	0.64	12.29
9/24/2024 19:00	15.24	24.67	0.01	7.16	406.37	8.57	0.64	12.19
9/24/2024 18:50	15.25	24.7	0.01	7.15	405.9	8.57	0.64	12.19
9/24/2024 18:40	15.25	24.68	0.01	7.13	407.16	8.57	0.62	12.21
9/24/2024 18:30	15.26	24.7	0.01	7.12	406.67	8.58	0.63	12.19
9/24/2024 18:20	15.26	24.62	0.01	7.15	405.19	8.6	0.62	12.21
9/24/2024 18:10	15.27	24.7	0.01	7.14	404.51	8.62	0.64	12.33
9/24/2024 18:00	15.29	24.5	0.01	7.15	404.66	8.64	0.64	12.36
9/24/2024 17:50	15.29	24.58	0.01	7.15	403.74	8.65	0.64	12.36
9/24/2024 17:40	15.3	24.4	0.01	7.2	401.96	8.66	0.64	12.38
9/24/2024 17:30	15.32	24.36	0.01	7.16	403.04	8.68	0.62	12.36
9/24/2024 17:20	15.33	24.31	0.01	7.15	404.13	8.66	0.63	12.26
9/24/2024 17:10	15.34	24.42	0.01	7.16	402.62	8.69	0.63	12.38
9/24/2024 17:00	15.35	24.23	0.01	7.19	401.39	8.71	0.63	12.5
9/24/2024 16:50	15.36	24.19	0.01	7.19	401.73	8.71	0.65	12.55
9/24/2024 16:40	15.37	24.07	0.01	7.19	401.7	8.71	0.65	12.57
9/24/2024 16:30	15.38	24.18	0.01	7.2	400.3	8.74	0.64	12.6
9/24/2024 16:20	15.39	23.99	0.01	7.24	398.59	8.74	0.65	12.53
9/24/2024 16:10	15.41	24.03	0.01	7.16	401.49	8.75	0.64	12.6
9/24/2024 16:00	15.43	23.95	0.01	7.22	399.16	8.77	0.64	12.6
9/24/2024 15:50	15.44	23.96	0.01	7.23	397.62	8.79	0.63	12.5
9/24/2024 15:40	15.47	23.9	0.01	7.22	398.26	8.81	0.65	12.53
9/24/2024 15:30	15.49	23.88	0.01	7.23	396.38	8.83	0.63	12.55
9/24/2024 15:20	15.5	23.66	0.01	7.23	397.14	8.86	0.62	12.55
9/24/2024 15:10	15.51	23.81	0.01	7.22	396.72	8.88	0.67	12.79
9/24/2024 15:00	15.51	23.71	0.01	7.23	396.13	8.88	0.68	12.98
9/24/2024 14:50	15.5	23.81	0.01	7.24	395.09	8.88	0.63	12.62
9/24/2024 14:40	15.5	23.64	0.01	7.24	395.63	8.9	0.63	13.03
9/24/2024 14:30	15.49	23.78	0.01	7.26	393.3	8.88	0.64	12.79
9/24/2024 14:20	15.5	23.59	0.01	7.24	394.35	8.91	0.63	13.03
9/24/2024 14:10	15.51	23.65	0.01	7.25	392.79	8.93	0.64	12.98
9/24/2024 14:00	15.52	23.69	0.01	7.28	391.1	8.9	0.62	12.84
9/24/2024 13:50	15.53	23.73	0.01	7.26	391.05	8.93	0.63	12.86
9/24/2024 13:40	15.55	23.51	0.01	7.26	390.79	8.95	0.66	13.27
9/24/2024 13:30	15.58	23.69	0.01	7.26	389.86	8.98	0.65	13.44
9/24/2024 13:20	15.61	23.47	0.01	7.31	386.42	9.04	0.63	13.17
9/24/2024 13:10	15.62	23.67	0.01	7.33	384.81	9.04	0.64	13.39
9/24/2024 13:00	15.63	23.66	0.01	7.32	384.94	9.07	0.64	13.39
9/24/2024 12:50	15.69	23.81	0.01	7.32	384.11	9.09	0.62	13.39
9/24/2024 12:40	15.61	23.66	0.01	7.36	382.51	9.09	0.62	13.41
9/24/2024 12:30	15.59	23.88	0.01	7.33	384	9.1	0.63	13.41
9/24/2024 12:20	15.61	23.74	0.01	7.32	384.5	9.11	0.61	13.41
9/24/2024 12:10	15.55	24.04	0.01	7.31	384.42	9.08	0.59	13.32
9/24/2024 12:00	15.52	23.88	0.01	7.32	384.49	9.06	0.59	13.32
9/24/2024 11:50	15.52	24.09	0.01	7.31	384.47	9.09	0.61	13.44

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9/24/2024 11:40	15.53	23.88	0.01	7.28	386.16	9.11	0.6	13.34
9/24/2024 11:30	15.5	24.16	0.01	7.29	384.96	9.12	0.6	13.44
9/24/2024 11:20	15.51	24.04	0.01	7.32	383.82	9.13	0.6	13.34
9/24/2024 11:10	15.48	24.04	0.01	7.31	384.82	9.16	0.58	13.46
9/24/2024 11:00	15.45	23.86	0.01	7.33	385.62	9.17	0.59	13.39
9/24/2024 10:50	15.37	24.05	0.01	7.32	387.19	9.17	0.57	13.48
9/24/2024 10:40	15.29	23.82	0.01	7.32	389.41	9.16	0.6	13.48
9/24/2024 10:30	15.16	23.87	0.01	7.31	390.49	9.18	0.55	13.51
9/24/2024 10:20	15.04	23.88	0.01	7.29	392.09	9.16	0.55	13.51
9/24/2024 10:10	14.94	23.97	0.01	7.27	393.67	9.17	0.55	13.51
9/24/2024 10:00	14.82	23.87	0.01	7.28	394.51	9.16	0.55	13.51
9/24/2024 9:50	14.69	23.98	0.01	7.26	395.59	9.15	0.55	13.53
9/24/2024 9:40	14.56	23.83	0.01	7.22	398.98	9.09	0.53	13.51
9/24/2024 9:30	14.46	24.11	0.01	7.23	398.97	9.08	0.52	13.44
9/24/2024 9:20	14.42	23.96	0.01	7.22	400.84	9.07	0.5	13.41
9/24/2024 9:10	14.38	24.18	0.01	7.21	402.43	9.07	0.53	13.53
9/24/2024 9:00	14.34	23.85	0.01	7.19	405.17	9.04	0.54	13.51
9/24/2024 8:50	14.3	24.29	0.01	7.2	405.77	9.02	0.5	13.1
9/24/2024 8:40	14.26	24.01	0.01	7.17	408.4	8.95	0.52	12.5
9/24/2024 8:30	14.25	24.42	0.01	7.17	408.75	8.93	0.53	12.21
9/24/2024 8:20	14.25	24.31	0.01	7.15	410.49	8.91	0.48	12.07
9/24/2024 8:10	14.26	24.52	0.01	7.16	409.68	8.89	0.51	12.12
9/24/2024 8:00	14.26	24.28	0.01	7.16	410.6	8.9	0.5	12.14
9/24/2024 7:50	14.27	24.64	0.01	7.15	410.83	8.88	0.52	12
9/24/2024 7:40	14.28	24.49	0.01	7.16	410.9	8.87	0.53	12.09
9/24/2024 7:30	14.29	24.78	0.01	7.15	411.2	8.87	0.5	12.12
9/24/2024 7:20	14.3	24.52	0.01	7.14	412.02	8.85	0.5	12.12
9/24/2024 7:10	14.31	24.9	0.01	7.14	411.25	8.84	0.51	12.12
9/24/2024 7:00	14.31	24.59	0.01	7.15	411.26	8.84	1.63	12.09
9/24/2024 6:50	14.32	24.89	0.01	7.14	411.17	8.84	0.52	12.09
9/24/2024 6:40	14.33	24.81	0.01	7.13	412.08	8.82	0.51	12.09
9/24/2024 6:30	14.34	24.86	0.01	7.14	410.87	8.81	0.53	12.12
9/24/2024 6:20	14.35	24.77	0.01	7.12	412.02	8.84	0.51	12.12
9/24/2024 6:10	14.36	24.9	0.01	7.13	410.66	8.82	0.53	12.14
9/24/2024 6:00	14.37	24.84	0.01	7.11	412.41	8.81	0.51	12.12
9/24/2024 5:50	14.38	24.96	0.01	7.14	410.22	8.81	0.53	12.14
9/24/2024 5:40	14.38	24.39	0.01	7.14	411.1	8.85	0.49	12.05
9/24/2024 5:30	14.39	25	0.01	7.14	411.01	8.85	0.53	12.05
9/24/2024 5:20	14.4	24.99	0.01	7.12	412.7	8.81	0.53	12.14
9/24/2024 5:10	14.41	25.09	0.01	7.11	412.31	8.83	0.55	12.05
9/24/2024 5:00	14.41	25.04	0.01	7.12	412.97	8.82	0.54	12.05
9/24/2024 4:50	14.42	25.11	0.01	7.14	411.13	8.82	0.5	12.14
9/24/2024 4:40	14.42	25.12	0.01	7.15	411.07	8.83	0.52	12.07
9/24/2024 4:30	14.42	25.2	0.01	7.15	410.68	8.81	0.52	12.07
9/24/2024 4:20	14.42	25.09	0.01	7.12	412.53	8.82	0.51	12.14
9/24/2024 4:10	14.43	25.35	0.01	7.15	410.31	8.83	0.52	12.14
9/24/2024 4:00	14.43	25.27	0.01	7.13	411.84	8.84	0.53	12.17

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9/24/2024 3:50	14.44	25.31	0.01	7.13	411.3	8.83	0.52	12.17
9/24/2024 3:40	14.44	25.22	0.01	7.11	412.82	8.8	0.5	12.19
9/24/2024 3:30	14.44	25.44	0.01	7.13	411.13	8.84	0.52	12.19
9/24/2024 3:20	14.44	24.99	0.01	7.13	412.15	8.83	0.53	12.19
9/24/2024 3:10	14.44	25.49	0.01	7.12	411.91	8.82	0.55	12.09
9/24/2024 3:00	14.44	25.47	0.01	7.11	412.57	8.82	0.51	12.07
9/24/2024 2:50	14.45	25.52	0.01	7.11	411.92	8.83	0.51	12.07
9/24/2024 2:40	14.45	25.45	0.01	7.1	412.96	8.83	0.51	12.19
9/24/2024 2:30	14.45	25.58	0.01	7.08	413.38	8.82	0.52	12.19
9/24/2024 2:20	14.45	25.34	0.01	7.09	413.33	8.82	0.52	12.19
9/24/2024 2:10	14.45	25.64	0.01	7.09	412.87	8.82	0.53	12.19
9/24/2024 2:00	14.46	25.67	0.01	7.1	412.63	8.81	0.52	12.19
9/24/2024 1:50	14.46	25.75	0.01	7.09	412.75	8.84	1.54	12.17
9/24/2024 1:40	14.46	25.49	0.01	7.1	412.9	8.82	0.52	12.17
9/24/2024 1:30	14.47	25.9	0.01	7.11	411.71	8.81	0.52	12.21
9/24/2024 1:20	14.47	25.65	0.01	7.1	412.5	8.81	0.53	12.21
9/24/2024 1:10	14.47	25.94	0.01	7.12	411.29	8.84	0.51	12.21
9/24/2024 1:00	14.48	25.71	0.01	7.08	413.97	8.82	0.52	12.21
9/24/2024 0:50	14.48	25.95	0.01	7.13	411.15	8.84	0.53	12.21
9/24/2024 0:40	14.48	25.57	0.01	7.12	412.22	8.82	0.52	12.21
9/24/2024 0:30	14.49	26	0.01	7.11	411.63	8.83	0.51	12.21
9/24/2024 0:20	14.49	25.95	0.01	7.1	412.67	8.83	0.52	12.12
9/24/2024 0:10	14.49	26.1	0.01	7.11	411.27	8.83	0.51	12.14
9/24/2024 0:00	14.49	25.51	0.01	7.1	412.58	8.82	0.52	12.12
9/23/2024 23:50	14.49	26.04	0.01	7.11	411.73	8.84	0.55	12.12
9/23/2024 23:40	14.49	25.95	0.01	7.1	412.18	8.83	0.53	12.21
9/23/2024 23:30	14.49	26.01	0.01	7.12	410.6	8.83	0.5	12.14
9/23/2024 23:20	14.49	25.96	0.01	7.11	411.22	8.81	0.52	12.14
9/23/2024 23:10	14.5	26.08	0.01	7.11	410.73	8.83	0.51	12.24
9/23/2024 23:00	14.5	26.03	0.01	7.12	410.83	8.82	0.53	12.21
9/23/2024 22:50	14.51	26.07	0.01	7.12	410.61	8.82	0.54	12.24
9/23/2024 22:40	14.51	25.81	0.01	7.11	411.41	8.82	0.54	12.24
9/23/2024 22:30	14.52	26.19	0.01	7.1	411.08	8.83	0.55	12.24
9/23/2024 22:20	14.52	26.12	0.01	7.1	411.11	8.81	0.53	12.24
9/23/2024 22:10	14.53	26.23	0.01	7.08	411.36	8.81	0.51	12.17
9/23/2024 22:00	14.53	25.94	0.01	7.11	410.16	8.83	0.53	12.17
9/23/2024 21:50	14.54	26.15	0.01	7.12	409.03	8.82	0.51	12.17
9/23/2024 21:40	14.54	26.14	0.01	7.12	409.57	8.82	0.53	12.24
9/23/2024 21:30	14.54	26.18	0.01	7.1	409.85	8.84	0.52	12.26
9/23/2024 21:20	14.55	26.04	0.01	7.15	407.73	8.82	0.52	12.26
9/23/2024 21:10	14.55	26.21	0.01	7.13	408.37	8.82	0.54	12.26
9/23/2024 21:00	14.55	26.08	0.01	7.13	409.01	8.82	0.52	12.19
9/23/2024 20:50	14.56	26.34	0.01	7.13	407.84	8.82	0.52	12.19
9/23/2024 20:40	14.56	25.9	0.01	7.13	408.25	8.82	0.53	12.26
9/23/2024 20:30	14.57	26.23	0.01	7.14	406.89	8.82	0.53	12.26
9/23/2024 20:20	14.58	26.32	0.01	7.19	404.91	8.82	0.51	12.19
9/23/2024 20:10	14.59	26.43	0.01	7.15	406.47	8.82	0.55	12.29

