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 environment (upstream and downstream) and point 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 make and models to be confirmed by the contractor. 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	Monitoring using 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 YSI ProDSS
	NTU	Monitoring using Observator NEP9504GPI
	Electrical Conductivity	Monitoring using YSI ProDSS
Weekly (or per batch) Lab Samples	List prescribed in permit	Lab samples

Point of Discharge from the WTP equipment details: YSI ProDSS with pH, conductivity, DO, ORP and turbidity probe that measure pH, temperature, NTU, electrical conductivity, ORP, DO and salinity.

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

Receiving Environment equipment details: Sondes: Aqua-TROLL 600 made by In-Situ Inc. Sondes set up to log temperature, specific conductivity, salinity (in PSU), pH, ORP, DO (mg/L), and turbidity (NTU) at 10 minute intervals.

Summary-BC Rail Site

Site Activities

- Discharge occurred from the water treatment plant from April 1st-5th intermittently.

Point of Discharge from Water Treatment System Monitoring

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

Table 3: Discharge from Water Treatment System Information

Location	Date of Discharge	Date of Lab Sample (for the discharge)	Real Time Monitored	Field Samples Taken	Discharge Rate (batch)	Discharge Volume (batch)	Results
BC Rail	2024-04-01 to 2024-04-05	2024-05-25	Batch Discharge	Yes	150 GPM	792 m3	Full set of lab sample results, photo and documentation are provided in Appendix A.

Exceedance details

- No discharges during 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	Field Samples Taken	Results
Squamish River Upstream	2024-04-02	Yes *	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	Field Samples Taken	Results
Squamish River Downstream	2023-04-02	Yes *	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

- No discharges during this reporting period. Water Treatment Plant still in the process of being constructed.

Point of Discharge from Water Treatment System Monitoring

Table 3 below includes information on the batch test water quality and lab sampling. Appendix C includes a full set of lab results with real time/field samples from the batch discharge.

Table 3: Discharge from Water Treatment System Information

Location	Date of Discharge	Date of Lab Sample (for the discharge)	Real Time Monitored	Field Samples Taken	Discharge Rate (batch)	Discharge Volume (batch)	Results
Woodfibre	No discharges this reporting period						

Exceedance details

- No discharges during 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	Field Samples Taken	Results
Woodfibre Upstream	2024-04-01	Yes *	No	Field documentation in Appendix D

Table 5: Downstream Monitoring Information

	Date of Lab Sample	Real Time Monitored	Field Samples Taken	Results
Woodfibre Downstream	2024-04-01	Yes *	No	Field documentation in Appendix D

***** 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.
- 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.

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

BCR Site Batch Sample Analysis

BCR Batch Testing Results

Sara Derakhshi

04-08-24

EGP Woodfibre Gas Pipeline Project
Discharged Water Report

Water Sample Result:

Client Sample ID			WTP discharge	In-Situ	In-Situ	In-Situ	In-Situ				
Date Sampled			25-Mar-2024	01-Apr-2024	02-Apr-2024	04-Apr-2024	05-Apr-2024				
Time Sampled			11:00	07:14	07:20	08:12	07:13				
ALS Sample ID			VA24A6225-001								
Sample Type			Lab Sample	Field Sample	Field Sample	Field Sample	Field Sample				
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	FAL-LT	FAL-ST	MAL-ST	MAL-LT
Field Tests (Matrix: Water)											
Temperature, field	0.10	°C	5.00	5.1	8.4	7.2	7.7	-	19, hourly rate of change <1°C	19, hourly rate of change <1°C	-
pH, field	0.10	pH units	7.60	7.9	7.2	7.5	7.4	6.5-9.0	6.5-9.0	7.0-8.7	7.0-8.7
Conductivity		µS/cm		455.8	461.7	346.7	285.7				
Turbidity		NTU		3.3	0.79	0.67	0.81				
Salinity		ppt		0.22	0.22	0.17	0.14				
ORP		mV		139.7	96.9	177.1	180.0				
DO		mg/L		12.73	7.91	8.85	7.89				
Visible Sheen				No	No	No	No				
Physical Tests (Matrix: Water)											
Conductivity	2.0	µS/cm	435					-	-	-	-
Alkalinity, bicarbonate (as CaCO3)	2.0	mg/L	184					-	-	-	-
Alkalinity, carbonate (as CaCO3)	2.0	mg/L	<2.0					-	-	-	-
Alkalinity, hydroxide (as CaCO3)	2.0	mg/L	<2.0					-	-	-	-
Alkalinity, phenolphthalein (as CaCO3)	2.0	mg/L	<2.0					-	-	-	-
Alkalinity, total (as CaCO3)	2.0	mg/L	184					-	-	-	-
Hardness (as CaCO3), dissolved	0.60	mg/L	1.55					-	-	-	-
Hardness (as CaCO3), from total Ca/Mg	0.60	mg/L	1.59					-	-	-	-
Oxidation-reduction potential [ORP]	0.10	mV	202					-	-	-	-
Solids, total dissolved [TDS]	10	mg/L	249					-	-	-	-
Solids, total suspended [TSS]	3.0	mg/L	<3.0					Varies with background, Lowest value for guideline	Varies with background, Lowest value for guideline	Varies with background, Lowest value for guideline	Varies with background, Lowest value for guideline is 26mg/L

								is 6mg/L	is 26mg/L	is 6mg/L	
Turbidity	0.10	NTU	0.84					Varies with background, Lowest value for guideline is 3 NTU	Varies with background, Lowest value for guideline is 9 NTU	Varies with background, Lowest value for guideline is 9 NTU	Varies with background, Lowest value for guideline is 3 NTU
pH	0.10	pH units	7.94					6.5-9.0	6.5-9.0	7.0-8.7	7.0-8.7
Anions and Nutrients (Matrix: Water)											
Ammonia, total (as N)	0.0050	mg/L	1.17					Dependent on PH and Temperature	Dependent on PH and Temperature	Dependent on PH, Temperature and Salinity	Dependent on PH, Temperature and Salinity
Bromide	0.050	mg/L	<0.050					-	-	-	-
Chloride	0.50	mg/L	18.3					150	600	> 110% of background	< 90% of background
Fluoride	0.020	mg/L	0.062					-	Varies with hardness	1.5	-
Nitrate (as N)	0.0050	mg/L	0.527					3	32.8	-	3.7
Nitrite (as N)	0.0010	mg/L	0.0270					Dependent on chloride	Dependent on chloride	3	1
Nitrogen, total	0.030	mg/L	2.29					-	-	-	-
Phosphorus, total	0.0020	mg/L	0.0077					0.005 to 0.015	-	-	-
Sulfate (as SO4)	0.30	mg/L	11.1					Dependent on hardness	-	-	-
Ammonium (as NH4), field	0.0010	mg/L	1.50					1.95	11.7	-	-
Organic / Inorganic Carbon (Matrix: Water)											
Carbon, dissolved organic [DOC]	0.50	mg/L	2.46					-	-	-	-
Carbon, total organic [TOC]	0.50	mg/L	2.72					-	-	-	-
Total Metals (Matrix: Water)											
Aluminum, total	0.0030	mg/L	0.0106					Dependent on PH, DOC, and Temperature	-	-	-
Antimony, total	0.00010	mg/L	0.00112					0.074	0.25		
Arsenic, total	0.00010	mg/L	0.00052					0.005	-	-	0.0125
Barium, total	0.00010	mg/L	0.00151					1	-	-	-
Beryllium, total	0.000100	mg/L	<0.000100					0.00013	-	-	0.100
Bismuth, total	0.000050	mg/L	<0.000050					-	-	-	-
Boron, total	0.010	mg/L	0.024					1.2	-	-	1.2
Cadmium, total	0.0000050	mg/L	<0.0000050					-	-	-	0.00012

Calcium, total	0.050	mg/L	0.582					-	-	-	-
Cesium, total	0.000010	mg/L	0.000162					-	-	-	-
Chromium, total	0.00050	mg/L	0.00094					-	-	-	-
Cobalt, total	0.00010	mg/L	<0.00010					0.004	0.11	-	-
Copper, total	0.00050	mg/L	0.00105					-	-	0.003	0.002
Iron, total	0.010	mg/L	0.045					-	1	-	
Lead, total	0.000050	mg/L	<0.000050					Dependent on hardness	Dependent on hardness	0.14	0.002
Lithium, total	0.0010	mg/L	0.0041					-	-	-	-
Magnesium, total	0.0050	mg/L	0.0327					-	-	-	-
Manganese, total	0.00010	mg/L	0.00673					Dependent on hardness	Dependent on hardness	-	-
Mercury, total	0.0000050	mg/L	<0.0000050					Dependent on methyl mercury	-	-	-
Molybdenum, total	0.000050	mg/L	0.00916					7.6	46		
Nickel, total	0.00050	mg/L	<0.00050					Dependent on hardness	-	-	0.0083
Phosphorus, total	0.050	mg/L	<0.050					0.005 to 0.015	-	-	-
Potassium, total	0.050	mg/L	6.22					-	-	-	-
Rubidium, total	0.00020	mg/L	0.0120					-	-	-	-
Selenium, total	0.000050	mg/L	0.000105					0.002	-	-	0.002
Silicon, total	0.10	mg/L	2.90					-	-	-	-
Silver, total	0.000010	mg/L	<0.000010					Dependent on hardness	Dependent on hardness	0.003	0.0015
Sodium, total	0.050	mg/L	99.0					-	-	-	-
Strontium, total	0.00020	mg/L	0.00137					-	-	-	-
Sulfur, total	0.50	mg/L	4.59					-	-	-	-
Tellurium, total	0.00020	mg/L	<0.00020					-	-	-	-
Thallium, total	0.000010	mg/L	<0.000010					0.0008	-	-	-
Thorium, total	0.00010	mg/L	<0.00010					-	-	-	-
Tin, total	0.00010	mg/L	<0.00010					-	-	-	-
Titanium, total	0.00030	mg/L	<0.00030					-	-	-	-
Tungsten, total	0.00010	mg/L	<0.00010					-	-	-	-
Uranium, total	0.000010	mg/L	<0.000010					0.0085	-	-	-
Vanadium, total	0.00050	mg/L	0.00051					-	-	-	0.050
Zinc, total	0.0030	mg/L	0.0034					NA	NA	0.055	0.010
Zirconium, total	0.00020	mg/L	<0.00020					-	-	-	-
Dissolved Metals (Matrix: Water)											
Aluminum, dissolved	0.0010	mg/L	0.0030					-	-	-	-

Antimony, dissolved	0.00010	mg/L	0.00104					-	-	-	-
Arsenic, dissolved	0.00010	mg/L	0.00053					-	-	-	-
Barium, dissolved	0.00010	mg/L	0.00142					-	-	-	-
Beryllium, dissolved	0.000100	mg/L	<0.000100					-	-	-	-
Bismuth, dissolved	0.000050	mg/L	<0.000050					-	-	-	-
Boron, dissolved	0.010	mg/L	0.023					-	-	-	-
Cadmium, dissolved	0.0000050	mg/L	<0.0000050					Dependent on hardness	Dependent on hardness	-	-
Calcium, dissolved	0.050	mg/L	0.571					Categorical			
Cesium, dissolved	0.000010	mg/L	0.000153					-	-	-	-
Chromium, dissolved	0.00050	mg/L	0.00079					-	-	-	-
Cobalt, dissolved	0.00010	mg/L	<0.00010					-	-	-	-
Copper, dissolved	0.00020	mg/L	0.00078					Guideline varies with other parameters	Guideline varies with other parameters	-	-
Iron, dissolved	0.010	mg/L	0.015					-	0.35	-	-
Lead, dissolved	0.000050	mg/L	<0.000050					-	-	-	-
Lithium, dissolved	0.0010	mg/L	0.0041					-	-	-	-
Magnesium, dissolved	0.0050	mg/L	0.0311					-	-	-	-
Manganese, dissolved	0.00010	mg/L	0.00621					-	-	-	-
Mercury, dissolved	0.0000050	mg/L	<0.0000050					-	-	-	-
Molybdenum, dissolved	0.000050	mg/L	0.00862					-	-	-	-
Nickel, dissolved	0.00050	mg/L	<0.00050					-	-	-	-
Phosphorus, dissolved	0.050	mg/L	<0.050					-	-	-	-
Potassium, dissolved	0.050	mg/L	6.43					-	-	-	-
Rubidium, dissolved	0.00020	mg/L	0.0117					-	-	-	-
Selenium, dissolved	0.000050	mg/L	0.000108					-	-	-	-
Silicon, dissolved	0.050	mg/L	2.75					-	-	-	-
Silver, dissolved	0.000010	mg/L	<0.000010					-	-	-	-
Sodium, dissolved	0.050	mg/L	97.2					-	-	-	-
Strontium, dissolved	0.00020	mg/L	0.00130					-	-	-	-
Sulfur, dissolved	0.50	mg/L	4.26					-	-	-	-
Tellurium, dissolved	0.00020	mg/L	<0.00020					-	-	-	-
Thallium, dissolved	0.000010	mg/L	<0.000010					-	-	-	-
Thorium, dissolved	0.00010	mg/L	<0.00010					-	-	-	-
Tin, dissolved	0.00010	mg/L	<0.00010					-	-	-	-
Titanium, dissolved	0.00030	mg/L	<0.00030					-	-	-	-
Tungsten, dissolved	0.00010	mg/L	<0.00010					-	-	-	-
Uranium, dissolved	0.000010	mg/L	<0.000010					-	-	-	-

Vanadium, dissolved	0.00050	mg/L	<0.00050					-	-	-	-
Zinc, dissolved	0.0010	mg/L	0.0032					Dependent on pH, DOC, hardness	Dependent on pH, DOC, hardness	-	-
Zirconium, dissolved	0.00020	mg/L	<0.00020					-	-	-	-
Dissolved mercury filtration location			Field								
Dissolved metals filtration location			Field								
Aggregate Organics (Matrix: Water)											
Phenols, total (4AAP)	0.001000000	mg/L	<0.0010					-	0.05	-	-
Volatile Organic Compounds (Matrix: Water)											
Chlorobenzene	0.50	µg/L	<0.50					-	-	-	-
Chloromethane	5.0	µg/L	<5.0					-	-	-	-
Dichlorobenzene, 1,2-	0.50	µg/L	<0.50					0.70	-	-	0.042
Dichlorobenzene, 1,3-	0.50	µg/L	<0.50					150	-	-	-
Dichlorobenzene, 1,4-	0.50	µg/L	<0.50					26	-	-	-
Dichloropropane, 1,2-	0.50	µg/L	<0.50					-	-	-	-
Dichloropropylene, cis+trans-1,3-	0.75	µg/L	<0.75					-	-	-	-
Dichloropropylene, cis-1,3-	0.50	µg/L	<0.50					-	-	-	-
Tetrachloroethane, 1,1,1,2-	0.50	µg/L	<0.50					-	-	-	-
Tetrachloroethane, 1,1,2,2-	0.20	µg/L	<0.20					-	-	-	-
Trichloroethane, 1,1,2-	0.50	µg/L	<0.50					-	-	-	-
Trichlorofluoromethane	0.50	µg/L	<0.50					-	-	-	-
Volatile Organic Compounds [Drycleaning] (Matrix: Water)											
Carbon tetrachloride	0.50	µg/L	<0.50					-	-	-	-
Chloroethane	0.50	µg/L	<0.50					-	-	-	-
Dichloroethane, 1,1-	0.50	µg/L	<0.50					-	-	-	-
Dichloroethane, 1,2-	0.50	µg/L	<0.50					100	-	-	-
Dichloroethylene, 1,1-	0.50	µg/L	<0.50					-	-	-	-
Dichloroethylene, cis-1,2-	0.50	µg/L	<0.50					-	-	-	-
Dichloroethylene, trans-1,2-	0.50	µg/L	<0.50					-	-	-	-
Dichloromethane	1.0	µg/L	<1.0					98.1	-	-	-
Dichloropropylene, trans- 1,3-	0.50	µg/L	<0.50					-	-	-	-
Tetrachloroethylene	0.50	µg/L	<0.50					110	-	-	-
Trichloroethane, 1,1,1-	0.50	µg/L	<0.50					-	-	-	-
Trichloroethylene	0.50	µg/L	<0.50					21	-	-	-

Vinyl chloride	0.40	µg/L	<0.40					-	-	-	-
Volatile Organic Compounds [Fuels] (Matrix: Water)											
Benzene	0.50	µg/L	<0.50					40	-	-	110
Ethylbenzene	0.50	µg/L	<0.50					200	-	-	250
Methyl-tert-butyl ether [MTBE]	0.50	µg/L	<0.50					-	3400	440	-
Styrene	0.50	µg/L	<0.50					72	-	-	-
Toluene	0.40	µg/L	<0.40					0.5	-	-	-
Xylene, m+p-	0.40	µg/L	<0.40					-	-	-	-
Xylene, o-	0.30	µg/L	<0.30					-	-	-	-
Xylenes, total	0.50	µg/L	<0.50					30	-	-	-
Volatile Organic Compounds [THMs] (Matrix: Water)											
Bromodichloromethane	0.50	µg/L	<0.50					-	-	-	-
Bromoform	0.50	µg/L	<0.50					-	-	-	-
Chloroform	0.50	µg/L	<0.50					1.8	-	-	-
Dibromochloromethane	0.50	µg/L	<0.50					-	-	-	-
Hydrocarbons (Matrix: Water)											
EPH (C10-C19)	250	µg/L	<250					-	-	-	-
EPH (C19-C32)	250	µg/L	<250					-	-	-	-
VHw (C6-C10)	100	µg/L	<100					-	-	-	-
LEPHw	250	µg/L	<250					-	-	-	-
VPHw	100	µg/L	<100					-	-	-	-
HEPHw	250	µg/L	<250					-	-	-	-
Polycyclic Aromatic Hydrocarbons (Matrix: Water)											
Acenaphthene	0.010	µg/L	<0.010					6	-	-	6
Acenaphthylene	0.010	µg/L	<0.010					-	-	-	-
Acridine	0.010	µg/L	<0.010					-	-	-	-
Anthracene	0.010	µg/L	<0.010					4	0.1	-	-
Benz(a)anthracene	0.010	µg/L	<0.010					0.1	0.1	-	-
Benzo(a)pyrene	0.0050	µg/L	<0.0050					0.01	-	-	0.01
Benzo(b+j)fluoranthene	0.010	µg/L	<0.010					-	-	-	-
Benzo(b+j+k)fluoranthene	0.015	µg/L	<0.015					-	-	-	-
Benzo(g,h,i)perylene	0.010	µg/L	<0.010					-	-	-	-
Benzo(k)fluoranthene	0.010	µg/L	<0.010					-	-	-	-
Chrysene	0.010	µg/L	<0.010					-	-	-	0.1
Dibenz(a,h)anthracene	0.0050	µg/L	<0.0050					-	-	-	-
Fluoranthene	0.010	µg/L	<0.010					4	0.2	-	-
Fluorene	0.010	µg/L	<0.010					12	-	-	-
Indeno(1,2,3-	0.010	µg/L	<0.010					-	-	-	-

c,d)pyrene											
Methylnaphthalene, 1-	0.010	µg/L	<0.010					-	-	-	1
Methylnaphthalene, 2-	0.010	µg/L	<0.010					-	-	-	1
Naphthalene	0.050	µg/L	<0.050					1	-	-	1
Phenanthrene	0.020	µg/L	<0.020					0.3	-	-	-
Pyrene	0.010	µg/L	<0.010					-	0.2	-	-
Quinoline	0.050	µg/L	<0.050					3.4	-	-	-
Glycols (Matrix: Water)											
Diethylene glycol	5.0	mg/L	<5.0					-	-	-	-
Ethylene glycol	5.0	mg/L	<5.0					192	-	-	-
Propylene glycol, 1,2-	5.0	mg/L	<5.0					500	-	-	-
Triethylene glycol	5.0	mg/L	<5.0					-	-	-	-
Glycols, total (EG+DEG+PG)	10	mg/L	<10					-	-	-	-

BCR Site Batch Sample Lab Documentation

ALS Canada Ltd.

right solutions. right partner.

CERTIFICATE OF ANALYSIS

Work Order	: **VA24A6225**	Page	: 1 of 10
Client	: **Frontier-Kemper Michels Joint Venture**	Laboratory	: ALS Environmental - Vancouver
Contact	: Sara Derakhshi	Account Manager	: Thomas Chang
Address	: 404-850 Harbourside Drive North Vancouver BC Canada V7P 0A3	Address	: 8081 Lougheed Highway Burnaby BC Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: ----	Date Samples Received	: 25-Mar-2024 13:15
PO	: ----	Date Analysis Commenced	: 25-Mar-2024
C-O-C number	: 23-1084268	Issue Date	: 27-Mar-2024 17:10
Sampler	: ----		
Site	: ----		
Quote number	: WTP Dishcarge		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
Delson Resende	Lab Assistant	Metals, Burnaby, British Columbia
Janice Leung	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
Kelly Fischer	Technical Specialist	Inorganics, Waterloo, Ontario
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Paul Cushing	Team Leader - Organics	Organics, Burnaby, British Columbia
Thomas Chang	Account Manager	Administration, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia

General Comments

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

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

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

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

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

LOR: Limit of Reporting (detection limit).

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

Sample Comments

Sample	Client Id	*Comment*
VA24A6225-001	WTP discharge	Water sample for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.
VA24A6225-001	WTP discharge	Water sample for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	WTP discharge	----	----	----	----
				Client sampling date / time	25-Mar-2024 11:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24A6225-001	--------	--------	--------	--------
					Result	----	----	----	----
Field Tests									
pH, field	----	EF001/VA	0.10	pH units	7.60	----	----	----	----
Temperature, field	----	EF001/VA	0.10	°C	5.00	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	2.0	mg/L	184	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	2.0	mg/L	<2.0	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	2.0	mg/L	<2.0	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	2.0	mg/L	<2.0	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	184	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	435	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	1.55	----	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	1.59	----	----	----	----
Oxidation-reduction potential [ORP]	----	E125/VA	0.10	mV	202	----	----	----	----
pH	----	E108/VA	0.10	pH units	7.94	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	249	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	0.84	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	1.17	----	----	----	----
Ammonium (as NH4), field	14798-03-9	EC298A/VA	0.0010	mg/L	1.50	----	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	----	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	18.3	----	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.062	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.527	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	0.0270	----	----	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	2.29	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0077	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	11.1	----	----	----	----
Organic / Inorganic Carbon									

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WTP discharge	----	----	----	----
					Client sampling date / time	25-Mar-2024 11:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24A6225-001	--------	--------	--------	--------
						Result	----	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L		2.46	----	----	----	----
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L		2.72	----	----	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L		0.0106	----	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		0.00112	----	----	----	----
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00052	----	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.00151	----	----	----	----
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L		<0.000100	----	----	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L		<0.000050	----	----	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L		0.024	----	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		<0.0000050	----	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		0.582	----	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000162	----	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		0.00094	----	----	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		<0.00010	----	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00105	----	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.045	----	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		<0.000050	----	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0041	----	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		0.0327	----	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.00673	----	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L		<0.0000050	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.00916	----	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		<0.00050	----	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.050	----	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		6.22	----	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.0120	----	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		0.000105	----	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		2.90	----	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WTP discharge	----	----	----	----
					Client sampling date / time	25-Mar-2024 11:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24A6225-001	--------	--------	--------	--------
						Result	----	----	----	----
Total Metals										
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		99.0	----	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.00137	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		4.59	----	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00020	----	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		<0.000010	----	----	----	----
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		<0.00010	----	----	----	----
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		<0.00010	----	----	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		<0.00030	----	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		<0.00010	----	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		<0.000010	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		0.00051	----	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		0.0034	----	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	----	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0030	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		0.00104	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00053	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00142	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L		<0.000100	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		<0.000050	----	----	----	----
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		0.023	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		<0.0000050	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		0.571	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.000153	----	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		0.00079	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		<0.00010	----	----	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		0.00078	----	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.015	----	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		0.0041	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WTP discharge	----	----	----	----
					Client sampling date / time	25-Mar-2024 11:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24A6225-001	--------	--------	--------	--------
						Result	----	----	----	----
Dissolved Metals										
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		0.0311	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00621	----	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.00862	----	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		<0.00050	----	----	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		6.43	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.0117	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		0.000108	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		2.75	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		97.2	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.00130	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		4.26	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		<0.000010	----	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00010	----	----	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	----	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		<0.00030	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		<0.00010	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		<0.000010	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		<0.00050	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0032	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00020	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-		Field	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Field	----	----	----	----
Aggregate Organics										
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		<0.0010	----	----	----	----
Volatile Organic Compounds										
Chlorobenzene	108-90-7	E611C/VA	0.50	µg/L		<0.50	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WTP discharge	----	----	----	----
					Client sampling date / time	25-Mar-2024 11:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24A6225-001	--------	--------	--------	--------
						Result	----	----	----	----
Volatile Organic Compounds										
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+trans-1,3-	542-75-6	E611C/VA	0.75	µg/L		<0.75	----	----	----	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C/VA	0.20	µg/L		<0.20	----	----	----	----
Trichloroethane, 1,1,2-	79-00-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Trichlorofluoromethane	75-69-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Volatile Organic Compounds [Drycleaning]										
Carbon tetrachloride	56-23-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Chloroethane	75-00-3	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethane, 1,1-	75-34-3	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethane, 1,2-	107-06-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethylene, 1,1-	75-35-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethylene, cis-1,2-	156-59-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethylene, trans-1,2-	156-60-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloromethane	75-09-2	E611C/VA	1.0	µg/L		<1.0	----	----	----	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Tetrachloroethylene	127-18-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Trichloroethane, 1,1,1-	71-55-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Trichloroethylene	79-01-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Vinyl chloride	75-01-4	E611C/VA	0.40	µg/L		<0.40	----	----	----	----
Volatile Organic Compounds [Fuels]										
Benzene	71-43-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Ethylbenzene	100-41-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Styrene	100-42-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WTP discharge	----	----	----	----
					Client sampling date / time	25-Mar-2024 11:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24A6225-001	--------	--------	--------	--------
						Result	----	----	----	----
Volatile Organic Compounds [Fuels]										
Toluene	108-88-3	E611C/VA	0.40	µg/L		<0.40	----	----	----	----
Xylene, m+p-	179601-23-1	E611C/VA	0.40	µg/L		<0.40	----	----	----	----
Xylene, o-	95-47-6	E611C/VA	0.30	µg/L		<0.30	----	----	----	----
Xylenes, total	1330-20-7	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Volatile Organic Compounds [THMs]										
Bromodichloromethane	75-27-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Bromoform	75-25-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Chloroform	67-66-3	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dibromochloromethane	124-48-1	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Hydrocarbons										
EPH (C10-C19)	----	E601A/VA	250	µg/L		<250	----	----	----	----
EPH (C19-C32)	----	E601A/VA	250	µg/L		<250	----	----	----	----
VHw (C6-C10)	----	E581.VH+F1/VA	100	µg/L		<100	----	----	----	----
HEPHw	----	EC600A/VA	250	µg/L		<250	----	----	----	----
LEPHw	----	EC600A/VA	250	µg/L		<250	----	----	----	----
VPHw	----	EC580A/VA	100	µg/L		<100	----	----	----	----
Hydrocarbons Surrogates										
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	1.0	%		89.5	----	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%		97.4	----	----	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%		87.7	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611C/VA	1.0	%		97.7	----	----	----	----
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	83-32-9	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Acenaphthylene	208-96-8	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Acridine	260-94-6	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Anthracene	120-12-7	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Benz(a)anthracene	56-55-3	E641A/VA	0.010	µg/L		<0.010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WTP discharge	----	----	----	----
					Client sampling date / time	25-Mar-2024 11:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24A6225-001	--------	--------	--------	--------
						Result	----	----	----	----
Polycyclic Aromatic Hydrocarbons										
Benzo(a)pyrene	50-32-8	E641A/VA	0.0050	µg/L		<0.0050	----	----	----	----
Benzo(b+j)fluoranthene	n/a	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Benzo(b+j+k)fluoranthene	n/a	E641A/VA	0.015	µg/L		<0.015	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Benzo(k)fluoranthene	207-08-9	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Chrysene	218-01-9	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	E641A/VA	0.0050	µg/L		<0.0050	----	----	----	----
Fluoranthene	206-44-0	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Fluorene	86-73-7	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Methylnaphthalene, 1-	90-12-0	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Methylnaphthalene, 2-	91-57-6	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Naphthalene	91-20-3	E641A/VA	0.050	µg/L		<0.050	----	----	----	----
Phenanthrene	85-01-8	E641A/VA	0.020	µg/L		<0.020	----	----	----	----
Pyrene	129-00-0	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Quinoline	91-22-5	E641A/VA	0.050	µg/L		<0.050	----	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Chrysene-d12	1719-03-5	E641A/VA	0.1	%		97.6	----	----	----	----
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%		96.0	----	----	----	----
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%		105	----	----	----	----
Glycols										
Diethylene glycol	111-46-6	E680E/VA	5.0	mg/L		<5.0	----	----	----	----
Ethylene glycol	107-21-1	E680E/VA	5.0	mg/L		<5.0	----	----	----	----
Propylene glycol, 1,2-	57-55-6	E680E/VA	5.0	mg/L		<5.0	----	----	----	----
Triethylene glycol	112-27-6	E680E/VA	5.0	mg/L		<5.0	----	----	----	----
Glycols, total (EG+DEG+PG)	----	E680E/VA	10	mg/L		<10	----	----	----	----
Glycols Surrogates										
Propanediol, 1,3-	504-63-2	E680E/VA	1.0	%		93.2	----	----	----	----

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 REPORT

Work Order	: **VA24A6225**	Page	: 1 of 24
Client	: Frontier-Kemper Michels Joint Venture	Laboratory	: ALS Environmental - Vancouver
Contact	: Sara Derakhshi	Account Manager	: Thomas Chang
Address	: 404-850 Harbourside Drive North Vancouver BC Canada V7P 0A3	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	:	Telephone	: +1 604 253 4188
Project	: ----	Date Samples Received	: 25-Mar-2024 13:15
PO	: ----	Date Analysis Commenced	: 25-Mar-2024
C-O-C number	: 23-1084268	Issue Date	: 27-Mar-2024 17:10
Sampler	: ---- ----		
Site	: ----		
Quote number	: WTP Dishcarge		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
Delson Resende	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Janice Leung	Supervisor - Organics Instrumentation	Vancouver Organics, Burnaby, British Columbia
Kelly Fischer	Technical Specialist	Waterloo Inorganics, Waterloo, Ontario
Kim Jensen	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
Monica Ko	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia
Owen Cheng		Vancouver Metals, Burnaby, British Columbia
Paul Cushing	Team Leader - Organics	Vancouver Organics, Burnaby, British Columbia
Thomas Chang	Account Manager	Vancouver Administration, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1379688)											
VA24A6212-021	Anonymous	Turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1379690)											
VA24A6050-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	3100 µg/L	3.7	0.6	Diff <2x LOR	----
Physical Tests (QC Lot: 1379698)											
VA24A6050-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	939000 µg/L	943	0.425%	20%	----
Physical Tests (QC Lot: 1379852)											
VA24A6225-001	WTP discharge	pH	----	E108	0.10	pH units	7.94	7.98	0.502%	4%	----
Physical Tests (QC Lot: 1379854)											
VA24A6225-001	WTP discharge	Conductivity	----	E100	2.0	µS/cm	435	436	0.230%	10%	----
Physical Tests (QC Lot: 1380319)											
VA24A6225-001	WTP discharge	Oxidation-reduction potential [ORP]	----	E125	0.10	mV	202	204	0.690%	15%	----
Anions and Nutrients (QC Lot: 1379558)											
VA24A5983-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.300	mg/L	0.954	0.969	0.015	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1379559)											
VA24A5983-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.450	0.438	2.54%	20%	----
Anions and Nutrients (QC Lot: 1379560)											
VA24A5983-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0472	0.0427	0.0045	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1379855)											
VA24A6225-001	WTP discharge	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.062	0.061	0.0009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1379856)											
VA24A6225-001	WTP discharge	Chloride	16887-00-6	E235.Cl	0.50	mg/L	18.3	18.1	1.32%	20%	----
Anions and Nutrients (QC Lot: 1379857)											
VA24A6225-001	WTP discharge	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1379858)											
VA24A6225-001	WTP discharge	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.527	0.519	1.47%	20%	----
Anions and Nutrients (QC Lot: 1379859)											
VA24A6225-001	WTP discharge	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0270	0.0258	4.48%	20%	----
Anions and Nutrients (QC Lot: 1379860)											
VA24A6225-001	WTP discharge	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	11.1	10.8	2.56%	20%	----
Organic / Inorganic Carbon (QC Lot: 1379556)											

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: 1379556) - continued											
VA24A5983-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	5.80	5.40	7.02%	20%	----
Organic / Inorganic Carbon (QC Lot: 1379557)											
VA24A5983-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	7.86	8.45	7.26%	20%	----
Total Metals (QC Lot: 1379619)											
FJ2400846-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.282	0.286	1.17%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00055	0.00054	0.00001	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00046	0.00049	0.00003	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0350	0.0370	5.37%	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	0.017	0.017	0.0001	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000117	0.0000108	0.0000009	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	24.5	24.1	1.58%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000052	0.000049	0.000004	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	0.00122	0.00126	0.00004	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00010	<0.00010	0.000001	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00328	0.00337	0.00009	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.060	0.058	0.002	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000672	0.000690	2.70%	20%	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0040	0.0039	0.00004	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	5.86	5.98	1.87%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00201	0.00202	0.376%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00388	0.00382	1.72%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.00102	0.00100	0.00001	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	6.73	7.08	5.08%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.0109	0.0111	2.38%	20%	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000430	0.000428	0.000002	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	3.08	3.11	0.826%	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	11.1	11.3	1.61%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.127	0.123	3.01%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	7.21	7.16	0.688%	20%	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 1379619) - continued											
FJ2400846-001	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	0.00012	0.00012	0.000002	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.00144	0.00142	0.00002	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	0.00060	0.00060	0.000004	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000446	0.000460	3.19%	20%	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00224	0.00227	0.00003	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	0.0200	0.0195	0.0004	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: 1379913)											
VA24A5740-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1379620)											
FJ2400846-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.231	0.232	0.450%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00051	0.00051	0.000001	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00046	0.00045	0.000007	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0338	0.0352	3.78%	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	0.016	0.016	0.0003	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000051	0.0000061	0.0000011	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	24.2	23.2	4.30%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000042	0.000044	0.000002	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	0.00111	0.00110	0.00001	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	0.00177	0.00174	0.00003	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.014	0.014	0.0001	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000074	0.000072	0.000002	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0039	0.0038	0.0001	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	5.88	5.82	1.02%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00084	0.00085	0.000009	Diff <2x LOR	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00382	0.00388	1.62%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00073	0.00077	0.00003	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	7.04	7.21	2.40%	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: 1379620) - continued											
FJ2400846-001	Anonymous	Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.0110	0.0108	1.69%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000418	0.000440	0.000022	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.91	2.89	0.921%	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	10.9	11.0	0.211%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.123	0.123	0.617%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	6.78	7.02	3.55%	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	0.00011	0.00010	0.000010	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	0.00058	0.00058	0.000005	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000432	0.000434	0.424%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00206	0.00207	0.000010	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0083	0.0086	0.0003	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: 1379907)											
VA24A6158-006	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 1380334)											
VA24A6151-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1379918)											
VA24A5855-001	Anonymous	Benzene	71-43-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Carbon tetrachloride	56-23-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611C	0.50	µg/L	0.64	0.62	0.02	Diff <2x LOR	----
		Chloromethane	74-87-3	E611C	5.0	µg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----

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: 1379918) - continued											
VA24A5855-001	Anonymous	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	0.41	<0.40	0.01	Diff <2x LOR	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethylene	79-01-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichlorofluoromethane	75-69-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Vinyl chloride	75-01-4	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611C	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1379917)											
VA24A5855-001	Anonymous	VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----
Glycols (QC Lot: 1379615)											
VA24A6225-001	WTP discharge	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: 1379688)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1379690)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1379698)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1379853)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1379854)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Anions and Nutrients (QCLot: 1379558)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1379559)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1379560)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1379855)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1379856)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1379857)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1379858)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1379859)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1379860)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Organic / Inorganic Carbon (QCLot: 1379556)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Organic / Inorganic Carbon (QCLot: 1379556) - continued						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	# 0.60	B
Organic / Inorganic Carbon (QCLot: 1379557)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 1379619)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1379619) - continued						
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 1379913)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1379620)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1379620) - continued						
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 1379907)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Aggregate Organics (QCLot: 1380334)						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
Volatile Organic Compounds (QCLot: 1379918)						
Benzene	71-43-2	E611C	0.5	µg/L	<0.50	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	<0.50	----
Bromoform	75-25-2	E611C	0.5	µg/L	<0.50	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	<0.50	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	<0.50	----
Chloroethane	75-00-3	E611C	0.5	µg/L	<0.50	----
Chloroform	67-66-3	E611C	0.5	µg/L	<0.50	----
Chloromethane	74-87-3	E611C	5	µg/L	<5.0	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	<0.50	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	<0.50	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	<0.50	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	<0.50	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1379918) - continued						
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	<0.50	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	<0.50	----
Dichloromethane	75-09-2	E611C	1	µg/L	<1.0	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	<0.50	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	<0.50	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	<0.50	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	<0.50	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	<0.50	----
Styrene	100-42-5	E611C	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	<0.20	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	<0.50	----
Toluene	108-88-3	E611C	0.4	µg/L	<0.40	----
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	<0.50	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	<0.50	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	<0.50	----
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	<0.50	----
Vinyl chloride	75-01-4	E611C	0.4	µg/L	<0.40	----
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	<0.40	----
Xylene, o-	95-47-6	E611C	0.3	µg/L	<0.30	----
Hydrocarbons (QCLot: 1379520)						
EPH (C10-C19)	----	E601A	250	µg/L	<250	----
EPH (C19-C32)	----	E601A	250	µg/L	<250	----
Hydrocarbons (QCLot: 1379917)						
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1379521)						
Acenaphthene	83-32-9	E641A	0.01	µg/L	<0.010	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	<0.010	----
Acridine	260-94-6	E641A	0.01	µg/L	<0.010	----
Anthracene	120-12-7	E641A	0.01	µg/L	<0.010	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	<0.010	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	<0.0050	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	<0.010	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	<0.010	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	<0.010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1379521) - continued						
Chrysene	218-01-9	E641A	0.01	µg/L	<0.010	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	<0.0050	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	<0.010	----
Fluorene	86-73-7	E641A	0.01	µg/L	<0.010	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	<0.010	----
Naphthalene	91-20-3	E641A	0.05	µg/L	<0.050	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	<0.020	----
Pyrene	129-00-0	E641A	0.01	µg/L	<0.010	----
Quinoline	91-22-5	E641A	0.05	µg/L	<0.050	----
Glycols (QCLot: 1379615)						
Diethylene glycol	111-46-6	E680E	5	mg/L	<5.0	----
Ethylene glycol	107-21-1	E680E	5	mg/L	<5.0	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	<5.0	----
Triethylene glycol	112-27-6	E680E	5	mg/L	<5.0	----

Qualifiers

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

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1379688)									
Turbidity	----	E121	0.1	NTU	200 NTU	101	85.0	115	----
Physical Tests (QCLot: 1379690)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	90.5	85.0	115	----
Physical Tests (QCLot: 1379698)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1379852)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1379853)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	116	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	107	85.0	115	----
Physical Tests (QCLot: 1379854)									
Conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.2	90.0	110	----
Anions and Nutrients (QCLot: 1379558)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 1379559)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	95.8	80.0	120	----
Anions and Nutrients (QCLot: 1379560)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	98.0	85.0	115	----
Anions and Nutrients (QCLot: 1379855)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	97.3	90.0	110	----
Anions and Nutrients (QCLot: 1379856)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1379857)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 1379858)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1379859)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 1379860)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	104	90.0	110	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 1379556)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	106	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1379557)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	115	80.0	120	----
Total Metals (QCLot: 1379619)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	107	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	113	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	106	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	111	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	102	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	105	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	100	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	105	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	102	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	103	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	109	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	104	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	112	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	103	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	103	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	107	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	108	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	106	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	98.5	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	112	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	108	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	105	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	114	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	99.0	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	104	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	109	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	106	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	108	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	106	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1379619) - continued									
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	99.9	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	108	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	104	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	103	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	106	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	108	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	105	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	105	80.0	120	----
Total Metals (QCLot: 1379913)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	96.7	80.0	120	----
Dissolved Metals (QCLot: 1379620)									
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	105	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	96.9	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	99.6	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	99.0	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	99.7	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.3	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	101	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.4	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	108	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	100	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	99.4	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	99.2	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	105	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	96.6	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	108	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	98.5	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	102	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1379620) - continued									
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	107	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	95.1	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	106	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	98.8	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	109	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	102	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	94.7	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	100	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	104	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	97.1	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	96.5	80.0	120	----
Aggregate Organics (QCLot: 1380334)									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	99.8	85.0	115	----
Volatile Organic Compounds (QCLot: 1379918)									
Benzene	71-43-2	E611C	0.5	µg/L	100 µg/L	114	70.0	130	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	100 µg/L	104	70.0	130	----
Bromoform	75-25-2	E611C	0.5	µg/L	100 µg/L	84.3	70.0	130	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	100 µg/L	100	70.0	130	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	100 µg/L	115	70.0	130	----
Chloroethane	75-00-3	E611C	0.5	µg/L	100 µg/L	134	60.0	140	----
Chloroform	67-66-3	E611C	0.5	µg/L	100 µg/L	112	70.0	130	----
Chloromethane	74-87-3	E611C	5	µg/L	100 µg/L	129	60.0	140	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	100 µg/L	111	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	100 µg/L	117	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	100 µg/L	118	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	100 µg/L	115	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	100 µg/L	98.2	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	100 µg/L	120	70.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1379918) - continued									
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	100 µg/L	115	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	100 µg/L	124	70.0	130	----
Dichloromethane	75-09-2	E611C	1	µg/L	100 µg/L	118	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	100 µg/L	111	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	100 µg/L	92.2	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	100 µg/L	79.3	70.0	130	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	100 µg/L	114	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	100 µg/L	112	70.0	130	----
Styrene	100-42-5	E611C	0.5	µg/L	100 µg/L	114	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	100 µg/L	113	70.0	130	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	100 µg/L	107	70.0	130	----
Toluene	108-88-3	E611C	0.4	µg/L	100 µg/L	121	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	100 µg/L	97.2	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	100 µg/L	109	70.0	130	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	100 µg/L	104	70.0	130	----
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	100 µg/L	132	60.0	140	----
Vinyl chloride	75-01-4	E611C	0.4	µg/L	100 µg/L	128	60.0	140	----
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	200 µg/L	118	70.0	130	----
Xylene, o-	95-47-6	E611C	0.3	µg/L	100 µg/L	111	70.0	130	----
Hydrocarbons (QCLot: 1379520)									
EPH (C10-C19)	----	E601A	250	µg/L	6491 µg/L	100	70.0	130	----
EPH (C19-C32)	----	E601A	250	µg/L	3363 µg/L	99.0	70.0	130	----
Hydrocarbons (QCLot: 1379917)									
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	84.8	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1379521)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.5 µg/L	117	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.5 µg/L	124	60.0	130	----
Acridine	260-94-6	E641A	0.01	µg/L	0.5 µg/L	113	60.0	130	----
Anthracene	120-12-7	E641A	0.01	µg/L	0.5 µg/L	124	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.5 µg/L	111	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	0.5 µg/L	120	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	0.5 µg/L	123	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.5 µg/L	125	60.0	130	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1379521) - continued									
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	0.5 µg/L	119	60.0	130	----
Chrysene	218-01-9	E641A	0.01	µg/L	0.5 µg/L	116	60.0	130	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	0.5 µg/L	126	60.0	130	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	0.5 µg/L	119	60.0	130	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.5 µg/L	116	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.5 µg/L	123	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.5 µg/L	112	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.5 µg/L	119	60.0	130	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.5 µg/L	113	50.0	130	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	0.5 µg/L	121	60.0	130	----
Pyrene	129-00-0	E641A	0.01	µg/L	0.5 µg/L	119	60.0	130	----
Quinoline	91-22-5	E641A	0.05	µg/L	0.5 µg/L	120	60.0	130	----
Glycols (QCLot: 1379615)									
Diethylene glycol	111-46-6	E680E	5	mg/L	25 mg/L	94.7	70.0	130	----
Ethylene glycol	107-21-1	E680E	5	mg/L	25 mg/L	95.1	70.0	130	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	25 mg/L	93.6	70.0	130	----
Triethylene glycol	112-27-6	E680E	5	mg/L	25 mg/L	96.5	70.0	130	----

Matrix Spike (MS) Report

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

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1379558)										
VA24A5983-002	Anonymous	Nitrogen, total	7727-37-9	E366	ND mg/L	0.4 mg/L	ND	70.0	130	----
Anions and Nutrients (QCLot: 1379559)										
VA24A5983-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	ND mg/L	0.05 mg/L	ND	70.0	130	----
Anions and Nutrients (QCLot: 1379560)										
VA24A5983-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0971 mg/L	0.1 mg/L	97.1	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1379556)										
VA24A5983-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	4.50 mg/L	5 mg/L	90.1	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1379557)										
VA24A5983-002	Anonymous	Carbon, total organic [TOC]	----	E355-L	4.80 mg/L	5 mg/L	96.0	70.0	130	----
Total Metals (QCLot: 1379619)										
FJ2400846-002	Anonymous	Aluminum, total	7429-90-5	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0378 mg/L	0.04 mg/L	94.6	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00934 mg/L	0.01 mg/L	93.4	70.0	130	----
		Boron, total	7440-42-8	E420	0.093 mg/L	0.1 mg/L	92.7	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00401 mg/L	0.004 mg/L	100	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0101 mg/L	0.01 mg/L	101	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0199 mg/L	0.02 mg/L	99.7	70.0	130	----
		Copper, total	7440-50-8	E420	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----
		Iron, total	7439-89-6	E420	1.99 mg/L	2 mg/L	99.7	70.0	130	----
		Lead, total	7439-92-1	E420	0.0185 mg/L	0.02 mg/L	92.5	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0947 mg/L	0.1 mg/L	94.7	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0392 mg/L	0.04 mg/L	98.1	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1379619) - continued										
FJ2400846-002	Anonymous	Phosphorus, total	7723-14-0	E420	9.31 mg/L	10 mg/L	93.1	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0191 mg/L	0.02 mg/L	95.3	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0426 mg/L	0.04 mg/L	106	70.0	130	----
		Silicon, total	7440-21-3	E420	10.1 mg/L	10 mg/L	101	70.0	130	----
		Silver, total	7440-22-4	E420	0.00384 mg/L	0.004 mg/L	96.0	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	20.0 mg/L	20 mg/L	100	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0426 mg/L	0.04 mg/L	106	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00374 mg/L	0.004 mg/L	93.5	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		Tin, total	7440-31-5	E420	0.0204 mg/L	0.02 mg/L	102	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	97.7	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00384 mg/L	0.004 mg/L	95.9	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		Zinc, total	7440-66-6	E420	0.388 mg/L	0.4 mg/L	96.9	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0416 mg/L	0.04 mg/L	104	70.0	130	----
Total Metals (QCLot: 1379913)										
VA24A5740-002	Anonymous	Mercury, total	7439-97-6	E508	0.0000978 mg/L	0.0001 mg/L	97.8	70.0	130	----
Dissolved Metals (QCLot: 1379620)										
FJ2400846-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.194 mg/L	0.2 mg/L	96.8	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0201 mg/L	0.02 mg/L	101	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0214 mg/L	0.02 mg/L	107	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0385 mg/L	0.04 mg/L	96.2	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00836 mg/L	0.01 mg/L	83.6	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.097 mg/L	0.1 mg/L	97.4	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00402 mg/L	0.004 mg/L	100	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.01000 mg/L	0.01 mg/L	100.0	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0398 mg/L	0.04 mg/L	99.5	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0193 mg/L	0.02 mg/L	96.3	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1379620) - continued										
FJ2400846-002	Anonymous	Iron, dissolved	7439-89-6	E421	2.00 mg/L	2 mg/L	100	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0188 mg/L	0.02 mg/L	93.8	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0939 mg/L	0.1 mg/L	93.9	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0198 mg/L	0.02 mg/L	99.3	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0392 mg/L	0.04 mg/L	98.0	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	9.85 mg/L	10 mg/L	98.5	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0197 mg/L	0.02 mg/L	98.3	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0466 mg/L	0.04 mg/L	117	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	10.3 mg/L	10 mg/L	103	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00379 mg/L	0.004 mg/L	94.7	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	20.3 mg/L	20 mg/L	102	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0457 mg/L	0.04 mg/L	114	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00369 mg/L	0.004 mg/L	92.3	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0197 mg/L	0.02 mg/L	98.7	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0192 mg/L	0.02 mg/L	96.1	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00389 mg/L	0.004 mg/L	97.3	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.407 mg/L	0.4 mg/L	102	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0416 mg/L	0.04 mg/L	104	70.0	130	----
Dissolved Metals (QCLot: 1379907)										
VA24A6158-007	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000984 mg/L	0.0001 mg/L	98.4	70.0	130	----
Aggregate Organics (QCLot: 1380334)										
VA24A6151-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0185 mg/L	0.02 mg/L	92.7	75.0	125	----
Volatile Organic Compounds (QCLot: 1379918)										
VA24A6225-001	WTP discharge	Benzene	71-43-2	E611C	104 µg/L	100 µg/L	104	60.0	140	----
		Bromodichloromethane	75-27-4	E611C	92.2 µg/L	100 µg/L	92.2	60.0	140	----
		Bromoform	75-25-2	E611C	82.4 µg/L	100 µg/L	82.4	60.0	140	----
		Carbon tetrachloride	56-23-5	E611C	94.3 µg/L	100 µg/L	94.3	60.0	140	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1379918) - continued										
VA24A6225-001	WTP discharge	Chlorobenzene	108-90-7	E611C	118 µg/L	100 µg/L	118	60.0	140	----
		Chloroethane	75-00-3	E611C	133 µg/L	100 µg/L	133	50.0	150	----
		Chloroform	67-66-3	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Chloromethane	74-87-3	E611C	136 µg/L	100 µg/L	136	50.0	150	----
		Dibromochloromethane	124-48-1	E611C	100 µg/L	100 µg/L	100	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	111 µg/L	100 µg/L	111	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	121 µg/L	100 µg/L	121	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	121 µg/L	100 µg/L	121	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611C	104 µg/L	100 µg/L	104	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611C	87.1 µg/L	100 µg/L	87.1	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611C	112 µg/L	100 µg/L	112	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	104 µg/L	100 µg/L	104	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611C	120 µg/L	100 µg/L	120	60.0	140	----
		Dichloromethane	75-09-2	E611C	107 µg/L	100 µg/L	107	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611C	98.8 µg/L	100 µg/L	98.8	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	81.0 µg/L	100 µg/L	81.0	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	78.9 µg/L	100 µg/L	78.9	60.0	140	----
		Ethylbenzene	100-41-4	E611C	117 µg/L	100 µg/L	117	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	116 µg/L	100 µg/L	116	60.0	140	----
		Styrene	100-42-5	E611C	113 µg/L	100 µg/L	113	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	108 µg/L	100 µg/L	108	60.0	140	----
		Tetrachloroethylene	127-18-4	E611C	115 µg/L	100 µg/L	115	60.0	140	----
		Toluene	108-88-3	E611C	126 µg/L	100 µg/L	126	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	90.3 µg/L	100 µg/L	90.3	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	107 µg/L	100 µg/L	107	60.0	140	----
		Trichloroethylene	79-01-6	E611C	96.1 µg/L	100 µg/L	96.1	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611C	138 µg/L	100 µg/L	138	50.0	150	----
		Vinyl chloride	75-01-4	E611C	140 µg/L	100 µg/L	140	50.0	150	----
		Xylene, m+p-	179601-23-1	E611C	245 µg/L	200 µg/L	122	60.0	140	----
		Xylene, o-	95-47-6	E611C	114 µg/L	100 µg/L	114	60.0	140	----
Hydrocarbons (QCLot: 1379917)										
VA24A5944-001	Anonymous	VHw (C6-C10)	----	E581.VH+F1	4970 µg/L	6310 µg/L	78.7	60.0	140	----

Reference Material (RM) Report

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

Sub-Matrix:

Reference Material (RM) Report									
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Physical Tests (QCLot: 1380319)									
	RM	Oxidation-reduction potential [ORP]	----	E125	220 mV	101	95.0	105	----

Chain of Custody (COC) / Analytical Request Form

COC Number: 23 - 1084268

Page of

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Report To	Contact and company name below will appear on the final report
Company:	FCM
Contact:	Sara Dara, Khushi
Phone:	
	Company address below will appear on the final report
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	FCM
Contact:	Janessa Robinson

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: SaraDara.khushi@Michelscanada.com

Email 2: BradClarke@Michelscanada.com

Email 3:

Invoice Recipients

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2: JLerwokan@Frontierkemper.com

Turnaround Time (TAT) Requested

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

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

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

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

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Project Information

ALS Client Code / QUOTE #:	
Job / Project #:	
PO / AFE:	
LSD:	BCRai
ALS Lab Work Order # (ALS use only):	

Oil and Gas Required Fields (client use)

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

Analysis Request

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

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Physical test	Hardness	Glycols	Metal total	Metal dissolved	organics	EAH, EPH, VPH	WOC	Aniones & Nutrients	Dx, Toc	phenols	Hydrocarbons	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	WTP discharge	25,03,24	11:00	water		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

Environmental Division
Vancouver
Work Order Reference
VA24A6225

Telephone : +1 604 253 4188

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

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

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

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

Compare to FAL and MAL

SAMPLE RECEIPT DETAILS (ALS use only)

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

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

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
					8C

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Sara Dara Khushi	25,03,24	

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
SP	25/3/24	17:15PM

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JAN 2023 FRONT

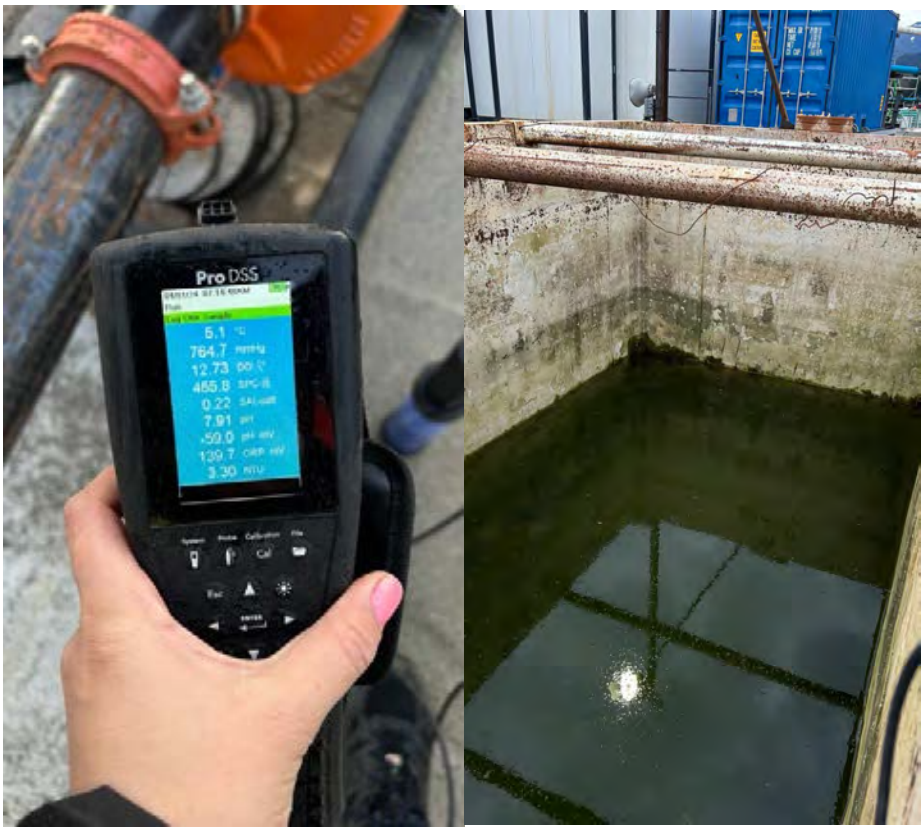
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

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

BCR Site WTP Discharge Field Notes and Logs

Discharged water Details:

Discharge Date	April 1st	April 2nd	April 4th	April 5th
Discharge time	Commencement Time: 09:30 AM, Completion Time: 05:00 PM	Commencement Time: 07:24 AM, Completion Time: 01:22 PM	Commencement Time: 08:16 AM, Completion Time: 05:29 PM	Commencement Time: 07:16 AM, Completion Time: 04:24 PM
Total Duration	7 hours and 30 minutes	5 hours and 58 minutes	9 hours and 13 minutes	9 hours and 08 minutes
Total Volume (Cubic Meters)	224.05	124.348	238.193	205.633
Discharge Rate (GPM)	~150	~150	~150	~150
In-Situ Parameter Checks	Prior to commencing discharge: 07:14 AM	Prior to commencing discharge: 07:20 AM	Prior to commencing discharge: 08:12 AM	Prior to commencing discharge: 07:13 AM

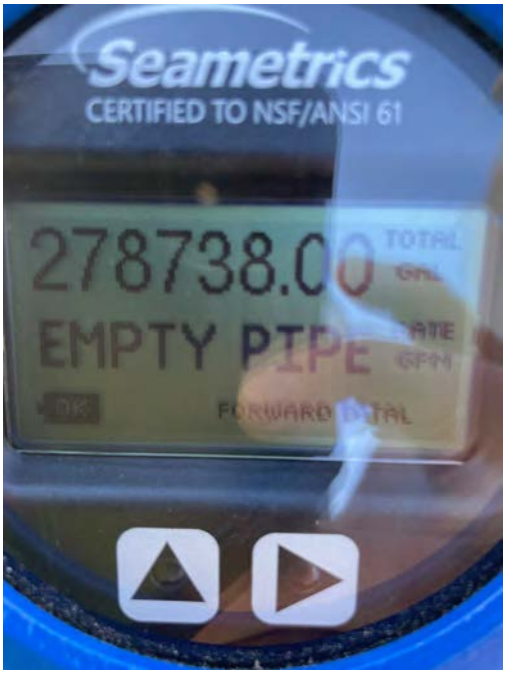


Picture 1: April 1st

Picture 2: April 2nd

Picture 3: April 4th

Picture 4: April 5th



Picture 5: Before start discharging (April 1st) Picture 6: After finish discharging (April 5th)