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9/23/2024 20:00	14.59	26.42	0.01	7.15	406.63	8.82	0.53	12.31
9/23/2024 19:50	14.6	26.61	0.01	7.16	405.04	8.83	0.6	12.31
9/23/2024 19:40	14.61	26.52	0.01	7.16	405.15	8.82	0.5	12.31
9/23/2024 19:30	14.62	26.63	0.01	7.16	404.51	8.82	0.53	12.31
9/23/2024 19:20	14.62	26.44	0.01	7.15	404.85	8.82	0.51	12.31
9/23/2024 19:10	14.63	26.72	0.01	7.17	402.98	8.83	0.53	12.33
9/23/2024 19:00	14.64	26.49	0.01	7.16	403.81	8.84	0.54	12.33
9/23/2024 18:50	14.65	26.8	0.01	7.18	402	8.84	0.53	12.36
9/23/2024 18:40	14.66	26.59	0.01	7.2	400.62	8.87	0.52	12.36
9/23/2024 18:30	14.67	26.87	0.01	7.2	399.82	8.89	0.51	12.38
9/23/2024 18:20	14.68	26.79	0.01	7.2	399.6	8.89	0.54	12.29
9/23/2024 18:10	14.69	26.95	0.01	7.19	398.88	8.94	0.54	12.29
9/23/2024 18:00	14.7	26.91	0.01	7.2	398.63	8.97	0.53	12.41
9/23/2024 17:50	14.71	26.99	0.01	7.23	396.3	9	0.54	12.5
9/23/2024 17:40	14.7	27.04	0.01	7.23	396.04	8.97	0.52	12.55
9/23/2024 17:30	14.7	27.25	0.01	7.23	395.33	8.98	0.53	12.5
9/23/2024 17:20	14.69	27.24	0.01	7.22	396.07	9	0.53	12.38
9/23/2024 17:10	14.7	27.31	0.01	7.24	393.87	9.01	0.54	12.43
9/23/2024 17:00	14.71	27.34	0.01	7.25	393.45	9.02	0.53	12.45
9/23/2024 16:50	14.71	27.56	0.01	7.26	391.64	9.03	0.53	12.57
9/23/2024 16:40	14.72	27.48	0.01	7.25	392.55	9.06	0.53	12.65
9/23/2024 16:30	14.72	27.86	0.01	7.25	391.19	9.09	0.51	12.84
9/23/2024 16:20	14.72	27.9	0.01	7.28	389.9	9.08	0.53	12.79
9/23/2024 16:10	14.72	28.09	0.01	7.26	389.89	9.09	0.54	12.74
9/23/2024 16:00	14.72	27.92	0.01	7.3	388.09	9.08	0.51	12.76
9/23/2024 15:50	14.72	28.46	0.01	7.28	387.65	9.09	0.52	12.76
9/23/2024 15:40	14.73	28.49	0.01	7.3	386.79	9.12	0.52	12.81
9/23/2024 15:30	14.74	28.67	0.01	7.32	384.74	9.14	0.51	12.79
9/23/2024 15:20	14.74	28.86	0.01	7.34	383.78	9.15	0.54	12.84
9/23/2024 15:10	14.76	29.19	0.01	7.34	382.8	9.16	0.56	12.79
9/23/2024 15:00	14.79	28.8	0.01	7.35	382.8	9.24	0.54	13.03
9/23/2024 14:50	14.76	29.53	0.01	7.37	381.75	9.25	0.52	13.2
9/23/2024 14:40	14.67	29.71	0.01	7.33	384.37	9.23	0.5	13.56
9/23/2024 14:30	14.64	30.18	0.01	7.35	382.5	9.22	0.51	13.24
9/23/2024 14:20	14.62	30.39	0.01	7.33	384.34	9.25	0.53	13.03
9/23/2024 14:10	14.59	30.76	0.01	7.33	383.26	9.23	0.51	12.81
9/23/2024 14:00	14.59	30.99	0.02	7.34	383.26	9.25	0.51	12.72
9/23/2024 13:50	14.59	31.58	0.02	7.36	381.42	9.26	0.54	12.76
9/23/2024 13:40	14.6	31.71	0.02	7.36	381.43	9.32	0.54	12.86
9/23/2024 13:30	14.58	32.25	0.02	7.37	380.83	9.32	0.5	13.15
9/23/2024 13:20	14.47	32.66	0.02	7.34	383.47	9.28	0.49	12.96
9/23/2024 13:10	14.45	33.38	0.02	7.36	381.75	9.3	0.51	12.84
9/23/2024 13:00	14.42	33.9	0.02	7.35	383.78	9.3	0.5	12.86
9/23/2024 12:50	14.39	34.64	0.02	7.35	383.34	9.28	0.5	12.84
9/23/2024 12:40	14.36	35.06	0.02	7.35	383.38	9.28	0.52	12.84
9/23/2024 12:30	14.33	36.35	0.02	7.33	383.92	9.26	0.49	12.84
9/23/2024 12:20	14.31	37.01	0.02	7.31	385.76	9.21	0.48	12.65

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9/23/2024 12:10	14.3	38.31	0.02	7.3	385.19	9.21	0.46	12.65
9/23/2024 12:00	14.28	39.24	0.02	7.32	383.94	9.26	0.49	12.67
9/23/2024 11:50	14.27	41.02	0.02	7.32	383.35	9.27	0.49	12.65
9/23/2024 11:40	14.26	42.15	0.02	7.32	384.38	9.29	0.49	12.67
9/23/2024 11:30	14.25	44.25	0.02	7.34	382.59	9.3	0.48	12.57
9/23/2024 11:20	14.24	45.94	0.02	7.34	382.92	9.32	0.47	12.6
9/23/2024 11:10	14.21	48.32	0.02	7.34	382.99	9.32	0.47	12.74
9/23/2024 11:00	14.19	50.63	0.03	7.34	383.5	9.32	0.47	12.79
9/23/2024 10:50	14.16	53.75	0.03	7.34	383.61	9.33	0.46	12.88
9/23/2024 10:40	14.12	56.12	0.03	7.32	385.6	9.27	0.48	12.65
9/23/2024 10:30	14.09	59.61	0.03	7.32	385.67	9.25	0.46	12.43
9/23/2024 10:20	14.06	62.22	0.03	7.31	386.81	9.21	0.45	12.26
9/23/2024 10:10	14.04	64.97	0.03	7.31	386.94	9.23	0.45	12.19
9/23/2024 10:00	14.02	67.07	0.03	7.29	388.3	9.21	0.47	12.17
9/23/2024 9:50	14	69.13	0.04	7.29	388.44	9.16	0.48	12.12
9/23/2024 9:40	13.99	70.81	0.04	7.26	390.33	9.13	0.46	12.14
9/23/2024 9:30	13.98	72.8	0.04	7.27	382.51	9.13	0.46	12.09
9/23/2024 9:20	13.97	73.82	0.04	7.24	392.77	9.1	0.43	12
9/23/2024 9:10	13.96	75.72	0.04	7.22	393.65	9.1	0.45	12
9/23/2024 9:00	13.95	76.88	0.04	7.22	394.56	9.11	0.44	12.09
9/23/2024 8:50	13.94	78.56	0.04	7.22	394.48	9.06	0.46	11.97
9/23/2024 8:40	13.93	79.46	0.04	7.21	395.36	9.04	0.46	12.02
9/23/2024 8:30	13.92	80.6	0.04	7.21	395.49	9.05	0.47	12.02
9/23/2024 8:20	13.92	80.09	0.04	7.19	397.65	9	0.44	12
9/23/2024 8:10	13.91	78.48	0.04	7.18	397.9	9.02	0.48	12
9/23/2024 8:00	13.91	73.15	0.04	7.17	399.61	8.99	0.49	11.97
9/23/2024 7:50	13.9	66.64	0.03	7.19	398.75	9.01	0.46	11.88
9/23/2024 7:40	13.9	57.46	0.03	7.17	400.26	9.01	0.46	11.88
9/23/2024 7:30	13.9	51.48	0.03	7.18	399.55	8.99	0.45	11.95
9/23/2024 7:20	13.89	48.78	0.02	7.17	400.48	8.98	0.47	11.85
9/23/2024 7:10	13.89	48.22	0.02	7.18	399.36	8.97	0.49	11.88
9/23/2024 7:00	13.89	48.21	0.02	7.17	400.57	8.97	0.47	11.97
9/23/2024 6:50	13.89	49.4	0.03	7.17	400.17	8.96	0.47	11.97
9/23/2024 6:40	13.89	50.37	0.03	7.16	400.57	8.96	0.48	11.88
9/23/2024 6:30	13.89	52.66	0.03	7.18	399.54	8.96	0.46	11.95
9/23/2024 6:20	13.88	54.9	0.03	7.16	400.57	8.97	0.47	11.95
9/23/2024 6:10	13.88	57.55	0.03	7.18	399.27	8.97	0.46	11.97
9/23/2024 6:00	13.88	59.57	0.03	7.18	399.15	8.98	0.46	11.97
9/23/2024 5:50	13.88	62.09	0.03	7.19	398.71	8.96	0.45	11.97
9/23/2024 5:40	13.88	63.66	0.03	7.19	399.25	8.97	0.47	11.97
9/23/2024 5:30	13.88	65.28	0.03	7.2	398.72	8.95	0.48	11.97
9/23/2024 5:20	13.87	66.17	0.03	7.18	400.13	8.97	0.48	11.88
9/23/2024 5:10	13.87	67.64	0.03	7.19	399.78	8.96	0.46	11.88
9/23/2024 5:00	13.87	68.22	0.04	7.18	400.83	8.98	0.46	11.95
9/23/2024 4:50	13.87	68.62	0.04	7.18	400.83	8.97	0.45	11.97
9/23/2024 4:40	13.86	68.23	0.04	7.17	402.14	8.98	0.48	11.97
9/23/2024 4:30	13.86	67.53	0.03	7.19	401.11	8.97	0.46	11.97

EGP-STU-003 (WLNG US) 2024-09-23 to 2024-09-29

9/23/2024 4:20	13.86	66.06	0.03	7.19	401.59	8.98	0.47	11.97
9/23/2024 4:10	13.85	64.69	0.03	7.19	401.08	8.97	0.46	11.88
9/23/2024 4:00	13.85	62.16	0.03	7.18	403.11	8.99	0.49	11.88
9/23/2024 3:50	13.85	60.03	0.03	7.19	401.84	8.99	0.47	11.88
9/23/2024 3:40	13.85	56.7	0.03	7.19	402.71	8.97	0.47	11.95
9/23/2024 3:30	13.85	55.37	0.03	7.19	403.01	8.99	0.47	11.85
9/23/2024 3:20	13.84	52.49	0.03	7.18	404.12	8.99	0.47	11.97
9/23/2024 3:10	13.84	50.91	0.03	7.19	403.36	8.98	0.47	11.97
9/23/2024 3:00	13.84	47.52	0.02	7.17	404.66	8.97	0.48	11.97
9/23/2024 2:50	13.84	44.25	0.02	7.17	404.2	8.96	0.49	11.97
9/23/2024 2:40	13.84	39.95	0.02	7.16	405.75	8.97	0.47	11.88
9/23/2024 2:30	13.84	36.32	0.02	7.17	404.76	8.98	0.49	11.88
9/23/2024 2:20	13.84	32.68	0.02	7.16	405.29	8.98	0.51	11.9
9/23/2024 2:10	13.84	29.56	0.01	7.15	405.55	8.96	0.48	11.97
9/23/2024 2:00	13.83	27.76	0.01	7.16	405.38	8.98	0.49	11.9
9/23/2024 1:50	13.83	27.21	0.01	7.15	405.27	8.96	0.49	11.97
9/23/2024 1:40	13.83	26.66	0.01	7.14	406.37	8.97	0.5	11.88
9/23/2024 1:30	13.83	27.3	0.01	7.16	405.03	8.98	0.49	11.88
9/23/2024 1:20	13.82	27.37	0.01	7.15	405.67	8.97	0.51	11.88
9/23/2024 1:10	13.82	27.59	0.01	7.16	404.74	8.96	0.47	11.88
9/23/2024 1:00	13.82	27.22	0.01	7.15	405.66	8.98	0.48	11.97
9/23/2024 0:50	13.82	27.88	0.01	7.16	404.74	8.95	0.53	12
9/23/2024 0:40	13.81	27.5	0.01	7.15	405.18	8.96	0.5	12
9/23/2024 0:30	13.81	28.28	0.01	7.15	404.85	8.97	0.49	12
9/23/2024 0:20	13.81	28.3	0.01	7.16	404.91	8.98	0.49	12
9/23/2024 0:10	13.81	28.76	0.01	7.15	404.85	8.97	0.51	12
9/23/2024 0:00	13.81	28.49	0.01	7.14	405.48	8.96	0.49	12

EGP-STU-004 (WLNG DS) 2024-09-23 to 2024-09-29

Received	Temperature C	Specific Conductivity ÂµS/cm	Salinity PSU	pH pH	ORP mV	Dissolved Oxygen Concentration mg/L	Turbidity NTU	TL Battery V
9/29/2024 23:50	12.76	190.66	0.09	7.74	204.21	9.53	24.19	12.26
9/29/2024 23:40	12.77	176.35	0.08	7.76	202.93	9.58	24.32	12.26
9/29/2024 23:30	12.76	172.82	0.08	7.76	203.25	9.58	28.91	12.26
9/29/2024 23:20	12.75	171.31	0.08	7.75	203.53	9.63	23.33	12.26
9/29/2024 23:10	12.71	167.59	0.08	7.73	203.42	9.58	26.09	12.26
9/29/2024 23:00	12.72	153.62	0.07	7.69	208.04	9.63	27.39	12.26
9/29/2024 22:50	12.86	191.59	0.09	7.71	206.31	9.43	38.33	12.26
9/29/2024 22:40	12.88	193.89	0.09	7.72	205.76	9.41	21.76	12.26
9/29/2024 22:30	12.88	190.57	0.09	7.73	204.91	9.46	24.18	12.26
9/29/2024 22:20	12.86	176.81	0.08	7.73	204.64	9.56	23.73	12.26
9/29/2024 22:10	12.8	165.68	0.08	7.72	204.91	9.58	23.59	12.29
9/29/2024 22:00	12.82	152.9	0.07	7.66	208.34	9.53	25.2	12.29
9/29/2024 21:50	12.95	185.32	0.09	7.68	208.21	9.38	23.04	12.24
9/29/2024 21:40	12.98	187.02	0.09	7.69	207.63	9.36	20.49	12.14
9/29/2024 21:30	13	189.05	0.09	7.7	206.48	9.38	18.87	12.19
9/29/2024 21:20	13.01	191.88	0.09	7.7	205.55	9.36	19.89	12.19
9/29/2024 21:10	13	192.64	0.09	7.71	204.77	9.41	59.65	12.29
9/29/2024 21:00	12.98	185.8	0.09	7.69	207.03	9.46	22.9	12.19
9/29/2024 20:50	12.96	150.62	0.07	7.66	207.46	9.51	34.34	12.19
9/29/2024 20:40	13.08	183.74	0.09	7.68	207.82	9.34	19.75	12.19
9/29/2024 20:30	13.11	184.74	0.09	7.68	207.71	9.34	20.29	12.33
9/29/2024 20:20	13.15	186.11	0.09	7.68	207.47	9.33	18.65	12.33
9/29/2024 20:10	13.18	187.26	0.09	7.69	207.08	9.33	24.29	12.33
9/29/2024 20:00	13.21	189.25	0.09	7.7	206.39	9.34	18.99	12.33
9/29/2024 19:50	13.24	190.76	0.09	7.71	206.21	9.34	26.93	12.33
9/29/2024 19:40	13.26	194.04	0.09	7.72	204.68	9.32	23.06	12.33
9/29/2024 19:30	13.27	192.84	0.09	7.72	203.26	9.37	28.26	12.33
9/29/2024 19:20	13.24	171.24	0.08	7.73	205.44	9.47	24.33	12.36
9/29/2024 19:10	13.25	161.13	0.08	7.67	207.92	9.43	44.6	12.36
9/29/2024 19:00	13.35	183.82	0.09	7.68	209.46	9.35	18.21	12.38
9/29/2024 18:50	13.4	183.53	0.09	7.69	208.35	9.36	18.3	12.41
9/29/2024 18:40	13.44	185.02	0.09	7.69	208.63	9.34	17.13	12.33
9/29/2024 18:30	13.48	186.25	0.09	7.7	208.48	9.34	30.41	12.38
9/29/2024 18:20	13.53	187.17	0.09	7.7	208.1	9.32	15.8	12.5
9/29/2024 18:10	13.57	190.86	0.09	7.71	208.43	9.32	24.83	12.67
9/29/2024 18:00	13.63	193.54	0.09	7.72	207.18	9.3	17.55	12.91
9/29/2024 17:50	13.67	195.08	0.09	7.74	205.49	9.3	20.04	13.2
9/29/2024 17:40	13.73	195.5	0.09	7.74	206.49	9.32	21.77	13.2
9/29/2024 17:30	13.78	176.68	0.08	7.77	204.64	9.36	22.33	13.24
9/29/2024 17:20	13.78	182.22	0.09	7.76	204.51	9.36	21.06	13.29
9/29/2024 17:10	13.77	182.72	0.09	7.75	205.03	9.36	21.6	13.24