Appendix B: BCR Site Receiving Environment Documentation

BCR Site Receiving Environment Sample Analysis

TRITON Environmental Consultants

	Sample ID	Reviewed and signed off by:			Miranda Lewis PAg, MSc	BCR US1 (Upstream)	BCR 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					VA24A6869-001	VA24A6869-002					
	Date Sampled					02-Apr-2024	02-Apr-2024					
	Time Sampled					10:20	10:55					
Analyte	Units	BCAWWQG-FAL-LT [1,2]	BCAWWQG-FAL-ST [1,2]	BCAWWQG-MAL-ST [1]	BCAWWQG-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	7.16	7.22		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, hourly rate of change <0.5°C [4]	Max +/- from BKG 1°C, hourly rate of change <0.5°C [4]	-	7.1	7.0		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: BCR 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: BCR US value +/- 1 = guideline range	
Conductivity (field)	µS/cm	-	-	-	-	71	67					
Turbidity (field)	NTU	Varies with background, see note Lowest value for guideline is 3 NTU	Varies with background, see note Lowest value for guideline is 9 NTU	Varies with background, see note Lowest value for guideline is 9 NTU	Varies with background, see note Lowest value for guideline is 3 NTU	0.95	0.78		Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: BCR US value + 8 = BCR 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: BCR US value + 5 = BCR DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: BCR US value + (BCR US value*0.1) = BCR DS guideline	Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of BCR US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using BCR 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: BCR US value + 8 = BCR 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: BCR US value + 5 = BCR DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: BCR US value + (BCR US value*0.1) = BCR DS guideline	Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of BCR US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using BCR 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	12.36	11.29		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 CaCO3) (total)	mg/L	-	-	-	-	20.8	20.5					
Total Dissolved Solids	mg/L	-	-	-	-	55	47					
Total Suspended Solids	mg/L	Varies with background, see note Lowest value for guideline is 6mg/L	Varies with background, see note Lowest value for guideline is 26mg/L	Varies with background, see note Lowest value for guideline is 26mg/L	Varies with background, see note Lowest value for guideline is 6mg/L	< 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: BCR US value + 25 = BCR 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: BCR US value + 10 = BCR DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: BCR US value + (BCR US value*0.1) = BCR 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 BCR US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using BCR 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: BCR US value + 25 = BCR 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: BCR US value + 10 = BCR DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: BCR US value + (BCR US value*0.1) = BCR 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 BCR US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using BCR US concentration at the time of sampling.
Dissolved Organic Carbon (DOC)	mg/L	-	-	-	-	1.74	1.60			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	Categorical	-	-	-	19.5	18.2	The upstream and downstream locations have moderate sensitivity to acid inputs (i.e. moderate buffering capcity).		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 H2S)	mg/L	0.002	-	-	-	< 0.0015	< 0.0015			Working guideline		
Total Sulfide (as H2S)	mg/L	-	-	-	-	< 0.0016	< 0.0016					
Anions and Nutrients												
Ammonia	mg/L ammonia-N	Varies with pH and temperature. See note.	Varies with pH and temperature. See note.	Varies with pH, temperature and salinity. See note.	Varies with pH, temperature and salinity. See note.	0.322	0.171		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	150	600	> 110% of background	< 90% of background	2.73	2.71				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	1.5	-	0.026	0.024		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	3	32.8	-	3.7	0.0265	0.0304					
Nitrite (as N)	mg/L	Varies with chloride. See note.	Varies with chloride. See note.	-	-	0.0018	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	-	-	-	-	0.399	0.256					
Total Phosphorous	mg/L	0.005 to 0.015	-	-	-	0.0429	0.0482			Guideline is for lakes, refer to BCWQ guideline for nutrients and algae for more information. Guideline does not apply to site.		
Sulfate (as SO4)	mg/L	Varies with hardness. See note.	-	-	-	6.22	5.93			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	-	-	-	0.0459	0.0554			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)		
Antimony (Sb)-Total	mg/L	0.074	0.25	-	-	< 0.00010	< 0.00010					
Arsenic (As)-Total	mg/L	0.005	-	-	0.0125	0.00018	0.00018					Interim guideline status
Barium (Ba)-Total	mg/L	1	-	-	-	0.00892	0.00861			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	0.012	0.011					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	0.0000095	0.0000078					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	7.01	6.95					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.000027	0.000027					
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	0.001	-	-	0.0015	< 0.00050	< 0.00050			Working guideline status		Working guideline status
Cobalt (Co)-Total	mg/L	0.004	0.11	-	-	< 0.00010	< 0.00010					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002	0.00068	0.00066					
Iron (Fe)-Total	mg/L	-	1	-	-	0.137	0.162					
Lead (Pb)-Total	mg/L	Varies with hardness. See Note.	Varies with hardness. See Note.	0.14	0.002	< 0.000050	< 0.000050		Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline is 0.003 where hardness ≤8mg/L. Guideline uses equation EXP[1.273*on(hardness)-1.460] where hardness is 8-360 mg/L. Lowest value for guideline is 0.003 mg/L.	Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline equation EXP[1.273*on(hardness)-4.704] applies to samples with hardness 8-360 mg/L.		
Lithium (Li)-Total	mg/L	-	-	-	-	0.0012	0.0013					
Magnesium (Mg)-Total	mg/L	-	-	-	-	0.810	0.769					
Manganese (Mn)-Total	mg/L	Varies with hardness	Varies with hardness	-	-	0.00814	0.00938		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.	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.		
Mercury (Hg)-Total	mg/L	Varies with methyl mercury	-	-	-	< 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	7.6	46	-	-	0.000670	0.000678					
Nickel (Ni)-Total	mg/L	Varies with hardness	-	-	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	-	-	-	0.053	< 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	-	-	-	-	0.690	0.660					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00118	0.00111					
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 guidleiens for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guidleiens and sampling guidance.		Guideline for marine aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidleiens for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guidleiens and sampling guidance.
Silicon (Si)-Total	mg/L	-	-	-	-	5.87	5.45					
Silver (Ag)-Total	mg/L	Varies with hardness, see note	Varies with hardness, see note	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	-	-	-	-	2.99	3.06					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0449	0.0449					
Sulfur (S)-Total	mg/L	-	-	-	-	1.70	1.52					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Total	mg/L	0.0008	-	-	-	< 0.000010	< 0.000010			30-day average, site-specific objective for the lower Columbia River, BC. Guideline is for reference only and does not apply to tnhe EGP site.		
Thorium (Th)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Tin (Sn)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Titanium (Ti)-Total	mg/L	-	-	-	-	0.00101	0.00157					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Total	mg/L	0.0085	-	-	-	0.000031	0.000034			Working guideline status		
Vanadium (V)-Total	mg/L	-	-	-	0.050	0.00180	0.00163					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	0.010	< 0.0030	< 0.0030					
Zirconium (Zr)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0260	0.0246					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00014	0.00015					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.00843	0.00880					
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	Varies with hardness, see note	-	-	0.0000070	0.0000070		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.	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.		
Calcium (Ca)-Dissolved	mg/L	Categorical, see note	-	-	-	6.83	6.76	Both locations have moderate sensitivity to acid inputs (i.e. medium 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	-	-	-	-	0.000022	0.000022					
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 varies with other parameters, see note	-	-	***0.00061***	***0.00100***	**Upstream and downstream locations exceed the long term BCWG for FAL.** LT guideline not applicable [3]	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	-	-	0.095	0.107					
Lead (Pb)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	< 0.0010	0.0011					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.806	0.792					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00727	0.00821					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.000664	0.000639					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.050	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	0.747	0.766					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00110	0.00106					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	5.48	5.13					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	2.94	3.01					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0414	0.0413					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	1.90	1.97					
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	< 0.00010					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.000030	0.000032					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	0.00139	0.00122					
Zinc (Zn)-Dissolved	mg/L	Varies with pH, DOC, hardness	Varies with DOC and hardness	-	-	0.0018	0.0015		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)	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.		
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 BCAWWQG Short and Long-Term Guideline	*Exceeds BCAWWQG Long term Guideline*	Exceeds BCAWWQG Short term Guideline	Exceeds BCAWWQG MAL Short term Guideline	*Exceeds BCAWWQG MAL Long term Guideline*							
Color Key:				Exceeds BCAWWQG MAL Short and Long-term Guidelines	Exceeds both BCAWWQG FAL and MAL Guidelines							

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

Parameters Used to Calculate Guidelines

Analyte	Units	BCAWWQG-FAL-LT [1,2]	BCAWWQG-FAL-ST [1,2]	BCAWWQG-MAL-ST [1]	BCAWWQG-MAL-LT [1,2]	Values: BCR US1	Values: BCR DS1
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations				7.16	7.22
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations				7.1	7.0
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations				0.95	0.78
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				20.8	20.5
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations				1.74	1.6
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations				19.5	18.2
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations				2.73	2.71

BCR Site Receiving Environment Lab Documentation

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CERTIFICATE OF ANALYSIS

Work Order	: **VA24A6869**	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	: 02-Apr-2024 13:00
PO	: 11964-Task 20-Phase 3C-4C	Date Analysis Commenced	: 03-Apr-2024
C-O-C number	: ----	Issue Date	: 10-Apr-2024 17:12
Sampler	: ----		
Site	: ----		
Quote number	: VA23-TRIT100-003		
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*
Anshim Anshim	Lab Assistant	Metals, Burnaby, British Columbia
Kaitlyn Gardner	Account Manager Assistant	Administration, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia

General Comments

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

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

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

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

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

LOR: Limit of Reporting (detection limit).

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

<: less than.

>: greater than.

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

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

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

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	----	----	----
					Client sampling date / time	02-Apr-2024 10:20	02-Apr-2024 10:55	----	----	----
						VA24A6869-001	VA24A6869-002	--------	--------	--------
						Result	Result	----	----	----
Field Tests										
Conductivity, field	----	EF001/VA	0.10	µS/cm		71.000	67.000	----	----	----
pH, field	----	EF001/VA	0.10	pH units		7.16	7.22	----	----	----
Temperature, field	----	EF001/VA	0.10	°C		7.10	7.00	----	----	----
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L		20.4	20.1	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L		20.8	20.5	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		55	47	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		<3.0	<3.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		19.5	18.2	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L		0.322	0.171	----	----	----
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		2.73	2.71	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L		0.026	0.024	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		0.0265	0.0304	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L		0.0018	0.0010	----	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L		0.399	0.256	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.0429	0.0482	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		6.22	5.93	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L		1.74	1.60	----	----	----
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L		<0.0015	<0.0015	----	----	----
Sulfide, un-ionized (as H2S), from total	7783-06-4	EC395/VA	0.0015	mg/L		<0.0015	<0.0015	----	----	----
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L		<0.0016	<0.0016	----	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L		0.0459	0.0554	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	----	----	----
					Client sampling date / time	02-Apr-2024 10:20	02-Apr-2024 10:55	----	----	----
						VA24A6869-001	VA24A6869-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00018	0.00018	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.00892	0.00861	----	----	----
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L		<0.000100	<0.000100	----	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L		0.012	0.011	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		0.0000095	0.0000078	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		7.01	6.95	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000027	0.000027	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00068	0.00066	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.137	0.162	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0012	0.0013	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		0.810	0.769	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.00814	0.00938	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.000670	0.000678	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		0.053	<0.050	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		0.690	0.660	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00118	0.00111	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		5.87	5.45	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		2.99	3.06	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0449	0.0449	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		1.70	1.52	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	----	----	----
					Client sampling date / time	02-Apr-2024 10:20	02-Apr-2024 10:55	----	----	----
						VA24A6869-001	VA24A6869-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		0.00101	0.00157	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.000031	0.000034	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		0.00180	0.00163	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		<0.0030	<0.0030	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0260	0.0246	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00014	0.00015	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00843	0.00880	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L		<0.000100	<0.000100	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		0.010	<0.010	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		0.0000070	0.0000070	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		6.83	6.76	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.000022	0.000022	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		0.00061	0.00100	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.095	0.107	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		<0.0010	0.0011	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		0.806	0.792	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00727	0.00821	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.000664	0.000639	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SQU US 1	SQU DS 1	----	----	----
					Client sampling date / time	02-Apr-2024 10:20	02-Apr-2024 10:55	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24A6869-001	VA24A6869-002	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		0.747	0.766	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00110	0.00106	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		5.48	5.13	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		2.94	3.01	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0414	0.0413	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		1.90	1.97	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		<0.00030	<0.00030	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.000030	0.000032	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		0.00139	0.00122	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0018	0.0015	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-		Field	Field	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Field	Field	----	----	----
Speciated Metals										
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----

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

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

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24A6869**	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	: 02-Apr-2024 13:00
PO	: 11964-Task 20-Phase 3C-4C	Issue Date	: 10-Apr-2024 17:12
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: VA23-TRIT100-003		
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	02-Apr-2024	06-Apr-2024	28 days	4 days	✓	08-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU US 1	E298	02-Apr-2024	06-Apr-2024	28 days	4 days	✓	08-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU DS 1	E235.Br-L	02-Apr-2024	05-Apr-2024	28 days	3 days	✓	05-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU US 1	E235.Br-L	02-Apr-2024	05-Apr-2024	28 days	3 days	✓	05-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SQU DS 1	E235.Cl	02-Apr-2024	05-Apr-2024	28 days	3 days	✓	05-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SQU US 1	E235.Cl	02-Apr-2024	05-Apr-2024	28 days	3 days	✓	05-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE SQU DS 1	E235.F	02-Apr-2024	05-Apr-2024	28 days	3 days	✓	05-Apr-2024	28 days	3 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE SQU US 1	E235.F	02-Apr-2024	05-Apr-2024	28 days	3 days	✓	05-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SQU DS 1	E235.NO3-L	02-Apr-2024	05-Apr-2024	3 days	3 days	✓	05-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SQU US 1	E235.NO3-L	02-Apr-2024	05-Apr-2024	3 days	3 days	✓	05-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SQU DS 1	E235.NO2-L	02-Apr-2024	05-Apr-2024	3 days	3 days	✓	05-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SQU US 1	E235.NO2-L	02-Apr-2024	05-Apr-2024	3 days	3 days	✓	05-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SQU DS 1	E235.SO4	02-Apr-2024	05-Apr-2024	28 days	3 days	✓	05-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SQU US 1	E235.SO4	02-Apr-2024	05-Apr-2024	28 days	3 days	✓	05-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) SQU DS 1	E366	02-Apr-2024	06-Apr-2024	28 days	4 days	✓	08-Apr-2024	28 days	6 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) SQU US 1	E366	02-Apr-2024	06-Apr-2024	28 days	4 days	✓	08-Apr-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
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SQU DS 1	E372-U	02-Apr-2024	06-Apr-2024	28 days	4 days	✓	09-Apr-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SQU US 1	E372-U	02-Apr-2024	06-Apr-2024	28 days	4 days	✓	09-Apr-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SQU DS 1	E509	02-Apr-2024	05-Apr-2024	28 days	3 days	✓	05-Apr-2024	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SQU US 1	E509	02-Apr-2024	05-Apr-2024	28 days	3 days	✓	05-Apr-2024	28 days	3 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SQU DS 1	E421	02-Apr-2024	03-Apr-2024	180 days	1 days	✓	04-Apr-2024	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SQU US 1	E421	02-Apr-2024	03-Apr-2024	180 days	1 days	✓	04-Apr-2024	180 days	2 days	✓
Field Tests : Field pH,EC,Salinity,Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
SQU DS 1	EF001	02-Apr-2024	----	----	----		09-Apr-2024	----	7 days	
Field Tests : Field pH,EC,Salinity,Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
SQU US 1	EF001	02-Apr-2024	----	----	----		09-Apr-2024	----	7 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
SQU DS 1	E358-L	02-Apr-2024	06-Apr-2024	28 days	4 days	✓	06-Apr-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 US 1	E358-L	02-Apr-2024	06-Apr-2024	28 days	4 days	✓	06-Apr-2024	28 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SQU DS 1	E290	02-Apr-2024	05-Apr-2024	14 days	3 days	✓	06-Apr-2024	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SQU US 1	E290	02-Apr-2024	05-Apr-2024	14 days	3 days	✓	06-Apr-2024	14 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SQU DS 1	E162	02-Apr-2024	----	----	----		08-Apr-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SQU US 1	E162	02-Apr-2024	----	----	----		08-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE SQU DS 1	E160	02-Apr-2024	----	----	----		08-Apr-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE SQU US 1	E160	02-Apr-2024	----	----	----		08-Apr-2024	7 days	6 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide) SQU DS 1	E532	02-Apr-2024	----	----	----		04-Apr-2024	28 days	3 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide) SQU US 1	E532	02-Apr-2024	----	----	----		04-Apr-2024	28 days	3 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
SQU DS 1	E508	02-Apr-2024	04-Apr-2024	28 days	3 days	✓	05-Apr-2024	28 days	3 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
SQU US 1	E508	02-Apr-2024	04-Apr-2024	28 days	3 days	✓	05-Apr-2024	28 days	3 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SQU DS 1	E420	02-Apr-2024	03-Apr-2024	180 days	1 days	✓	04-Apr-2024	180 days	2 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SQU US 1	E420	02-Apr-2024	03-Apr-2024	180 days	2 days	✓	04-Apr-2024	180 days	2 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
SQU DS 1	E395	02-Apr-2024	----	----	----		09-Apr-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
SQU US 1	E395	02-Apr-2024	----	----	----		09-Apr-2024	7 days	7 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1391819	1	11	9.0	5.0	✓
Ammonia by Fluorescence	E298	1393495	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1391828	1	9	11.1	5.0	✓
Chloride in Water by IC	E235.Cl	1391827	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1391710	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1388769	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1393492	1	18	5.5	5.0	✓
Fluoride in Water by IC	E235.F	1391826	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1391822	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1391823	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1391824	1	11	9.0	5.0	✓
TDS by Gravimetry	E162	1394864	1	6	16.6	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1391674	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1391696	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1388727	1	19	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	1393496	1	10	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1393494	1	7	14.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1395716	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1394857	1	9	11.1	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1391819	1	11	9.0	5.0	✓
Ammonia by Fluorescence	E298	1393495	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1391828	1	9	11.1	5.0	✓
Chloride in Water by IC	E235.Cl	1391827	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1391710	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1388769	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1393492	1	18	5.5	5.0	✓
Fluoride in Water by IC	E235.F	1391826	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1391822	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1391823	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1391824	1	11	9.0	5.0	✓
TDS by Gravimetry	E162	1394864	1	6	16.6	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1391674	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1391696	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1388727	1	19	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	1393496	1	10	10.0	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1393494	1	7	14.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1395716	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1394857	1	9	11.1	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1391819	1	11	9.0	5.0	✓
Ammonia by Fluorescence	E298	1393495	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1391828	1	9	11.1	5.0	✓
Chloride in Water by IC	E235.Cl	1391827	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1391710	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1388769	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1393492	1	18	5.5	5.0	✓
Fluoride in Water by IC	E235.F	1391826	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1391822	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1391823	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1391824	1	11	9.0	5.0	✓
TDS by Gravimetry	E162	1394864	1	6	16.6	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1391674	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1391696	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1388727	1	19	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	1393496	1	10	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1393494	1	7	14.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1395716	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1394857	1	9	11.1	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1393495	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1391828	1	9	11.1	5.0	✓
Chloride in Water by IC	E235.Cl	1391827	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1391710	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1388769	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1393492	1	18	5.5	5.0	✓
Fluoride in Water by IC	E235.F	1391826	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1391822	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1391823	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1391824	1	11	9.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1391674	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1391696	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1388727	1	19	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	1393496	1	10	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1393494	1	7	14.2	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Total Sulfide by Colourimetry (Automated Flow)	E395	1395716	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.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Un-ionized Total Hydrogen Sulfide (calculated)	EC395 ALS Environmental - Vancouver	Water	APHA 4500 -S H	Un-ionized sulfide is calculated using results from total sulfide analysis, pH, temperature, and ionic strength of the sample. Calculation of un-ionized sulfide using total sulfide concentrations may be biased high due to particulate forms of sulfide measured during total sulfide testing.
Total Trivalent Chromium (Cr III) by Calculation	EC535 ALS Environmental - Vancouver	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
Field pH,EC,Salinity,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,Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3 or Chloramine measurements provided by client and recorded on ALS report may affect the validity of results.

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

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

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **VA24A6869**	Page	: 1 of 18
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project	: 11964	Date Samples Received	: 02-Apr-2024 13:00
PO	: 11964-Task 20-Phase 3C-4C	Date Analysis Commenced	: 03-Apr-2024
C-O-C number	: ----	Issue Date	: 10-Apr-2024 17:12
Sampler	: ---- 604 631 2213		
Site	: ----		
Quote number	: VA23-TRIT100-003		
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*
Anshim Anshim	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Kaitlyn Gardner	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
Monica Ko	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia
Owen Cheng		Vancouver Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1391819)											
VA24A6885-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	53.0	52.7	0.573%	20%	----
Physical Tests (QC Lot: 1394857)											
VA24A6860-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	7.5	7.1	0.4	Diff <2x LOR	----
Physical Tests (QC Lot: 1394864)											
VA24A6869-001	SQU US 1	Solids, total dissolved [TDS]	----	E162	13	mg/L	55	62	7	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1391822)											
VA24A6859-004	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	8.20	8.28	0.946%	20%	----
Anions and Nutrients (QC Lot: 1391823)											
VA24A6859-004	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0712	0.0726	2.08%	20%	----
Anions and Nutrients (QC Lot: 1391824)											
VA24A6859-004	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	37.6	38.0	0.910%	20%	----
Anions and Nutrients (QC Lot: 1391826)											
VA24A6859-004	Anonymous	Fluoride	16984-48-8	E235.F	0.100	mg/L	0.113	0.113	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1391827)											
VA24A6859-004	Anonymous	Chloride	16887-00-6	E235.Cl	2.50	mg/L	106	107	1.04%	20%	----
Anions and Nutrients (QC Lot: 1391828)											
VA24A6859-004	Anonymous	Bromide	24959-67-9	E235.Br-L	0.250	mg/L	0.346	0.350	0.003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1393494)											
VA24A6824-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0752	0.0750	0.280%	20%	----
Anions and Nutrients (QC Lot: 1393495)											
VA24A6824-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1393496)											
VA24A6869-001	SQU US 1	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.399	0.400	0.490%	20%	----
Organic / Inorganic Carbon (QC Lot: 1393492)											
VA24A6824-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.61	1.39	0.23	Diff <2x LOR	----
Total Sulfides (QC Lot: 1395716)											
CG2404002-002	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: 1388727)											
VA24A6885-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0453	0.0374	19.1%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.0106	0.0111	4.11%	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: 1388727) - continued											
VA24A6885-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00501	0.00491	1.96%	20%	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0430	0.0408	5.26%	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	0.112	0.122	8.02%	20%	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000228	0.0000242	0.0000014	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	25.7	27.5	6.77%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.00249	0.00258	3.46%	20%	----
		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	0.0000007	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	0.012	0.012	0.0002	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000206	0.000220	0.000014	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0650	0.0684	5.06%	20%	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	1.96	1.92	2.06%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0907	0.0884	2.64%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0116	0.0122	5.12%	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	15.1	14.4	4.90%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.0194	0.0192	1.52%	20%	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.00102	0.00104	1.70%	20%	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	1.89	1.82	3.94%	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	36.0	34.6	4.10%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.527	0.548	3.89%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	26.8	26.0	2.89%	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	0.000050	0.000055	0.000005	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	0.00038	<0.00030	0.00008	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	0.00125	0.00131	5.20%	20%	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000454	0.000461	1.54%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 1388727) - continued											
VA24A6885-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1391696)											
FJ2400927-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1388769)											
VA24A6885-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0106	0.0108	2.26%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.0109	0.0106	2.96%	20%	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00454	0.00444	2.38%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0419	0.0408	2.76%	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	0.113	0.118	4.04%	20%	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000218	0.0000192	0.0000026	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	24.8	25.7	3.57%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.00244	0.00236	3.20%	20%	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	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	0.000084	0.000083	0.000002	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0642	0.0658	2.56%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	2.00	1.93	3.47%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0842	0.0817	3.09%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0120	0.0118	1.42%	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	15.1	14.6	3.46%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.0189	0.0183	2.83%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000942	0.000997	5.74%	20%	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.67	1.64	1.75%	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	35.4	34.6	2.37%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.533	0.515	3.33%	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: 1388769) - continued											
VA24A6885-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	26.1	25.9	0.788%	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	0.000056	0.000055	0.0000008	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	0.00124	0.00125	0.734%	20%	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000452	0.000455	0.645%	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	0.0012	0.0011	0.0001	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1391710)											
VA24A6869-001	SQU US 1	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1391674)											
KS2401090-001	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: 1391819)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1394857)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1394864)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1391822)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1391823)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1391824)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1391826)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1391827)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1391828)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1393494)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1393495)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1393496)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Organic / Inorganic Carbon (QCLot: 1393492)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1395716)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1388727)						
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: 1388727) - 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: 1391696)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1388769)						
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: 1388769) - 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: 1391710)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1391674)						
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	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1391819)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	108	85.0	115	----
Physical Tests (QCLot: 1394857)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	95.8	85.0	115	----
Physical Tests (QCLot: 1394864)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 1391822)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1391823)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1391824)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1391826)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1391827)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1391828)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	107	85.0	115	----
Anions and Nutrients (QCLot: 1393494)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1393495)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1393496)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	96.8	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1393492)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	105	80.0	120	----
Total Sulfides (QCLot: 1395716)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	106	80.0	120	----
Total Metals (QCLot: 1388727)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1388727) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	102	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	107	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	106	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	105	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	101	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	105	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	106	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	101	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	99.4	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	97.2	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	100	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	106	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	106	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	97.3	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	97.2	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	100	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	109	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	97.4	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	104	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	105	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	80.0	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	103	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	96.6	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	105	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	101	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	102	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1388727) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	102	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	103	80.0	120	----
Total Metals (QCLot: 1391696)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	97.6	80.0	120	----
Dissolved Metals (QCLot: 1388769)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	93.8	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	99.8	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	96.6	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	94.6	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	99.0	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	92.7	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	96.4	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	95.6	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	96.7	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	94.9	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	94.3	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	92.4	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	98.7	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	98.0	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	94.2	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	99.5	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	94.3	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	100	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	95.4	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	96.4	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	96.1	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	91.9	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	102	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	95.9	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	101	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	99.2	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	96.0	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1388769) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	94.8	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	101	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	94.8	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.0	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	91.5	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	97.8	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	101	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	95.4	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	93.5	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	105	80.0	120	----
Speciated Metals (QCLot: 1391674)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.25 mg/L	101	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: 1391822)										
VA24A6869-001	SQU US 1	Nitrate (as N)	14797-55-8	E235.NO3-L	2.58 mg/L	2.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1391823)										
VA24A6869-001	SQU US 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: 1391824)										
VA24A6869-001	SQU US 1	Sulfate (as SO4)	14808-79-8	E235.SO4	103 mg/L	100 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1391826)										
VA24A6869-001	SQU US 1	Fluoride	16984-48-8	E235.F	1.05 mg/L	1 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1391827)										
VA24A6869-001	SQU US 1	Chloride	16887-00-6	E235.Cl	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1391828)										
VA24A6869-001	SQU US 1	Bromide	24959-67-9	E235.Br-L	0.554 mg/L	0.5 mg/L	111	75.0	125	----
Anions and Nutrients (QCLot: 1393494)										
VA24A6869-001	SQU US 1	Phosphorus, total	7723-14-0	E372-U	0.0527 mg/L	0.05 mg/L	105	70.0	130	----
Anions and Nutrients (QCLot: 1393495)										
VA24A6869-001	SQU US 1	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 1393496)										
VA24A6869-002	SQU DS 1	Nitrogen, total	7727-37-9	E366	0.377 mg/L	0.4 mg/L	94.2	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1393492)										
VA24A6869-001	SQU US 1	Carbon, dissolved organic [DOC]	----	E358-L	5.35 mg/L	5 mg/L	107	70.0	130	----
Total Sulfides (QCLot: 1395716)										
CG2404002-009	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.198 mg/L	0.2 mg/L	99.0	75.0	125	----
Total Metals (QCLot: 1388727)										
VA24A6823-002	Anonymous	Aluminum, total	7429-90-5	E420	0.183 mg/L	0.2 mg/L	91.4	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		Barium, total	7440-39-3	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0385 mg/L	0.04 mg/L	96.2	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00950 mg/L	0.01 mg/L	95.0	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1388727) - continued										
VA24A6823-002	Anonymous	Boron, total	7440-42-8	E420	0.098 mg/L	0.1 mg/L	97.8	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00394 mg/L	0.004 mg/L	98.5	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00977 mg/L	0.01 mg/L	97.7	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0397 mg/L	0.04 mg/L	99.3	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		Copper, total	7440-50-8	E420	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----
		Iron, total	7439-89-6	E420	1.93 mg/L	2 mg/L	96.7	70.0	130	----
		Lead, total	7439-92-1	E420	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0972 mg/L	0.1 mg/L	97.2	70.0	130	----
		Magnesium, total	7439-95-4	E420	0.968 mg/L	1 mg/L	96.8	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0200 mg/L	0.02 mg/L	99.8	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0395 mg/L	0.04 mg/L	98.9	70.0	130	----
		Phosphorus, total	7723-14-0	E420	10.0 mg/L	10 mg/L	100	70.0	130	----
		Potassium, total	7440-09-7	E420	3.93 mg/L	4 mg/L	98.2	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0193 mg/L	0.02 mg/L	96.5	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0399 mg/L	0.04 mg/L	99.7	70.0	130	----
		Silicon, total	7440-21-3	E420	10.8 mg/L	10 mg/L	108	70.0	130	----
		Silver, total	7440-22-4	E420	0.00386 mg/L	0.004 mg/L	96.6	70.0	130	----
		Sodium, total	7440-23-5	E420	1.98 mg/L	2 mg/L	99.2	70.0	130	----
		Strontium, total	7440-24-6	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Sulfur, total	7704-34-9	E420	18.8 mg/L	20 mg/L	93.9	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0416 mg/L	0.04 mg/L	104	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00384 mg/L	0.004 mg/L	96.0	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		Tin, total	7440-31-5	E420	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0389 mg/L	0.04 mg/L	97.2	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00385 mg/L	0.004 mg/L	96.3	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0946 mg/L	0.1 mg/L	94.6	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	0.0407 mg/L	0.04 mg/L	102	70.0	130	----
Total Metals (QCLot: 1391696)										
KS2401114-001	Anonymous	Mercury, total	7439-97-6	E508	0.000104 mg/L	0.0001 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: 1388769)										
VA24A6823-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.181 mg/L	0.2 mg/L	90.3	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0196 mg/L	0.02 mg/L	97.9	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0190 mg/L	0.02 mg/L	95.0	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0188 mg/L	0.02 mg/L	94.3	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0388 mg/L	0.04 mg/L	96.9	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00925 mg/L	0.01 mg/L	92.5	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.094 mg/L	0.1 mg/L	94.6	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00378 mg/L	0.004 mg/L	94.6	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00944 mg/L	0.01 mg/L	94.4	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0370 mg/L	0.04 mg/L	92.5	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0188 mg/L	0.02 mg/L	94.1	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0181 mg/L	0.02 mg/L	90.5	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.82 mg/L	2 mg/L	91.1	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0190 mg/L	0.02 mg/L	94.9	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0966 mg/L	0.1 mg/L	96.6	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	0.910 mg/L	1 mg/L	91.0	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0186 mg/L	0.02 mg/L	93.1	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0199 mg/L	0.02 mg/L	99.5	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0378 mg/L	0.04 mg/L	94.5	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	9.40 mg/L	10 mg/L	94.0	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.85 mg/L	4 mg/L	96.4	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0184 mg/L	0.02 mg/L	92.0	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0389 mg/L	0.04 mg/L	97.2	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.53 mg/L	10 mg/L	95.3	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00368 mg/L	0.004 mg/L	92.1	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	1.81 mg/L	2 mg/L	90.3	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	18.6 mg/L	20 mg/L	92.9	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00385 mg/L	0.004 mg/L	96.4	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0190 mg/L	0.02 mg/L	95.1	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00385 mg/L	0.004 mg/L	96.2	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1388769) - continued										
VA24A6823-001	Anonymous	Vanadium, dissolved	7440-62-2	E421	0.0918 mg/L	0.1 mg/L	91.8	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.371 mg/L	0.4 mg/L	92.8	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0414 mg/L	0.04 mg/L	104	70.0	130	----
Dissolved Metals (QCLot: 1391710)										
VA24A6869-002	SQU DS 1	Mercury, dissolved	7439-97-6	E509	0.000108 mg/L	0.0001 mg/L	108	70.0	130	----
Speciated Metals (QCLot: 1391674)										
VA24A6734-005	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.260 mg/L	0.25 mg/L	104	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17 -

Page 1 of

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	Triton Environmental	Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:		Quality Control (QC) Report with Report ☑ ☐ NO	PRIORITY (Business Days): 4 day [P4-20%] ☐ / 3 day [P3-25%] ☐ / 2 day [P2-50%] ☐
Phone:		☑ Compare Results to Criteria on Report - provide details below if box checked	EMERGENCY: 1 Business day [E1 - 100%] ☐ / Same Day, Weekend or Statutory holiday [E2 - 200%] (Laboratory opening fees may apply) ☐
Street:		Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
City/Province:	Vancouver/BC	Email 1 or Fax	For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:	V6E 4M3	Email 2	
Invoice To	Same as Report To ☐ YES ☑ NO	Email 3	
	Copy of Invoice with Report ☐ YES ☑ NO	**Invoice Distribution**	
Company:		Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☑ FAX	
Contact:		Email 1 or Fax	
Project Information		Email 2	
ALS Account # / Quote #:	VA23-TRIT100-003	**Oil and Gas Required Fields (client use)**	
Job #:	11964	AFE/Cost Center:	PO#
PO / AFE:	11964 - Task 20 - Phase 3C-4C	Major/Minor Code:	Routing Code:
LSD:		Requisitioner:	
ALS Lab Work Order # (lab use only):		Location:	
		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 (as H2S), Unionized Sulfide	Anions scan (Br, Cl, F, NO2, NO3, SO4)	General parameters (alkalinity)	DOC	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
					F						P	P			F/P			
	SQU US 1	02-Apr-24	10:20	Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 7.16 cond: 71uS/cm temp: 7.1°C																	
	SQU DS 1	02-Apr-24	10:55	Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 7.22 cond: 67mS/cm temp: 7.0°C																	
	Duplicate N/A			Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	Field Blank N/A			Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	Trip Blank N/A			Water	R		R	R	R	R	R	R	R	R			N	6

Environmental Division
Vancouver
Work Order Reference
VA24A6869

Telephone : +1 604 253 4188

Drinking Water (DW) Samples[1] (client use)	Special Instructions / S	rop-down list below
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		
					8

E (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
[redacted]	pril 2, 2024	12:15				JC	2 Apr 24	1300

R AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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

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

BCR Site Receiving Environment Field Notes and Logs

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-4-2-Blanchard-2CB90

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	04/02/2024	**Location:**	BC Rail Site
Triton QP:	Sam Blanchard	**Latitude/Longitude:**	49.725282 -123.165175
Temperature(c):	Low 8 High 13	**Permit:**	AE 111824
Weather Conditions:	Light Rain	**Ground Conditions:**	Dry

Observations

Time: 10:55:56 **Flow Volume (visual):** moderate

Notes:

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

Samples Collected - Parameters

Total Metals + Mercury	Yes	**General Parameters (Alkalinity)**	Yes	**Other Sample:** Total Chromium, Conductivity 67 us/cm
Dissolved Metals + Mercury	Yes	**Total Sulfide, Unionized Sulfide**	Yes	
TSS	Yes	**Anions**	Yes	
TDS	Yes	**VOC/VPH**	N/A	**QA Samples:** No Total Chromium, Conductivity 67 us/cm
Nutrients	Yes	**EPH, PAH, LEPH/HEPH**	N/A	
DOC	Yes	**Trout LC50**	N/A	

Logger Maintenance

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

Describe Logger Maintenance

Photos

Photo: 1

Location: SQU DS1

Description: US View

Photo: 2

Location: SQU DS1

Description: DS View

Photos

Photo: 3

Location: SQU DS1

Description: Across View

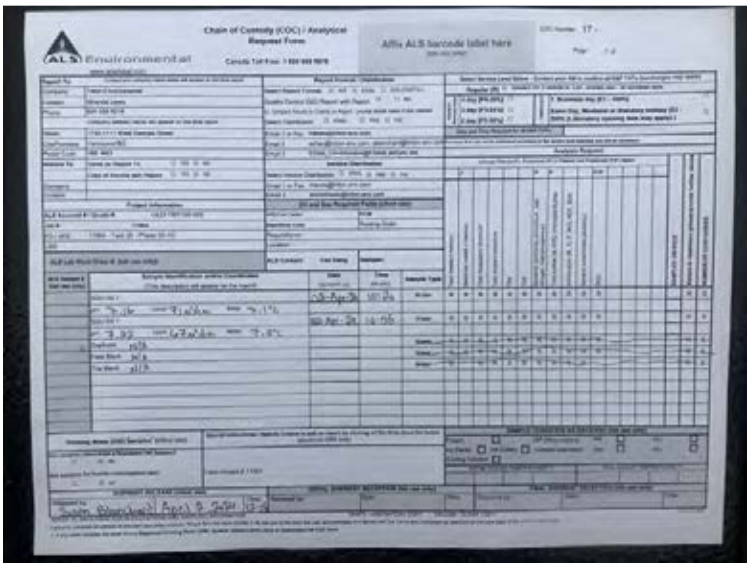

Photo: 4

Location: SQU DS1

Description: Lab COC

Sign Off

Report Prepared By: Sam Blanchard

Report Reviewer: Miranda Lewis

Name:

Designation:

Designation Number:

Report Reviewed: Yes

Professional(s) of Record: N/A

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-4-2-Blanchard-F3BB7

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	04/02/2024	**Location:**	BC Rail Site
Triton QP:	Sam Blanchard	**Latitude/Longitude:**	49.726866 -123.163912
Temperature(c):	Low 8 High 13	**Permit:**	AE 111824
Weather Conditions:	Light Rain	**Ground Conditions:**	Dry

Observations

Time: 10:24:58 **Flow Volume (visual):** moderate

Notes:

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

Samples Collected - Parameters

Total Metals + Mercury	Yes	**General Parameters (Alkalinity)**	Yes	**Other Sample:** Total Chromium, Conductivity 71 us/cm
Dissolved Metals + Mercury	Yes	**Total Sulfide, Unionized Sulfide**	Yes	
TSS	Yes	**Anions**	Yes	
TDS	Yes	**VOC/VPH**	N/A	**QA Samples:** No Total Chromium, Conductivity 71 us/cm
Nutrients	Yes	**EPH, PAH, LEPH/HEPH**	N/A	
DOC	Yes	**Trout LC50**	N/A	

Logger Maintenance

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

Describe Logger Maintenance

Changed telemetry marine battery.

Photos

Photo: 1
Location: SQU US1
Description: US View

Photo: 2
Location: SQU US1
Description: DS View

Photos

Photo: 3

Location: SQU US1

Description: Across View

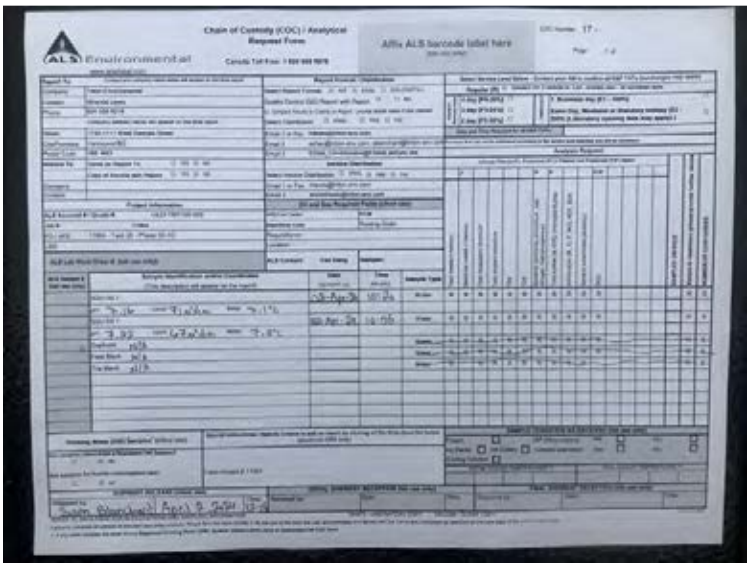

Photo: 4

Location: SQU US1

Description: Lab COC

Sign Off

Report Prepared By: Sam Blanchard

Report Reviewer: Miranda Lewis

Name:

Designation:

Designation Number:

Report Reviewed: Yes

Professional(s) of Record: N/A

BCR US:

Received	Temperature C	Specific Conductivity µS/cm	Salinity PSU	pH pH	ORP mV	Dissolved Oxygen Concentration mg/L	Turbidity NTU	TL Battery V
4/5/2024 23:50	5.858	51.604	0.02	7.358	210.8	12.197	2.873	12.43
4/5/2024 23:40	5.87	52.232	0.02	7.333	189.69	12.189	1.921	12.43
4/5/2024 23:30	5.863	51.395	0.02	7.314	167.21	12.196	3.65	12.43
4/5/2024 23:20	5.875	52.692	0.02	7.39	258.86	12.173	1.25	12.43
4/5/2024 23:10	5.866	52.511	0.02	7.371	255.27	12.179	2.709	12.43
4/5/2024 23:00	5.852	52.581	0.02	7.367	251.65	12.164	0.96	12.358
4/5/2024 22:50	5.859	52.599	0.02	7.369	246.3	12.16	1.729	12.43
4/5/2024 22:40	5.885	52.899	0.02	7.362	238.16	12.159	0.55	12.43
4/5/2024 22:30	5.882	52.648	0.02	7.363	224.35	12.167	0.03	12.43
4/5/2024 22:20	5.883	53.71	0.02	7.366	237.51	12.159	0	12.43
4/5/2024 22:10	5.878	54.236	0.02	7.359	230.4	12.163	0	12.43
4/5/2024 22:00	5.884	53.771	0.02	7.357	219.78	12.166	0	12.43
4/5/2024 21:50	5.869	53.794	0.02	7.353	204.48	12.183	0	12.43
4/5/2024 21:40	5.861	53.25	0.02	7.348	185.94	12.197	0	12.43
4/5/2024 21:30	5.858	53.271	0.02	7.314	165.32	12.209	0	12.43
4/5/2024 21:20	5.859	53.112	0.02	7.404	257.94	12.21	0	12.358
4/5/2024 21:10	5.859	53.355	0.02	7.385	253.71	12.214	0	12.43
4/5/2024 21:00	5.874	54.006	0.02	7.392	249.89	12.22	0	12.43
4/5/2024 20:50	5.896	54.326	0.02	7.399	245.59	12.22	0	12.43
4/5/2024 20:40	5.902	54.367	0.02	7.385	236.56	12.247	0	12.358
4/5/2024 20:30	5.87	52.222	0.02	7.403	221.21	12.289	0	12.43
4/5/2024 20:20	5.863	52.093	0.02	7.411	237.18	12.318	0	12.43
4/5/2024 20:10	5.872	52.091	0.02	7.41	230.08	12.34	0	12.43
4/5/2024 20:00	5.897	51.893	0.02	7.405	218.99	12.363	0	12.43
4/5/2024 19:50	5.926	52.126	0.02	7.411	204.11	12.369	0	12.43
4/5/2024 19:40	5.973	52.719	0.02	7.382	184.31	12.366	0	12.43
4/5/2024 19:30	6.009	53.066	0.02	7.338	163.79	12.372	0	12.43
4/5/2024 19:20	6.06	53.77	0.02	7.447	257.7	12.373	0	12.43
4/5/2024 19:10	6.103	53.867	0.02	7.423	256.82	12.391	0	12.43
4/5/2024 19:00	6.144	53.536	0.02	7.416	252.45	12.387	0	12.43
4/5/2024 18:50	6.166	53.292	0.02	7.422	247.04	12.409	0	12.358
4/5/2024 18:40	6.207	53.614	0.02	7.419	237.33	12.422	0	12.43
4/5/2024 18:30	6.263	54.106	0.02	7.421	221.19	12.427	0	12.43
4/5/2024 18:20	6.329	54.07	0.02	7.421	236.64	12.415	0	12.43
4/5/2024 18:10	6.414	54.209	0.02	7.412	229.51	12.414	0	12.43
4/5/2024 18:00	6.506	54.591	0.02	7.426	217.6	12.414	0	12.43
4/5/2024 17:50	6.566	54.287	0.02	7.401	201.7	12.422	0	12.43
4/5/2024 17:40	6.658	54.247	0.02	7.384	181.89	12.428	0	12.43
4/5/2024 17:30	6.805	54.969	0.02	7.335	160.04	12.442	0	12.454
4/5/2024 17:20	6.868	55.019	0.02	7.454	260.01	12.429	0	12.454
4/5/2024 17:10	6.9	54.057	0.02	7.43	253.44	12.455	0	12.358
4/5/2024 17:00	6.942	54.04	0.02	7.429	245.22	12.453	0	12.358
4/5/2024 16:50	6.977	53.948	0.02	7.429	232.81	12.455	0	12.43
4/5/2024 16:40	7.026	54.244	0.02	7.424	223.87	12.462	0	12.43
4/5/2024 16:30	7.053	53.792	0.02	7.42	211.19	12.464	0	12.454
4/5/2024 16:20	7.083	54.017	0.02	7.429	245.42	12.473	0	12.43
4/5/2024 16:10	7.107	54.092	0.02	7.417	236.35	12.478	0	12.358
4/5/2024 16:00	7.078	54.348	0.02	7.417	225.14	12.474	0	12.43

4/5/2024 15:50	7.052	54.511	0.02	7.404	210.75	12.487	0	12.358
4/5/2024 15:40	7.027	54	0.02	7.388	190.77	12.488	0	12.43
4/5/2024 15:30	6.993	54.741	0.02	7.331	164.57	12.495	0	12.43
4/5/2024 15:20	6.96	53.933	0.02	7.446	266.62	12.505	0	12.43
4/5/2024 15:10	6.945	54.186	0.02	7.412	265.64	12.5	0	12.43
4/5/2024 15:00	6.879	53.746	0.02	7.423	261.78	12.51	0	12.358
4/5/2024 14:50	6.819	53.172	0.02	7.411	255.84	12.548	0	12.43
4/5/2024 14:40	6.775	53.005	0.02	7.411	247.78	12.552	0	12.43
4/5/2024 14:30	6.743	53.661	0.02	7.418	233.95	12.552	0	12.43
4/5/2024 14:20	6.686	53.189	0.02	7.422	253.5	12.563	0	12.358
4/5/2024 14:10	6.622	52.989	0.02	7.412	245.85	12.583	0	12.43
4/5/2024 14:00	6.568	52.863	0.02	7.405	236.05	12.583	0	12.43
4/5/2024 13:50	6.502	52.165	0.02	7.403	220.45	12.603	0	12.43
4/5/2024 13:40	6.453	52.901	0.02	7.386	198.03	12.595	0	12.43
4/5/2024 13:30	6.391	52.918	0.02	7.358	171.96	12.612	0	12.43
4/5/2024 13:20	6.325	52.693	0.02	7.43	270.61	12.626	0	12.43
4/5/2024 13:10	6.264	52.982	0.02	7.401	268.24	12.619	0	12.43
4/5/2024 13:00	6.2	52.74	0.02	7.4	263.73	12.658	0	12.43
4/5/2024 12:50	6.12	52.519	0.02	7.4	258.21	12.659	0	12.43
4/5/2024 12:40	6.056	53.225	0.02	7.397	253.19	12.65	0	12.43
4/5/2024 12:30	5.975	52.599	0.02	7.392	244.05	12.668	0	12.43
4/5/2024 12:20	5.894	52.044	0.02	7.397	251.79	12.711	0	12.43
4/5/2024 12:10	5.831	52.435	0.02	7.386	240.91	12.691	0	12.43
4/5/2024 12:00	5.748	53.088	0.02	7.382	222.66	12.711	0	12.43
4/5/2024 11:50	5.663	52.69	0.02	7.38	217.96	12.709	0	12.43
4/5/2024 11:40	5.597	53.202	0.02	7.36	197.09	12.706	0	12.43
4/5/2024 11:30	5.522	52.539	0.02	7.338	172.09	12.709	0	12.43
4/5/2024 11:20	5.441	52.162	0.02	7.421	269.07	12.718	0	12.358
4/5/2024 11:10	5.362	52.348	0.02	7.384	265.91	12.737	0	12.43
4/5/2024 11:00	5.287	51.707	0.02	7.386	260.8	12.737	0	12.43
4/5/2024 10:50	5.218	52.88	0.02	7.38	253.95	12.72	0	12.43
4/5/2024 10:40	5.149	53.236	0.02	7.374	247.04	12.709	0	12.43
4/5/2024 10:30	5.075	52.84	0.02	7.371	233.46	12.724	0	12.43
4/5/2024 10:20	5.006	52.742	0.02	7.375	249.13	12.723	0.742	12.43
4/5/2024 10:10	4.932	51.953	0.02	7.37	240.05	12.73	0	12.334
4/5/2024 10:00	4.872	51.709	0.02	7.369	231.87	12.733	0	12.43
4/5/2024 9:50	4.807	51.8	0.02	7.353	217.49	12.733	0	12.358
4/5/2024 9:40	4.752	51.997	0.02	7.336	197.65	12.72	0	12.43
4/5/2024 9:30	4.697	51.06	0.02	7.317	173.5	12.715	0	12.358
4/5/2024 9:20	4.645	50.835	0.02	7.401	271.43	12.729	0	12.43
4/5/2024 9:10	4.603	50.53	0.02	7.364	267.84	12.71	0	12.43
4/5/2024 9:00	4.568	50.474	0.02	7.362	263.5	12.694	0	12.43
4/5/2024 8:50	4.536	49.828	0.02	7.364	257.19	12.703	0	12.43
4/5/2024 8:40	4.517	49.934	0.02	7.363	248.83	12.696	0	12.43
4/5/2024 8:30	4.487	49.515	0.02	7.37	235.7	12.699	0	12.454
4/5/2024 8:20	4.483	49.066	0.02	7.375	248.06	12.68	0	12.43
4/5/2024 8:10	4.481	49.183	0.02	7.366	238.35	12.646	0	12.43
4/5/2024 8:00	4.509	50.423	0.02	7.361	226.95	12.601	0	12.43
4/5/2024 7:50	4.522	50.554	0.02	7.344	212.95	12.574	0	12.43
4/5/2024 7:40	4.538	50.533	0.02	7.333	193.03	12.55	0	12.43
4/5/2024 7:30	4.567	51.786	0.02	7.299	169.97	12.517	0	12.43
4/5/2024 7:20	4.593	52.264	0.02	7.402	261.31	12.497	0	12.358
4/5/2024 7:10	4.623	52.445	0.02	7.365	259.71	12.488	0	12.43

4/5/2024 7:00	4.65	51.89	0.02	7.368	254.31	12.485	0	12.43
4/5/2024 6:50	4.689	52.061	0.02	7.368	246.35	12.482	0	12.43
4/5/2024 6:40	4.72	52.328	0.02	7.376	232.58	12.464	0	12.43
4/5/2024 6:30	4.763	52.663	0.02	7.366	226.17	12.452	0	12.43
4/5/2024 6:20	4.759	52.296	0.02	7.371	236.03	12.483	0	12.43
4/5/2024 6:10	4.783	52.715	0.02	7.368	222.61	12.462	0	12.43
4/5/2024 6:00	4.804	52.411	0.02	7.355	219.93	12.474	0	12.43
4/5/2024 5:50	4.821	52.777	0.02	7.376	206.29	12.457	0	12.43
4/5/2024 5:40	4.847	52.257	0.02	7.329	187.87	12.457	0	12.43
4/5/2024 5:30	4.877	52.803	0.02	7.306	168.66	12.443	0	12.43
4/5/2024 5:20	4.878	51.477	0.02	7.408	263.06	12.485	0	12.358
4/5/2024 5:10	4.87	50.217	0.02	7.387	263.71	12.505	0	12.358
4/5/2024 5:00	4.913	49.506	0.02	7.387	258.89	12.498	0	12.43
4/5/2024 4:50	4.942	49.166	0.02	7.391	254.11	12.489	0	12.43
4/5/2024 4:40	4.961	48.083	0.02	7.386	246.14	12.508	0	12.43
4/5/2024 4:30	5.006	47.675	0.02	7.379	231.01	12.485	0	12.43
4/5/2024 4:20	5.057	47.674	0.02	7.377	245.39	12.473	0	12.43
4/5/2024 4:10	5.074	47.339	0.02	7.368	240.33	12.472	0	12.43
4/5/2024 4:00	5.084	46.239	0.02	7.369	229.1	12.47	0	12.43
4/5/2024 3:50	5.108	45.176	0.02	7.357	214.19	12.489	0	12.43
4/5/2024 3:40	5.103	45.047	0.02	7.344	194.92	12.494	0	12.43
4/5/2024 3:30	5.107	45.117	0.02	7.31	173.32	12.48	0	12.43
4/5/2024 3:20	5.165	45.458	0.02	7.411	268.49	12.442	0	12.334
4/5/2024 3:10	5.148	46.632	0.02	7.362	267.33	12.423	0	12.43
4/5/2024 3:00	5.181	47.121	0.02	7.357	262.89	12.407	0	12.43
4/5/2024 2:50	5.184	47.62	0.02	7.364	258.59	12.387	0	12.43
4/5/2024 2:40	5.182	46.701	0.02	7.366	250.14	12.42	0	12.43
4/5/2024 2:30	5.192	46.754	0.02	7.365	234.54	12.418	0	12.358
4/5/2024 2:20	5.223	46.854	0.02	7.369	249.82	12.401	0	12.43
4/5/2024 2:10	5.237	47.217	0.02	7.351	242.62	12.412	0	12.43
4/5/2024 2:00	5.232	46.143	0.02	7.355	231.45	12.433	0	12.43
4/5/2024 1:50	5.243	46.771	0.02	7.34	215.04	12.409	0	12.43
4/5/2024 1:40	5.257	47.54	0.02	7.329	194.09	12.396	0	12.43
4/5/2024 1:30	5.27	47.997	0.02	7.288	171.87	12.372	0	12.43
4/5/2024 1:20	5.267	47.452	0.02	7.374	273.43	12.383	0	12.43
4/5/2024 1:10	5.264	46.774	0.02	7.346	269.72	12.381	0	12.43
4/5/2024 1:00	5.273	46.548	0.02	7.35	264.81	12.394	0	12.43
4/5/2024 0:50	5.279	46.4	0.02	7.355	257.94	12.398	0	12.43
4/5/2024 0:40	5.293	47.489	0.02	7.353	248.94	12.383	0	12.43
4/5/2024 0:30	5.285	47.215	0.02	7.349	235.74	12.386	0	12.43
4/5/2024 0:20	5.308	47.77	0.02	7.343	249.58	12.363	0	12.43
4/5/2024 0:10	5.302	47.127	0.02	7.337	241.46	12.37	0	12.358
4/4/2024 23:50	5.329	47.434	0.02	7.342	214.72	12.355	0	12.43
4/4/2024 23:40	5.336	47.447	0.02	7.319	194.07	12.369	0	12.43
4/4/2024 23:30	5.346	48.117	0.02	7.303	169.55	12.37	0	12.43
4/4/2024 23:20	5.376	50.344	0.02	7.374	264.32	12.328	0	12.358
4/4/2024 23:10	5.369	49.263	0.02	7.351	260.11	12.353	0	12.43
4/4/2024 23:00	5.387	50.354	0.02	7.35	253.05	12.332	0	12.43
4/4/2024 22:50	5.409	51.135	0.02	7.343	242.79	12.312	0	12.43
4/4/2024 22:40	5.401	51.39	0.02	7.34	241.97	12.325	0	12.43
4/4/2024 22:30	5.403	51.151	0.02	7.344	228.69	12.314	0	12.43
4/4/2024 22:20	5.407	51.532	0.02	7.349	241.83	12.31	0	12.43
4/4/2024 22:10	5.39	50.801	0.02	7.343	228.58	12.347	0	12.43

4/4/2024 22:00	5.397	51.136	0.02	7.341	228.1	12.332	0	12.43
4/4/2024 21:50	5.402	51.205	0.02	7.335	212.18	12.339	0	12.43
4/4/2024 21:40	5.396	50.64	0.02	7.321	191.81	12.357	0	12.43
4/4/2024 21:30	5.414	51.305	0.02	7.29	168.39	12.354	0	12.43
4/4/2024 21:20	5.426	51.084	0.02	7.39	265.31	12.368	0	12.334
4/4/2024 21:10	5.445	51.37	0.02	7.36	261.14	12.372	0	12.43
4/4/2024 21:00	5.455	51.026	0.02	7.359	256.79	12.385	0	12.43
4/4/2024 20:50	5.47	50.996	0.02	7.355	250.25	12.406	0	12.43
4/4/2024 20:40	5.486	50.505	0.02	7.346	240.57	12.409	0	12.43
4/4/2024 20:30	5.494	49.985	0.02	7.363	219.64	12.432	0	12.43
4/4/2024 20:20	5.52	50.834	0.02	7.373	246.4	12.455	0	12.43
4/4/2024 20:10	5.536	51.184	0.02	7.363	239.74	12.457	0	12.43
4/4/2024 20:00	5.551	51.244	0.02	7.362	229.1	12.473	0	12.43
4/4/2024 19:50	5.569	50.732	0.02	7.367	205	12.51	0	12.43
4/4/2024 19:40	5.579	50.111	0.02	7.357	192.87	12.532	0	12.43
4/4/2024 19:30	5.587	50.29	0.02	7.321	168.9	12.558	0	12.43
4/4/2024 19:20	5.608	50.758	0.02	7.416	268.71	12.565	0.651	12.43
4/4/2024 19:10	5.616	50.535	0.02	7.399	264.99	12.591	0	12.43
4/4/2024 19:00	5.61	49.548	0.02	7.406	259.33	12.609	0	12.43
4/4/2024 19:00	5.61	49.548	0.02	7.406	259.33	12.609	0	12.43
4/4/2024 18:50	5.615	49.602	0.02	7.41	254.61	12.635	0	12.43
4/4/2024 18:40	5.637	50.319	0.02	7.398	245.69	12.636	0	12.43
4/4/2024 18:30	5.667	51.163	0.02	7.394	231.72	12.628	0	12.43
4/4/2024 18:20	5.653	50.412	0.02	7.409	250.74	12.668	0	12.334
4/4/2024 18:10	5.669	49.784	0.02	7.402	243.06	12.678	0	12.43
4/4/2024 18:00	5.673	49.762	0.02	7.404	231.83	12.698	0	12.334
4/4/2024 17:50	5.67	50.105	0.02	7.395	209.24	12.698	0	12.43
4/4/2024 17:40	5.67	49.651	0.02	7.382	195.61	12.734	0	12.43
4/4/2024 17:30	5.658	48.382	0.02	7.364	171.26	12.758	0	12.43
4/4/2024 17:20	5.669	48.676	0.02	7.45	272.41	12.743	0	12.43
4/4/2024 17:10	5.687	49.794	0.02	7.409	269.02	12.747	0	12.43
4/4/2024 17:00	5.685	49.467	0.02	7.406	265.43	12.763	0	12.43
4/4/2024 16:50	5.69	49.048	0.02	7.404	259.61	12.792	0	12.43
4/4/2024 16:40	5.688	48.146	0.02	7.409	251.64	12.791	0	12.43
4/4/2024 16:30	5.704	49.098	0.02	7.416	238.06	12.808	0	12.43
4/4/2024 16:20	5.7	48.631	0.02	7.418	252.26	12.795	0	12.334
4/4/2024 16:10	5.706	49.317	0.02	7.406	244.26	12.803	0	12.43
4/4/2024 16:00	5.703	49.037	0.02	7.397	233.42	12.822	0	12.43
4/4/2024 15:50	5.703	48.628	0.02	7.393	218.24	12.833	0	12.43
4/4/2024 15:40	5.711	48.927	0.02	7.382	191.68	12.839	0	12.43
4/4/2024 15:30	5.712	49.421	0.02	7.35	170.94	12.851	0	12.43
4/4/2024 15:20	5.735	51.076	0.02	7.434	271.94	12.844	0	12.334
4/4/2024 15:10	5.735	49.314	0.02	7.419	269.81	12.878	0	12.406
4/4/2024 15:00	5.738	48.247	0.02	7.408	264.71	12.902	0	12.43
4/4/2024 14:50	5.763	47.369	0.02	7.409	259.92	12.918	0	12.43
4/4/2024 14:40	5.79	48.234	0.02	7.405	250.92	12.902	0	12.43
4/4/2024 14:30	5.813	48.27	0.02	7.406	236.81	12.907	0	12.43
4/4/2024 14:20	5.797	48.041	0.02	7.404	251.05	12.925	0.447	12.43
4/4/2024 14:10	5.747	48.252	0.02	7.399	244.07	12.949	0	12.43
4/4/2024 14:00	5.666	46.138	0.02	7.405	231.6	12.973	0	12.43
4/4/2024 13:50	5.627	48.514	0.02	7.366	215.55	12.929	0	12.43
4/4/2024 13:40	5.603	47.269	0.02	7.371	195.65	12.968	0	12.43
4/4/2024 13:40	5.603	47.269	0.02	7.371	195.65	12.968	0	12.43