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9/29/2024 17:00	13.75	179.84	0.09	7.76	204.08	9.37	20.04	12.93
9/29/2024 16:50	13.75	180.23	0.09	7.77	204.36	9.36	22.11	13.08
9/29/2024 16:40	13.76	183.43	0.09	7.76	204.22	9.37	23.32	13.2
9/29/2024 16:30	13.8	180.86	0.09	7.78	203.31	9.37	21.42	13.48
9/29/2024 16:20	13.77	179.87	0.09	7.78	204.21	9.41	22.35	13.48
9/29/2024 16:10	13.74	183.65	0.09	7.77	204.63	9.4	20.85	13.48
9/29/2024 16:00	13.7	179.99	0.09	7.78	203.58	9.39	22.05	13.36
9/29/2024 15:50	13.73	183.66	0.09	7.78	204.29	9.38	22.92	13.44
9/29/2024 15:40	13.77	180.93	0.09	7.79	204.73	9.4	18.88	13.44
9/29/2024 15:30	13.78	182.37	0.09	7.79	204.43	9.39	19.94	13.44
9/29/2024 15:20	13.79	183.09	0.09	7.79	205.18	9.39	20.69	13.39
9/29/2024 15:10	13.83	179.95	0.09	7.8	204.97	9.39	23.22	13.32
9/29/2024 15:00	13.76	188.46	0.09	7.78	205.3	9.39	24.39	13.32
9/29/2024 14:50	13.74	181.85	0.09	7.79	204.92	9.39	17.1	13.44
9/29/2024 14:40	13.73	181.57	0.09	7.78	204.22	9.4	25.58	13.46
9/29/2024 14:30	13.73	182.61	0.09	7.79	202.6	9.41	18.92	13.36
9/29/2024 14:20	13.65	182.47	0.09	7.79	203.52	9.45	20.41	13.44
9/29/2024 14:10	13.51	182.62	0.09	7.78	201.61	9.44	16.45	13.46
9/29/2024 14:00	13.49	184.2	0.09	7.78	202.18	9.46	20.68	13.56
9/29/2024 13:50	13.41	181.24	0.09	7.79	200.25	9.46	17.77	13.58
9/29/2024 13:40	13.35	186.77	0.09	7.78	202.6	9.48	18.56	13.58
9/29/2024 13:30	13.35	187.41	0.09	7.77	201.12	9.45	17.2	13.58
9/29/2024 13:20	13.35	186.32	0.09	7.78	203.89	9.47	19.22	13.56
9/29/2024 13:10	13.42	186.71	0.09	7.78	203.61	9.45	19.34	13.53
9/29/2024 13:00	13.4	193.1	0.09	7.77	204.06	9.47	19.53	13.44
9/29/2024 12:50	13.43	194.47	0.09	7.76	204.03	9.45	17.54	13.56
9/29/2024 12:40	13.33	187.77	0.09	7.77	203.35	9.45	20.29	13.6
9/29/2024 12:30	13.31	184.15	0.09	7.76	203.54	9.48	21.22	13.6
9/29/2024 12:20	13.28	183.33	0.09	7.75	203.95	9.48	18.15	13.6
9/29/2024 12:10	13.27	185.77	0.09	7.73	204.54	9.48	22.62	13.6
9/29/2024 12:00	13.19	173.74	0.08	7.74	205.98	9.5	20.93	13.6
9/29/2024 11:50	13.18	169.06	0.08	7.7	208.63	9.51	20.26	13.6
9/29/2024 11:40	13.18	163.7	0.08	7.68	210.13	9.48	20.9	13.63
9/29/2024 11:30	13.24	189.02	0.09	7.68	210.98	9.42	16.76	13.65
9/29/2024 11:20	13.18	192.87	0.09	7.67	210.35	9.42	20.47	13.67
9/29/2024 11:10	13.15	190.59	0.09	7.68	209.61	9.4	18.11	13.51
9/29/2024 11:00	13.14	192.17	0.09	7.68	209.22	9.39	17.68	13.63
9/29/2024 10:50	13.12	192.43	0.09	7.68	208.62	9.4	36.47	13.65
9/29/2024 10:40	13.14	194.84	0.09	7.68	210.35	9.39	17.24	13.22
9/29/2024 10:30	13.15	196.43	0.09	7.69	208.36	9.4	18.79	13.29
9/29/2024 10:20	13.14	193.17	0.09	7.69	210.19	9.41	17.04	13.41
9/29/2024 10:10	13.14	197.83	0.09	7.69	208.52	9.4	23.72	13.53
9/29/2024 10:00	13.15	196.88	0.09	7.69	208.37	9.39	17.03	13.65
9/29/2024 9:50	13.13	198.06	0.09	7.69	207.77	9.39	24.37	13.67
9/29/2024 9:40	13.1	198.53	0.09	7.7	207.81	9.4	18.14	13.72
9/29/2024 9:30	13.07	198.21	0.09	7.7	207.08	9.39	22	13.22
9/29/2024 9:20	13.06	197.27	0.09	7.7	206.02	9.4	19.27	13.03

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9/29/2024 9:10	13.04	200.07	0.09	7.71	204.28	9.4	26.27	12.74
9/29/2024 9:00	13.02	203.82	0.1	7.72	204.45	9.41	22.69	12.48
9/29/2024 8:50	12.98	207.56	0.1	7.73	201.56	9.41	144.45	12.55
9/29/2024 8:40	12.92	200.65	0.1	7.74	199.95	9.46	24.56	12.43
9/29/2024 8:30	12.87	192.78	0.09	7.75	198.71	9.49	23.42	12.33
9/29/2024 8:20	12.85	188.27	0.09	7.76	198.03	9.51	19.79	12.33
9/29/2024 8:10	12.84	186.52	0.09	7.77	197.99	9.51	20.93	12.17
9/29/2024 8:00	12.85	189.61	0.09	7.76	197.58	9.5	22.37	12.12
9/29/2024 7:50	12.86	187.83	0.09	7.77	196.65	9.49	21.21	12.07
9/29/2024 7:40	12.88	187.1	0.09	7.77	198.42	9.51	20.68	12.19
9/29/2024 7:30	12.9	188.87	0.09	7.76	197.09	9.47	28.43	12.17
9/29/2024 7:20	12.91	188.63	0.09	7.76	199.28	9.5	22.84	12.12
9/29/2024 7:10	12.93	190.24	0.09	7.76	198.18	9.48	29.45	12.17
9/29/2024 7:00	12.94	186.67	0.09	7.77	198.34	9.48	19.48	12.17
9/29/2024 6:50	12.97	191.84	0.09	7.76	199.13	9.47	22.22	12.17
9/29/2024 6:40	12.98	189.65	0.09	7.76	199.01	9.46	18.36	12.07
9/29/2024 6:30	13.01	189.41	0.09	7.77	199.51	9.44	19.17	12.05
9/29/2024 6:20	13.03	188.83	0.09	7.76	199.69	9.46	21.98	12.07
9/29/2024 6:10	13.06	191.26	0.09	7.76	199.67	9.45	29.33	12.09
9/29/2024 6:00	13.08	190.21	0.09	7.76	199.88	9.45	23.48	12.17
9/29/2024 5:50	13.09	191.05	0.09	7.76	199.55	9.43	19.83	12.17
9/29/2024 5:40	13.1	191.5	0.09	7.76	200.14	9.43	19.34	12.19
9/29/2024 5:30	13.1	192.27	0.09	7.76	200.1	9.42	20.91	12.19
9/29/2024 5:20	13.11	189.52	0.09	7.76	199.6	9.43	20.22	12.17
9/29/2024 5:10	13.12	190.7	0.09	7.76	199.17	9.43	21.66	12.17
9/29/2024 5:00	13.13	191.09	0.09	7.76	200.7	9.43	20.49	12.19
9/29/2024 4:50	13.14	189.33	0.09	7.76	199.86	9.42	20.02	12.09
9/29/2024 4:40	13.15	189.93	0.09	7.76	200.27	9.41	17.32	12.07
9/29/2024 4:30	13.16	193.04	0.09	7.76	199.82	9.42	20.18	12.19
9/29/2024 4:20	13.17	193.59	0.09	7.76	200.38	9.41	20.12	12.07
9/29/2024 4:10	13.17	192.87	0.09	7.76	200.16	9.4	21.57	12.07
9/29/2024 4:00	13.17	192.78	0.09	7.76	200.39	9.41	23.85	12.19
9/29/2024 3:50	13.18	192.73	0.09	7.76	200.41	9.41	20.16	12.21
9/29/2024 3:40	13.18	192.39	0.09	7.76	200.12	9.39	17.5	12.21
9/29/2024 3:30	13.18	192.26	0.09	7.76	199.7	9.4	20.99	12.21
9/29/2024 3:20	13.2	192.87	0.09	7.75	200.47	9.4	20.43	12.21
9/29/2024 3:10	13.19	190.19	0.09	7.76	199.53	9.42	17.76	12.24
9/29/2024 3:00	13.2	191.51	0.09	7.76	201.03	9.4	17.87	12.21
9/29/2024 2:50	13.21	189.11	0.09	7.76	200.46	9.4	19.6	12.21
9/29/2024 2:40	13.22	189.03	0.09	7.76	200.61	9.4	16.37	12.12
9/29/2024 2:30	13.24	190.85	0.09	7.75	200.76	9.39	17.56	12.19
9/29/2024 2:20	13.25	190.59	0.09	7.75	200.43	9.38	16.22	12.09
9/29/2024 2:10	13.24	188.96	0.09	7.75	200.2	9.39	18.88	12.24
9/29/2024 2:00	13.25	189.85	0.09	7.74	200.26	9.38	24.22	12.24
9/29/2024 1:50	13.25	189.1	0.09	7.74	200.06	9.38	17.6	12.14
9/29/2024 1:40	13.25	193.84	0.09	7.72	201.42	9.38	21.85	12.12
9/29/2024 1:30	13.25	184.01	0.09	7.69	203.72	9.38	14.82	12.24

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9/29/2024 1:20	13.33	197.96	0.09	7.68	203.9	9.28	27.08	12.24
9/29/2024 1:10	13.34	205.22	0.1	7.7	202.23	9.27	21.24	12.26
9/29/2024 1:00	13.32	204.74	0.1	7.72	201.15	9.3	15.86	12.26
9/29/2024 0:50	13.27	189.08	0.09	7.75	199.24	9.34	101.73	12.26
9/29/2024 0:40	13.27	190.76	0.09	7.74	200.16	9.38	14.69	12.26
9/29/2024 0:30	13.27	192.57	0.09	7.74	199.73	9.39	15.42	12.26
9/29/2024 0:20	13.25	191.3	0.09	7.73	199.72	9.37	14.54	12.26
9/29/2024 0:10	13.24	188.17	0.09	7.71	200.69	9.38	19.74	12.26
9/29/2024 0:00	13.28	187.38	0.09	7.69	201.02	9.33	15.47	12.26
9/28/2024 23:50	13.29	200.99	0.1	7.71	200.27	9.3	15.61	12.26
9/28/2024 23:40	13.27	193.61	0.09	7.71	201.14	9.35	14.76	12.17
9/28/2024 23:30	13.3	183.86	0.09	7.67	202.43	9.33	20.81	12.19
9/28/2024 23:20	13.36	207.02	0.1	7.69	201.36	9.25	14.06	12.17
9/28/2024 23:10	13.34	203.41	0.1	7.7	200.77	9.3	50.74	12.17
9/28/2024 23:00	13.3	190.15	0.09	7.7	201.52	9.36	20.55	12.17
9/28/2024 22:50	13.34	182.42	0.09	7.65	203.47	9.33	19.68	12.17
9/28/2024 22:40	13.4	201.73	0.1	7.65	204.36	9.26	15.11	12.31
9/28/2024 22:30	13.41	201.37	0.1	7.66	203.43	9.24	15.46	12.31
9/28/2024 22:20	13.43	199.81	0.09	7.66	204.01	9.24	13.06	12.31
9/28/2024 22:10	13.45	198.13	0.09	7.66	203.37	9.23	15.69	12.31
9/28/2024 22:00	13.46	203.38	0.1	7.66	203.54	9.24	12.37	12.31
9/28/2024 21:50	13.48	200.99	0.1	7.66	203.03	9.23	15.64	12.21
9/28/2024 21:40	13.49	200	0.09	7.67	201.63	9.24	14.95	12.21
9/28/2024 21:30	13.51	203.58	0.1	7.7	199.57	9.24	24.43	12.19
9/28/2024 21:20	13.5	203.19	0.1	7.72	198.84	9.26	17.55	12.29
9/28/2024 21:10	13.5	201.42	0.1	7.73	197.23	9.29	19.69	12.31
9/28/2024 21:00	13.5	197.18	0.09	7.73	197.23	9.31	16.28	12.33
9/28/2024 20:50	13.5	193.07	0.09	7.74	196.18	9.31	15.12	12.33
9/28/2024 20:40	13.51	194.6	0.09	7.74	196.53	9.31	14.6	12.33
9/28/2024 20:30	13.51	195.37	0.09	7.74	196.43	9.3	16.55	12.33
9/28/2024 20:20	13.51	194.47	0.09	7.74	196.51	9.3	14.64	12.33
9/28/2024 20:10	13.51	194.06	0.09	7.74	196.36	9.3	15.26	12.31
9/28/2024 20:00	13.52	196.78	0.09	7.73	196.92	9.29	17.42	12.31
9/28/2024 19:50	13.53	197	0.09	7.73	196.59	9.29	19.43	12.36
9/28/2024 19:40	13.53	193.71	0.09	7.73	196.52	9.3	15.85	12.36
9/28/2024 19:30	13.54	197.35	0.09	7.73	196.81	9.29	18.6	12.36
9/28/2024 19:20	13.53	194.71	0.09	7.73	197.2	9.3	17.61	12.36
9/28/2024 19:10	13.54	194.73	0.09	7.71	197.42	9.28	34.25	12.33
9/28/2024 19:00	13.57	204.86	0.1	7.71	198.96	9.26	14.66	12.45
9/28/2024 18:50	13.59	206.64	0.1	7.71	197.34	9.24	23.59	12.45
9/28/2024 18:40	13.6	209.55	0.1	7.72	197.07	9.25	15.27	12.67
9/28/2024 18:30	13.6	200.32	0.1	7.73	196.25	9.28	15.77	12.79
9/28/2024 18:20	13.6	195.16	0.09	7.73	196.48	9.3	20.38	12.81
9/28/2024 18:10	13.6	197.73	0.09	7.73	196.07	9.29	22.85	12.76
9/28/2024 18:00	13.59	195.88	0.09	7.75	196.03	9.3	14.6	12.84
9/28/2024 17:50	13.6	195.24	0.09	7.74	195.71	9.3	16.42	12.69
9/28/2024 17:40	13.6	196.03	0.09	7.74	196.25	9.3	14.62	12.74

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9/28/2024 17:30	13.61	197.05	0.09	7.73	196.47	9.3	14.41	13.24
9/28/2024 17:20	13.61	197.67	0.09	7.72	197.16	9.28	19.09	13.12
9/28/2024 17:10	13.6	195.74	0.09	7.73	196.89	9.3	40.72	13.15
9/28/2024 17:00	13.6	196.84	0.09	7.73	197.06	9.31	14.63	13.17
9/28/2024 16:50	13.58	194.64	0.09	7.73	196.59	9.31	33.45	13.24
9/28/2024 16:40	13.56	196.16	0.09	7.72	197.5	9.31	54.53	13.15
9/28/2024 16:30	13.54	193.47	0.09	7.71	198.41	9.31	14.87	13.12
9/28/2024 16:20	13.55	187.35	0.09	7.65	202.3	9.29	11.49	13.12
9/28/2024 16:10	13.57	193.45	0.09	7.66	201.73	9.26	16.99	13.22
9/28/2024 16:00	13.57	198.28	0.09	7.66	202.94	9.26	12.67	13.32
9/28/2024 15:50	13.58	202.13	0.1	7.69	199.82	9.27	19.93	13.32
9/28/2024 15:40	13.55	198.47	0.09	7.7	199.2	9.3	19.57	13.27
9/28/2024 15:30	13.53	187.86	0.09	7.67	201.51	9.34	16.13	13.39
9/28/2024 15:20	13.56	195.17	0.09	7.67	202.37	9.29	10.89	13.65
9/28/2024 15:10	13.58	195.85	0.09	7.67	202.08	9.29	11.4	13.7
9/28/2024 15:00	13.55	194.57	0.09	7.67	202.05	9.31	20.24	13.67
9/28/2024 14:50	13.56	197.73	0.09	7.67	200.79	9.3	11.43	13.67
9/28/2024 14:40	13.54	198.98	0.09	7.68	200.04	9.3	10.3	13.36
9/28/2024 14:30	13.54	205.5	0.1	7.72	197.52	9.29	13.28	13.32
9/28/2024 14:20	13.53	211.56	0.1	7.73	195.78	9.28	11.94	13.2
9/28/2024 14:10	13.5	203.3	0.1	7.74	196.13	9.34	22.23	13.53
9/28/2024 14:00	13.5	200.55	0.1	7.73	196.87	9.36	12.14	13.36
9/28/2024 13:50	13.51	194.64	0.09	7.7	198.35	9.36	12.48	13.6
9/28/2024 13:40	13.52	210.32	0.1	7.73	198.07	9.32	15.14	13.65
9/28/2024 13:30	13.51	213.52	0.1	7.73	196.12	9.32	15.39	13.65
9/28/2024 13:20	13.48	201.08	0.1	7.73	196.38	9.36	12.39	13.32
9/28/2024 13:10	13.49	203.9	0.1	7.74	196.4	9.36	13.53	13.39
9/28/2024 13:00	13.48	203.06	0.1	7.72	196.95	9.35	13.84	13.44
9/28/2024 12:50	13.47	202.72	0.1	7.71	197.23	9.34	16.74	13.17
9/28/2024 12:40	13.47	202.14	0.1	7.72	197.52	9.36	11.79	13.27
9/28/2024 12:30	13.46	201.32	0.1	7.72	197.15	9.37	13.9	13.53
9/28/2024 12:20	13.45	203.19	0.1	7.72	197.77	9.35	14.24	13.56
9/28/2024 12:10	13.46	203.41	0.1	7.71	198.44	9.35	13.18	13.63
9/28/2024 12:00	13.46	202.28	0.1	7.7	200.62	9.37	11.46	13.63
9/28/2024 11:50	13.46	198.68	0.09	7.66	202.42	9.35	13.54	13.65
9/28/2024 11:40	13.47	213	0.1	7.64	202.76	9.32	12.37	13.65
9/28/2024 11:30	13.46	207.99	0.1	7.67	201.05	9.33	9.98	13.53
9/28/2024 11:20	13.45	216.07	0.1	7.65	203.18	9.33	18.86	13.67
9/28/2024 11:10	13.44	216.86	0.1	7.65	200.95	9.32	20.51	13.32
9/28/2024 11:00	13.39	215.25	0.1	7.67	199.11	9.33	10.53	13.17
9/28/2024 10:50	13.36	229.08	0.11	7.69	196.87	9.34	10.94	13.05
9/28/2024 10:40	13.27	210.92	0.1	7.7	196.28	9.4	12.5	13.12
9/28/2024 10:30	13.22	205.82	0.1	7.72	195.4	9.43	16.94	13.15
9/28/2024 10:20	13.21	206.08	0.1	7.71	194.73	9.41	12.69	13.15
9/28/2024 10:10	13.17	204.26	0.1	7.73	193.61	9.43	16.88	13.08
9/28/2024 10:00	13.16	207.71	0.1	7.73	195.49	9.43	11.15	13.27
9/28/2024 9:50	13.14	209.38	0.1	7.73	193.9	9.43	11.75	13.2