4/4/2024 13:30	5.573	44.547	0.02	7.365	173.22	13.005	0	12.43
4/4/2024 13:20	5.55	44.257	0.02	7.451	277.31	13.017	0	12.43
4/4/2024 13:10	5.533	45.322	0.02	7.4	273.58	13	0	12.43
4/4/2024 13:00	5.481	44.821	0.02	7.407	270.56	13.029	0	12.43
4/4/2024 12:50	5.417	44.028	0.02	7.4	264.87	13.058	0	12.43
4/4/2024 12:40	5.351	44.136	0.02	7.396	255.83	13.07	0	12.43
4/4/2024 12:30	5.28	44.243	0.02	7.394	242.49	13.085	0	12.43
4/4/2024 12:20	5.201	44.086	0.02	7.385	255.16	13.082	0	12.43
4/4/2024 12:10	5.121	43.163	0.02	7.39	247.44	13.107	0	12.334
4/4/2024 12:00	5.045	42.805	0.02	7.386	235	13.127	0	12.43
4/4/2024 11:50	4.967	43.364	0.02	7.367	218.91	13.128	0	12.334
4/4/2024 11:40	4.878	42.536	0.02	7.358	190.92	13.157	0.978	12.43
4/4/2024 11:30	4.799	43.237	0.02	7.328	170.9	13.159	0	12.43
4/4/2024 11:20	4.726	43.7	0.02	7.417	274.65	13.151	0.05	12.43
4/4/2024 11:10	4.632	43.158	0.02	7.394	266.05	13.159	0	12.43
4/4/2024 11:00	4.543	43.06	0.02	7.383	268.02	13.197	1.465	12.43
4/4/2024 10:50	4.476	43.433	0.02	7.395	260.58	13.184	0.111	12.43
4/4/2024 10:40	4.437	44.623	0.02	7.374	246.79	13.164	0	12.43
4/4/2024 10:30	4.392	44.493	0.02	7.364	240.06	13.177	0	12.43
4/4/2024 10:20	4.345	43.639	0.02	7.368	252.31	13.175	0	12.43
4/4/2024 10:10	4.308	44.259	0.02	7.362	243.59	13.186	0	12.334
4/4/2024 10:00	4.297	44.191	0.02	7.365	230.03	13.159	0	12.43
4/4/2024 9:50	4.268	44.562	0.02	7.345	205.81	13.176	1.33	12.43
4/4/2024 9:40	4.237	43.458	0.02	7.337	193.02	13.166	0	12.43
4/4/2024 9:30	4.209	43.069	0.02	7.31	173.23	13.178	0	12.43
4/4/2024 9:20	4.187	42.705	0.02	7.414	282.05	13.168	0	12.43
4/4/2024 9:10	4.166	42.683	0.02	7.334	277.37	13.16	0	12.358
4/4/2024 9:00	4.148	42.386	0.02	7.365	272.81	13.154	0.096	12.43
4/4/2024 8:50	4.128	42.527	0.02	7.359	265.49	13.138	0	12.43
4/4/2024 8:40	4.12	42.728	0.02	7.349	258.75	13.116	0.199	12.43
4/4/2024 8:30	4.094	42.387	0.02	7.349	238.77	13.125	0	12.43
4/4/2024 8:20	4.097	42.204	0.02	7.348	253.7	13.106	0.253	12.43
4/4/2024 8:10	4.082	42.491	0.02	7.341	237.35	13.094	3.752	12.43
4/4/2024 8:00	4.083	42.964	0.02	7.34	233.4	13.069	0	12.43
4/4/2024 7:50	4.076	42.926	0.02	7.322	217.13	13.045	0	12.43
4/4/2024 7:40	4.083	43.282	0.02	7.309	196.71	13.043	0	12.43
4/4/2024 7:30	4.095	43.657	0.02	7.288	175.13	13.034	0	12.43
4/4/2024 7:20	4.119	44.71	0.02	7.367	279.79	12.995	0	12.43
4/4/2024 7:10	4.115	43.686	0.02	7.324	273.67	13.014	0	12.43
4/4/2024 7:00	4.089	42.315	0.02	7.33	265.96	13.034	0.651	12.43
4/4/2024 6:50	4.11	42.602	0.02	7.325	268.06	13.019	0	12.43
4/4/2024 6:40	4.121	42.117	0.02	7.313	259.96	13.023	3.075	12.43
4/4/2024 6:30	4.116	41.167	0.02	7.319	245.43	13.033	0.316	12.43
4/4/2024 6:20	4.124	40.868	0.02	7.303	252.02	13.041	1.172	12.43
4/4/2024 6:10	4.139	41.17	0.02	7.307	234.95	13.035	0.062	12.334
4/4/2024 6:00	4.158	41.509	0.02	7.293	232.17	12.998	0	12.43
4/4/2024 5:50	4.153	40.625	0.02	7.281	218.5	13.013	1.849	12.43
4/4/2024 5:40	4.162	40.311	0.02	7.273	197.29	13.014	0.419	12.43
4/4/2024 5:30	4.171	40.942	0.02	7.234	171.83	13.011	1.028	12.43
4/4/2024 5:30	4.171	40.942	0.02	7.234	171.83	13.011	1.028	12.43
4/4/2024 5:20	4.191	41.404	0.02	7.337	273.33	12.986	0.367	12.43
4/4/2024 5:10	4.212	40.998	0.02	7.314	272.28	13.014	2.732	12.43
4/4/2024 5:00	4.209	40.448	0.02	7.324	269.15	13.034	0	12.43

4/4/2024 4:50	4.217	39.437	0.02	7.334	256.48	13.043	1.633	12.43
4/4/2024 4:40	4.235	39.81	0.02	7.329	257.81	13.036	0	12.43
4/4/2024 4:30	4.245	39.5	0.02	7.336	241.57	13.044	1.183	12.43
4/4/2024 4:20	4.264	39.349	0.02	7.333	255.94	13.048	0	12.43
4/4/2024 4:10	4.273	38.556	0.02	7.351	246.92	13.056	0.577	12.43
4/4/2024 4:00	4.287	37.699	0.02	7.327	233.34	13.053	0.798	12.43
4/4/2024 3:50	4.292	37.615	0.02	7.321	215.6	13.074	1.548	12.43
4/4/2024 3:40	4.32	37.584	0.02	7.291	195.43	13.044	0.843	12.43
4/4/2024 3:30	4.336	37.461	0.02	7.253	172.2	13.044	1.996	12.43
4/4/2024 3:20	4.361	37.537	0.02	7.373	275.17	13.029	2.216	12.43
4/4/2024 3:10	4.405	37.731	0.02	7.331	277.79	13	0	12.43
4/4/2024 3:00	4.446	37.914	0.02	7.324	273.42	12.981	1.873	12.43
4/4/2024 2:50	4.458	38.233	0.02	7.321	266.28	12.982	1.794	12.43
4/4/2024 2:40	4.494	37.895	0.02	7.312	254.68	12.953	2.202	12.43
4/4/2024 2:30	4.502	38.194	0.02	7.303	234.35	12.955	6.149	12.43
4/4/2024 2:20	4.529	38.173	0.02	7.299	253.39	12.94	3.46	12.43
4/4/2024 2:10	4.537	38.1	0.02	7.304	231.87	12.945	4.92	12.43
4/4/2024 2:00	4.568	38.15	0.02	7.295	229.44	12.92	3.046	12.43
4/4/2024 1:50	4.584	38.242	0.02	7.292	211.77	12.929	1.973	12.43
4/4/2024 1:40	4.595	38.896	0.02	7.266	185.23	12.914	1.571	12.358
4/4/2024 1:30	4.587	39.349	0.02	7.247	169.49	12.911	8.129	12.43
4/4/2024 1:20	4.584	39.623	0.02	7.341	273.03	12.911	1.647	12.358
4/4/2024 1:10	4.604	39.949	0.02	7.316	261.6	12.898	0.867	12.43
4/4/2024 1:00	4.632	39.762	0.02	7.313	265.73	12.884	0.368	12.43
4/4/2024 0:50	4.655	40.068	0.02	7.315	259.09	12.873	2.639	12.43
4/4/2024 0:40	4.675	40.157	0.02	7.31	247.71	12.876	0.836	12.43
4/4/2024 0:30	4.699	40.838	0.02	7.307	227.64	12.858	0	12.43
4/4/2024 0:20	4.728	40.75	0.02	7.302	249.09	12.855	2.038	12.43
4/4/2024 0:10	4.75	41.084	0.02	7.3	238.9	12.844	1.076	12.43
4/3/2024 23:50	4.795	41.236	0.02	7.284	207.49	12.831	1.981	12.43
4/3/2024 23:40	4.816	40.961	0.02	7.26	183.66	12.824	1.583	12.43
4/3/2024 23:30	4.836	40.67	0.02	7.24	168.71	12.822	0.68	12.43
4/3/2024 23:20	4.849	40.672	0.02	7.343	264	12.823	3.984	12.43
4/3/2024 23:10	4.874	40.885	0.02	7.308	268.88	12.817	0.807	12.43
4/3/2024 23:00	4.902	40.973	0.02	7.295	264.15	12.819	2.872	12.43
4/3/2024 22:50	4.92	40.993	0.02	7.313	257.52	12.808	1.246	12.43
4/3/2024 22:40	4.932	41.139	0.02	7.317	246.48	12.816	4.708	12.43
4/3/2024 22:30	4.941	40.863	0.02	7.311	225.53	12.819	3.001	12.43
4/3/2024 22:20	4.958	40.808	0.02	7.308	247.01	12.817	5.272	12.43
4/3/2024 22:10	4.973	40.024	0.02	7.311	236.38	12.82	6.399	12.43
4/3/2024 22:00	4.993	40.406	0.02	7.301	222.67	12.832	5.907	12.43
4/3/2024 21:50	5.009	40.47	0.02	7.301	206.53	12.824	4.069	12.334
4/3/2024 21:40	5.021	40.436	0.02	7.272	187.95	12.814	3.745	12.334
4/3/2024 21:30	5.027	39.724	0.02	7.244	169.05	12.828	4.396	12.43
4/3/2024 21:20	5.036	40.119	0.02	7.373	277.31	12.838	5.396	12.406
4/3/2024 21:10	5.054	40.082	0.02	7.333	273.34	12.845	3.987	12.43
4/3/2024 21:00	5.064	39.834	0.02	7.321	271.32	12.856	5.208	12.43
4/3/2024 20:50	5.078	40.029	0.02	7.318	267.85	12.863	6.999	12.43
4/3/2024 20:40	5.074	39.258	0.02	7.319	260.95	12.895	6.696	12.358
4/3/2024 20:30	5.077	38.969	0.02	7.324	250.28	12.898	7.015	12.43
4/3/2024 20:20	5.084	39.165	0.02	7.338	253.67	12.924	3.555	12.43
4/3/2024 20:10	5.1	38.859	0.02	7.328	242.07	12.933	3.747	12.43
4/3/2024 20:00	5.11	38.699	0.02	7.327	219.3	12.959	13.157	12.43

4/3/2024 19:50	5.116	38.49	0.02	7.327	212.23	12.984	5.014	12.334
4/3/2024 19:40	5.13	38.506	0.02	7.302	191.62	12.992	6.926	12.43
4/3/2024 19:30	5.132	37.707	0.02	7.288	170.31	13.027	8.635	12.43
4/3/2024 19:20	5.148	37.456	0.02	7.396	273.23	13.017	13.579	12.334
4/3/2024 19:10	5.172	37.668	0.02	7.351	275.88	13.026	5.408	12.43
4/3/2024 19:00	5.191	37.535	0.02	7.348	271.48	13.029	9.743	12.43
4/3/2024 18:50	5.207	37.537	0.02	7.352	260.13	13.045	10.474	12.43
4/3/2024 18:40	5.225	37.436	0.02	7.344	258.92	13.04	9.265	12.43
4/3/2024 18:30	5.25	37.608	0.02	7.355	243.75	13.077	9.738	12.43
4/3/2024 18:20	5.279	37.15	0.02	7.354	246.22	13.08	9.296	12.43
4/3/2024 18:10	5.305	36.538	0.02	7.343	246.4	13.091	9.45	12.43
4/3/2024 18:00	5.334	36.586	0.02	7.341	233.1	13.101	6.288	12.43
4/3/2024 17:50	5.369	36.88	0.02	7.335	215.12	13.115	8.576	12.406
4/3/2024 17:40	5.397	36.522	0.02	7.315	194.69	13.11	13.985	12.43
4/3/2024 17:30	5.45	36.849	0.02	7.287	170.88	13.116	15.689	12.43
4/3/2024 17:20	5.487	36.211	0.02	7.386	284.77	13.139	17.717	12.43
4/3/2024 17:10	5.538	36.279	0.02	7.374	278.78	13.151	19.145	12.43
4/3/2024 17:00	5.582	36.259	0.02	7.352	271.47	13.162	13.963	12.43
4/3/2024 16:50	5.609	35.954	0.02	7.356	256.75	13.189	14.472	12.43
4/3/2024 16:40	5.599	36.103	0.02	7.348	248.74	13.193	10.529	12.43
4/3/2024 16:30	5.598	36.36	0.02	7.354	244.74	13.215	15.8	12.43
4/3/2024 16:20	5.589	36.289	0.02	7.354	252.48	13.227	12.153	12.43
4/3/2024 16:10	5.572	35.963	0.02	7.35	241.25	13.239	13.219	12.43
4/3/2024 16:00	5.557	36.039	0.02	7.335	227.01	13.241	19.496	12.43
4/3/2024 15:50	5.553	36.36	0.02	7.33	209.98	13.243	10.474	12.43
4/3/2024 15:40	5.545	36.271	0.02	7.317	190.97	13.247	13.986	12.43
4/3/2024 15:30	5.518	35.77	0.02	7.277	172.27	13.266	11.512	12.43
4/3/2024 15:20	5.496	35.871	0.02	7.389	287.54	13.271	12.411	12.43
4/3/2024 15:10	5.463	35.625	0.02	7.359	283.44	13.292	24.214	12.43
4/3/2024 15:00	5.428	35.615	0.02	7.347	277.4	13.319	16.636	12.43
4/3/2024 14:50	5.394	35.239	0.02	7.349	272.96	13.328	21.18	12.43
4/3/2024 14:40	5.351	35.08	0.01	7.342	262.55	13.324	14.018	12.43
4/3/2024 14:30	5.305	35.284	0.02	7.343	244.77	13.335	19.123	12.43
4/3/2024 14:20	5.277	35.36	0.02	7.348	262	13.364	15.929	12.334
4/3/2024 14:10	5.246	34.798	0.01	7.339	250.79	13.374	13.36	12.43
4/3/2024 14:00	5.216	34.923	0.01	7.338	227.82	13.375	18.294	12.406
4/3/2024 13:50	5.213	35.642	0.02	7.319	219.54	13.378	11.708	12.406
4/3/2024 13:40	5.207	35.176	0.01	7.302	197.5	13.377	15.873	12.43
4/3/2024 13:30	5.209	34.857	0.01	7.277	174.62	13.406	13.67	12.43
4/3/2024 13:20	5.227	35.276	0.02	7.388	287.76	13.406	14.417	12.43
4/3/2024 13:10	5.249	35.272	0.02	7.346	283.25	13.398	18.945	12.43
4/3/2024 13:00	5.279	35.393	0.02	7.335	278.28	13.394	15.764	12.406
4/3/2024 12:50	5.279	35.039	0.01	7.341	273.4	13.418	19.544	12.43
4/3/2024 12:40	5.245	34.967	0.01	7.32	263.07	13.431	13.988	12.43
4/3/2024 12:30	5.178	34.707	0.01	7.339	248.73	13.446	15.539	12.43
4/3/2024 12:20	5.104	34.696	0.01	7.349	261.9	13.457	12.917	12.43
4/3/2024 12:10	5.028	34.659	0.01	7.339	250.72	13.471	13.561	12.406
4/3/2024 12:00	4.955	35.014	0.01	7.329	227.41	13.486	13.839	12.406
4/3/2024 11:50	4.874	34.799	0.01	7.32	219.84	13.502	15.113	12.43
4/3/2024 11:40	4.809	34.74	0.01	7.302	198.47	13.496	14.662	12.43
4/3/2024 11:30	4.764	35.509	0.02	7.282	176.2	13.477	14.239	12.43
4/3/2024 11:20	4.717	35.701	0.02	7.371	287.62	13.505	19.811	12.406
4/3/2024 11:10	4.674	35.139	0.01	7.341	283.96	13.503	14.151	12.43

4/3/2024 11:00	4.645	34.56	0.01	7.328	278.92	13.526	14.75	12.43
4/3/2024 10:50	4.6	34.372	0.01	7.34	271.81	13.541	14.334	12.406
4/3/2024 10:40	4.58	34.744	0.01	7.332	260.83	13.516	11.804	12.334
4/3/2024 10:30	4.547	35.378	0.02	7.337	241.21	13.54	12.004	12.406
4/3/2024 10:20	4.517	35.181	0.01	7.337	263.73	13.531	18.971	12.334
4/3/2024 10:10	4.485	35.591	0.02	7.31	253.16	13.545	17.235	12.406
4/3/2024 10:10	4.485	35.591	0.02	7.31	253.16	13.545	17.235	12.406
4/3/2024 10:00	4.451	35.561	0.02	7.317	239.27	13.529	13.946	12.406
4/3/2024 9:50	4.42	35.357	0.02	7.316	211.79	13.531	14.263	12.406
4/3/2024 9:40	4.407	35.165	0.01	7.294	194.32	13.533	10.631	12.406
4/3/2024 9:30	4.385	34.942	0.01	7.268	176.3	13.557	18.056	12.406
4/3/2024 9:20	4.373	35.442	0.02	7.377	285.94	13.536	10.326	12.43
4/3/2024 9:10	4.342	35.844	0.02	7.33	281.33	13.539	11.057	12.406
4/3/2024 9:00	4.326	35.752	0.02	7.327	276.74	13.52	14.824	12.406
4/3/2024 8:50	4.301	34.797	0.01	7.326	269.73	13.53	16.22	12.43
4/3/2024 8:40	4.285	35.078	0.01	7.323	258.19	13.53	13.111	12.43
4/3/2024 8:30	4.273	35.038	0.01	7.318	241.94	13.524	12.303	12.43
4/3/2024 8:20	4.247	34.407	0.01	7.315	262.81	13.533	14	12.43
4/3/2024 8:10	4.247	34.199	0.01	7.318	252.34	13.51	8.042	12.43
4/3/2024 8:00	4.24	34.416	0.01	7.323	238.09	13.528	10.972	12.334
4/3/2024 7:50	4.232	35	0.01	7.312	219.68	13.513	12.449	12.43
4/3/2024 7:40	4.242	34.784	0.01	7.299	199.35	13.511	11.438	12.43
4/3/2024 7:30	4.24	34.46	0.01	7.268	177.62	13.509	12.025	12.43
4/3/2024 7:20	4.246	34.811	0.01	7.377	292.67	13.522	10.942	12.334
4/3/2024 7:10	4.253	34.661	0.01	7.324	288.12	13.51	15.628	12.43
4/3/2024 7:00	4.242	33.894	0.01	7.334	282.72	13.54	9.056	12.43
4/3/2024 6:50	4.244	33.778	0.01	7.339	276.23	13.541	14.261	12.43
4/3/2024 6:40	4.276	34.326	0.01	7.334	267.01	13.53	12.42	12.406
4/3/2024 6:30	4.279	34.264	0.01	7.346	251.62	13.514	19.826	12.43
4/3/2024 6:20	4.285	34.897	0.01	7.343	260.55	13.533	21.97	12.43
4/3/2024 6:10	4.336	35.282	0.01	7.344	239.6	13.504	9.944	12.43
4/3/2024 6:00	4.339	35.467	0.02	7.335	237.85	13.509	16.963	12.406
4/3/2024 5:50	4.333	35.169	0.01	7.341	220.88	13.531	9.783	12.406
4/3/2024 5:40	4.344	34.807	0.01	7.333	199.75	13.544	13.305	12.43
4/3/2024 5:30	4.366	34.653	0.01	7.306	174.9	13.529	13.933	12.43
4/3/2024 5:20	4.377	34.558	0.01	7.422	287.2	13.551	15.928	12.334
4/3/2024 5:10	4.423	35.08	0.01	7.371	278.27	13.528	18.462	12.334
4/3/2024 5:00	4.461	36.064	0.02	7.384	266.94	13.51	10.725	12.43
4/3/2024 4:50	4.491	36.716	0.02	7.382	269.3	13.523	10.189	12.43
4/3/2024 4:40	4.54	37.348	0.02	7.39	257.46	13.481	12.482	12.43
4/3/2024 4:30	4.578	37.33	0.02	7.391	232.87	13.463	11.141	12.43
4/3/2024 4:20	4.603	37.588	0.02	7.401	255.69	13.462	18.304	12.334
4/3/2024 4:10	4.63	38.062	0.02	7.395	235.08	13.445	23.098	12.43
4/3/2024 4:00	4.655	38.384	0.02	7.399	233.87	13.468	12.996	12.43
4/3/2024 3:50	4.687	39.401	0.02	7.403	215.98	13.443	18.183	12.43
4/3/2024 3:40	4.708	39.38	0.02	7.391	193.82	13.457	17.661	12.43
4/3/2024 3:30	4.746	39.519	0.02	7.352	169.99	13.431	18.151	12.43
4/3/2024 3:20	4.768	39.309	0.02	7.474	284.93	13.431	18.396	12.43
4/3/2024 3:10	4.822	40.101	0.02	7.438	278.49	13.403	12.93	12.406
4/3/2024 3:00	4.86	40.641	0.02	7.448	271.99	13.391	17.945	12.43
4/3/2024 2:50	4.896	40.658	0.02	7.448	264.71	13.363	21.626	12.43
4/3/2024 2:40	4.941	41.035	0.02	7.456	250.57	13.344	19.64	12.43
4/3/2024 2:30	5.005	42.257	0.02	7.443	220.56	13.293	17.954	12.43

4/3/2024 2:20	5.052	42.539	0.02	7.467	247.46	13.265	20.076	12.43
4/3/2024 2:10	5.083	41.326	0.02	7.457	244.98	13.253	10.158	12.43
4/3/2024 2:00	5.142	41.867	0.02	7.46	220.89	13.237	20.758	12.406
4/3/2024 1:50	5.199	42.839	0.02	7.455	212.53	13.196	19.901	12.406
4/3/2024 1:40	5.27	43.903	0.02	7.427	190.87	13.141	31.467	12.406
4/3/2024 1:30	5.337	44.764	0.02	7.385	165.82	13.075	32.336	12.43
4/3/2024 1:20	5.375	45.447	0.02	7.503	276.62	13.046	28.971	12.334
4/3/2024 1:10	5.425	46.048	0.02	7.481	271.43	13.005	35.287	12.406
4/3/2024 1:00	5.465	46.267	0.02	7.473	264.45	12.983	12.089	12.406
4/3/2024 0:50	5.497	46.335	0.02	7.485	256.65	12.953	19.462	12.406
4/3/2024 0:40	5.542	46.618	0.02	7.477	244.27	12.917	12.936	12.406
4/3/2024 0:30	5.593	47.313	0.02	7.478	217.1	12.85	20.807	12.406
4/3/2024 0:20	5.643	47.995	0.02	7.481	252.97	12.799	19.885	12.406
4/3/2024 0:10	5.702	49.176	0.02	7.459	242.23	12.731	8.504	12.406
4/3/2024 0:00	5.775	51.515	0.02	7.439	228.89	12.645	8.02	12.334
4/2/2024 23:50	5.811	52.096	0.02	7.433	211.21	12.604	20.417	12.406
4/2/2024 23:40	5.861	53.223	0.02	7.402	185.55	12.556	7.362	12.406
4/2/2024 23:30	5.899	53.688	0.02	7.367	164.44	12.509	7.388	12.43
4/2/2024 23:20	5.94	55	0.02	7.448	265.28	12.458	7.196	12.334
4/2/2024 23:10	5.976	55.798	0.02	7.44	260.03	12.413	4.117	12.406
4/2/2024 23:00	5.996	55.825	0.02	7.432	249.41	12.391	5.632	12.334
4/2/2024 22:50	6.021	56.083	0.02	7.421	247.77	12.359	3.155	12.334
4/2/2024 22:40	6.059	57.197	0.03	7.412	236.36	12.32	1.593	12.406
4/2/2024 22:30	6.066	56.77	0.03	7.402	211.69	12.319	1.776	12.406
4/2/2024 22:20	6.096	57.711	0.03	7.426	238.72	12.275	0.241	12.406
4/2/2024 22:10	6.12	58.554	0.03	7.407	237.01	12.262	0	12.406
4/2/2024 22:00	6.154	60.021	0.03	7.397	223.33	12.223	0	12.406
4/2/2024 21:50	6.169	60.386	0.03	7.382	199.15	12.197	0	12.406
4/2/2024 21:40	6.168	59.642	0.03	7.37	188.49	12.197	0	12.406
4/2/2024 21:30	6.192	60.64	0.03	7.325	163.17	12.167	0	12.406
4/2/2024 21:20	6.193	59.274	0.03	7.419	262.12	12.178	3.486	12.334
4/2/2024 21:10	6.201	59.705	0.03	7.398	258.64	12.182	0	12.406
4/2/2024 21:00	6.211	59.647	0.03	7.398	252.67	12.157	0	12.406
4/2/2024 20:50	6.223	59.687	0.03	7.392	240.46	12.16	0	12.406
4/2/2024 20:40	6.243	60.326	0.03	7.388	228.65	12.158	0	12.406
4/2/2024 20:30	6.24	59.064	0.03	7.392	206.4	12.161	0	12.334
4/2/2024 20:20	6.257	59.205	0.03	7.402	236.21	12.185	0	12.406
4/2/2024 20:10	6.273	58.7	0.03	7.393	229.75	12.176	0	12.406
4/2/2024 20:00	6.292	58.838	0.03	7.407	215.31	12.168	0	12.406
4/2/2024 19:50	6.308	58.868	0.03	7.382	208.9	12.172	0	12.406
4/2/2024 19:40	6.315	58.243	0.03	7.367	187.12	12.18	0	12.31
4/2/2024 19:30	6.319	58.061	0.03	7.327	164.7	12.199	0	12.406
4/2/2024 19:20	6.332	58.265	0.03	7.423	265.51	12.192	0	12.31
4/2/2024 19:10	6.342	58.555	0.03	7.398	261.18	12.184	0	12.406
4/2/2024 19:00	6.335	57.973	0.03	7.405	253.37	12.207	0	12.406
4/2/2024 18:50	6.343	58.226	0.03	7.399	251.54	12.213	0	12.406
4/2/2024 18:40	6.333	57.654	0.03	7.403	239.26	12.217	0	12.406
4/2/2024 18:30	6.333	57.894	0.03	7.403	214.94	12.228	0	12.406
4/2/2024 18:20	6.326	57.54	0.03	7.413	249.86	12.246	16.617	12.406
4/2/2024 18:10	6.321	57.566	0.03	7.395	240.94	12.255	0	12.406
4/2/2024 18:00	6.326	57.904	0.03	7.395	231.16	12.252	0	12.406
4/2/2024 17:50	6.33	58.086	0.03	7.379	203.07	12.256	0	12.382
4/2/2024 17:40	6.324	57.917	0.03	7.366	194.55	12.262	0	12.406