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9/28/2024 9:40	13.09	205.44	0.1	7.73	193.33	9.45	13.08	13.05
9/28/2024 9:30	13.07	206.26	0.1	7.73	192.81	9.44	18.74	12.91
9/28/2024 9:20	13.03	205.62	0.1	7.74	192.34	9.45	12.09	13.1
9/28/2024 9:10	13	209.58	0.1	7.73	191.88	9.46	12.05	13
9/28/2024 9:00	12.97	209.77	0.1	7.74	192.08	9.46	10.97	12.76
9/28/2024 8:50	12.96	211.04	0.1	7.73	192.06	9.47	13.96	12.69
9/28/2024 8:40	12.96	212.43	0.1	7.72	192.11	9.46	15.33	12.43
9/28/2024 8:30	12.94	212.12	0.1	7.73	191.46	9.47	14.1	12.57
9/28/2024 8:30	12.94	212.12	0.1	7.73	191.46	9.47	14.1	12.57
9/28/2024 8:20	12.91	211.49	0.1	7.73	191.21	9.46	10.76	12.48
9/28/2024 8:10	12.89	210.03	0.1	7.73	190.9	9.46	10.55	12.33
9/28/2024 8:00	12.9	212.91	0.1	7.72	191.11	9.48	13.76	12.29
9/28/2024 7:50	12.89	213.08	0.1	7.72	190.9	9.48	16.36	12.24
9/28/2024 7:40	12.9	212.64	0.1	7.72	190.72	9.47	11.59	12.24
9/28/2024 7:30	12.89	208.23	0.1	7.72	190.14	9.47	13.05	12.12
9/28/2024 7:20	12.91	211.24	0.1	7.72	191.91	9.47	12.03	12.09
9/28/2024 7:10	12.93	213.78	0.1	7.72	191.29	9.46	14.32	12.17
9/28/2024 7:00	12.94	214.74	0.1	7.72	190.98	9.45	11.83	12.07
9/28/2024 6:50	12.92	210.78	0.1	7.72	190.94	9.46	15.27	12.19
9/28/2024 6:40	12.92	213.94	0.1	7.71	192.23	9.46	12.44	12.21
9/28/2024 6:30	12.94	210.01	0.1	7.7	194.03	9.47	23.93	12.09
9/28/2024 6:20	13.04	214.33	0.1	7.67	196.06	9.4	11.36	12.07
9/28/2024 6:10	13.1	238.41	0.11	7.67	195.97	9.37	11.29	12.21
9/28/2024 6:00	13.1	235.39	0.11	7.69	194.06	9.37	10.4	12.21
9/28/2024 5:50	13.08	237.99	0.11	7.71	192.5	9.37	17.69	12.21
9/28/2024 5:40	13	215.81	0.1	7.71	192.89	9.45	10.91	12.24
9/28/2024 5:30	13	215.75	0.1	7.71	193.72	9.45	15.42	12.21
9/28/2024 5:20	13.03	212.69	0.1	7.67	197.09	9.44	13.85	12.21
9/28/2024 5:10	13.17	244.38	0.12	7.67	197.32	9.34	13.82	12.24
9/28/2024 5:00	13.14	233.64	0.11	7.67	197.22	9.36	11.6	12.21
9/28/2024 4:50	13.16	247.6	0.12	7.67	197.05	9.36	14.29	12.12
9/28/2024 4:40	13.14	234.37	0.11	7.68	195.7	9.36	11.34	12.24
9/28/2024 4:30	13.14	237.72	0.11	7.69	194.42	9.36	24.87	12.21
9/28/2024 4:20	13.12	238.04	0.11	7.71	193.08	9.38	25.11	12.12
9/28/2024 4:10	13.05	220.88	0.1	7.72	191.83	9.44	12.11	12.24
9/28/2024 4:00	13.06	219.83	0.1	7.72	191.91	9.45	11.47	12.24
9/28/2024 3:50	13.05	216.76	0.1	7.72	191.77	9.45	15.42	12.12
9/28/2024 3:40	13.06	218.19	0.1	7.71	191.84	9.45	11.46	12.21
9/28/2024 3:30	13.09	219.61	0.1	7.71	191.65	9.45	12.24	12.14
9/28/2024 3:20	13.1	218.8	0.1	7.71	191.74	9.44	10.95	12.24
9/28/2024 3:10	13.11	219.22	0.1	7.71	190.97	9.44	13.29	12.21
9/28/2024 3:00	13.12	219.19	0.1	7.71	191.66	9.44	11.94	12.26
9/28/2024 2:50	13.14	220.99	0.11	7.71	191.43	9.44	12.74	12.26
9/28/2024 2:40	13.14	215.61	0.1	7.71	191.11	9.44	13	12.24
9/28/2024 2:30	13.18	223.44	0.11	7.71	190.73	9.43	13.47	12.24
9/28/2024 2:20	13.18	221.93	0.11	7.71	190.87	9.45	30.55	12.12
9/28/2024 2:10	13.2	223.95	0.11	7.71	190.96	9.43	10.39	12.12

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9/28/2024 2:00	13.21	224.49	0.11	7.71	190.97	9.43	11.13	12.19
9/28/2024 1:50	13.23	224.59	0.11	7.71	190.42	9.42	19.26	12.26
9/28/2024 1:40	13.24	224.97	0.11	7.71	190.5	9.42	11.73	12.26
9/28/2024 1:30	13.25	222.33	0.11	7.72	190.31	9.43	11.24	12.17
9/28/2024 1:20	13.26	223.88	0.11	7.71	190.22	9.42	12.23	12.24
9/28/2024 1:10	13.28	228.11	0.11	7.71	189.96	9.41	11.27	12.17
9/28/2024 1:00	13.28	223.52	0.11	7.71	189.34	9.42	10.62	12.14
9/28/2024 0:50	13.3	228.17	0.11	7.71	189.42	9.41	10.43	12.14
9/28/2024 0:40	13.31	228.9	0.11	7.7	189.69	9.41	14.89	12.29
9/28/2024 0:30	13.32	225.03	0.11	7.71	189.33	9.41	18.66	12.26
9/28/2024 0:20	13.35	230.09	0.11	7.71	189.38	9.41	15.44	12.29
9/28/2024 0:10	13.36	229.55	0.11	7.71	188.44	9.4	11.43	12.29
9/28/2024 0:00	13.37	239.89	0.11	7.7	188.95	9.41	11.34	12.29
9/27/2024 23:50	13.4	233.04	0.11	7.7	189.16	9.39	9.23	12.26
9/27/2024 23:40	13.4	227.97	0.11	7.7	188.82	9.4	10.56	12.19
9/27/2024 23:30	13.4	229.51	0.11	7.7	188.52	9.41	8.7	12.29
9/27/2024 23:20	13.42	233.92	0.11	7.7	188.7	9.4	11.28	12.29
9/27/2024 23:10	13.44	234.51	0.11	7.7	188.19	9.39	11.49	12.29
9/27/2024 23:00	13.46	234.69	0.11	7.69	189.17	9.38	13.16	12.29
9/27/2024 22:50	13.48	229.63	0.11	7.68	189.63	9.37	7.94	12.19
9/27/2024 22:40	13.5	235.66	0.11	7.7	188.38	9.36	11.45	12.21
9/27/2024 22:30	13.49	230.17	0.11	7.69	189.01	9.4	9.58	12.29
9/27/2024 22:20	13.5	231.75	0.11	7.65	192.34	9.38	8.08	12.29
9/27/2024 22:10	13.56	248.69	0.12	7.66	190.46	9.33	9.74	12.19
9/27/2024 22:00	13.59	251.55	0.12	7.66	191.31	9.33	15.35	12.26
9/27/2024 21:50	13.61	252.04	0.12	7.67	190.21	9.32	12.19	12.31
9/27/2024 21:40	13.64	255.31	0.12	7.66	190.91	9.32	10.29	12.31
9/27/2024 21:30	13.66	251.57	0.12	7.67	189.15	9.32	17.75	12.21
9/27/2024 21:20	13.7	252.65	0.12	7.69	187.89	9.31	73.08	12.29
9/27/2024 21:10	13.69	242.32	0.12	7.69	187.3	9.34	8.77	12.26
9/27/2024 21:00	13.69	237.17	0.11	7.66	189.56	9.34	15.95	12.31
9/27/2024 20:50	13.72	246.63	0.12	7.67	189.64	9.33	9.01	12.33
9/27/2024 20:40	13.77	253.14	0.12	7.69	187.64	9.31	9.92	12.33
9/27/2024 20:30	13.77	242.24	0.12	7.69	187.12	9.32	7.62	12.33
9/27/2024 20:20	13.77	242.72	0.12	7.68	189.14	9.31	19.86	12.33
9/27/2024 20:10	13.81	250.5	0.12	7.69	187.82	9.29	8.87	12.36
9/27/2024 20:00	13.83	246.62	0.12	7.68	187.82	9.3	9.01	12.36
9/27/2024 19:50	13.84	246.88	0.12	7.68	187.74	9.3	10.71	12.36
9/27/2024 19:40	13.85	244.68	0.12	7.68	188.15	9.3	11.76	12.36
9/27/2024 19:30	13.86	251.35	0.12	7.67	188.93	9.31	16.11	12.38
9/27/2024 19:20	13.87	251.45	0.12	7.65	190.73	9.28	133.56	12.26
9/27/2024 19:10	13.9	254.32	0.12	7.65	190.97	9.29	11.45	12.26
9/27/2024 19:00	13.92	257.04	0.12	7.65	190.83	9.27	8.95	12.26
9/27/2024 18:50	13.95	258.75	0.12	7.65	190.31	9.27	12.54	12.33
9/27/2024 18:40	13.97	256.24	0.12	7.65	190.53	9.27	10.22	12.31
9/27/2024 18:30	14	255.1	0.12	7.65	190.46	9.27	8.5	12.41
9/27/2024 18:20	14.02	255.67	0.12	7.65	190.1	9.26	8.2	12.76

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9/27/2024 18:10	14.05	255.77	0.12	7.65	190.5	9.26	8.25	12.81
9/27/2024 18:00	14.08	260.9	0.12	7.64	190.88	9.24	8.28	12.86
9/27/2024 17:50	14.1	257.93	0.12	7.64	190.2	9.25	18.81	12.91
9/27/2024 17:40	14.13	256.17	0.12	7.63	190.42	9.25	12.21	12.93
9/27/2024 17:30	14.16	261.37	0.12	7.63	190.82	9.24	13.59	12.88
9/27/2024 17:20	14.21	261.2	0.12	7.64	190.08	9.23	19.92	12.98
9/27/2024 17:10	14.24	267.25	0.13	7.65	189.26	9.23	12.16	13.34
9/27/2024 17:00	14.28	263.73	0.13	7.69	186.22	9.24	11.43	13.34
9/27/2024 16:50	14.31	258.46	0.12	7.7	185.26	9.23	8.97	13.36
9/27/2024 16:40	14.33	260.79	0.12	7.69	186.27	9.22	10.23	13.34
9/27/2024 16:30	14.33	266.77	0.13	7.7	185.13	9.21	52.82	13.39
9/27/2024 16:20	14.33	262.05	0.13	7.7	185.51	9.22	19.31	13.41
9/27/2024 16:10	14.32	264.55	0.13	7.69	185.71	9.24	13.27	13.46
9/27/2024 16:00	14.31	263.35	0.13	7.68	185.97	9.24	62.62	13.46
9/27/2024 15:50	14.3	264.93	0.13	7.68	186.03	9.24	15.12	13.48
9/27/2024 15:40	14.3	264.25	0.13	7.69	185.33	9.23	12.45	13.36
9/27/2024 15:30	14.32	275.13	0.13	7.68	185.82	9.23	12.78	13.46
9/27/2024 15:20	14.34	284.46	0.14	7.69	186.4	9.23	16.28	13.46
9/27/2024 15:10	14.34	274.17	0.13	7.69	185.69	9.23	13.64	13.44
9/27/2024 15:00	14.35	273.3	0.13	7.69	185.38	9.24	50.1	13.46
9/27/2024 14:50	14.33	283.84	0.14	7.69	184.89	9.21	11.05	13.44
9/27/2024 14:40	14.32	276.93	0.13	7.67	185.13	9.23	31.86	13.44
9/27/2024 14:30	14.31	275.16	0.13	7.67	185.32	9.23	16.64	13.39
9/27/2024 14:20	14.33	272.89	0.13	7.68	185.18	9.22	83.63	13.39
9/27/2024 14:10	14.38	274.05	0.13	7.7	184.35	9.21	10.66	13.39
9/27/2024 14:00	14.44	278.87	0.13	7.69	184.9	9.23	17.14	13.29
9/27/2024 13:50	14.36	278.69	0.13	7.69	183.94	9.21	11.36	13.36
9/27/2024 13:40	14.42	281.44	0.13	7.7	184.87	9.21	15.65	13.32
9/27/2024 13:30	14.46	278.55	0.13	7.71	184.43	9.21	33.89	13.22
9/27/2024 13:20	14.49	279.37	0.13	7.71	185.26	9.21	186.46	13.32
9/27/2024 13:10	14.47	281.94	0.13	7.71	184.46	9.22	21.79	13.32
9/27/2024 13:00	14.47	291.7	0.14	7.71	185.74	9.21	252.62	13.29
9/27/2024 12:50	14.43	287.68	0.14	7.72	184.22	9.22	69	13.29
9/27/2024 12:40	14.43	289.45	0.14	7.7	187.84	9.21	123.94	13.29
9/27/2024 12:30	15.18	0.07	0	7.55	160.95	9.38	2.71	13.27
9/27/2024 12:20	14.5	379.88	0.18	7.7	196.31	8.99	17.72	13.2
9/27/2024 12:10	14.47	384.53	0.19	7.71	194.14	8.97	18.52	13.22
9/27/2024 12:00	14.44	379.13	0.18	7.71	196.22	9.03	13.93	13.2
9/27/2024 11:50	14.41	360	0.17	7.71	194.64	9.06	17.27	13.32
9/27/2024 11:40	14.37	354.64	0.17	7.72	195.3	9.06	17.16	13.24
9/27/2024 11:30	14.32	358.16	0.17	7.71	193.72	9.06	15.13	13.34
9/27/2024 11:20	14.31	362.34	0.17	7.71	193.18	9.05	17.61	13.34
9/27/2024 11:10	14.28	359.93	0.17	7.71	192.71	9.07	18.51	13.36
9/27/2024 11:00	14.26	370.39	0.18	7.7	194.65	9.08	18.64	13.39
9/27/2024 10:50	14.21	369.43	0.18	7.7	194.98	9.11	20.36	13.29
9/27/2024 10:40	14.18	375.06	0.18	7.68	195.39	9.11	38.78	13.44
9/27/2024 10:30	14.13	368.92	0.18	7.69	194.38	9.12	21.26	13.46