4/2/2024 17:30	6.33	57.966	0.03	7.333	164.31	12.265	0	12.406
4/2/2024 17:20	6.324	57.52	0.03	7.438	261.29	12.28	0	12.406
4/2/2024 17:10	6.335	58.923	0.03	7.413	261.78	12.285	0	12.31
4/2/2024 17:00	6.346	60.888	0.03	7.414	255.66	12.29	0	12.406
4/2/2024 16:50	6.357	58.2	0.03	7.412	247.14	12.294	0	12.406
4/2/2024 16:40	6.373	58.718	0.03	7.414	230.9	12.308	0	12.382
4/2/2024 16:30	6.374	58.163	0.03	7.414	211.96	12.331	0	12.406
4/2/2024 16:20	6.377	57.711	0.03	7.429	247.78	12.34	0	12.31
4/2/2024 16:10	6.39	57.825	0.03	7.413	237.08	12.347	0	12.406
4/2/2024 16:00	6.402	58.232	0.03	7.411	216.39	12.347	0	12.382
4/2/2024 15:50	6.416	58.68	0.03	7.404	210.16	12.349	0	12.406
4/2/2024 15:40	6.412	58.276	0.03	7.386	189.06	12.375	0	12.382
4/2/2024 15:30	6.419	58.074	0.03	7.335	162.13	12.381	0	12.382
4/2/2024 15:20	6.438	58.664	0.03	7.447	260.19	12.378	0	12.382
4/2/2024 15:10	6.451	58.492	0.03	7.424	263.21	12.383	0	12.382
4/2/2024 15:00	6.461	58.983	0.03	7.419	257.75	12.385	0	12.382
4/2/2024 14:50	6.468	59.01	0.03	7.417	252.2	12.397	0	12.382
4/2/2024 14:40	6.464	58.511	0.03	7.42	237.1	12.407	0	12.382
4/2/2024 14:30	6.477	58.928	0.03	7.417	228.37	12.399	0	12.406
4/2/2024 14:20	6.473	58.884	0.03	7.416	234.85	12.395	0	12.31
4/2/2024 14:10	6.474	59.363	0.03	7.406	227.18	12.389	0	12.406
4/2/2024 14:00	6.466	59.198	0.03	7.37	225.24	12.384	0	12.382
4/2/2024 13:50	6.46	59.551	0.03	7.387	208.91	12.361	0	12.382
4/2/2024 13:40	6.457	59.947	0.03	7.372	188.11	12.348	0	12.382
4/2/2024 13:30	6.459	59.905	0.03	7.331	165.21	12.344	0	12.382
4/2/2024 13:20	6.458	60.242	0.03	7.426	263.48	12.335	0	12.382
4/2/2024 13:10	6.471	60.874	0.03	7.399	259.14	12.309	0	12.406
4/2/2024 13:00	6.489	61.898	0.03	7.399	254.3	12.313	0	12.406
4/2/2024 12:50	6.49	62.036	0.03	7.407	243.1	12.329	0	12.382
4/2/2024 12:40	6.489	61.503	0.03	7.405	239.98	12.352	0	12.382
4/2/2024 12:30	6.488	61.34	0.03	7.413	221.08	12.358	0	12.406
4/2/2024 12:20	6.495	61.719	0.03	7.406	241.45	12.339	0	12.382
4/2/2024 12:10	6.495	61.866	0.03	7.402	225.75	12.342	0	12.406
4/2/2024 12:00	6.507	62.759	0.03	7.391	214.2	12.321	0	12.406
4/2/2024 11:50	6.504	62.176	0.03	7.392	200.07	12.346	0	12.406
4/2/2024 11:40	6.497	60.982	0.03	7.39	187.85	12.377	0	12.406
4/2/2024 11:30	6.51	61.262	0.03	7.346	164.56	12.368	0	12.406
4/2/2024 11:20	6.532	62.52	0.03	7.441	270.5	12.352	0	12.43
4/2/2024 11:10	6.521	61.714	0.03	7.411	267.37	12.375	0	12.43
4/2/2024 11:00	6.51	60.81	0.03	7.412	263.84	12.388	0	12.454
4/2/2024 10:50	6.496	60.177	0.03	7.416	256.73	12.403	0	12.454
4/2/2024 10:40	6.464	58.855	0.03	7.422	244.39	12.435	0	12.454
4/2/2024 10:30	6.437	58.706	0.03	7.4	219.13	12.416	0	12.454
4/2/2024 10:20	6.425	59.841	0.03	7.409	248.53	12.362	0	12.382
4/2/2024 10:10	6.393	60.596	0.03	7.373	236.04	12.332	0	12.478
4/2/2024 10:00	6.338	60.487	0.03	7.375	226.92	12.328	0	11.304
4/2/2024 9:50	6.277	59.289	0.03	7.371	211.04	12.343	0	11.304
4/2/2024 9:40	6.237	57.808	0.03	7.354	185.93	12.339	0	11.304
4/2/2024 9:30	6.207	57.122	0.03	7.325	167.63	12.309	0	11.304
4/2/2024 9:20	6.191	57.258	0.03	7.407	272.3	12.281	0	11.304
4/2/2024 9:10	6.18	57.149	0.03	7.367	268.24	12.259	0	11.304
4/2/2024 9:00	6.171	57.557	0.03	7.373	263.14	12.224	0	11.328
4/2/2024 8:50	6.173	57.859	0.03	7.354	255.27	12.193	0	11.328

4/2/2024 8:40	6.152	57.548	0.03	7.361	240.48	12.195	0	11.28
4/2/2024 8:30	6.139	56.931	0.03	7.353	230	12.187	0	11.304
4/2/2024 8:20	6.126	56.526	0.03	7.359	251.52	12.187	0	11.304
4/2/2024 8:10	6.119	56.154	0.03	7.353	242.48	12.196	0	11.304
4/2/2024 8:00	6.111	55.863	0.02	7.351	229.66	12.184	0	11.304
4/2/2024 7:50	6.114	56.36	0.03	7.327	204.5	12.15	0	11.304
4/2/2024 7:40	6.113	57.222	0.03	7.306	191.17	12.107	0	11.304
4/2/2024 7:30	6.104	57.034	0.03	7.266	168.47	12.099	0	11.304
4/2/2024 7:20	6.098	57.339	0.03	7.37	268.53	12.079	0	11.304
4/2/2024 7:10	6.093	57.228	0.03	7.351	263.58	12.081	0	11.304
4/2/2024 7:00	6.087	57.002	0.03	7.343	257.65	12.095	0	11.304
4/2/2024 6:50	6.069	55.905	0.02	7.356	243.42	12.135	0	11.328
4/2/2024 6:40	6.082	56.384	0.03	7.351	232.48	12.118	0	11.304
4/2/2024 6:30	6.084	56.842	0.03	7.354	216.89	12.109	0	11.304
4/2/2024 6:20	6.088	56.948	0.03	7.352	234.94	12.094	0	11.208
4/2/2024 6:10	6.089	56.911	0.03	7.349	236.12	12.111	0	11.304
4/2/2024 6:00	6.093	57.197	0.03	7.352	222.98	12.102	0	11.304
4/2/2024 5:50	6.098	57.32	0.03	7.34	206.51	12.122	0	11.328
4/2/2024 5:40	6.098	56.908	0.03	7.318	186.48	12.132	0	11.328
4/2/2024 5:30	6.106	56.833	0.03	7.265	161.45	12.141	0	11.328
4/2/2024 5:20	6.105	56.948	0.03	7.405	261.25	12.135	0.656	11.232
4/2/2024 5:10	6.117	57.184	0.03	7.374	259.96	12.136	0	11.328
4/2/2024 5:00	6.156	58.875	0.03	7.362	249.25	12.081	0	11.328
4/2/2024 4:50	6.194	60.783	0.03	7.37	244.07	12.05	0	11.328
4/2/2024 4:40	6.222	61.587	0.03	7.365	238.89	12.038	0	11.328
4/2/2024 4:30	6.233	61.581	0.03	7.367	219.3	12.028	0	11.328
4/2/2024 4:20	6.248	62.08	0.03	7.372	243.87	12.019	0	11.328
4/2/2024 4:10	6.264	62.709	0.03	7.365	230.55	12.034	0	11.328
4/2/2024 4:00	6.284	63.096	0.03	7.373	228.57	12.024	0	11.328
4/2/2024 3:50	6.263	61.449	0.03	7.362	212.12	12.057	0	11.328
4/2/2024 3:40	6.268	61.025	0.03	7.33	190.53	12.062	0	11.328
4/2/2024 3:30	6.279	60.804	0.03	7.31	165.68	12.09	0	11.232
4/2/2024 3:20	6.285	60.775	0.03	7.409	262.95	12.087	0	11.328
4/2/2024 3:10	6.295	60.904	0.03	7.383	254.41	12.069	0	11.328
4/2/2024 3:00	6.307	61.284	0.03	7.38	257	12.076	0	11.304
4/2/2024 2:50	6.317	61.078	0.03	7.38	249.53	12.071	0	11.328
4/2/2024 2:40	6.325	60.814	0.03	7.379	237.15	12.082	0	11.328
4/2/2024 2:30	6.319	59.979	0.03	7.379	215.52	12.092	0	11.304
4/2/2024 2:20	6.313	59.064	0.03	7.385	245.14	12.118	0	11.304
4/2/2024 2:10	6.311	58.015	0.03	7.375	237.62	12.118	0	11.304
4/2/2024 2:00	6.323	57.732	0.03	7.376	225.35	12.127	0	11.208
4/2/2024 1:50	6.335	57.486	0.03	7.371	208.07	12.118	0	11.304
4/2/2024 1:40	6.351	58.499	0.03	7.346	186.72	12.091	0	11.304
4/2/2024 1:30	6.38	60.22	0.03	7.281	162.72	12.055	0	11.232
4/2/2024 1:20	6.412	62.894	0.03	7.389	252.6	11.977	0	11.328
4/2/2024 1:10	6.414	62.395	0.03	7.365	255.55	11.984	0	11.232
4/2/2024 1:00	6.45	63.81	0.03	7.351	250.03	11.926	0	11.328
4/2/2024 0:50	6.417	60.566	0.03	7.36	242.16	12.01	0	11.328
4/2/2024 0:40	6.369	57.627	0.03	7.371	222.36	12.088	0	11.328
4/2/2024 0:30	6.338	56.394	0.03	7.377	203.46	12.129	0	11.328
4/2/2024 0:20	6.317	55.884	0.02	7.399	247.79	12.133	0	11.328
4/2/2024 0:10	6.304	55.506	0.02	7.384	241.25	12.152	0	11.328
4/2/2024 0:00	6.294	54.253	0.02	7.376	229.96	12.187	0	11.328

4/1/2024 23:50	6.306	53.98	0.02	7.368	211.58	12.187	0	11.328
4/1/2024 23:40	6.3	54.311	0.02	7.34	183.56	12.188	0	11.304
4/1/2024 23:30	6.295	55.139	0.02	7.301	163.99	12.148	0	11.328
4/1/2024 23:20	6.306	56.578	0.03	7.404	252.62	12.114	0	11.328
4/1/2024 23:10	6.333	58.637	0.03	7.373	247.5	12.075	0	11.328
4/1/2024 23:00	6.329	58.85	0.03	7.365	242.95	12.074	0	11.328
4/1/2024 22:50	6.342	60.061	0.03	7.364	242.15	12.045	0	11.328
4/1/2024 22:40	6.356	61.019	0.03	7.354	227.86	12.024	0	11.328
4/1/2024 22:30	6.377	62.501	0.03	7.342	201.64	11.975	0	11.256
4/1/2024 22:20	6.377	62.982	0.03	7.351	238.19	11.982	0	11.328
4/1/2024 22:10	6.378	62.854	0.03	7.339	221.6	11.995	0	11.328
4/1/2024 22:00	6.385	62.865	0.03	7.334	219.13	11.998	0	11.328
4/1/2024 21:50	6.403	63.51	0.03	7.324	203.12	11.989	0	11.328
4/1/2024 21:40	6.404	62.913	0.03	7.307	182.96	12.005	0	11.328
4/1/2024 21:30	6.419	64.077	0.03	7.267	160.34	12.005	0	11.328
4/1/2024 21:20	6.417	63.586	0.03	7.378	254.44	12.03	0	11.232
4/1/2024 21:10	6.425	63.069	0.03	7.359	244.81	12.043	0	11.328
4/1/2024 21:00	6.424	62.443	0.03	7.37	244.77	12.046	0	11.328
4/1/2024 20:50	6.433	62.744	0.03	7.36	230.25	12.085	0	11.328
4/1/2024 20:40	6.437	62.399	0.03	7.371	216.72	12.088	0	11.328
4/1/2024 20:30	6.451	62.539	0.03	7.361	198.79	12.11	0	11.328
4/1/2024 20:20	6.454	62.503	0.03	7.376	235.81	12.127	0	11.328
4/1/2024 20:10	6.472	62.603	0.03	7.363	218.08	12.139	0	11.328
4/1/2024 20:00	6.488	62.893	0.03	7.363	215.74	12.161	0	11.232
4/1/2024 19:50	6.499	62.441	0.03	7.363	200.13	12.187	0	11.304
4/1/2024 19:40	6.51	62.245	0.03	7.347	181.03	12.214	0	11.304
4/1/2024 19:30	6.515	61.65	0.03	7.283	159.23	12.259	0	11.304
4/1/2024 19:20	6.533	61.765	0.03	7.418	248.47	12.274	0	11.328
4/1/2024 19:10	6.544	61.197	0.03	7.403	252.77	12.291	0	11.328
4/1/2024 19:00	6.571	61.543	0.03	7.401	248.12	12.301	0	11.328
4/1/2024 18:50	6.592	61.668	0.03	7.397	239.9	12.298	0	11.304
4/1/2024 18:40	6.617	61.518	0.03	7.399	225.81	12.318	0	11.328
4/1/2024 18:30	6.635	61.534	0.03	7.399	199.05	12.341	0	11.328
4/1/2024 18:20	6.646	61.039	0.03	7.413	239.07	12.358	0	11.232
4/1/2024 18:10	6.686	61.477	0.03	7.399	230.68	12.382	0	11.328
4/1/2024 18:00	6.712	61.329	0.03	7.403	218.27	12.377	0	11.328
4/1/2024 17:50	6.75	61.404	0.03	7.391	202.24	12.384	0	11.328
4/1/2024 17:40	6.784	61.367	0.03	7.365	176.12	12.394	0	11.352
4/1/2024 17:30	6.829	61.537	0.03	7.32	158.23	12.391	0	11.328
4/1/2024 17:20	6.877	61.453	0.03	7.437	237.52	12.407	0	11.328
4/1/2024 17:10	6.926	61.441	0.03	7.424	242.44	12.435	0	11.328
4/1/2024 17:00	6.986	61.263	0.03	7.42	231.04	12.421	0	11.328
4/1/2024 16:50	7.037	61.635	0.03	7.414	230.74	12.43	0	11.328
4/1/2024 16:40	7.086	61.267	0.03	7.413	220.56	12.452	0	11.328
4/1/2024 16:30	7.137	61.103	0.03	7.412	199.96	12.452	0	11.328
4/1/2024 16:20	7.172	61.229	0.03	7.418	212.36	12.452	0	11.328
4/1/2024 16:10	7.219	60.993	0.03	7.4	192.36	12.467	0	11.328
4/1/2024 16:00	7.271	61.004	0.03	7.394	193.17	12.484	0	11.328
4/1/2024 15:50	7.266	61.231	0.03	7.364	172.48	12.47	0	11.328
4/1/2024 15:40	7.269	61.464	0.03	7.328	162.79	12.458	0	11.304
4/1/2024 15:30	7.294	61.574	0.03	7.278	150.05	12.456	0	11.328
4/1/2024 15:20	7.307	61.008	0.03	7.453	258.14	12.485	0	11.328
4/1/2024 15:10	7.305	61.109	0.03	7.415	258.99	12.486	0	11.232

4/1/2024 15:00	7.3	61.142	0.03	7.412	247.68	12.494	0	11.304
4/1/2024 14:50	7.331	61.481	0.03	7.395	246.55	12.469	0	11.304
4/1/2024 14:40	7.347	61.295	0.03	7.402	230.6	12.495	0	11.328
4/1/2024 14:30	7.32	60.764	0.03	7.408	207.35	12.497	0	11.304
4/1/2024 14:20	7.28	61.3	0.03	7.402	246.3	12.493	0	11.304
4/1/2024 14:10	7.261	61.448	0.03	7.395	237.51	12.488	0	11.304
4/1/2024 14:00	7.222	61.501	0.03	7.385	224.1	12.496	0	11.328
4/1/2024 13:50	7.184	61.805	0.03	7.378	210.05	12.515	0	11.328
4/1/2024 13:40	7.15	61.308	0.03	7.347	180.9	12.512	0	11.328
4/1/2024 13:30	7.112	61.793	0.03	7.303	161.68	12.52	0	11.328
4/1/2024 13:20	7.1	61.908	0.03	7.406	260.71	12.507	0	11.328
4/1/2024 13:10	7.079	61.69	0.03	7.384	252.24	12.524	0	11.304
4/1/2024 13:00	7.056	61.961	0.03	7.38	251.77	12.51	0	11.328
4/1/2024 12:50	6.98	62.268	0.03	7.375	239.73	12.515	0	11.304
4/1/2024 12:40	6.905	63.222	0.03	7.369	233.84	12.498	0	11.232
4/1/2024 12:30	6.831	63.012	0.03	7.365	206.45	12.502	0	11.304
4/1/2024 12:20	6.765	64.616	0.03	7.37	243.68	12.483	0	11.304
4/1/2024 12:10	6.706	65.567	0.03	7.355	232.23	12.489	0	11.304
4/1/2024 12:00	6.627	65.463	0.03	7.347	212.31	12.49	0	11.304
4/1/2024 11:50	6.574	64.571	0.03	7.345	208.23	12.51	0	11.304
4/1/2024 11:40	6.485	64.445	0.03	7.343	186.42	12.515	0	11.304
4/1/2024 11:30	6.39	64.642	0.03	7.255	159.69	12.514	0	11.328
4/1/2024 11:20	6.315	64.383	0.03	7.385	260.63	12.517	0	11.328
4/1/2024 11:10	6.22	65.712	0.03	7.358	256.01	12.486	0	11.304
4/1/2024 11:00	6.109	62.831	0.03	7.374	245.1	12.546	0	11.328
4/1/2024 10:50	6.036	61.39	0.03	7.38	237.98	12.575	0	11.328
4/1/2024 10:40	5.961	61.587	0.03	7.375	232.69	12.588	0	11.328
4/1/2024 10:30	5.865	60.648	0.03	7.373	206.39	12.594	0	11.328
4/1/2024 10:20	5.792	61.307	0.03	7.378	243.43	12.543	0	11.232
4/1/2024 10:10	5.695	59.935	0.03	7.373	233.26	12.574	0	11.328
4/1/2024 10:00	5.621	59.14	0.03	7.372	220.89	12.58	0	11.304
4/1/2024 9:50	5.541	58.509	0.03	7.367	201.44	12.592	0	11.328
4/1/2024 9:40	5.483	58.77	0.03	7.336	182.9	12.54	0	11.304
4/1/2024 9:30	5.415	59.805	0.03	7.285	162.83	12.508	0	11.304
4/1/2024 9:20	5.373	58.52	0.03	7.393	268.52	12.522	0.836	11.304
4/1/2024 9:10	5.324	58.331	0.03	7.373	265.61	12.504	0	11.304
4/1/2024 9:00	5.286	57.12	0.03	7.374	260.97	12.51	0	11.232
4/1/2024 8:50	5.277	56.839	0.03	7.369	252.93	12.498	0	11.304
4/1/2024 8:40	5.284	57.474	0.03	7.357	237.78	12.443	0	11.304
4/1/2024 8:30	5.261	57.049	0.03	7.351	204.63	12.437	0	11.304
4/1/2024 8:20	5.231	55.759	0.02	7.373	250.21	12.451	0	11.304
4/1/2024 8:10	5.23	55.639	0.02	7.351	231.52	12.401	0	11.328
4/1/2024 8:00	5.216	55.223	0.02	7.343	215.43	12.403	0	11.304
4/1/2024 7:50	5.233	55.126	0.02	7.33	202.13	12.377	0	11.304
4/1/2024 7:40	5.244	55.086	0.02	7.306	185.52	12.37	0	11.304
4/1/2024 7:30	5.253	55.389	0.02	7.242	163.72	12.328	0	11.304
4/1/2024 7:20	5.275	55.705	0.02	7.366	270.09	12.308	0	11.304
4/1/2024 7:10	5.287	56.069	0.02	7.352	266.63	12.285	0	11.304
4/1/2024 7:00	5.314	56.213	0.02	7.337	260.13	12.256	0	11.328
4/1/2024 6:50	5.317	56.155	0.02	7.339	250.33	12.262	0	11.328
4/1/2024 6:40	5.333	56.002	0.02	7.335	227.89	12.257	0	11.304
4/1/2024 6:30	5.361	56.396	0.03	7.321	206.21	12.24	0	11.304
4/1/2024 6:20	5.379	56.751	0.03	7.345	243.32	12.222	0	11.304

4/1/2024 6:10	5.393	56.943	0.03	7.325	232.42	12.218	0	11.304
4/1/2024 6:00	5.4	57.122	0.03	7.32	219.47	12.213	0	11.304
4/1/2024 5:50	5.419	57.17	0.03	7.317	204.42	12.205	0	11.328
4/1/2024 5:40	5.417	56.648	0.03	7.296	182.89	12.236	0	11.328
4/1/2024 5:30	5.445	56.843	0.03	7.253	162.44	12.222	0	11.328
4/1/2024 5:20	5.466	57.559	0.03	7.363	267.36	12.192	0	11.304
4/1/2024 5:10	5.476	57.907	0.03	7.344	262.55	12.186	0	11.328
4/1/2024 5:00	5.478	57.693	0.03	7.353	252.78	12.204	0	11.328
4/1/2024 4:50	5.499	57.858	0.03	7.35	246.93	12.199	0	11.304
4/1/2024 4:40	5.494	57.037	0.03	7.356	237.38	12.217	0	11.328
4/1/2024 4:30	5.506	56.766	0.03	7.357	211.01	12.221	0	11.232
4/1/2024 4:20	5.526	57.459	0.03	7.367	234.33	12.213	0	11.208
4/1/2024 4:10	5.553	58.292	0.03	7.351	221.21	12.179	0	11.304
4/1/2024 4:00	5.553	57.726	0.03	7.348	208.22	12.2	0	11.304
4/1/2024 3:50	5.603	59.741	0.03	7.333	200.75	12.154	0	11.304
4/1/2024 3:40	5.609	59.438	0.03	7.311	180.92	12.17	0	11.304
4/1/2024 3:30	5.619	59.839	0.03	7.269	160.56	12.166	0	11.304
4/1/2024 3:20	5.655	61.561	0.03	7.384	264.1	12.099	0	11.208
4/1/2024 3:10	5.671	62.092	0.03	7.366	261.72	12.107	0	11.328
4/1/2024 3:00	5.671	61.199	0.03	7.34	256.73	12.131	0	11.328
4/1/2024 2:50	5.691	61.375	0.03	7.366	246.6	12.11	0	11.328
4/1/2024 2:40	5.741	64.141	0.03	7.356	230.65	12.063	0	11.328
4/1/2024 2:30	5.76	63.794	0.03	7.363	216.2	12.075	0	11.328
4/1/2024 2:20	5.795	65.516	0.03	7.36	243.17	12.027	0	11.304
4/1/2024 2:10	5.771	63.464	0.03	7.354	233.03	12.094	0	11.304
4/1/2024 2:00	5.736	61.131	0.03	7.357	220.24	12.141	0	11.304
4/1/2024 1:50	5.734	59.058	0.03	7.351	198.74	12.163	0	11.304
4/1/2024 1:40	5.748	59.029	0.03	7.319	174.96	12.171	0	11.328
4/1/2024 1:30	5.794	60.709	0.03	7.271	159.01	12.126	0	11.328
4/1/2024 1:20	5.818	61.754	0.03	7.391	256.32	12.107	0	11.328
4/1/2024 1:10	5.831	62.597	0.03	7.368	265.41	12.099	0	11.328
4/1/2024 1:00	5.828	62.228	0.03	7.366	262.06	12.095	0	11.328
4/1/2024 0:50	5.768	58.229	0.03	7.378	257.56	12.186	0	11.328
4/1/2024 0:40	5.769	56.77	0.03	7.382	246.61	12.19	0	11.328
4/1/2024 0:30	5.814	57.943	0.03	7.371	227.2	12.155	0	11.328
4/1/2024 0:20	5.845	58.595	0.03	7.368	240.18	12.137	0	11.328
4/1/2024 0:10	5.87	60.447	0.03	7.353	228.47	12.09	0	11.328
4/1/2024 0:00	5.893	60.919	0.03	7.347	215.46	12.049	0	11.328

BCR DS: Received	Temperature C	Specific Conductivity µS/cm	Salinity PSU	pH pH	ORP mV	Dissolved Oxygen Concentration mg/L	Turbidity NTU	TL Battery V
4/5/2024 23:50	6.222	44.535	0.02	7.211	294.54	11.134	0.576	12.022
4/5/2024 23:40	6.219	44.374	0.02	7.222	292.36	11.138	0	12.022
4/5/2024 23:30	6.214	44.483	0.02	7.189	292.02	11.131	0	11.999
4/5/2024 23:20	6.195	44.774	0.02	7.178	290.28	11.135	0	11.999
4/5/2024 23:10	6.19	44.819	0.02	7.162	289.62	11.135	0	11.999
4/5/2024 23:00	6.172	44.794	0.02	7.207	289.24	11.137	0	12.022
4/5/2024 22:50	6.181	45.23	0.02	7.182	291.11	11.125	0	12.022
4/5/2024 22:40	6.189	44.827	0.02	7.203	291.02	11.142	0	12.022
4/5/2024 22:30	6.183	45.062	0.02	7.18	293.24	11.124	0	12.022
4/5/2024 22:20	6.159	45.686	0.02	7.168	294.78	11.132	0	11.999
4/5/2024 22:10	6.146	45.796	0.02	7.202	293.97	11.144	0	11.999
4/5/2024 22:00	6.148	45.612	0.02	7.166	298.58	11.138	0	11.999
4/5/2024 21:50	6.149	45.922	0.02	7.206	295.43	11.144	0	11.999
4/5/2024 21:40	6.153	45.646	0.02	7.179	295.89	11.161	0	12.022
4/5/2024 21:30	6.135	45.88	0.02	7.19	293.92	11.165	0	11.927
4/5/2024 21:20	6.143	45.797	0.02	7.202	292.71	11.168	0	11.999
4/5/2024 21:10	6.125	46.216	0.02	7.207	291.15	11.188	0	12.022
4/5/2024 21:00	6.151	46.559	0.02	7.193	293.77	11.182	0	12.022
4/5/2024 20:50	6.146	46.647	0.02	7.2	293.97	11.183	0	12.022
4/5/2024 20:40	6.143	46.056	0.02	7.215	293.85	11.229	0	12.022
4/5/2024 20:30	6.116	46.098	0.02	7.235	292.94	11.245	0	11.999
4/5/2024 20:20	6.127	45.801	0.02	7.218	293.88	11.264	0	12.022
4/5/2024 20:10	6.13	45.824	0.02	7.19	295.82	11.278	0	11.927
4/5/2024 20:00	6.165	45.697	0.02	7.222	296.77	11.291	0	12.022
4/5/2024 19:50	6.167	46.121	0.02	7.22	294.74	11.306	0	12.022
4/5/2024 19:40	6.199	46.274	0.02	7.26	290.66	11.311	0	12.022
4/5/2024 19:30	6.22	46.611	0.02	7.235	289.87	11.327	0	12.022
4/5/2024 19:20	6.256	46.678	0.02	7.231	288.36	11.332	0	12.022
4/5/2024 19:10	6.281	46.59	0.02	7.234	286.55	11.346	0	12.022
4/5/2024 19:00	6.301	46.47	0.02	7.22	289.49	11.356	0	12.022
4/5/2024 18:50	6.332	46.43	0.02	7.233	289.35	11.358	0	12.022
4/5/2024 18:40	6.358	46.66	0.02	7.243	289.01	11.368	0	11.999
4/5/2024 18:30	6.397	46.763	0.02	7.258	288.43	11.381	0	12.022
4/5/2024 18:20	6.452	46.626	0.02	7.27	288.85	11.379	0	11.999
4/5/2024 18:10	6.511	46.698	0.02	7.263	290.8	11.378	0	12.022
4/5/2024 18:00	6.558	46.953	0.02	7.275	294.91	11.379	0	12.022
4/5/2024 17:50	6.595	46.655	0.02	7.269	294.09	11.396	0	12.022
4/5/2024 17:40	6.678	46.916	0.02	7.296	289.99	11.409	0	12.022
4/5/2024 17:30	6.779	47.179	0.02	7.267	288.75	11.411	0	12.022
4/5/2024 17:20	6.82	46.894	0.02	7.268	287.21	11.411	0	12.022
4/5/2024 17:10	6.868	47.027	0.02	7.261	285.76	11.411	0	12.022
4/5/2024 17:00	6.887	46.909	0.02	7.257	287.41	11.426	0	12.022
4/5/2024 16:50	6.919	47.364	0.02	7.237	288.97	11.415	0	12.022
4/5/2024 16:40	6.952	47.292	0.02	7.25	288.91	11.43	0	12.022
4/5/2024 16:30	6.992	47.511	0.02	7.246	290.22	11.439	0	11.927
4/5/2024 16:20	6.993	47.306	0.02	7.249	291.4	11.438	0	12.022
4/5/2024 16:10	6.973	47.234	0.02	7.26	292.87	11.444	0	12.022

4/5/2024 16:00	6.94	47	0.02	7.241	297.26	11.456	0	12.022
4/5/2024 15:50	6.918	46.977	0.02	7.296	293.09	11.465	0	12.022
4/5/2024 15:40	6.884	47.169	0.02	7.281	293.06	11.473	0	12.022
4/5/2024 15:30	6.839	46.843	0.02	7.287	291.52	11.478	0	12.022
4/5/2024 15:20	6.818	46.93	0.02	7.266	291.17	11.488	0	11.927
4/5/2024 15:10	6.769	46.662	0.02	7.272	289.47	11.492	0	12.022
4/5/2024 15:00	6.725	46.487	0.02	7.248	292.77	11.503	0	12.022
4/5/2024 14:50	6.676	46.108	0.02	7.257	292.78	11.504	0	12.022
4/5/2024 14:40	6.64	46.452	0.02	7.258	293.62	11.501	0	12.022
4/5/2024 14:30	6.588	46.115	0.02	7.248	295.07	11.521	0	11.999
4/5/2024 14:20	6.531	45.954	0.02	7.217	296.43	11.535	0	12.022
4/5/2024 14:10	6.473	45.972	0.02	7.234	296.89	11.539	0	12.022
4/5/2024 14:00	6.425	45.701	0.02	7.257	298.31	11.544	0	12.022
4/5/2024 13:50	6.368	45.844	0.02	7.215	299.62	11.532	0	12.022
4/5/2024 13:40	6.317	46.051	0.02	7.242	296.91	11.547	0	12.022
4/5/2024 13:30	6.256	45.897	0.02	7.247	295.16	11.555	0	11.927
4/5/2024 13:20	6.201	46.145	0.02	7.252	293.52	11.557	0	12.022
4/5/2024 13:10	6.142	45.869	0.02	7.242	292.9	11.568	0	12.022
4/5/2024 13:00	6.077	45.665	0.02	7.226	295.17	11.58	0	11.927
4/5/2024 12:50	6.019	45.795	0.02	7.213	294.87	11.594	0	11.951
4/5/2024 12:40	5.95	45.752	0.02	7.209	294.49	11.591	0	12.022
4/5/2024 12:30	5.882	45.491	0.02	7.24	292.11	11.601	0	11.951
4/5/2024 12:20	5.819	45.561	0.02	7.232	292.45	11.604	0	12.022
4/5/2024 12:10	5.755	45.617	0.02	7.22	293.39	11.602	0	12.022
4/5/2024 12:00	5.684	45.69	0.02	7.232	294.76	11.609	0	12.022
4/5/2024 11:50	5.621	45.709	0.02	7.241	292.76	11.606	0	12.022
4/5/2024 11:40	5.56	45.644	0.02	7.21	292.64	11.626	0	12.022
4/5/2024 11:30	5.494	45.345	0.02	7.235	289.12	11.63	0	12.022
4/5/2024 11:20	5.427	45.404	0.02	7.233	286.56	11.622	0	12.022
4/5/2024 11:10	5.362	45.366	0.02	7.248	282.9	11.63	0	12.022
4/5/2024 11:00	5.302	45.711	0.02	7.236	284.65	11.635	0	12.022
4/5/2024 10:50	5.242	45.763	0.02	7.204	285.78	11.632	0	12.022
4/5/2024 10:40	5.185	45.752	0.02	7.188	286.4	11.615	0	12.022
4/5/2024 10:30	5.135	45.257	0.02	7.195	286.62	11.622	0	12.022
4/5/2024 10:20	5.075	45.155	0.02	7.229	284.73	11.624	0	12.022
4/5/2024 10:10	5.031	45.014	0.02	7.19	290.24	11.612	0	12.022
4/5/2024 10:00	4.967	45.175	0.02	7.2	295.19	11.631	0	11.951
4/5/2024 9:50	4.929	45.024	0.02	7.255	290.64	11.607	0	12.022
4/5/2024 9:40	4.884	44.854	0.02	7.235	289.64	11.611	0	12.022
4/5/2024 9:30	4.852	44.727	0.02	7.225	287.96	11.591	0	12.022
4/5/2024 9:20	4.81	44.608	0.02	7.241	284.1	11.594	0	12.022
4/5/2024 9:10	4.795	44.394	0.02	7.185	284.48	11.593	0	12.022
4/5/2024 9:00	4.776	44.202	0.02	7.206	286.13	11.575	0	12.022
4/5/2024 8:50	4.748	44.231	0.02	7.201	286.55	11.57	0	12.022
4/5/2024 8:40	4.744	44.064	0.02	7.198	286.61	11.564	0	12.022
4/5/2024 8:30	4.737	43.94	0.02	7.2	286.62	11.547	0	12.022
4/5/2024 8:20	4.72	43.976	0.02	7.2	287.32	11.544	0	12.022
4/5/2024 8:10	4.736	44.701	0.02	7.22	286.22	11.516	0	12.022
4/5/2024 8:00	4.761	44.419	0.02	7.212	290.24	11.495	0	11.999
4/5/2024 7:50	4.757	44.518	0.02	7.247	286.47	11.483	0	12.022
4/5/2024 7:40	4.769	45.034	0.02	7.205	285.66	11.474	0	12.022
4/5/2024 7:30	4.792	45.239	0.02	7.237	281.77	11.461	0	12.022

4/5/2024 7:20	4.805	45.648	0.02	7.199	281.46	11.443	0	12.022
4/5/2024 7:10	4.83	45.471	0.02	7.234	277.32	11.454	0	12.022
4/5/2024 7:00	4.867	45.502	0.02	7.18	282.52	11.445	0	12.022
4/5/2024 6:50	4.882	45.641	0.02	7.188	282.63	11.435	0	12.022
4/5/2024 6:40	4.912	45.887	0.02	7.227	281.07	11.427	0	12.022
4/5/2024 6:30	4.927	45.702	0.02	7.25	280.97	11.438	0	12.022
4/5/2024 6:20	4.947	45.681	0.02	7.212	283.86	11.428	0	12.022
4/5/2024 6:10	4.96	45.493	0.02	7.22	285.13	11.437	0	12.022
4/5/2024 6:00	4.996	45.575	0.02	7.217	289.28	11.424	0	11.951
4/5/2024 5:50	5.008	45.635	0.02	7.25	286.49	11.427	0	12.022
4/5/2024 5:40	5.039	45.809	0.02	7.213	287.24	11.413	0	11.951
4/5/2024 5:30	5.058	45.1	0.02	7.233	285.57	11.434	0	12.022
4/5/2024 5:20	5.055	44.537	0.02	7.232	284.08	11.448	0	12.022
4/5/2024 5:10	5.101	44.2	0.02	7.273	280.41	11.42	0	12.022
4/5/2024 5:00	5.133	43.927	0.02	7.194	286.84	11.415	0	11.951
4/5/2024 4:50	5.166	43.275	0.02	7.233	285.99	11.416	0	12.022
4/5/2024 4:40	5.202	42.888	0.02	7.209	287.81	11.404	0	12.022
4/5/2024 4:30	5.25	42.973	0.02	7.25	286.3	11.382	0	12.022
4/5/2024 4:20	5.281	42.68	0.02	7.222	289	11.381	0	11.951
4/5/2024 4:10	5.293	41.992	0.02	7.233	290.96	11.385	0	12.022
4/5/2024 4:00	5.316	41.489	0.02	7.233	297.6	11.388	0	11.951
4/5/2024 3:50	5.325	41.334	0.02	7.219	296.26	11.389	0	11.951
4/5/2024 3:40	5.334	41.287	0.02	7.248	291.19	11.386	0	11.951
4/5/2024 3:30	5.373	41.485	0.02	7.214	288.53	11.36	0	12.022
4/5/2024 3:20	5.382	41.829	0.02	7.216	284.43	11.348	0	12.022
4/5/2024 3:10	5.406	42.077	0.02	7.154	284.03	11.339	0	12.022
4/5/2024 3:00	5.432	42.249	0.02	7.211	285.54	11.337	0	12.022
4/5/2024 2:50	5.413	42.107	0.02	7.207	287.04	11.354	0	12.022
4/5/2024 2:40	5.447	41.854	0.02	7.225	286.25	11.339	0	12.022
4/5/2024 2:30	5.462	42.001	0.02	7.235	285.73	11.346	0	11.951
4/5/2024 2:20	5.482	42.028	0.02	7.171	289.44	11.33	0	12.022
4/5/2024 2:10	5.487	41.712	0.02	7.212	289.18	11.338	0	12.022
4/5/2024 2:00	5.51	41.778	0.02	7.176	295.25	11.323	0	12.022
4/5/2024 1:50	5.516	42.09	0.02	7.202	291.29	11.322	0	12.022
4/5/2024 1:40	5.536	42.061	0.02	7.211	288.41	11.321	0	12.022
4/5/2024 1:30	5.536	42.091	0.02	7.181	288.49	11.316	0	12.022
4/5/2024 1:20	5.541	41.672	0.02	7.205	284.31	11.317	0	12.022
4/5/2024 1:10	5.539	41.597	0.02	7.19	282.06	11.325	0	12.022
4/5/2024 1:00	5.541	41.6	0.02	7.193	287.8	11.317	0	12.022
4/5/2024 0:50	5.551	41.811	0.02	7.207	290.22	11.318	0	12.022
4/5/2024 0:40	5.546	41.954	0.02	7.164	292.91	11.314	0	12.022
4/5/2024 0:30	5.56	41.975	0.02	7.177	292.34	11.329	0	12.022
4/5/2024 0:20	5.563	41.893	0.02	7.186	292.89	11.312	0	12.022
4/5/2024 0:10	5.559	41.517	0.02	7.185	293.46	11.33	0	12.022
4/5/2024 0:00	5.569	41.827	0.02	7.167	296.58	11.316	0	12.022
4/4/2024 23:50	5.588	41.839	0.02	7.182	293.95	11.316	0	12.022
4/4/2024 23:40	5.586	41.834	0.02	7.222	289.36	11.324	0	12.022
4/4/2024 23:30	5.595	42.809	0.02	7.214	287.01	11.308	0	12.022
4/4/2024 23:20	5.602	42.75	0.02	7.124	289.13	11.314	0	12.022
4/4/2024 23:10	5.614	42.807	0.02	7.179	283.76	11.314	0	12.022
4/4/2024 23:00	5.618	43.518	0.02	7.202	283.4	11.309	0	12.022
4/4/2024 22:50	5.615	43.849	0.02	7.181	284.33	11.302	0	12.022

4/4/2024 22:40	5.613	43.462	0.02	7.169	285.99	11.317	0	12.022
4/4/2024 22:30	5.619	43.453	0.02	7.171	286.77	11.308	0	12.022
4/4/2024 22:20	5.618	43.509	0.02	7.197	286.13	11.309	0	12.022
4/4/2024 22:10	5.608	43.626	0.02	7.152	289.47	11.317	0	12.046
4/4/2024 22:00	5.619	43.425	0.02	7.189	290.3	11.317	0	12.022
4/4/2024 21:50	5.61	43.776	0.02	7.193	288.54	11.334	0	12.022
4/4/2024 21:40	5.628	43.657	0.02	7.214	285.6	11.337	0	12.022
4/4/2024 21:30	5.631	43.646	0.02	7.202	284.36	11.339	0	12.022
4/4/2024 21:20	5.641	43.783	0.02	7.211	280.97	11.352	0	12.022
4/4/2024 21:10	5.659	43.72	0.02	7.217	278.42	11.364	0	12.022
4/4/2024 21:00	5.676	43.705	0.02	7.21	281.1	11.37	0	12.022
4/4/2024 20:50	5.695	43.623	0.02	7.18	283.55	11.371	0	12.022
4/4/2024 20:40	5.711	43.723	0.02	7.22	282.36	11.395	0	12.022
4/4/2024 20:30	5.732	43.732	0.02	7.197	284.08	11.395	0	12.046
4/4/2024 20:20	5.737	43.942	0.02	7.23	284.46	11.419	0	12.022
4/4/2024 20:10	5.757	44.466	0.02	7.233	286.37	11.428	0	12.022
4/4/2024 20:00	5.774	44.251	0.02	7.212	293.3	11.448	0	12.022
4/4/2024 19:50	5.786	44.308	0.02	7.224	291.53	11.462	0	12.022
4/4/2024 19:40	5.802	44.173	0.02	7.27	287.66	11.483	0	12.022
4/4/2024 19:30	5.808	44.342	0.02	7.251	286.32	11.494	0	12.046
4/4/2024 19:20	5.837	44.365	0.02	7.234	285.02	11.512	0	12.022
4/4/2024 19:10	5.819	44.218	0.02	7.242	282.44	11.526	0	12.022
4/4/2024 19:00	5.829	44.204	0.02	7.25	284.82	11.539	0	12.022
4/4/2024 18:50	5.85	44.364	0.02	7.272	284.03	11.552	0	12.022
4/4/2024 18:40	5.856	44.618	0.02	7.257	285.79	11.561	0	12.022
4/4/2024 18:30	5.842	44.635	0.02	7.27	286.39	11.581	0	12.022
4/4/2024 18:20	5.868	44.236	0.02	7.255	288.88	11.59	0	12.022
4/4/2024 18:10	5.853	43.963	0.02	7.189	293.91	11.606	0	12.022
4/4/2024 18:00	5.857	44.304	0.02	7.275	293.06	11.621	0	12.022
4/4/2024 17:50	5.85	44.259	0.02	7.296	291.37	11.636	0	11.951
4/4/2024 17:40	5.843	43.763	0.02	7.298	289.78	11.648	0	12.022
4/4/2024 17:30	5.838	43.569	0.02	7.299	287.4	11.669	0	12.022
4/4/2024 17:20	5.845	43.733	0.02	7.285	285.55	11.659	0	12.022
4/4/2024 17:10	5.832	44.012	0.02	7.316	281.99	11.674	0	12.022
4/4/2024 17:00	5.837	43.925	0.02	7.277	287.33	11.68	0	12.022
4/4/2024 16:50	5.827	43.439	0.02	7.264	289.53	11.698	0	12.022
4/4/2024 16:40	5.826	43.464	0.02	7.299	288.36	11.703	0	12.022
4/4/2024 16:30	5.82	43.496	0.02	7.285	289.34	11.72	0	12.022
4/4/2024 16:20	5.808	43.39	0.02	7.289	289.16	11.725	0	12.022
4/4/2024 16:10	5.809	43.551	0.02	7.255	291.56	11.737	0	12.022
4/4/2024 16:00	5.802	43.608	0.02	7.272	292.68	11.738	0	11.951
4/4/2024 15:50	5.796	43.278	0.02	7.274	290.49	11.75	0	12.022
4/4/2024 15:40	5.786	43.243	0.02	7.304	287.05	11.767	0	12.022
4/4/2024 15:30	5.779	44.074	0.02	7.295	284.66	11.767	0	12.022
4/4/2024 15:20	5.779	43.575	0.02	7.282	283.49	11.784	0	12.022
4/4/2024 15:10	5.787	43.255	0.02	7.314	281.68	11.793	0	11.951
4/4/2024 15:00	5.788	42.739	0.02	7.281	284.59	11.81	0	11.951
4/4/2024 14:50	5.796	42.098	0.02	7.278	285.61	11.827	0	12.022
4/4/2024 14:40	5.805	42.577	0.02	7.303	285.7	11.828	0	12.022
4/4/2024 14:30	5.809	42.309	0.02	7.319	287.25	11.839	0	12.046
4/4/2024 14:20	5.781	42.853	0.02	7.328	286.83	11.842	0	12.022
4/4/2024 14:10	5.724	41.835	0.02	7.287	289.79	11.864	0	12.022

4/4/2024 14:00	5.676	42.411	0.02	7.209	297.41	11.841	0	12.046
4/4/2024 13:50	5.625	42.338	0.02	7.274	294.55	11.864	0	12.022
4/4/2024 13:40	5.594	40.94	0.02	7.196	297.66	11.892	0	12.022
4/4/2024 13:30	5.57	40.264	0.02	7.3	291.82	11.907	0	12.046
4/4/2024 13:20	5.554	40.493	0.02	7.265	290.62	11.898	0	12.022
4/4/2024 13:10	5.52	40.47	0.02	7.242	289.77	11.917	0	11.951
4/4/2024 13:00	5.476	40.33	0.02	7.263	291.4	11.906	0	12.022
4/4/2024 12:50	5.412	39.781	0.02	7.272	291.2	11.929	0	12.022
4/4/2024 12:40	5.35	39.945	0.02	7.278	290.97	11.95	0	12.022
4/4/2024 12:30	5.277	39.816	0.02	7.28	290.95	11.961	0	12.022
4/4/2024 12:20	5.201	39.636	0.02	7.241	293.75	11.972	0	12.022
4/4/2024 12:10	5.133	39.291	0.02	7.258	293.97	11.974	0	12.022
4/4/2024 12:00	5.065	39.385	0.02	7.254	297.47	11.985	0	12.022
4/4/2024 11:50	5	39.205	0.02	7.252	295.82	11.997	0	12.022
4/4/2024 11:40	4.914	39.019	0.02	7.22	295.36	12.011	0	12.022
4/4/2024 11:30	4.843	39.337	0.02	7.211	293.5	12.005	0	12.046
4/4/2024 11:20	4.769	39.193	0.02	7.245	289.18	12.024	0	12.022
4/4/2024 11:10	4.707	39.286	0.02	7.211	288.35	12.017	0	12.022
4/4/2024 11:00	4.624	38.976	0.02	7.212	288.9	12.034	0	12.046
4/4/2024 10:50	4.572	39.395	0.02	7.245	287.44	12.018	0	12.046
4/4/2024 10:40	4.521	39.155	0.02	7.194	289.62	12.022	0	12.046
4/4/2024 10:30	4.481	39.373	0.02	7.172	291.18	12.033	0	12.046
4/4/2024 10:20	4.462	39.487	0.02	7.249	288.6	12.019	0	12.022
4/4/2024 10:10	4.434	39.575	0.02	7.221	290.41	12.027	0	12.022
4/4/2024 10:00	4.421	39.812	0.02	7.221	294.75	12.01	0	11.951
4/4/2024 9:50	4.39	39.302	0.02	7.277	292.24	12.025	0	12.022
4/4/2024 9:40	4.376	39.417	0.02	7.237	291.06	12.004	0	12.022
4/4/2024 9:30	4.348	39.242	0.02	7.207	290.77	11.998	0	12.022
4/4/2024 9:20	4.334	39.267	0.02	7.223	287.37	12.015	0	11.951
4/4/2024 9:10	4.317	39.58	0.02	7.233	284.71	11.99	0	12.022
4/4/2024 9:00	4.302	39.088	0.02	7.233	286.82	11.993	0	11.951
4/4/2024 8:50	4.295	38.925	0.02	7.182	289.47	11.978	0	12.022
4/4/2024 8:40	4.284	39.135	0.02	7.211	289.97	11.962	0	12.046
4/4/2024 8:30	4.273	39.208	0.02	7.252	291.13	11.957	0	12.046
4/4/2024 8:20	4.266	39.334	0.02	7.249	290.41	11.954	0	12.046
4/4/2024 8:10	4.264	39.632	0.02	7.237	292.41	11.937	0	12.046
4/4/2024 8:00	4.265	39.924	0.02	7.223	298.2	11.915	0	12.022
4/4/2024 7:50	4.253	40.015	0.02	7.235	296	11.903	0	12.046
4/4/2024 7:40	4.261	40.208	0.02	7.243	291.99	11.902	0	12.046
4/4/2024 7:30	4.271	40.715	0.02	7.203	290.14	11.885	0	11.951
4/4/2024 7:20	4.275	40.553	0.02	7.229	288.68	11.881	0	12.022
4/4/2024 7:10	4.27	39.882	0.02	7.193	288.52	11.89	0	12.046
4/4/2024 7:00	4.277	39.527	0.02	7.197	291.49	11.892	0	12.046
4/4/2024 6:50	4.286	39.141	0.02	7.204	290.68	11.899	0	12.046
4/4/2024 6:40	4.287	38.449	0.02	7.167	293.94	11.907	0	11.951
4/4/2024 6:30	4.291	37.848	0.02	7.187	291.32	11.91	0	12.046
4/4/2024 6:20	4.295	37.373	0.02	7.192	290.89	11.897	0	12.046
4/4/2024 6:10	4.307	37.035	0.02	7.178	292.17	11.896	0	12.022
4/4/2024 6:00	4.324	36.649	0.02	7.158	299.68	11.905	0	11.951
4/4/2024 5:50	4.321	35.669	0.02	7.166	298.12	11.887	0	12.022
4/4/2024 5:40	4.327	35.584	0.02	7.064	298.71	11.903	0	12.046
4/4/2024 5:30	4.332	35.799	0.02	7.187	291.78	11.898	0	12.046

4/4/2024 5:20	4.348	35.673	0.02	7.105	291.98	11.906	0	12.046
4/4/2024 5:10	4.365	35.457	0.02	7.156	288.23	11.906	0	12.046
4/4/2024 5:00	4.38	34.874	0.01	7.162	291.27	11.906	0	12.046
4/4/2024 4:50	4.387	34.957	0.01	7.186	289.89	11.905	0	12.046
4/4/2024 4:40	4.412	34.68	0.01	7.188	291.53	11.904	0	12.046
4/4/2024 4:30	4.426	34.587	0.01	7.195	292.45	11.899	0	12.046
4/4/2024 4:20	4.449	34.33	0.01	7.118	299.24	11.894	0	12.046
4/4/2024 4:10	4.463	33.908	0.01	7.174	296.92	11.904	0	12.046
4/4/2024 4:00	4.477	33.592	0.01	7.181	302.89	11.905	0	12.046
4/4/2024 3:50	4.496	33.595	0.01	7.2	300.34	11.895	0	12.046
4/4/2024 3:40	4.515	33.602	0.01	7.153	299.84	11.891	0	12.046
4/4/2024 3:30	4.548	33.453	0.01	7.191	294.95	11.875	0	12.046
4/4/2024 3:20	4.578	33.527	0.01	7.152	295.64	11.868	0	12.046
4/4/2024 3:10	4.608	33.773	0.01	7.184	288.08	11.845	0	12.046
4/4/2024 3:00	4.62	34.058	0.01	7.148	292.1	11.844	0	12.046
4/4/2024 2:50	4.65	33.961	0.01	7.221	289.81	11.837	0	12.046
4/4/2024 2:40	4.666	33.979	0.01	7.101	295.82	11.832	0	12.046
4/4/2024 2:30	4.696	33.94	0.01	7.185	291.43	11.825	0	12.022
4/4/2024 2:20	4.697	34.12	0.01	7.172	292.4	11.835	0	12.046
4/4/2024 2:10	4.729	33.903	0.01	7.172	292.66	11.815	0	11.951
4/4/2024 2:00	4.74	34.047	0.01	7.175	297.38	11.821	0	12.046
4/4/2024 1:50	4.75	34.244	0.01	7.158	295.24	11.818	0	12.046
4/4/2024 1:40	4.748	34.671	0.01	7.218	291.09	11.815	0	12.046
4/4/2024 1:30	4.758	34.786	0.01	7.216	287.1	11.81	0	12.046
4/4/2024 1:20	4.794	34.655	0.01	7.134	288.54	11.806	0	12.046
4/4/2024 1:10	4.805	34.84	0.01	7.252	281.08	11.793	0	12.046
4/4/2024 1:00	4.832	34.842	0.01	7.176	283.64	11.778	0	12.046
4/4/2024 0:50	4.849	34.726	0.01	7.185	284.02	11.794	0	12.046
4/4/2024 0:40	4.877	35.046	0.01	7.182	282.23	11.778	0	12.046
4/4/2024 0:30	4.897	35.168	0.01	7.171	283.98	11.771	0	12.046
4/4/2024 0:20	4.916	35.043	0.01	7.179	281.31	11.769	1.24	12.046
4/4/2024 0:10	4.93	35.207	0.01	7.256	280.28	11.758	0	12.046
4/4/2024 0:00	4.95	35.005	0.01	7.151	290.39	11.754	0	12.046
4/3/2024 23:50	4.966	35.191	0.01	7.181	287.69	11.757	0	12.046
4/3/2024 23:40	4.976	34.947	0.01	7.187	285.68	11.758	3.913	12.046
4/3/2024 23:30	4.99	34.903	0.01	7.17	284.88	11.763	0	12.046
4/3/2024 23:20	5.005	34.814	0.01	7.195	279.19	11.763	0	11.975
4/3/2024 23:10	5.029	35.026	0.01	7.185	276.02	11.76	2.619	12.046
4/3/2024 23:00	5.051	35.025	0.01	7.17	279.5	11.752	6.599	12.046
4/3/2024 22:50	5.059	34.96	0.01	7.178	280.7	11.758	0	12.046
4/3/2024 22:40	5.071	34.969	0.01	7.206	279.29	11.755	0	11.975
4/3/2024 22:30	5.078	34.755	0.01	7.146	283.28	11.766	0	12.046
4/3/2024 22:20	5.095	34.446	0.01	7.191	283.64	11.763	0	12.046
4/3/2024 22:10	5.112	34.602	0.01	7.156	288.53	11.762	2.594	12.046
4/3/2024 22:00	5.115	34.964	0.01	7.172	293.24	11.756	0	12.046
4/3/2024 21:50	5.133	34.44	0.01	7.185	291.38	11.77	17.094	12.046
4/3/2024 21:40	5.133	34.339	0.01	7.187	289.92	11.771	1.45	12.046
4/3/2024 21:30	5.137	34.308	0.01	7.15	287.99	11.783	10.746	12.046
4/3/2024 21:20	5.142	34.377	0.01	7.179	285.06	11.797	2.123	12.046
4/3/2024 21:10	5.151	34.387	0.01	7.17	283.03	11.795	10.296	12.046
4/3/2024 21:00	5.159	34.301	0.01	7.173	286.26	11.802	3.053	12.046
4/3/2024 20:50	5.16	34.082	0.01	7.166	285.18	11.816	10.886	11.975

4/3/2024 20:40	5.162	33.48	0.01	7.14	288.55	11.835	2.027	12.046
4/3/2024 20:30	5.162	33.639	0.01	7.142	289.97	11.844	29.871	12.046
4/3/2024 20:20	5.169	33.711	0.01	7.206	286.2	11.853	16.313	12.046
4/3/2024 20:10	5.177	33.834	0.01	7.243	287.4	11.87	6.731	12.046
4/3/2024 20:00	5.181	33.461	0.01	7.227	292.28	11.903	34.129	12.046
4/3/2024 19:50	5.187	33.43	0.01	7.259	290.16	11.897	18.86	12.046
4/3/2024 19:40	5.199	33.183	0.01	7.211	289.87	11.912	28.358	12.046
4/3/2024 19:30	5.205	32.896	0.01	7.163	289.48	11.925	19.553	12.046
4/3/2024 19:20	5.219	32.933	0.01	7.207	284.32	11.938	31.181	12.046
4/3/2024 19:10	5.233	32.866	0.01	7.245	279.81	11.951	22.746	11.975
4/3/2024 19:00	5.248	32.868	0.01	7.178	283.93	11.947	22.564	12.046
4/3/2024 18:50	5.256	32.627	0.01	7.216	283.23	11.963	33.025	12.046
4/3/2024 18:40	5.271	32.692	0.01	7.249	282.05	11.969	55.384	12.046
4/3/2024 18:30	5.293	32.579	0.01	7.242	284.52	11.977	48.726	11.975
4/3/2024 18:20	5.315	32.159	0.01	7.189	289.23	11.986	41.573	12.046
4/3/2024 18:10	5.34	32.133	0.01	7.194	291.01	11.996	37.877	12.046
4/3/2024 18:00	5.367	32.265	0.01	7.231	293.23	11.997	37.042	12.046
4/3/2024 17:50	5.387	32.203	0.01	7.208	294.17	12.009	44.032	12.046
4/3/2024 17:40	5.413	32.061	0.01	7.233	291.01	12.019	38.868	12.046
4/3/2024 17:30	5.456	32.089	0.01	7.252	288.2	12.021	35.649	12.046
4/3/2024 17:20	5.506	31.909	0.01	7.25	284.4	12.033	49.195	12.046
4/3/2024 17:10	5.54	31.979	0.01	7.221	283.49	12.045	60.522	11.975
4/3/2024 17:00	5.577	31.874	0.01	7.23	287.94	12.068	53.237	12.046
4/3/2024 16:50	5.591	31.731	0.01	7.212	289.01	12.078	64.809	12.046
4/3/2024 16:40	5.584	31.832	0.01	7.287	286.21	12.083	57.699	12.046
4/3/2024 16:30	5.576	31.806	0.01	7.281	287.49	12.091	63.375	12.046
4/3/2024 16:20	5.573	31.843	0.01	7.242	288.13	12.102	37.518	12.046
4/3/2024 16:10	5.563	31.721	0.01	7.228	289.46	12.1	56.605	12.046
4/3/2024 16:00	5.549	31.749	0.01	7.254	292.56	12.111	75.308	12.046
4/3/2024 15:50	5.54	31.811	0.01	7.186	293.84	12.112	63.5	12.046
4/3/2024 15:40	5.522	31.494	0.01	7.248	289.83	12.128	66.885	12.046
4/3/2024 15:30	5.504	31.437	0.01	7.198	289.61	12.138	51.691	12.046
4/3/2024 15:20	5.486	31.648	0.01	7.249	285.79	12.146	60.397	12.046
4/3/2024 15:10	5.454	31.433	0.01	7.245	281.96	12.147	52.614	12.046
4/3/2024 15:00	5.415	31.038	0.01	7.152	288.72	12.175	62.999	12.046
4/3/2024 14:50	5.371	30.938	0.01	7.166	290.1	12.181	30.801	12.07
4/3/2024 14:40	5.34	31.237	0.01	7.207	289.02	12.188	60.024	12.046
4/3/2024 14:30	5.311	31.543	0.01	7.241	287.66	12.193	83.655	12.046
4/3/2024 14:20	5.273	31.145	0.01	7.147	293.11	12.212	53.925	12.046
4/3/2024 14:10	5.243	30.868	0.01	7.19	292.25	12.216	36.537	12.046
4/3/2024 14:00	5.228	31.189	0.01	7.21	294.12	12.21	46.614	12.046
4/3/2024 13:50	5.215	31.071	0.01	7.169	295.27	12.225	67.928	12.046
4/3/2024 13:40	5.209	30.909	0.01	7.153	295.04	12.226	40.514	12.046
4/3/2024 13:30	5.231	31.253	0.01	7.22	288.67	12.228	64.163	12.046
4/3/2024 13:20	5.249	31.305	0.01	7.153	289.12	12.227	46.449	12.046
4/3/2024 13:10	5.272	31.234	0.01	7.123	287.91	12.237	40.231	12.046
4/3/2024 13:00	5.303	31.556	0.01	7.225	284.41	12.242	49.291	12.046
4/3/2024 12:50	5.286	31.3	0.01	7.2	285.49	12.262	51.357	12.046
4/3/2024 12:40	5.24	31.123	0.01	7.162	288.94	12.264	54.502	12.046
4/3/2024 12:30	5.187	31.019	0.01	7.216	286.16	12.27	54.363	12.046
4/3/2024 12:20	5.118	31.161	0.01	7.192	286.98	12.275	32.302	12.046
4/3/2024 12:10	5.064	30.929	0.01	7.194	290.73	12.273	50.707	12.046