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9/27/2024 10:20	14.12	373.23	0.18	7.69	195.78	9.08	28.42	13.48
9/27/2024 10:10	14.06	356.58	0.17	7.68	194.98	9.1	25.76	13.53
9/27/2024 10:00	14.03	369.31	0.18	7.68	196.42	9.14	33.45	13.53
9/27/2024 9:50	14.07	397.04	0.19	7.68	193.94	9.06	31.4	13.58
9/27/2024 9:40	14.01	379.28	0.18	7.68	195.64	9.09	26.64	13.6
9/27/2024 9:30	13.94	365.03	0.18	7.67	194.09	9.12	23.63	13.32
9/27/2024 9:20	13.89	367.54	0.18	7.67	195.35	9.17	20.15	13.03
9/27/2024 9:10	13.86	358.7	0.17	7.7	194.84	9.1	20.98	12.74
9/27/2024 9:00	13.84	368.54	0.18	7.69	193.88	9.11	21.09	12.26
9/27/2024 8:50	13.85	373.76	0.18	7.68	194.77	9.11	23.76	12.21
9/27/2024 8:40	13.85	375.43	0.18	7.68	193.89	9.1	25.88	12.19
9/27/2024 8:30	13.83	374.12	0.18	7.68	193.63	9.12	33.73	12.21
9/27/2024 8:20	13.81	373.45	0.18	7.68	193.19	9.12	32.44	12.26
9/27/2024 8:10	13.79	373.29	0.18	7.68	194.95	9.12	22.21	12.09
9/27/2024 8:00	13.85	388.53	0.19	7.67	196.31	9.06	34.8	12.07
9/27/2024 7:50	13.83	384.05	0.18	7.69	193.56	9.05	28.8	12.07
9/27/2024 7:40	13.86	397.02	0.19	7.68	195.26	9.09	31.35	12.07
9/27/2024 7:30	13.79	391.54	0.19	7.68	194.44	9.13	37.22	12.05
9/27/2024 7:20	13.79	392.41	0.19	7.69	193.39	9.08	25.31	12.05
9/27/2024 7:10	13.83	394.23	0.19	7.69	192.24	9.05	32.74	12.02
9/27/2024 7:00	13.84	392.8	0.19	7.69	194	9	34.75	12.02
9/27/2024 6:50	13.83	390.49	0.19	7.69	192.79	9.04	63.43	12.02
9/27/2024 6:40	13.85	381.53	0.18	7.69	192.89	8.98	43.8	12.02
9/27/2024 6:30	13.84	376.76	0.18	7.69	194.23	8.96	227.27	12.05
9/27/2024 6:20	13.86	378.05	0.18	7.67	194.95	8.96	38.22	12.05
9/27/2024 6:10	13.89	377.6	0.18	7.66	195.05	8.95	47.58	12.05
9/27/2024 6:00	13.92	382.79	0.18	7.67	192	8.96	41.67	11.95
9/27/2024 5:50	13.9	394.93	0.19	7.68	186.78	9.01	34.67	12.02
9/27/2024 5:40	13.91	397.86	0.19	7.68	186.6	8.98	29.32	11.95
9/27/2024 5:30	13.9	399.13	0.19	7.68	185.82	8.99	31.71	11.97
9/27/2024 5:20	13.89	401.85	0.19	7.68	185.55	9	35.2	12.05
9/27/2024 5:10	13.89	403.25	0.19	7.68	185.1	9.01	38.32	12.05
9/27/2024 5:00	13.9	402.91	0.19	7.68	190.18	8.99	31.65	12.07
9/27/2024 4:50	13.86	400.96	0.19	7.68	186.03	8.98	38.48	12.05
9/27/2024 4:40	13.83	387.31	0.19	7.68	188.81	9.02	35.17	12.07
9/27/2024 4:30	13.78	380.32	0.18	7.69	185.3	9	27.77	12.12
9/27/2024 4:20	13.85	379.03	0.18	7.67	187.69	8.94	25	12.12
9/27/2024 4:10	13.82	364.25	0.18	7.66	190.67	8.96	30.8	12.14
9/27/2024 4:00	13.83	355.06	0.17	7.65	191.98	8.98	30.67	12.14
9/27/2024 3:50	13.85	357.14	0.17	7.66	188.72	8.98	27.1	12.14
9/27/2024 3:40	13.86	359.32	0.17	7.65	191.18	8.98	27.29	12.14
9/27/2024 3:30	13.83	353.12	0.17	7.66	188.35	8.99	27.17	12.14
9/27/2024 3:20	13.87	347.89	0.17	7.66	187.71	8.95	31.82	12.14
9/27/2024 3:10	13.86	349.63	0.17	7.68	184.47	8.99	28.37	12.05
9/27/2024 3:00	13.84	348.44	0.17	7.67	185.66	9.02	28.11	12.14
9/27/2024 2:50	13.84	350.12	0.17	7.67	181.6	8.98	27.15	12.14
9/27/2024 2:40	13.81	350.46	0.17	7.66	185.66	9.05	32.22	12.07

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9/27/2024 2:30	13.79	348.02	0.17	7.67	181.43	9.04	25.17	12.19
9/27/2024 2:20	13.79	346.87	0.17	7.68	179.81	9.02	24.73	12.17
9/27/2024 2:10	13.84	356.11	0.17	7.66	180.49	9.02	33.36	12.17
9/27/2024 2:00	13.79	348.48	0.17	7.67	181.41	9.02	23.43	12.07
9/27/2024 1:50	13.81	349.67	0.17	7.68	178.54	8.98	24.99	12.07
9/27/2024 1:40	13.74	348.71	0.17	7.68	179.79	9.06	28.24	12.17
9/27/2024 1:30	13.8	352.37	0.17	7.67	181.02	9.02	30.67	12.17
9/27/2024 1:20	13.76	349.93	0.17	7.68	182.51	9.03	34.73	12.21
9/27/2024 1:10	13.75	351.24	0.17	7.67	181.33	9.04	29.92	12.24
9/27/2024 1:00	13.68	350.35	0.17	7.66	189.34	9.08	29.33	12.24
9/27/2024 0:50	13.93	366.53	0.18	7.67	180.56	8.9	33.64	12.24
9/27/2024 0:40	13.92	366.89	0.18	7.67	182.06	8.91	27.9	12.12
9/27/2024 0:30	13.89	368.05	0.18	7.67	178.26	8.93	29.19	12.21
9/27/2024 0:20	13.87	367.78	0.18	7.68	178.14	8.91	25.21	12.21
9/27/2024 0:10	13.81	360.92	0.17	7.68	176.93	8.95	34.35	12.12
9/27/2024 0:00	13.63	356.83	0.17	7.67	182.17	9.08	31.86	12.24
9/26/2024 23:50	13.58	357.68	0.17	7.67	179.96	9.1	24.36	12.24
9/26/2024 23:40	13.56	360.71	0.17	7.67	180.7	9.11	27.71	12.24
9/26/2024 23:30	13.58	362.2	0.17	7.67	180.06	9.08	34.54	12.21
9/26/2024 23:20	13.56	364.5	0.18	7.67	180.09	9.07	27.53	12.21
9/26/2024 23:10	13.48	369.84	0.18	7.67	181.75	9.15	39.67	12.26
9/26/2024 23:00	13.48	373.75	0.18	7.68	187.99	9.16	32.19	12.26
9/26/2024 22:50	13.45	374.82	0.18	7.68	181.74	9.14	28.99	12.26
9/26/2024 22:40	13.51	371.38	0.18	7.68	179.3	9.08	29.93	12.26
9/26/2024 22:30	13.47	373.24	0.18	7.68	179.52	9.1	32.15	12.26
9/26/2024 22:20	13.46	373.92	0.18	7.68	185.17	9.11	27.97	12.24
9/26/2024 22:10	13.46	367.68	0.18	7.68	180.96	9.06	54.62	12.24
9/26/2024 22:00	13.49	362.17	0.17	7.68	182.62	9.03	94.82	12.17
9/26/2024 21:50	13.49	360.37	0.17	7.69	183.23	9.06	41.64	12.24
9/26/2024 21:40	13.61	355.3	0.17	7.69	179.57	8.96	29.74	12.29
9/26/2024 21:30	13.61	352.89	0.17	7.7	178.63	8.91	42.35	12.19
9/26/2024 21:20	13.56	349.66	0.17	7.69	181.17	8.94	31.16	12.19
9/26/2024 21:10	13.63	346.38	0.17	7.69	178.24	8.91	43.7	12.19
9/26/2024 21:00	13.63	344.55	0.17	7.69	177.42	8.92	27.85	12.19
9/26/2024 20:50	13.65	344.64	0.17	7.7	177.04	8.94	39.24	12.17
9/26/2024 20:40	13.63	341.98	0.16	7.7	174.14	8.91	24.5	12.19
9/26/2024 20:30	13.6	335.78	0.16	7.71	178.31	8.94	24.84	12.21
9/26/2024 20:20	13.68	337.74	0.16	7.69	183.94	8.86	33.99	12.31
9/26/2024 20:10	13.66	334.83	0.16	7.69	181.09	8.88	32.9	12.31
9/26/2024 20:00	13.71	334.35	0.16	7.68	179.26	8.84	35.16	12.31
9/26/2024 19:50	13.69	326.43	0.16	7.69	182.23	8.85	36.64	12.31
9/26/2024 19:40	13.67	324.11	0.16	7.68	188.88	8.88	34.48	12.31
9/26/2024 19:30	13.71	323.26	0.15	7.68	182.01	8.85	42.73	12.31
9/26/2024 19:20	13.71	317.99	0.15	7.68	184.3	8.85	36.65	12.21
9/26/2024 19:10	13.7	312.83	0.15	7.68	190.97	8.9	48.99	12.19
9/26/2024 19:00	13.66	305.28	0.15	7.69	185.03	8.96	43.1	12.33
9/26/2024 18:50	13.74	314.18	0.15	7.68	191.38	8.88	49.76	12.33

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9/26/2024 18:40	13.73	300.49	0.14	7.66	184.51	8.89	41.49	12.24
9/26/2024 18:30	13.87	321.35	0.15	7.68	169.85	8.82	48.95	12.33
9/26/2024 18:20	13.9	329.92	0.16	7.68	168.53	8.83	25.21	12.36
9/26/2024 18:10	13.91	325.79	0.16	7.68	170.33	8.81	25.21	12.33
9/26/2024 18:00	13.92	328.3	0.16	7.67	170.34	8.83	28.45	12.33
9/26/2024 17:50	13.9	324.13	0.16	7.68	172.23	8.86	22.11	12.29
9/26/2024 17:40	13.93	321.35	0.15	7.68	176.75	8.8	28.89	12.33
9/26/2024 17:30	13.95	324.07	0.16	7.68	171.82	8.82	46.25	12.41
9/26/2024 17:20	13.94	322.93	0.15	7.68	180.16	8.83	39.93	12.38
9/26/2024 17:10	13.97	327.41	0.16	7.68	169.6	8.81	35.1	12.29
9/26/2024 17:00	13.99	328.54	0.16	7.68	169.39	8.8	39.34	12.33
9/26/2024 16:50	13.98	328.36	0.16	7.68	179.43	8.83	26.76	12.38
9/26/2024 16:40	14	322.08	0.15	7.67	172.26	8.8	32.56	12.65
9/26/2024 16:30	13.99	322.85	0.15	7.68	173.23	8.81	24.3	12.65
9/26/2024 16:20	13.99	327.71	0.16	7.68	189.03	8.82	27.37	12.65
9/26/2024 16:10	14.05	330.95	0.16	7.68	175.71	8.8	110.34	12.69
9/26/2024 16:00	14.05	328.43	0.16	7.68	172.38	8.79	21.83	12.72
9/26/2024 15:50	14.03	328.05	0.16	7.69	182.76	8.85	33.46	12.65
9/26/2024 15:40	14	322.3	0.15	7.69	191.72	8.86	34.25	12.67
9/26/2024 15:30	14.04	328.66	0.16	7.69	179.25	8.86	29.58	12.67
9/26/2024 15:20	14.03	324.75	0.16	7.69	184.02	8.86	22.35	12.6
9/26/2024 15:10	14.07	332.34	0.16	7.69	179.2	8.84	26.04	12.67
9/26/2024 15:00	14.07	334.49	0.16	7.69	176.94	8.83	14.82	12.6
9/26/2024 14:50	14.06	330.88	0.16	7.68	180.98	8.86	23.56	12.48
9/26/2024 14:40	14.07	324.44	0.16	7.68	188.2	8.82	32.46	12.5
9/26/2024 14:30	14.06	313.42	0.15	7.68	181.75	8.82	48.31	12.5
9/26/2024 14:20	14.07	310.39	0.15	7.69	186.8	8.84	48.65	12.62
9/26/2024 14:10	14.09	324.16	0.16	7.69	192.16	8.84	162.68	12.62
9/26/2024 14:00	14.11	323.22	0.16	7.69	178.31	8.82	15.52	12.67
9/26/2024 13:50	14.14	334.52	0.16	7.67	178.25	8.84	27.25	12.6
9/26/2024 13:40	14.12	313.71	0.15	7.68	181.34	8.84	12.72	12.69
9/26/2024 13:30	13.98	314.33	0.15	7.65	185.15	9.09	59.02	12.74
9/26/2024 13:20	13.45	143.36	0.07	7.79	198.25	9.58	5.01	12.67
9/26/2024 13:10	13.56	0.07	0	7.83	205.44	9.49	2.94	12.69
9/26/2024 13:00	13.81	219.46	0.1	7.7	199.06	9.17	152.23	12.72
9/26/2024 12:50	13.82	224.9	0.11	7.72	197.51	9.08	94.87	12.76
9/26/2024 12:40	13.85	222.54	0.11	7.69	201.6	9.17	429.77	12.86
9/26/2024 12:30	14.02	251.63	0.12	7.69	201.07	8.81	113.3	12.93
9/26/2024 12:20	14.06	285.58	0.14	7.66	201.83	8.8	327.5	12.91
9/26/2024 12:10	14.02	281.87	0.13	7.68	196.79	8.77	201.02	12.86
9/26/2024 12:00	13.97	275.6	0.13	7.66	202.17	8.95	70.67	12.86
9/26/2024 11:50	13.83	225.33	0.11	7.71	197.58	9.11	458.53	12.86
9/26/2024 11:40	13.83	223.72	0.11	7.69	196.16	9.2	507.12	12.74
9/26/2024 11:30	13.84	229.24	0.11	7.71	192.31	9.1	389.94	12.81
9/26/2024 11:20	13.85	223.82	0.11	7.7	197	9.2	522.29	12.84
9/26/2024 11:10	13.88	229.78	0.11	7.7	195.61	9.13	181.89	12.81
9/26/2024 11:00	13.92	228.88	0.11	7.68	199.19	9.17	521.01	13.05

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9/26/2024 10:50	13.94	237.51	0.11	7.68	199.87	8.96	303	13.12
9/26/2024 10:40	13.93	234.57	0.11	7.64	206.99	8.97	237.62	13.15
9/26/2024 10:30	13.89	233.7	0.11	7.67	202.59	9.06	265.32	12.96
9/26/2024 10:20	13.9	226.45	0.11	7.66	206.09	9.14	439.86	13.03
9/26/2024 10:10	13.91	235.84	0.11	7.68	198.13	8.93	459.44	13.34
9/26/2024 10:00	13.91	238.63	0.11	7.66	203.77	8.92	348.12	13.6
9/26/2024 9:50	13.87	234.32	0.11	7.68	197.43	8.98	209.87	13.63
9/26/2024 9:40	13.84	228.26	0.11	7.68	201.76	9.13	332.13	13.65
9/26/2024 9:30	13.81	236.98	0.11	7.71	195.25	9.05	366.99	13.2
9/26/2024 9:20	13.78	229.33	0.11	7.7	194.99	9.19	732.87	13.15
9/26/2024 9:10	13.77	241.12	0.11	7.73	189.72	9.14	253.36	12.88
9/26/2024 9:00	13.97	270.03	0.13	7.65	186.98	8.94	126.52	12.84
9/26/2024 8:50	13.95	270.65	0.13	7.66	187.49	8.91	75.99	12.69
9/26/2024 8:40	13.94	271.53	0.13	7.65	184.84	8.89	178.28	12.53
9/26/2024 8:30	13.93	275.55	0.13	7.65	186.73	8.95	91.19	12.41
9/26/2024 8:20	13.93	272.99	0.13	7.65	184.96	8.93	194.48	12.21
9/26/2024 8:10	13.93	277.88	0.13	7.65	184.75	8.95	44.03	12.21
9/26/2024 8:00	13.93	272.51	0.13	7.65	185	8.9	267.75	12.14
9/26/2024 7:50	13.93	279.62	0.13	7.65	185.67	8.93	51.14	12.07
9/26/2024 7:40	13.91	273.54	0.13	7.65	186.6	8.96	152.05	12.07
9/26/2024 7:30	13.9	270.11	0.13	7.67	185.72	8.94	127.41	12.02
9/26/2024 7:20	13.93	274.92	0.13	7.64	184.45	8.93	239.62	12
9/26/2024 7:10	13.92	275.06	0.13	7.66	186.37	8.93	98.15	11.95
9/26/2024 7:00	13.93	273.06	0.13	7.65	186.63	8.9	165.53	12.02
9/26/2024 6:50	13.93	277.68	0.13	7.66	185.97	8.92	64.65	12.02
9/26/2024 6:40	13.92	269.35	0.13	7.67	186.57	8.96	336.85	11.9
9/26/2024 6:30	13.92	273.89	0.13	7.66	187.47	8.94	99.45	11.95
9/26/2024 6:20	13.93	273.06	0.13	7.66	190.08	8.97	80.82	12.02
9/26/2024 6:10	13.93	279.72	0.13	7.66	186.33	8.98	33.84	12.05
9/26/2024 6:00	13.94	279.79	0.13	7.65	188.31	8.95	269.09	12.05
9/26/2024 5:50	13.94	279.43	0.13	7.66	184.84	8.97	50.26	12.05
9/26/2024 5:40	13.93	268.6	0.13	7.68	188.13	8.98	38.83	12.02
9/26/2024 5:30	13.94	276.76	0.13	7.67	185.89	8.95	106.94	12.02
9/26/2024 5:20	13.93	268.75	0.13	7.67	186.8	8.96	248.16	12.02
9/26/2024 5:10	13.93	271.5	0.13	7.69	185.17	9	103.92	12.05
9/26/2024 5:00	13.93	270.11	0.13	7.67	188	9	126.76	12.02
9/26/2024 4:50	13.98	280.34	0.13	7.66	186.58	8.95	194.5	12.02
9/26/2024 4:40	14.03	290.22	0.14	7.64	187.56	8.86	132.45	12.02
9/26/2024 4:30	14.03	291.54	0.14	7.64	184.09	8.84	78.43	11.93
9/26/2024 4:20	14.02	289.89	0.14	7.65	185.8	8.85	140.05	11.93
9/26/2024 4:10	13.93	270.31	0.13	7.69	187.61	9.07	100.43	11.93
9/26/2024 4:00	13.92	263.43	0.13	7.69	189.17	9.08	191.73	12.02
9/26/2024 3:50	13.93	267.09	0.13	7.69	187.97	9.06	166.12	12.05
9/26/2024 3:40	13.95	260.86	0.12	7.69	190.32	9.05	103.28	12.05
9/26/2024 3:30	13.95	266.28	0.13	7.69	190.42	9.03	155.2	12.02
9/26/2024 3:20	13.94	256.77	0.12	7.68	191.43	9.09	184.79	12.05
9/26/2024 3:10	13.96	263.7	0.13	7.7	189.32	9.06	46.53	12.05

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9/26/2024 3:00	13.96	254.9	0.12	7.69	190.92	9.09	61.81	12.05
9/26/2024 2:50	13.97	263.88	0.13	7.7	188.76	9.09	228.33	12.02
9/26/2024 2:40	13.98	257.01	0.12	7.69	190.71	9.07	158.99	11.93
9/26/2024 2:30	13.99	270.26	0.13	7.68	188.4	9.07	110.72	11.9
9/26/2024 2:20	13.99	257.66	0.12	7.68	191.34	9.1	233.74	12.05
9/26/2024 2:10	14.01	273.03	0.13	7.69	187.56	9.06	224.03	12.05
9/26/2024 2:00	14	263.63	0.13	7.68	189.47	9.07	251.87	11.97
9/26/2024 1:50	14.01	271.98	0.13	7.68	189.67	9.07	51.87	12.05
9/26/2024 1:40	14.01	266.12	0.13	7.67	190.07	9.07	211.15	12.02
9/26/2024 1:30	14.03	276.06	0.13	7.68	188.51	9.05	72.55	12.02
9/26/2024 1:20	14.06	274.47	0.13	7.66	190.3	9.06	131.32	12.02
9/26/2024 1:10	14.1	294.93	0.14	7.67	186.87	8.93	45.23	12.07
9/26/2024 1:00	14.07	286.28	0.14	7.68	187.55	8.97	202.95	12.05
9/26/2024 0:50	14.02	279.93	0.13	7.69	189.32	9.06	21.59	12.07
9/26/2024 0:40	14.01	265.9	0.13	7.69	190.17	9.08	109.55	12.05
9/26/2024 0:30	14.02	278.63	0.13	7.69	189.95	9.07	92.81	12.07
9/26/2024 0:20	14.04	272.5	0.13	7.68	190.17	9.07	213.45	11.97
9/26/2024 0:10	14.06	287.01	0.14	7.69	190.87	9.07	24.34	12.05
9/26/2024 0:00	14.08	274.02	0.13	7.68	191.34	9.05	552.68	12.05
9/25/2024 23:50	14.09	285.26	0.14	7.68	192.31	9.05	135.93	12.07
9/25/2024 23:40	14.08	270.24	0.13	7.68	192.06	9.05	247.28	12.07
9/25/2024 23:30	14.11	291.37	0.14	7.68	192.44	9.06	74.14	12.07
9/25/2024 23:20	14.14	279.72	0.13	7.67	192.64	9.05	59.44	12.05
9/25/2024 23:10	14.18	304	0.15	7.67	190.27	8.98	186	12.05
9/25/2024 23:00	14.19	291.63	0.14	7.68	190.57	9.01	319.88	11.95
9/25/2024 22:50	14.19	305.38	0.15	7.68	189.08	8.97	55.73	11.97
9/25/2024 22:40	14.18	281.07	0.13	7.68	191.34	9.04	143.72	12
9/25/2024 22:30	14.19	307.78	0.15	7.68	188.73	9.01	97.44	12.12
9/25/2024 22:20	14.2	291.61	0.14	7.67	192.51	9.04	240.79	12.09
9/25/2024 22:10	14.22	310.95	0.15	7.66	190.67	9	80.24	12.09
9/25/2024 22:00	14.22	297.04	0.14	7.67	189.45	9.01	172.43	12.09
9/25/2024 21:50	14.22	315.87	0.15	7.68	188.72	8.99	105.89	12
9/25/2024 21:40	14.23	298.03	0.14	7.67	190.14	9.02	84.55	11.97
9/25/2024 21:30	14.25	322.41	0.15	7.68	189.8	8.99	177.45	12.09
9/25/2024 21:20	14.26	297.36	0.14	7.67	191.15	9.01	112.68	12.12
9/25/2024 21:10	14.28	325.86	0.16	7.68	190.88	8.95	252.22	12.17
9/25/2024 21:00	14.29	304.25	0.15	7.67	191.05	8.98	271.01	12.17
9/25/2024 20:50	14.31	332.34	0.16	7.68	191.24	8.97	210.87	12.19
9/25/2024 20:40	14.32	314.97	0.15	7.68	191.32	8.98	272.23	12.19
9/25/2024 20:30	14.34	339.8	0.16	7.69	190.29	8.94	249.97	12.19
9/25/2024 20:20	14.35	323.26	0.16	7.67	192.52	8.96	543.53	12.12
9/25/2024 20:10	14.36	341.14	0.16	7.65	193.93	8.95	110.4	12.21
9/25/2024 20:00	14.37	326.51	0.16	7.65	195.91	8.96	531.6	12.24
9/25/2024 19:50	14.39	346	0.17	7.66	192.6	8.94	133.95	12.14
9/25/2024 19:40	14.4	329.99	0.16	7.66	192.64	8.95	274.27	12.24
9/25/2024 19:30	14.41	347.46	0.17	7.68	189.8	8.88	67.16	12.26
9/25/2024 19:20	14.42	332.08	0.16	7.67	194.66	8.89	573.76	12.26

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9/25/2024 19:10	14.43	347.93	0.17	7.67	189.25	8.88	192.45	12.17
9/25/2024 19:00	14.44	334.12	0.16	7.67	193.4	8.9	349.99	12.19
9/25/2024 18:50	14.45	352.5	0.17	7.67	189.95	8.87	205.56	12.38
9/25/2024 18:40	14.45	339.06	0.16	7.67	190.6	8.87	559.95	12.41
9/25/2024 18:30	14.46	355.43	0.17	7.66	191	8.92	106.25	12.45
9/25/2024 18:20	14.47	343.3	0.16	7.67	193.94	8.91	1018.31	12.45
9/25/2024 18:10	14.48	353.6	0.17	7.66	192.83	8.88	279.41	12.45
9/25/2024 18:00	14.48	340.69	0.16	7.66	196.48	8.88	540.7	12.41
9/25/2024 17:50	14.49	362.48	0.17	7.65	194.94	8.85	209.51	12.29
9/25/2024 17:40	14.5	344.69	0.17	7.66	198.37	8.88	870.23	12.36
9/25/2024 17:30	14.5	355.12	0.17	7.64	197.39	8.9	242.15	12.48
9/25/2024 17:20	14.51	345.3	0.17	7.64	204.68	8.89	1259.47	12.57
9/25/2024 17:10	14.52	353.29	0.17	7.62	199.72	8.9	402	12.57
9/25/2024 17:00	14.53	349.64	0.17	7.64	205.13	8.84	1721	12.57
9/25/2024 16:50	14.54	354.89	0.17	7.62	201.85	8.87	623.94	12.57
9/25/2024 16:40	14.54	353.86	0.17	7.65	215.84	8.91	222.13	12.53
9/25/2024 16:30	14.55	359.84	0.17	7.65	205.7	8.88	658.06	12.45
9/25/2024 16:20	14.56	358.67	0.17	7.63	210.11	8.78	314.3	12.45
9/25/2024 16:10	14.58	365.44	0.18	7.63	216.89	8.72	1003.18	12.62
9/25/2024 16:00	14.6	388	0.19	7.62	213.67	9.07	58.56	12.65
9/25/2024 15:50	14.61	405.18	0.2	7.63	206.5	9.07	54.67	12.65
9/25/2024 15:40	14.63	420.32	0.2	7.61	214.25	9.11	45.11	12.67
9/25/2024 15:30	14.62	407.16	0.2	7.63	213.41	9.07	40.67	12.72
9/25/2024 15:20	14.63	402.98	0.19	7.62	217.44	9.11	40.7	12.69
9/25/2024 15:10	14.62	395.57	0.19	7.63	215.7	9.09	27.31	12.69
9/25/2024 15:00	14.59	351.72	0.17	7.65	217.25	9.05	53.38	12.69
9/25/2024 14:50	14.59	326.06	0.16	7.68	214.42	9.07	55.86	12.67
9/25/2024 14:40	14.6	306.48	0.15	7.67	218.58	9.06	47.32	12.72
9/25/2024 14:30	14.6	321.38	0.15	7.65	218.18	9.03	40.92	12.72
9/25/2024 14:20	14.59	298.58	0.14	7.64	223.96	8.89	45.15	12.74
9/25/2024 14:10	14.59	290.07	0.14	7.64	221.39	8.9	30.11	12.72
9/25/2024 14:00	14.59	277.97	0.13	7.64	222.52	8.86	29.39	12.72
9/25/2024 13:50	14.61	270.85	0.13	7.63	223.23	8.92	24.6	12.62
9/25/2024 13:40	14.62	264.37	0.13	7.63	224.89	8.93	19.73	12.74
9/25/2024 13:30	14.62	263.4	0.13	7.63	220.06	8.92	19.47	12.74
9/25/2024 13:20	14.63	262.14	0.13	7.63	224.14	8.96	15.64	12.72
9/25/2024 13:10	14.63	266.06	0.13	7.63	221.4	8.95	12.37	12.72
9/25/2024 13:00	14.63	267.74	0.13	7.64	224.06	8.98	15.63	12.6
9/25/2024 12:50	14.63	272.26	0.13	7.64	221.61	8.98	21.04	12.6
9/25/2024 12:40	14.63	274.54	0.13	7.65	225.23	8.97	14.52	12.55
9/25/2024 12:30	14.63	276.94	0.13	7.65	221.11	8.99	10.99	12.72
9/25/2024 12:20	14.62	271.79	0.13	7.65	225.33	8.97	14.85	12.72
9/25/2024 12:10	14.6	260.31	0.12	7.67	222.94	8.99	12.75	12.67
9/25/2024 12:00	14.59	246.42	0.12	7.69	221.51	8.99	16.57	12.74
9/25/2024 11:50	14.59	251.2	0.12	7.68	221.36	8.95	29.77	12.72
9/25/2024 11:40	14.59	244.73	0.12	7.7	223.29	8.96	53	12.65
9/25/2024 11:30	14.6	242.81	0.12	7.7	217.61	8.97	64.38	12.57

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9/25/2024 11:20	14.62	242.21	0.12	7.68	227.57	8.95	57.81	12.48
9/25/2024 11:10	14.61	232.43	0.11	7.66	224.69	8.95	45.96	12.31
9/25/2024 11:00	14.59	223.2	0.11	7.66	227.43	8.9	40.39	12.31
9/25/2024 10:50	14.57	213.73	0.1	7.68	223.02	8.84	36.57	12.29
9/25/2024 10:40	14.57	199.16	0.09	7.71	225.92	8.92	94.09	12.31
9/25/2024 10:30	14.58	200.58	0.1	7.7	224.63	8.86	34.59	12.26
9/25/2024 10:20	14.6	174.88	0.08	7.69	227.89	8.92	53.62	12.19
9/25/2024 10:10	14.61	165.23	0.08	7.71	226.03	8.93	42.31	12.17
9/25/2024 10:00	14.61	168.58	0.08	7.71	227.43	8.93	23.71	12.17
9/25/2024 9:50	14.62	164.72	0.08	7.74	225.06	8.94	30	12.19
9/25/2024 9:40	14.64	170.07	0.08	7.71	227.64	8.92	54.66	12.19
9/25/2024 9:30	14.64	172.49	0.08	7.71	224.24	8.88	17.4	12.12
9/25/2024 9:20	14.64	179.34	0.09	7.66	228.24	8.84	24.78	12.14
9/25/2024 9:10	14.63	193.48	0.09	7.62	227.41	8.81	44.5	12.12
9/25/2024 9:00	14.64	187.28	0.09	7.62	229.32	8.82	24.57	12.07
9/25/2024 8:50	14.65	179.02	0.08	7.65	227.53	8.86	15.49	12
9/25/2024 8:40	14.66	179.31	0.09	7.66	228.99	8.87	33.97	12.09
9/25/2024 8:30	14.66	175.88	0.08	7.67	225.15	8.88	22.88	12.14
9/25/2024 8:20	14.67	172.9	0.08	7.66	228.7	8.87	18.28	12.14
9/25/2024 8:10	14.67	173.73	0.08	7.67	225.04	8.89	14.2	12.14
9/25/2024 8:00	14.69	169.32	0.08	7.69	227.21	8.92	43.18	12.12
9/25/2024 7:50	14.68	174.28	0.08	7.68	225.42	8.9	10.95	12.12
9/25/2024 7:40	14.69	172.19	0.08	7.69	226.96	8.89	12.81	12.12
9/25/2024 7:30	14.69	172.49	0.08	7.69	225.49	8.89	12.4	12.12
9/25/2024 7:20	14.7	171.08	0.08	7.7	227.83	8.9	11.91	12
9/25/2024 7:10	14.7	171.73	0.08	7.69	226.84	8.89	10.85	12.02
9/25/2024 7:00	14.7	174.91	0.08	7.65	229.77	8.87	13.03	12.02
9/25/2024 6:50	14.7	174.68	0.08	7.64	227.87	8.88	10.04	12.12
9/25/2024 6:40	14.7	177.71	0.08	7.64	230.24	8.87	19.23	12.09
9/25/2024 6:30	14.7	178.9	0.08	7.64	228.89	8.87	22.38	12.02
9/25/2024 6:20	14.7	175.08	0.08	7.64	231.79	8.87	32.35	12.02
9/25/2024 6:10	14.7	175.51	0.08	7.64	229.94	8.86	27.54	12.05
9/25/2024 6:00	14.7	174.06	0.08	7.65	231.92	8.87	27.07	12.12
9/25/2024 5:50	14.71	172.51	0.08	7.69	228.94	8.88	15.63	12.14
9/25/2024 5:40	14.7	177.96	0.08	7.64	232.58	8.86	19.59	12.14
9/25/2024 5:30	14.71	171.6	0.08	7.65	224.83	8.87	22.81	12.14
9/25/2024 5:20	14.73	163.45	0.08	7.67	231.97	8.91	17.41	12.14
9/25/2024 5:10	14.73	166.69	0.08	7.67	227.99	8.9	24.82	12.17
9/25/2024 5:00	14.74	161.96	0.08	7.67	231.58	8.91	19.69	12.14
9/25/2024 4:50	14.75	162.5	0.08	7.67	229.56	8.93	13.67	12.07
9/25/2024 4:40	14.75	161.01	0.08	7.68	232.33	8.94	48.32	12.17
9/25/2024 4:30	14.75	162.98	0.08	7.66	229.98	8.93	24	12.17
9/25/2024 4:20	14.77	159.99	0.08	7.69	232.62	8.93	12.36	12.17
9/25/2024 4:10	14.77	162.38	0.08	7.66	230.64	8.94	16.91	12.17
9/25/2024 4:00	14.78	161.61	0.08	7.6	237.07	8.92	22.19	12.17
9/25/2024 3:50	14.7	191.16	0.09	7.57	232.15	8.76	24.13	12.17
9/25/2024 3:40	14.72	191.76	0.09	7.54	235.11	8.73	27.55	12.17

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9/25/2024 3:30	14.77	167.26	0.08	7.65	231.71	8.95	14.99	12.17
9/25/2024 3:20	14.78	168.87	0.08	7.67	234.28	8.93	59.02	12.17
9/25/2024 3:10	14.79	173.96	0.08	7.65	233.67	8.93	18.92	12.17
9/25/2024 3:00	14.8	176.32	0.08	7.62	235.93	8.91	21.9	12.19
9/25/2024 2:50	14.8	178.85	0.08	7.63	232.56	8.92	26.27	12.19
9/25/2024 2:40	14.81	181.32	0.09	7.63	235.62	8.92	32.24	12.09
9/25/2024 2:30	14.82	182.34	0.09	7.65	232.17	8.92	12.58	12.09
9/25/2024 2:20	14.82	183.59	0.09	7.65	235.47	8.92	15.11	12.09
9/25/2024 2:10	14.83	185.52	0.09	7.64	232.5	8.9	12.13	12.12
9/25/2024 2:00	14.84	186.92	0.09	7.63	232.16	8.9	17.9	12.12
9/25/2024 1:50	14.84	187.18	0.09	7.63	229.78	8.9	43.75	12.24
9/25/2024 1:40	14.85	181.86	0.09	7.65	232.62	8.91	25.64	12.26
9/25/2024 1:30	14.85	183.26	0.09	7.63	227.48	8.89	36.98	12.26
9/25/2024 1:20	14.86	179.54	0.09	7.63	228.25	8.88	25.86	12.17
9/25/2024 1:10	14.86	174	0.08	7.62	224.06	8.85	43.45	12.26
9/25/2024 1:00	14.86	170.12	0.08	7.62	230.22	8.85	36.39	12.17
9/25/2024 0:50	14.87	161.28	0.08	7.64	226.8	8.87	62.05	12.14
9/25/2024 0:40	14.87	160.73	0.08	7.65	230.06	8.89	33.1	12.29
9/25/2024 0:30	14.87	158.88	0.08	7.65	229.07	8.83	65.4	12.29
9/25/2024 0:20	14.87	170.65	0.08	7.63	238.88	8.76	61.9	12.29
9/25/2024 0:10	14.86	180.73	0.09	7.59	238.9	8.71	123.91	12.29
9/25/2024 0:00	14.87	173.42	0.08	7.61	240.21	8.77	34.94	12.29
9/24/2024 23:50	14.88	172.26	0.08	7.6	235.42	8.78	30.73	12.29
9/24/2024 23:40	14.89	170.11	0.08	7.6	240.47	8.76	27.35	12.24
9/24/2024 23:30	14.84	172.03	0.08	7.56	242.76	8.7	31.05	12.24
9/24/2024 23:20	14.78	195.19	0.09	7.52	248.57	8.52	28.48	12.29
9/24/2024 23:10	14.78	193.79	0.09	7.52	245.02	8.51	27.14	12.29
9/24/2024 23:00	14.79	194.89	0.09	7.54	246.38	8.54	17.3	12.29
9/24/2024 22:50	14.8	193.7	0.09	7.57	244.02	8.55	12.67	12.19
9/24/2024 22:40	14.8	195.61	0.09	7.55	245.54	8.57	13.11	12.31
9/24/2024 22:30	14.83	190.39	0.09	7.56	243.07	8.59	15.56	12.29
9/24/2024 22:20	14.84	189.08	0.09	7.55	245.32	8.63	19.94	12.26
9/24/2024 22:10	14.86	183.88	0.09	7.57	242.2	8.64	43.3	12.29
9/24/2024 22:00	14.86	188.06	0.09	7.53	243.72	8.65	17.51	12.21
9/24/2024 21:50	14.91	169.7	0.08	7.6	239.22	8.79	12.88	12.21
9/24/2024 21:40	14.92	168.2	0.08	7.61	242.21	8.79	13.1	12.29
9/24/2024 21:30	14.92	171.19	0.08	7.62	238.9	8.78	10.11	12.19
9/24/2024 21:20	14.93	171.36	0.08	7.6	242.76	8.76	15.05	12.21
9/24/2024 21:10	14.95	169.59	0.08	7.59	238.23	8.78	15.82	12.21
9/24/2024 21:00	14.95	169.87	0.08	7.6	243.7	8.78	11.21	12.24
9/24/2024 20:50	14.97	167.28	0.08	7.63	239.79	8.81	7.79	12.33
9/24/2024 20:40	14.98	167.87	0.08	7.64	241.25	8.81	8.38	12.33
9/24/2024 20:30	14.99	167.2	0.08	7.64	239.13	8.8	6.63	12.33
9/24/2024 20:20	15	169.32	0.08	7.64	240.96	8.81	5.79	12.33
9/24/2024 20:10	15	171.87	0.08	7.62	239.63	8.8	7.12	12.33
9/24/2024 20:00	15.01	172.19	0.08	7.62	243.39	8.81	6.91	12.36
9/24/2024 19:50	15.02	170.79	0.08	7.63	238.82	8.8	8.82	12.33

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9/24/2024 19:40	15.04	169.12	0.08	7.63	242.64	8.81	5.14	12.36
9/24/2024 19:30	15.05	168.05	0.08	7.65	237.04	8.82	4.29	12.36
9/24/2024 19:20	15.05	169.14	0.08	7.63	241.68	8.81	5.76	12.36
9/24/2024 19:10	15.05	170.19	0.08	7.6	243.28	8.78	4.43	12.26
9/24/2024 19:00	15.05	171.16	0.08	7.62	241.68	8.8	5.02	12.26
9/24/2024 18:50	15.04	174.07	0.08	7.61	240.99	8.76	5.16	12.36
9/24/2024 18:40	15.03	175.53	0.08	7.58	244.91	8.76	5.09	12.38
9/24/2024 18:30	15.02	177.05	0.08	7.56	245.26	8.77	5.07	12.41
9/24/2024 18:20	15.03	175.21	0.08	7.57	246.09	8.76	4.44	12.53
9/24/2024 18:10	15.04	175.26	0.08	7.58	243.16	8.76	4.34	12.65
9/24/2024 18:00	15.04	177.08	0.08	7.57	248.17	8.76	3.84	12.74
9/24/2024 17:50	15.06	175.94	0.08	7.58	244.67	8.77	6.39	12.81
9/24/2024 17:40	15.07	177.05	0.08	7.58	248.09	8.77	4.28	12.88
9/24/2024 17:30	15.05	178.24	0.08	7.59	248.75	8.76	4.87	12.88
9/24/2024 17:20	15.05	176.1	0.08	7.59	249.44	8.78	4.86	12.84
9/24/2024 17:10	15.01	178.38	0.08	7.6	247.65	8.78	11.8	12.88
9/24/2024 17:00	15.02	173.41	0.08	7.61	247.89	8.78	52.22	13.1
9/24/2024 16:50	15.02	177.18	0.08	7.61	246.57	8.75	9.17	13.12
9/24/2024 16:40	15.04	180.7	0.09	7.61	246.82	8.75	10.82	13.12
9/24/2024 16:30	15.02	188.07	0.09	7.58	247.64	8.7	6.57	13.12
9/24/2024 16:20	15.1	173.96	0.08	7.67	243.93	8.84	5.18	13.15
9/24/2024 16:10	15.1	173.3	0.08	7.7	242.8	8.86	3.93	13.1
9/24/2024 16:00	15.09	176.13	0.08	7.68	244.04	8.84	4.91	13.12
9/24/2024 15:50	15.11	175.3	0.08	7.7	241.62	8.85	4.83	13.1
9/24/2024 15:40	15.13	175.81	0.08	7.69	243.53	8.85	4.18	13.03
9/24/2024 15:30	15.14	176.94	0.08	7.66	241.65	8.85	4.74	13.03
9/24/2024 15:20	15.15	175.07	0.08	7.69	245.73	8.87	3.94	13.22
9/24/2024 15:10	15.14	176.66	0.08	7.69	243.06	8.86	4.67	13.17
9/24/2024 15:00	15.14	176.56	0.08	7.69	247.72	8.88	4.87	13.15
9/24/2024 14:50	15.15	176.69	0.08	7.65	248.57	8.87	9.82	13.1
9/24/2024 14:40	15.13	176.24	0.08	7.67	248.75	8.88	4.15	13.32
9/24/2024 14:30	15.12	177.77	0.08	7.69	246.62	8.89	4.25	13.41
9/24/2024 14:20	15.14	175.87	0.08	7.7	248.87	8.89	5.98	13.41
9/24/2024 14:10	15.16	174.36	0.08	7.67	248.38	8.89	5.06	13.39
9/24/2024 14:00	15.22	177.75	0.08	7.58	256.34	8.83	4.35	13.17
9/24/2024 13:50	15.49	168.83	0.08	7.57	259.65	8.8	10.47	12.72
9/24/2024 13:40								13.03
9/24/2024 13:30	16.43	0.58	0	7.75	237.15	8.91	0	13.24
9/24/2024 13:20	15.16	180.06	0.09	7.72	260.76	8.93	0	13.15
9/24/2024 13:10	15.18	177.51	0.08	7.76	260.33	8.97	0	13.22
9/24/2024 13:00	15.19	175.7	0.08	7.77	259.38	8.97	0	13.22
9/24/2024 12:50	15.25	173.94	0.08	7.78	261.07	8.97	0	13.22
9/24/2024 12:40	15.21	172.72	0.08	7.76	263.67	9	0	13.24
9/24/2024 12:30	15.2	176.07	0.08	7.73	264.88	9	0	13.24
9/24/2024 12:20	14.93	141.89	0.07	7.95	262.53	9.29	0	13.24
9/24/2024 12:10	14.87	141.18	0.07	7.94	265.18	9.29	0	13.24
9/24/2024 12:10	14.87	141.18	0.07	7.94	265.18	9.29	0	13.24

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9/24/2024 12:00	14.79	141.96	0.07	7.93	267.07	9.29	0	13.27
9/24/2024 11:50	14.76	142.6	0.07	7.9	270.49	9.26	0	13.29
9/24/2024 11:40	14.73	145.76	0.07	7.85	273.85	9.2	0	13.17
9/24/2024 11:30	14.69	149.35	0.07	7.83	278.48	9.22	0	13.29
9/24/2024 11:20	14.87	178.32	0.08	7.66	288.72	9.02	0	13.32
9/24/2024 11:10	14.86	173.39	0.08	7.45	306.8	8.99	0	13.24
9/24/2024 11:00	15.3	166.24	0.08	7.26	361.21	8.91	11.47	13.17
9/24/2024 10:50								13
9/24/2024 10:40	14.75	229.9	0.11	7.87	407.96	8.19	4.28	13.41
9/24/2024 10:30	14.72	228.65	0.11	7.87	409.36	8.22	3.24	13.44
9/24/2024 10:20	14.68	227.93	0.11	7.87	409.76	8.27	3.05	13.46
9/24/2024 10:10	14.64	227.57	0.11	7.86	410.83	8.32	2.14	13.48
9/24/2024 10:00	14.61	227.72	0.11	7.86	411.54	8.34	3.67	13.53
9/24/2024 9:50	14.57	226.92	0.11	7.85	413.69	8.39	2.8	13.56
9/24/2024 9:40	14.53	226.65	0.11	7.84	415.08	8.41	2.35	13.51
9/24/2024 9:30	14.49	226.43	0.11	7.83	416.86	8.5	4.64	13.2
9/24/2024 9:20	14.45	225.95	0.11	7.84	418	8.67	4.1	12.86
9/24/2024 9:10	14.39	205.28	0.1	7.82	415.93	8.93	10.4	12.45
9/24/2024 9:00	14.3	160.62	0.08	7.97	411.57	9.15	0.44	12.36
9/24/2024 8:50	14.3	160.28	0.08	8	411.12	9.1	0.85	12.21
9/24/2024 8:40	14.3	160.26	0.08	7.99	410.89	9.11	0.48	12.24
9/24/2024 8:30	14.3	160.33	0.08	8	410.8	9.07	0.55	12.17
9/24/2024 8:20	14.3	160.25	0.08	7.98	411.02	9.13	0.17	12.21
9/24/2024 8:10	14.31	160.41	0.08	8	410.58	9.08	0.19	12.26
9/24/2024 8:00	14.31	160.44	0.08	7.99	410.39	9.11	1.28	12.24
9/24/2024 7:50	14.31	161.3	0.08	8	410.54	9.09	3.36	12.12
9/24/2024 7:40	14.32	161.12	0.08	7.97	410.95	9.14	0.22	12.24
9/24/2024 7:30	14.33	162.38	0.08	7.98	410.69	9.13	0.23	12.21
9/24/2024 7:20	14.34	161.65	0.08	7.97	410.47	9.12	2.28	12.21
9/24/2024 7:10	14.34	162.08	0.08	7.99	410.35	9.13	0.58	12.19
9/24/2024 7:00	14.35	161.14	0.08	7.97	410.87	9.13	1.09	12.09
9/24/2024 6:50	14.36	161.85	0.08	7.98	410.88	9.12	1.05	12.19
9/24/2024 6:40	14.37	162.35	0.08	7.97	410.72	9.13	5.31	12.21
9/24/2024 6:30	14.38	161.95	0.08	7.98	410.39	9.13	0.14	12.21
9/24/2024 6:20	14.38	161.77	0.08	7.97	410.33	9.12	0.62	12.21
9/24/2024 6:10	14.39	162.39	0.08	7.98	410.22	9.12	0.77	12.21
9/24/2024 6:00	14.4	161.74	0.08	7.98	409.84	9.11	0.15	12.21
9/24/2024 5:50	14.41	162.56	0.08	7.98	410.19	9.11	0.87	12.12
9/24/2024 5:40	14.42	161.57	0.08	7.98	410.41	9.11	0.17	12.21
9/24/2024 5:30	14.43	162.05	0.08	7.97	411.29	9.12	0.4	12.21
9/24/2024 5:20	14.44	162.18	0.08	7.95	411.48	9.12	0.57	12.09
9/24/2024 5:10	14.44	162.48	0.08	7.96	411	9.12	1.01	12.21
9/24/2024 5:00	14.45	161.62	0.08	7.95	411.06	9.12	0.71	12.21
9/24/2024 4:50	14.45	162.11	0.08	7.96	411.18	9.11	0.31	12.12
9/24/2024 4:40	14.45	162.26	0.08	7.95	410.59	9.13	0.43	12.12
9/24/2024 4:30	14.45	161.87	0.08	7.97	410.07	9.11	0.39	12.26
9/24/2024 4:20	14.46	162.43	0.08	7.93	410.68	9.08	1.89	12.26

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9/24/2024 4:10	14.47	162.51	0.08	7.95	409.63	9.1	1.69	12.26
9/24/2024 4:00	14.47	162.7	0.08	7.95	410.41	9.05	1.8	12.26
9/24/2024 3:50	14.48	162.29	0.08	7.95	410.17	9.11	0.58	12.26
9/24/2024 3:40	14.48	162.15	0.08	7.93	411.37	9.11	0.39	12.26
9/24/2024 3:30	14.49	162.03	0.08	7.94	410.35	9.1	0.45	12.26
9/24/2024 3:20	14.5	163.33	0.08	7.92	410.25	9.11	1.64	12.26
9/24/2024 3:10	14.5	164.21	0.08	7.93	409.46	9.09	0.76	12.17
9/24/2024 3:00	14.51	164.38	0.08	7.93	408.96	9.08	0.6	12.24
9/24/2024 2:50	14.52	164.79	0.08	7.94	409.07	9.08	0.48	12.17
9/24/2024 2:40	14.53	166.86	0.08	7.91	410.36	8.97	0.89	12.17
9/24/2024 2:30	14.54	166.81	0.08	7.92	410.34	9.08	0.75	12.26
9/24/2024 2:20	14.53	172.23	0.08	7.87	411.44	8.93	1.56	12.26
9/24/2024 2:10	14.55	233.83	0.11	7.74	416.51	8.37	2.64	12.17
9/24/2024 2:00	14.55	233.7	0.11	7.72	417.72	8.46	4.39	12.17
9/24/2024 1:50	14.55	232.48	0.11	7.76	417.64	8.47	3.19	12.17
9/24/2024 1:40	14.55	231.61	0.11	7.75	418.25	8.54	3.75	12.17
9/24/2024 1:30	14.55	228.89	0.11	7.77	419.45	8.58	5.12	12.29
9/24/2024 1:20	14.55	224.35	0.11	7.76	419.21	8.6	3.56	12.29
9/24/2024 1:10	14.55	177.15	0.08	7.9	413.16	9.1	5.56	12.29
9/24/2024 1:00	14.56	165.27	0.08	7.93	411.88	9.09	0.74	12.29
9/24/2024 0:50	14.57	166.01	0.08	7.94	411.27	9.06	1.01	12.31
9/24/2024 0:40	14.57	166.81	0.08	7.93	411.66	9.09	0.74	12.31
9/24/2024 0:30	14.59	168.39	0.08	7.94	411.28	9.05	2.67	12.21
9/24/2024 0:20	14.59	168.61	0.08	7.92	411.7	9.05	2.61	12.31
9/24/2024 0:10	14.6	168.69	0.08	7.93	411.53	9.06	2.1	12.29
9/24/2024 0:00	14.61	168.61	0.08	7.92	411.36	9.05	2.15	12.21
9/23/2024 23:50	14.62	168.53	0.08	7.92	411.83	9.05	1.11	12.21
9/23/2024 23:40	14.62	168.22	0.08	7.91	411.5	8.99	0.1	12.19
9/23/2024 23:30	14.63	169.33	0.08	7.92	411.36	9.01	18.2	12.19
9/23/2024 23:20	14.64	166.56	0.08	7.92	411.56	9.08	0.62	12.21
9/23/2024 23:10	14.64	161.73	0.08	7.94	410.2	9.03	7.88	12.21
9/23/2024 23:00	14.64	165.4	0.08	7.93	409.31	9.04	2.35	12.33
9/23/2024 22:50	14.64	167.44	0.08	7.94	408.28	9.06	0.52	12.33
9/23/2024 22:40	14.65	169.88	0.08	7.92	408.05	9.05	2.34	12.33
9/23/2024 22:30	14.66	172.28	0.08	7.92	407.27	9.01	1.65	12.33
9/23/2024 22:20	14.67	173.53	0.08	7.92	406.22	9.04	0.43	12.33
9/23/2024 22:10	14.69	171.65	0.08	7.92	406.39	8.97	1.25	12.31
9/23/2024 22:00	14.69	175.44	0.08	7.89	406.73	9.05	0.92	12.24
9/23/2024 21:50	14.71	174.55	0.08	7.9	406.14	9	3.85	12.21
9/23/2024 21:40	14.72	173.48	0.08	7.9	405.76	9.01	0.8	12.36
9/23/2024 21:30	14.72	177.53	0.08	7.9	405.94	9	3.1	12.36
9/23/2024 21:20	14.71	178.66	0.08	7.88	406.9	8.9	1.09	12.36
9/23/2024 21:10	14.64	181.67	0.09	7.87	410.78	8.47	2.79	12.36
9/23/2024 21:00	14.6	234.51	0.11	7.77	411.83	8.46	1.88	12.36
9/23/2024 20:50	14.61	233.71	0.11	7.76	411.79	8.44	3.94	12.36
9/23/2024 20:40	14.61	233.33	0.11	7.74	412.25	8.51	5.24	12.36
9/23/2024 20:30	14.63	232.06	0.11	7.76	410.5	8.52	4.1	12.33

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9/23/2024 20:20	14.66	228.93	0.11	7.77	409.24	8.55	4.35	12.36
9/23/2024 20:10	14.71	210.68	0.1	7.81	403.78	8.95	13.02	12.38
9/23/2024 20:00	14.79	177.56	0.08	7.94	401.13	8.99	0.29	12.38
9/23/2024 19:50	14.78	183.98	0.09	7.92	400.21	8.96	1.43	12.38
9/23/2024 19:40	14.76	191.39	0.09	7.86	402.45	8.82	2.04	12.38
9/23/2024 19:30	14.72	208.09	0.1	7.82	404.11	8.78	3.4	12.41
9/23/2024 19:20	14.74	206.27	0.1	7.83	403.9	8.81	5.53	12.41
9/23/2024 19:10	14.76	201.25	0.1	7.86	406.08	8.89	4.29	12.43
9/23/2024 19:00	14.74	208.13	0.1	7.83	407.9	8.81	2.43	12.45
9/23/2024 18:50	14.73	210.15	0.1	7.83	408.64	8.82	2.36	12.5
9/23/2024 18:40	14.78	196.32	0.09	7.86	406.84	8.89	1.09	12.5
9/23/2024 18:30	14.78	197.8	0.09	7.86	405.77	8.91	14.25	12.69
9/23/2024 18:20	14.83	176.03	0.08	7.99	400.9	9.03	0.82	12.79
9/23/2024 18:10	14.84	175.32	0.08	7.99	401.1	9.05	0.29	13.05
9/23/2024 18:00	14.85	174.6	0.08	7.97	402.03	9.08	0.36	13.2
9/23/2024 17:50	14.84	174.48	0.08	7.98	401.31	9.05	0.48	13.24
9/23/2024 17:40	14.83	174.25	0.08	7.96	400.95	9.06	0.23	13.12
9/23/2024 17:30	14.82	173.9	0.08	7.96	399.76	9.06	0.39	13
9/23/2024 17:20	14.82	171.75	0.08	7.97	399.64	9.06	37.38	13
9/23/2024 17:10	14.81	170.12	0.08	8	396.85	9.08	0.54	12.96
9/23/2024 17:00	14.81	170.19	0.08	8.04	395.11	9.07	13.34	12.93
9/23/2024 16:50	14.82	168.92	0.08	8.05	395.25	9.07	1.29	12.98
9/23/2024 16:40	14.8	170.07	0.08	8.05	397.09	9.09	3.56	13.24
9/23/2024 16:30	14.76	181.59	0.09	7.96	402.4	8.47	6.79	13.41
9/23/2024 16:20	14.75	229.53	0.11	7.86	404.9	8.44	7.16	13.32
9/23/2024 16:10	14.77	230.3	0.11	7.86	403.09	8.57	2.59	13.27
9/23/2024 16:00	14.78	228.13	0.11	7.87	403.28	8.59	2.01	13.29
9/23/2024 15:50	14.8	225.48	0.11	7.89	401.57	8.68	9.03	13.2
9/23/2024 15:40	14.82	209.25	0.1	7.9	398.08	8.79	6.21	13.32
9/23/2024 15:30	14.85	171.71	0.08	8.07	391.62	9.08	0.35	13.51
9/23/2024 15:20	14.87	175.61	0.08	8.06	390.98	9.02	1.13	13.39
9/23/2024 15:10	14.9	183.26	0.09	8.01	390.47	9.01	2.16	13.36
9/23/2024 15:00	14.93	175.11	0.08	8.07	390.77	9.08	5.74	13.48
9/23/2024 14:50	14.87	183.97	0.09	8.03	391.57	9.09	1.39	13.39
9/23/2024 14:40	14.81	179.64	0.09	8.05	391.77	9.11	2.57	13.51
9/23/2024 14:30	14.77	184.82	0.09	8.02	392.83	9.1	4.56	13.53
9/23/2024 14:20	14.75	185.17	0.09	8.03	391.83	9.1	2.98	13.48
9/23/2024 14:10	14.73	179.99	0.09	8.03	392.51	9.03	1.29	13.41
9/23/2024 14:00	14.74	181.83	0.09	8.03	391.67	9.06	5.52	13.56
9/23/2024 13:50	14.75	181.13	0.09	8.04	393.88	9.1	1.81	13.34
9/23/2024 13:40	14.76	178.32	0.08	8.05	393.76	9.17	1.52	13.36
9/23/2024 13:30	14.7	182.01	0.09	8.05	394.71	9.16	73.62	13.44
9/23/2024 13:20	14.63	183.27	0.09	8.01	395.68	9.18	1.15	13.56
9/23/2024 13:10	14.61	179.75	0.09	8.04	395.81	9.13	2.06	13.56
9/23/2024 13:00	14.59	179.15	0.08	7.99	395.17	9.18	1.37	13.46
9/23/2024 12:50	14.56	176.66	0.08	8.05	395.72	9.17	1.28	13.58
9/23/2024 12:40	14.53	174.22	0.08	8.06	395.26	9.2	2.91	13.58

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9/23/2024 12:30	14.5	173.08	0.08	8.07	397.55	9.15	0.67	13.6
9/23/2024 12:20	14.49	172.72	0.08	8.03	398.03	9.18	0.56	13.1
9/23/2024 12:10	14.49	172.8	0.08	8.05	398.12	9.17	1.5	13.17
9/23/2024 12:00	14.48	171.81	0.08	8.03	397.81	9.17	1.81	13.2
9/23/2024 11:50	14.48	172.35	0.08	8.04	397.8	9.2	0.47	13.1
9/23/2024 11:40	14.48	171.39	0.08	8.02	397.31	9.18	0.63	12.98
9/23/2024 11:30	14.47	171.92	0.08	8.02	397.88	9.16	0.89	13.03
9/23/2024 11:20	14.47	172.35	0.08	7.99	397.92	9.19	1.26	13.03
9/23/2024 11:10	14.46	171.62	0.08	8.02	397.05	9.14	0.52	13.1
9/23/2024 11:00	14.45	172.34	0.08	7.98	397.36	9.18	2.05	13.2
9/23/2024 10:50	14.42	171.03	0.08	8.01	396.59	9.17	2.51	13.32
9/23/2024 10:40	14.4	171.24	0.08	8	397.7	9.12	1.44	12.91
9/23/2024 10:30	14.42	170.18	0.08	8.01	399.64	9.03	10.66	12.91
9/23/2024 10:20	14.53	232.95	0.11	7.84	406.88	8.25	10.42	12.74
9/23/2024 10:10	14.52	234.02	0.11	7.84	406.73	8.21	7.52	12.74
9/23/2024 10:00	14.51	234.71	0.11	7.84	406.49	8.22	3.78	12.72
9/23/2024 9:50	14.51	234.36	0.11	7.83	407.86	8.2	3.76	12.55
9/23/2024 9:40	14.5	236.64	0.11	7.82	408.27	8.18	4.09	12.55
9/23/2024 9:30	14.5	236.7	0.11	7.8	410.78	8.17	7.79	12.45
9/23/2024 9:20	14.49	239.22	0.11	7.8	410.59	8.17	3.58	12.36
9/23/2024 9:10	14.48	239.53	0.11	7.8	409.62	8.19	6	12.24
9/23/2024 9:00	14.48	238.29	0.11	7.81	408.42	8.2	3.63	12.33
9/23/2024 8:50	14.47	237.66	0.11	7.81	409.88	8.15	10.27	12.24
9/23/2024 8:40	14.47	238.24	0.11	7.8	410.26	8.13	6.17	12.19
9/23/2024 8:30	14.47	238.11	0.11	7.78	412.02	7.97	4.76	12.17
9/23/2024 8:20	14.47	240.04	0.11	7.77	411.42	7.94	4.69	12.14
9/23/2024 8:10	14.46	239.14	0.11	7.79	409.68	8.06	4	12.05
9/23/2024 8:00	14.46	238.02	0.11	7.82	408.23	8.03	5.08	12.02
9/23/2024 7:50	14.46	236.83	0.11	7.83	407.7	8.14	5.7	12.02
9/23/2024 7:40	14.46	236.52	0.11	7.82	409.85	8.13	15.57	12.09
9/23/2024 7:30	14.46	235.58	0.11	7.82	409.47	8.12	6.33	12
9/23/2024 7:20	14.45	236.72	0.11	7.8	409.8	8.13	4.01	11.97
9/23/2024 7:10	14.46	236.38	0.11	7.79	411.46	8.08	6.89	12.09
9/23/2024 7:00	14.46	238.26	0.11	7.77	411.46	8.21	3.66	12
9/23/2024 6:50	14.46	237.25	0.11	7.75	412.54	8.14	4.9	11.97
9/23/2024 6:40	14.45	239.03	0.11	7.73	412.43	8.21	6.05	12.12
9/23/2024 6:30	14.45	238.83	0.11	7.73	412.85	8.31	5.11	12.09
9/23/2024 6:20	14.44	238.02	0.11	7.73	412.65	8.36	8.87	12.09
9/23/2024 6:10	14.43	235.86	0.11	7.74	412.72	8.45	10.66	12.12
9/23/2024 6:00	14.41	232.27	0.11	7.76	412.61	8.55	12.53	12.12
9/23/2024 5:50	14.38	224.47	0.11	7.78	412.76	8.66	16.31	12.12
9/23/2024 5:40	14.35	217.86	0.1	7.82	411.09	8.62	39.26	12.12
9/23/2024 5:30	14.25	195.5	0.09	7.88	406.46	8.91	35.33	12.09
9/23/2024 5:20	14.2	178.8	0.08	7.9	405.57	8.43	46.63	12.09
9/23/2024 5:10	14.22	176.5	0.08	7.92	403.41	8.73	59.73	12.02
9/23/2024 5:00	14.26	176.4	0.08	7.9	403.45	8.85	40.21	12.12
9/23/2024 4:50	14.39	202.44	0.1	7.87	404.14	8.33	7.97	12.09

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9/23/2024 4:40	14.45	234.68	0.11	7.86	403.86	8.33	7.29	12.02
9/23/2024 4:30	14.45	233.61	0.11	7.85	404.28	8.36	5.76	12.09
9/23/2024 4:20	14.45	234.29	0.11	7.86	403.83	8.41	4.47	12.09
9/23/2024 4:10	14.44	233.09	0.11	7.86	404.66	8.43	6.72	12.09
9/23/2024 4:00	14.44	233.07	0.11	7.86	404.34	8.46	3.94	12.02
9/23/2024 3:50	14.44	232.13	0.11	7.87	405.32	8.48	7.29	12.02
9/23/2024 3:40	14.43	231.95	0.11	7.87	405.35	8.48	3.59	12.12
9/23/2024 3:30	14.42	230.5	0.11	7.87	407.03	8.54	5.08	12.14
9/23/2024 3:20	14.41	231.58	0.11	7.87	408.14	8.59	5.14	12.12
9/23/2024 3:10	14.38	227.18	0.11	7.88	409.81	8.67	5.32	12.12
9/23/2024 3:00	14.33	223.94	0.11	7.9	410.34	8.84	6.34	12.12
9/23/2024 2:50	14.24	202.22	0.1	7.9	409.09	9.11	8.83	12
9/23/2024 2:40	14.1	165	0.08	7.99	405.29	9.23	0.67	12
9/23/2024 2:30	14.09	163.12	0.08	8.01	405.44	9.22	8.22	12
9/23/2024 2:20	14.09	163.11	0.08	7.99	406.41	9.2	1	12.14
9/23/2024 2:10	14.1	163.33	0.08	7.99	407.29	9.17	0.85	12.05
9/23/2024 2:00	14.1	163.23	0.08	7.98	406.85	9.24	0.2	12.14
9/23/2024 1:50	14.09	163.55	0.08	7.99	406.45	9.19	1.04	12.14
9/23/2024 1:40	14.09	163.46	0.08	7.99	405.37	9.23	0.62	12.05
9/23/2024 1:30	14.09	163.92	0.08	8.02	405.1	9.2	0.35	12.05
9/23/2024 1:20	14.08	163.87	0.08	8.01	405.36	9.23	0.74	12.05
9/23/2024 1:10	14.08	164.67	0.08	8.02	405.23	9.19	0.51	12.19
9/23/2024 1:00	14.08	165	0.08	7.99	405.56	9.23	0.04	12.19
9/23/2024 0:50	14.08	165.29	0.08	8.01	405.02	9.19	0.83	12.19
9/23/2024 0:40	14.07	164.59	0.08	8	404.51	9.22	0.49	12.19
9/23/2024 0:30	14.07	164.36	0.08	8.01	404.55	9.21	2.79	12.17
9/23/2024 0:20	14.07	164.12	0.08	8	404.66	9.25	0.81	12.21
9/23/2024 0:10	14.06	164.07	0.08	8	404.17	9.2	3.08	12.12
9/23/2024 0:00	14.06	164.06	0.08	7.98	404.22	9.23	0.47	12.12