4/3/2024 12:00	4.994	31.313	0.01	7.213	293.3	12.295	59.401	11.975
4/3/2024 11:50	4.929	31.185	0.01	7.215	291.97	12.309	44.004	12.046
4/3/2024 11:40	4.879	31.25	0.01	7.211	289.32	12.291	56.506	12.046
4/3/2024 11:30	4.824	31.8	0.01	7.182	287.49	12.311	50.08	12.046
4/3/2024 11:20	4.797	31.573	0.01	7.199	284.93	12.297	40.288	12.046
4/3/2024 11:10	4.77	31.558	0.01	7.185	282.42	12.302	45.786	12.046
4/3/2024 11:00	4.734	31.041	0.01	7.122	287.39	12.324	44.283	11.975
4/3/2024 10:50	4.716	31.11	0.01	7.209	284.7	12.318	46.198	12.046
4/3/2024 10:40	4.679	31.5	0.01	7.174	288.76	12.338	36.759	12.046
4/3/2024 10:30	4.668	31.614	0.01	7.209	288.28	12.321	44.601	12.046
4/3/2024 10:20	4.64	31.785	0.01	7.186	290.42	12.317	43.552	12.046
4/3/2024 10:10	4.603	31.972	0.01	7.166	292.82	12.337	41.605	12.046
4/3/2024 10:00	4.576	31.946	0.01	7.172	296.23	12.329	47.905	12.046
4/3/2024 9:50	4.554	31.69	0.01	7.169	295.59	12.351	49.907	12.046
4/3/2024 9:40	4.553	31.522	0.01	7.194	292.54	12.332	51.22	12.046
4/3/2024 9:30	4.529	31.694	0.01	7.171	290.97	12.335	51.985	12.046
4/3/2024 9:20	4.527	31.935	0.01	7.103	290.45	12.3	34.011	12.046
4/3/2024 9:10	4.495	32.119	0.01	7.184	284.08	12.323	34.107	12.046
4/3/2024 9:00	4.477	31.884	0.01	7.132	290.8	12.337	51.121	12.046
4/3/2024 8:50	4.469	31.767	0.01	7.129	290.17	12.318	31.283	12.046
4/3/2024 8:40	4.461	31.944	0.01	7.192	288.4	12.317	42.448	12.046
4/3/2024 8:30	4.446	31.661	0.01	7.191	289.84	12.318	12.56	12.046
4/3/2024 8:20	4.441	31.422	0.01	7.199	291.75	12.31	36.466	12.046
4/3/2024 8:10	4.442	31.281	0.01	7.142	297.03	12.302	30.264	12.046
4/3/2024 8:00	4.439	31.575	0.01	7.175	300.54	12.294	15.85	11.975
4/3/2024 7:50	4.437	31.819	0.01	7.127	301.14	12.302	21.721	12.046
4/3/2024 7:40	4.447	31.659	0.01	7.157	299.31	12.3	53.435	12.046
4/3/2024 7:30	4.452	31.657	0.01	7.169	296.04	12.305	17.887	12.046
4/3/2024 7:20	4.451	31.923	0.01	7.206	292.41	12.298	14.687	12.046
4/3/2024 7:10	4.45	31.729	0.01	7.162	292.77	12.324	11.759	12.046
4/3/2024 7:00	4.449	31.197	0.01	7.173	294.38	12.33	47.426	11.975
4/3/2024 6:50	4.46	31.358	0.01	7.177	291.94	12.321	23.26	12.046
4/3/2024 6:40	4.479	31.581	0.01	7.177	292.86	12.319	7.977	12.046
4/3/2024 6:30	4.479	31.816	0.01	7.133	295.64	12.321	4.081	12.046
4/3/2024 6:20	4.511	32.018	0.01	7.217	291.25	12.303	20.609	12.07
4/3/2024 6:10	4.532	32.511	0.01	7.184	294.56	12.309	6.463	12.07
4/3/2024 6:00	4.521	32.487	0.01	7.225	297.77	12.335	14.821	12.07
4/3/2024 5:50	4.54	32.463	0.01	7.172	298.94	12.328	30.769	11.975
4/3/2024 5:40	4.549	32.071	0.01	7.207	296.54	12.331	10.761	12.07
4/3/2024 5:30	4.567	32.274	0.01	7.192	294.45	12.337	8.729	12.07
4/3/2024 5:20	4.59	32.362	0.01	7.193	290.5	12.339	19.363	12.07
4/3/2024 5:10	4.611	33.027	0.01	7.235	284.35	12.332	29.778	12.07
4/3/2024 5:00	4.639	33.445	0.01	7.179	291.14	12.328	23.223	12.07
4/3/2024 4:50	4.67	33.989	0.01	7.23	289.58	12.313	23.802	12.07
4/3/2024 4:40	4.706	34.12	0.01	7.232	290.86	12.306	19.463	12.07
4/3/2024 4:30	4.731	34.361	0.01	7.25	290.38	12.292	17.478	12.046
4/3/2024 4:20	4.754	34.577	0.01	7.278	289.6	12.302	23.201	11.975
4/3/2024 4:10	4.775	35.055	0.01	7.228	294.25	12.299	13.03	12.07
4/3/2024 4:00	4.806	35.493	0.02	7.206	299.4	12.294	31.238	12.046
4/3/2024 3:50	4.827	35.801	0.02	7.263	295.76	12.297	24.612	12.07
4/3/2024 3:40	4.861	36.032	0.02	7.28	292.74	12.281	43.245	12.07
4/3/2024 3:30	4.892	35.961	0.02	7.235	293.78	12.267	40.49	12.046

4/3/2024 3:20	4.923	36.268	0.02	7.271	288.55	12.257	39.361	12.07
4/3/2024 3:10	4.956	36.769	0.02	7.325	283.15	12.253	35.203	12.07
4/3/2024 3:00	4.998	37.404	0.02	7.258	289.24	12.231	45.458	12.07
4/3/2024 2:50	5.032	37.379	0.02	7.298	288.07	12.219	23.659	12.07
4/3/2024 2:40	5.067	37.788	0.02	7.275	290.57	12.204	37.878	12.07
4/3/2024 2:30	5.118	38.301	0.02	7.283	291.17	12.18	29.903	12.07
4/3/2024 2:20	5.159	38.301	0.02	7.284	293.08	12.154	43.847	12.07
4/3/2024 2:10	5.21	38.382	0.02	7.295	292.7	12.12	54.809	12.07
4/3/2024 2:00	5.269	38.954	0.02	7.297	296.35	12.095	89.129	12.07
4/3/2024 1:50	5.319	39.471	0.02	7.251	298.59	12.069	57.025	12.07
4/3/2024 1:40	5.377	40.43	0.02	7.327	292.28	12.036	80.745	12.07
4/3/2024 1:30	5.431	40.816	0.02	7.316	290.86	11.983	68.183	12.07
4/3/2024 1:20	5.47	41.553	0.02	7.344	287.33	11.977	55.399	12.07
4/3/2024 1:10	5.516	41.891	0.02	7.336	285.88	11.932	63.454	12.07
4/3/2024 1:00	5.56	42.216	0.02	7.304	290.53	11.903	41.542	12.07
4/3/2024 0:50	5.614	42.55	0.02	7.377	287.49	11.854	46.579	12.07
4/3/2024 0:40	5.662	42.782	0.02	7.332	290.91	11.812	44.813	11.975
4/3/2024 0:30	5.712	43.516	0.02	7.36	289.82	11.773	38.679	12.07
4/3/2024 0:20	5.76	44.022	0.02	7.321	292.12	11.723	57.833	12.07
4/3/2024 0:10	5.827	45.19	0.02	7.337	291.88	11.662	46.59	12.07
4/3/2024 0:00	5.869	45.846	0.02	7.343	292.81	11.625	34.472	11.975
4/2/2024 23:50	5.922	46.464	0.02	7.343	291.81	11.567	49.229	12.07
4/2/2024 23:40	5.952	46.745	0.02	7.343	290.82	11.536	27.901	12.07
4/2/2024 23:30	5.994	47.431	0.02	7.352	288.49	11.491	36.027	12.07
4/2/2024 23:20	6.015	47.793	0.02	7.321	288.23	11.471	70.842	12.07
4/2/2024 23:10	6.054	48.412	0.02	7.305	287.9	11.442	9.052	12.07
4/2/2024 23:00	6.084	48.388	0.02	7.295	289.75	11.405	14.936	12.07
4/2/2024 22:50	6.107	48.628	0.02	7.276	291.4	11.378	0.736	11.999
4/2/2024 22:40	6.126	48.722	0.02	7.225	294.27	11.365	0	12.07
4/2/2024 22:30	6.15	48.89	0.02	7.279	291.98	11.348	0	12.07
4/2/2024 22:20	6.174	49.54	0.02	7.288	291.43	11.324	0	11.999
4/2/2024 22:10	6.203	50.111	0.02	7.287	291.32	11.284	0	12.07
4/2/2024 22:00	6.219	50.38	0.02	7.273	293.31	11.283	0	12.07
4/2/2024 21:50	6.235	50.531	0.02	7.257	293.06	11.261	0	12.07
4/2/2024 21:40	6.245	50.722	0.02	7.253	292.32	11.251	0	12.07
4/2/2024 21:30	6.261	50.439	0.02	7.296	288.91	11.238	0	12.07
4/2/2024 21:20	6.281	50.643	0.02	7.302	287.33	11.232	0	12.07
4/2/2024 21:10	6.286	50.704	0.02	7.255	290.03	11.225	0	12.07
4/2/2024 21:00	6.302	50.513	0.02	7.266	292.12	11.219	0	11.999
4/2/2024 20:50	6.323	50.645	0.02	7.242	294.12	11.205	0	12.07
4/2/2024 20:40	6.329	50.888	0.02	7.252	294.72	11.2	0	12.07
4/2/2024 20:30	6.347	50.526	0.02	7.262	295	11.201	0	12.07
4/2/2024 20:20	6.364	50.561	0.02	7.263	295.28	11.2	0	12.07
4/2/2024 20:10	6.384	50.661	0.02	7.274	295.44	11.199	0	12.07
4/2/2024 20:00	6.414	50.288	0.02	7.267	297.08	11.203	0	12.07
4/2/2024 19:50	6.423	50.267	0.02	7.274	295.53	11.195	0	12.07
4/2/2024 19:40	6.433	50.107	0.02	7.285	294.04	11.198	0	11.999
4/2/2024 19:30	6.448	50.214	0.02	7.262	294.33	11.2	0	12.07
4/2/2024 19:20	6.457	50.181	0.02	7.256	293.72	11.199	0	12.07
4/2/2024 19:10	6.462	50.102	0.02	7.273	292.32	11.204	9.964	12.07
4/2/2024 19:00	6.465	50.009	0.02	7.257	295.15	11.212	0	11.999
4/2/2024 18:50	6.461	50.225	0.02	7.264	295.36	11.208	0	12.07

4/2/2024 18:40	6.46	50.159	0.02	7.254	296.44	11.215	0	12.07
4/2/2024 18:30	6.455	50.296	0.02	7.265	296.37	11.226	0	12.07
4/2/2024 18:20	6.455	50.25	0.02	7.269	296.21	11.224	0	12.07
4/2/2024 18:10	6.451	50.53	0.02	7.275	296.33	11.233	0	12.07
4/2/2024 18:00	6.447	50.733	0.02	7.252	299.23	11.234	0	12.07
4/2/2024 17:50	6.447	50.712	0.02	7.274	297.44	11.243	0	12.07
4/2/2024 17:40	6.451	50.623	0.02	7.303	295.13	11.252	0	12.07
4/2/2024 17:30	6.455	50.664	0.02	7.269	295.55	11.247	0	12.07
4/2/2024 17:20	6.456	50.826	0.02	7.294	293.24	11.26	0	11.999
4/2/2024 17:10	6.466	50.78	0.02	7.314	291.62	11.259	0	12.07
4/2/2024 17:00	6.469	50.981	0.02	7.297	293.81	11.266	0	12.07
4/2/2024 16:50	6.491	51.052	0.02	7.26	296.17	11.272	0	12.07
4/2/2024 16:40	6.499	51.05	0.02	7.278	295.44	11.272	0	12.07
4/2/2024 16:30	6.514	50.798	0.02	7.284	295.16	11.285	0	12.07
4/2/2024 16:20	6.519	50.846	0.02	7.253	296.52	11.292	0	12.07
4/2/2024 16:10	6.534	50.993	0.02	7.273	295.68	11.291	0	12.07
4/2/2024 16:00	6.546	51.058	0.02	7.272	297.03	11.296	0	12.07
4/2/2024 15:50	6.551	51.154	0.02	7.305	294.61	11.311	0	12.07
4/2/2024 15:40	6.553	51.099	0.02	7.289	294.24	11.314	0	12.07
4/2/2024 15:30	6.569	51.222	0.02	7.289	292.91	11.316	0	12.07
4/2/2024 15:20	6.583	51.293	0.02	7.29	291.32	11.31	0	12.07
4/2/2024 15:10	6.602	51.304	0.02	7.277	291.03	11.304	0	12.07
4/2/2024 15:00	6.601	51.367	0.02	7.285	292.05	11.315	0	12.07
4/2/2024 14:50	6.594	51.519	0.02	7.29	291.86	11.324	0	12.07
4/2/2024 14:40	6.602	51.581	0.02	7.257	294.11	11.314	0	12.07
4/2/2024 14:30	6.606	51.681	0.02	7.278	293.55	11.313	0	12.07
4/2/2024 14:20	6.614	51.761	0.02	7.259	294.57	11.31	0	12.07
4/2/2024 14:10	6.603	51.923	0.02	7.27	293.91	11.31	0	12.07
4/2/2024 14:00	6.606	52.048	0.02	7.273	295.03	11.292	0	12.07
4/2/2024 13:50	6.604	52.076	0.02	7.293	292.57	11.292	0	12.07
4/2/2024 13:40	6.602	52.339	0.02	7.293	291.27	11.286	0	11.999
4/2/2024 13:30	6.614	52.467	0.02	7.308	289.06	11.266	0	12.094
4/2/2024 13:20	6.614	52.631	0.02	7.299	288.07	11.265	0	12.094
4/2/2024 13:10	6.613	53.153	0.02	7.274	287.85	11.263	0	12.07
4/2/2024 13:00	6.618	53.384	0.02	7.275	289.11	11.285	0	12.07
4/2/2024 12:50	6.627	53.558	0.02	7.257	290.26	11.282	0	12.07
4/2/2024 12:40	6.622	53.563	0.02	7.257	289.95	11.299	0	11.999
4/2/2024 12:30	6.636	53.579	0.02	7.273	288.31	11.291	0	12.094
4/2/2024 12:20	6.633	53.304	0.02	7.273	287.59	11.286	0	12.07
4/2/2024 12:10	6.632	53.887	0.02	7.277	286.94	11.282	0	12.07
4/2/2024 12:00	6.63	53.739	0.02	7.27	289.75	11.29	0	12.07
4/2/2024 11:50	6.64	53.131	0.02	7.266	289.83	11.303	0	11.999
4/2/2024 11:40	6.644	53.625	0.02	7.269	289.49	11.3	0	12.07
4/2/2024 11:30	6.656	53.987	0.02	7.296	286.61	11.284	0	12.07
4/2/2024 11:20	6.661	53.726	0.02	7.304	285.17	11.293	0	12.094
4/2/2024 11:10	6.648	53.731	0.02	7.278	285.86	11.304	0	12.07
4/2/2024 11:00	6.649	53.127	0.02	7.27	288.65	11.307	0	12.07
4/2/2024 10:50	6.628	52.629	0.02	7.254	289.57	11.317	0	12.07
4/2/2024 10:40	6.616	52.589	0.02	7.259	289.24	11.303	0	12.094
4/2/2024 10:30	6.606	52.883	0.02	7.257	289.01	11.282	0	12.094
4/2/2024 10:20	6.578	53.38	0.02	7.251	289.36	11.263	0	12.07
4/2/2024 10:10	6.538	53.431	0.02	7.254	290.23	11.247	0	12.07

4/2/2024 10:00	6.502	52.921	0.02	7.262	291.68	11.254	0	11.999
4/2/2024 9:50	6.472	52.366	0.02	7.281	290.84	11.244	0	12.094
4/2/2024 9:40	6.456	51.916	0.02	7.255	291.83	11.222	0	11.999
4/2/2024 9:30	6.433	52.033	0.02	7.265	290.76	11.218	0	12.094
4/2/2024 9:20	6.42	52	0.02	7.225	290.92	11.178	0	12.07
4/2/2024 9:10	6.417	52.111	0.02	7.268	287.73	11.167	0	12.094
4/2/2024 9:00	6.408	52.349	0.02	7.233	291.15	11.152	0	12.094
4/2/2024 8:50	6.406	52.183	0.02	7.232	291.6	11.137	0	12.07
4/2/2024 8:40	6.394	52.045	0.02	7.248	290.89	11.13	0	12.094
4/2/2024 8:30	6.4	51.791	0.02	7.232	291.78	11.127	0	12.094
4/2/2024 8:20	6.394	51.739	0.02	7.231	291.74	11.114	0	12.094
4/2/2024 8:10	6.398	51.831	0.02	7.223	292.27	11.112	0	12.094
4/2/2024 8:00	6.388	51.897	0.02	7.184	295.89	11.089	0	12.07
4/2/2024 7:50	6.374	51.608	0.02	7.225	292.64	11.065	0	12.094
4/2/2024 7:40	6.37	51.595	0.02	7.22	292.2	11.067	0	12.07
4/2/2024 7:30	6.36	51.661	0.02	7.205	291.59	11.065	0	12.094
4/2/2024 7:20	6.352	51.759	0.02	7.214	289.88	11.078	0	12.07
4/2/2024 7:10	6.342	51.681	0.02	7.235	287.95	11.063	0	12.094
4/2/2024 7:00	6.34	51.264	0.02	7.212	291.94	11.084	0	12.07
4/2/2024 6:50	6.338	51.313	0.02	7.225	291.25	11.086	0	11.999
4/2/2024 6:40	6.349	51.455	0.02	7.195	293.13	11.075	0	12.094
4/2/2024 6:30	6.338	51.586	0.02	7.209	292.68	11.084	0	12.094
4/2/2024 6:20	6.35	51.507	0.02	7.201	293.24	11.079	0	12.094
4/2/2024 6:10	6.341	51.684	0.02	7.23	291.93	11.083	0	12.094
4/2/2024 6:00	6.333	51.758	0.02	7.211	295.72	11.095	0	11.999
4/2/2024 5:50	6.341	51.671	0.02	7.248	293.08	11.092	0	12.094
4/2/2024 5:40	6.352	51.586	0.02	7.255	291.34	11.105	0	12.094
4/2/2024 5:30	6.331	51.786	0.02	7.266	289.09	11.111	0	12.094
4/2/2024 5:20	6.336	51.923	0.02	7.247	287.85	11.105	0	12.094
4/2/2024 5:10	6.359	52.351	0.02	7.242	286.84	11.075	0	12.094
4/2/2024 5:00	6.369	53.477	0.02	7.236	289.89	11.074	0	11.999
4/2/2024 4:50	6.399	54.027	0.02	7.231	289.5	11.06	0	12.094
4/2/2024 4:40	6.389	54.144	0.02	7.23	290.11	11.061	0	12.094
4/2/2024 4:30	6.408	54.498	0.02	7.201	291.9	11.057	0	12.094
4/2/2024 4:20	6.424	54.595	0.02	7.214	290.95	11.055	0	12.094
4/2/2024 4:10	6.427	54.844	0.02	7.248	289.38	11.059	0	12.094
4/2/2024 4:00	6.419	54.129	0.02	7.242	291.91	11.085	0	12.094
4/2/2024 3:50	6.426	53.992	0.02	7.248	291.33	11.086	0	12.094
4/2/2024 3:40	6.439	53.764	0.02	7.269	289.7	11.085	0	12.07
4/2/2024 3:30	6.452	53.557	0.02	7.257	289.67	11.09	0	12.094
4/2/2024 3:20	6.456	53.86	0.02	7.253	288.75	11.088	0	12.094
4/2/2024 3:10	6.457	54.059	0.02	7.258	288.15	11.086	0	12.094
4/2/2024 3:00	6.474	53.822	0.02	7.238	291.28	11.086	0	12.094
4/2/2024 2:50	6.477	53.769	0.02	7.24	292.23	11.087	0	12.094
4/2/2024 2:40	6.478	53.155	0.02	7.246	292.68	11.099	0	12.094
4/2/2024 2:30	6.476	52.747	0.02	7.259	292.62	11.106	0	12.094
4/2/2024 2:20	6.481	52.263	0.02	7.231	294.61	11.109	0	12.094
4/2/2024 2:10	6.49	52.162	0.02	7.198	296.14	11.114	0	12.094
4/2/2024 2:00	6.503	52.337	0.02	7.23	294.73	11.101	0	11.999
4/2/2024 1:50	6.516	52.808	0.02	7.222	293.44	11.086	0	12.094
4/2/2024 1:40	6.537	53.308	0.02	7.229	291.28	11.059	0	12.094
4/2/2024 1:30	6.547	54.733	0.02	7.24	289.61	11.033	0	12.094

4/2/2024 1:20	6.557	54.874	0.02	7.265	287.81	11.023	0	12.094
4/2/2024 1:10	6.569	54.951	0.02	7.225	290.69	11.022	0	12.094
4/2/2024 1:00	6.565	54.102	0.02	7.219	295.1	11.048	0	12.094
4/2/2024 0:50	6.539	52.15	0.02	7.22	297.75	11.078	0	12.094
4/2/2024 0:40	6.546	51.532	0.02	7.205	299.67	11.098	0	12.094
4/2/2024 0:30	6.531	51.249	0.02	7.237	298.75	11.107	0	12.094
4/2/2024 0:20	6.517	51.103	0.02	7.249	298.96	11.107	0	12.094
4/2/2024 0:10	6.513	50.58	0.02	7.231	300.64	11.119	0	12.022
4/2/2024 0:00	6.519	50.389	0.02	7.23	300.67	11.113	0	12.022
4/1/2024 23:50	6.511	50.675	0.02	7.244	296.7	11.123	0	12.094
4/1/2024 23:40	6.531	50.893	0.02	7.272	291.73	11.108	0	12.022
4/1/2024 23:30	6.525	51.417	0.02	7.237	291.16	11.104	0	12.094
4/1/2024 23:20	6.536	52.35	0.02	7.255	288.38	11.072	0	12.094
4/1/2024 23:10	6.542	52.648	0.02	7.223	288.81	11.069	0	12.094
4/1/2024 23:00	6.541	53.042	0.02	7.225	289.63	11.067	0	12.094
4/1/2024 22:50	6.553	53.356	0.02	7.217	289.16	11.049	0	12.094
4/1/2024 22:40	6.565	53.826	0.02	7.212	289.01	11.032	0	12.094
4/1/2024 22:30	6.572	54.135	0.02	7.19	290.09	11.033	0	12.094
4/1/2024 22:20	6.562	54.183	0.02	7.205	288.66	11.038	0	12.094
4/1/2024 22:10	6.569	54.12	0.02	7.24	286.78	11.04	0	12.094
4/1/2024 22:00	6.566	54.44	0.02	7.224	288.94	11.042	0	12.094
4/1/2024 21:50	6.572	54.415	0.02	7.216	289.12	11.05	0	12.094
4/1/2024 21:40	6.582	54.2	0.02	7.235	287.48	11.059	0	12.094
4/1/2024 21:30	6.581	54.519	0.02	7.249	285.8	11.073	0	12.094
4/1/2024 21:20	6.581	54.365	0.02	7.235	285.69	11.076	0	12.094
4/1/2024 21:10	6.589	54.156	0.02	7.233	286.19	11.088	0	12.094
4/1/2024 21:00	6.599	54.183	0.02	7.192	289.8	11.102	0	12.094
4/1/2024 20:50	6.589	54.255	0.02	7.211	289.1	11.111	0	12.094
4/1/2024 20:40	6.603	54.146	0.02	7.227	288.5	11.122	0	12.022
4/1/2024 20:30	6.597	54.291	0.02	7.255	287.24	11.154	0	12.094
4/1/2024 20:20	6.618	54.042	0.02	7.234	288.37	11.148	0	12.094
4/1/2024 20:10	6.617	54.228	0.02	7.26	286.71	11.167	0	12.094
4/1/2024 20:00	6.624	54.103	0.02	7.249	289.18	11.184	0	12.022
4/1/2024 19:50	6.631	54.101	0.02	7.257	288.64	11.206	0	12.094
4/1/2024 19:40	6.645	53.75	0.02	7.261	288.19	11.219	0	12.094
4/1/2024 19:30	6.661	53.626	0.02	7.259	287.93	11.241	0	12.094
4/1/2024 19:20	6.663	53.725	0.02	7.293	285.46	11.251	0	12.094
4/1/2024 19:10	6.683	53.693	0.02	7.254	286.55	11.262	0	12.094
4/1/2024 19:00	6.695	53.597	0.02	7.248	288.76	11.269	0	12.094
4/1/2024 18:50	6.71	53.65	0.02	7.271	287.79	11.278	0	12.094
4/1/2024 18:40	6.719	53.809	0.02	7.268	288.07	11.296	0	12.094
4/1/2024 18:30	6.738	53.611	0.02	7.264	288.14	11.305	0	12.094
4/1/2024 18:20	6.764	53.569	0.02	7.25	288.89	11.295	0	12.094
4/1/2024 18:10	6.79	53.666	0.02	7.269	288	11.311	0	12.094
4/1/2024 18:00	6.817	53.844	0.02	7.285	288.03	11.316	0	12.022
4/1/2024 17:50	6.842	54.061	0.02	7.284	288.6	11.316	0	12.094
4/1/2024 17:40	6.881	53.994	0.02	7.3	286.99	11.326	0	12.094
4/1/2024 17:30	6.919	53.98	0.02	7.307	286.14	11.338	0	12.094
4/1/2024 17:20	6.951	54.047	0.02	7.313	285.03	11.349	0	12.094
4/1/2024 17:10	7.003	53.809	0.02	7.297	285.52	11.35	0	12.094
4/1/2024 17:00	7.041	54.06	0.02	7.269	289.09	11.351	0	12.094
4/1/2024 16:50	7.076	53.904	0.02	7.284	287.98	11.358	0	12.094

4/1/2024 16:40	7.122	53.95	0.02	7.292	288.14	11.371	0	12.094
4/1/2024 16:30	7.156	53.855	0.02	7.318	286.78	11.37	0	12.094
4/1/2024 16:20	7.191	53.877	0.02	7.313	286.88	11.378	0	12.094
4/1/2024 16:10	7.222	53.846	0.02	7.283	288.33	11.374	0	12.094
4/1/2024 16:00	7.249	53.891	0.02	7.278	290.41	11.37	0	12.094
4/1/2024 15:50	7.251	54.209	0.02	7.316	288.97	11.386	0	12.094
4/1/2024 15:40	7.241	54.075	0.02	7.284	290.03	11.373	0	12.094
4/1/2024 15:30	7.254	54.005	0.02	7.292	288.89	11.391	0	12.094
4/1/2024 15:20	7.264	53.988	0.02	7.295	287.42	11.393	0	12.094
4/1/2024 15:10	7.252	54.075	0.02	7.297	287.63	11.398	0	12.094
4/1/2024 15:00	7.246	54.08	0.02	7.28	290.06	11.393	0	12.022
4/1/2024 14:50	7.259	54.134	0.02	7.252	291.43	11.393	0	12.022
4/1/2024 14:40	7.265	53.885	0.02	7.262	290.65	11.384	0	12.094
4/1/2024 14:30	7.246	54.087	0.02	7.269	290.17	11.396	0	12.094
4/1/2024 14:20	7.218	54.027	0.02	7.27	289.46	11.391	0	12.094
4/1/2024 14:10	7.202	54.176	0.02	7.288	288.04	11.401	0	12.094
4/1/2024 14:00	7.169	54.216	0.02	7.276	289.48	11.398	0	12.094
4/1/2024 13:50	7.148	54.024	0.02	7.285	288.9	11.405	0	12.094
4/1/2024 13:40	7.12	54.178	0.02	7.29	287.58	11.403	0	12.094
4/1/2024 13:30	7.085	54.074	0.02	7.271	287.04	11.396	0	12.094
4/1/2024 13:20	7.074	54.283	0.02	7.301	285.22	11.397	0	12.094
4/1/2024 13:10	7.062	54.264	0.02	7.297	284.1	11.408	0	12.094
4/1/2024 13:00	7.033	54.371	0.02	7.265	286.71	11.401	0	12.094
4/1/2024 12:50	6.964	54.642	0.02	7.279	285.27	11.422	0	12.094
4/1/2024 12:40	6.907	54.537	0.02	7.262	285.19	11.404	0	12.094
4/1/2024 12:30	6.843	55.067	0.02	7.261	285.36	11.41	0	12.094
4/1/2024 12:20	6.779	55.651	0.02	7.263	287.56	11.421	0	12.07
4/1/2024 12:10	6.716	55.731	0.02	7.241	290.92	11.415	0	12.094
4/1/2024 12:00	6.659	55.771	0.02	7.252	292.05	11.425	0	12.094
4/1/2024 11:50	6.613	55.215	0.02	7.255	291.2	11.423	0	12.094
4/1/2024 11:40	6.516	55.852	0.02	7.264	289.61	11.435	0	12.094
4/1/2024 11:30	6.436	56.031	0.02	7.259	289.02	11.428	0	12.094
4/1/2024 11:20	6.37	56.171	0.03	7.282	286.93	11.431	0	12.094
4/1/2024 11:10	6.285	55.636	0.02	7.242	289.13	11.443	0	12.094
4/1/2024 11:00	6.207	54.909	0.02	7.257	289.99	11.457	0	12.094
4/1/2024 10:50	6.151	54.699	0.02	7.259	290.69	11.453	0	12.094
4/1/2024 10:40	6.092	54.352	0.02	7.244	292.52	11.47	0	12.094
4/1/2024 10:30	6.017	54.591	0.02	7.254	292.18	11.441	0	12.094
4/1/2024 10:20	5.911	53.596	0.02	7.249	293.73	11.452	0	12.094
4/1/2024 10:10	5.843	52.796	0.02	7.266	292.16	11.466	0	12.094
4/1/2024 10:00	5.785	52.522	0.02	7.264	293	11.455	0	12.094
4/1/2024 9:50	5.738	52.646	0.02	7.271	291.18	11.408	0	12.094
4/1/2024 9:40	5.68	52.911	0.02	7.275	291.08	11.416	0	12.094
4/1/2024 9:30	5.647	52.488	0.02	7.276	290.04	11.385	0	12.094
4/1/2024 9:20	5.602	52.33	0.02	7.288	289.64	11.396	0	12.118
4/1/2024 9:10	5.59	51.906	0.02	7.263	290.6	11.379	0	12.094
4/1/2024 9:00	5.58	51.704	0.02	7.242	293.61	11.361	0	12.094
4/1/2024 8:50	5.569	51.813	0.02	7.217	295.85	11.33	0	12.094
4/1/2024 8:40	5.556	51.65	0.02	7.222	296.71	11.326	0	12.094
4/1/2024 8:30	5.546	51.212	0.02	7.234	296.84	11.33	0	12.022
4/1/2024 8:20	5.553	51.113	0.02	7.23	297.12	11.298	0	12.094
4/1/2024 8:10	5.547	50.937	0.02	7.244	296.68	11.281	0	12.094

4/1/2024 8:00	5.557	50.879	0.02	7.209	300.23	11.269	0	12.094
4/1/2024 7:50	5.565	50.864	0.02	7.223	297.98	11.259	0	12.094
4/1/2024 7:40	5.583	50.985	0.02	7.24	295.08	11.232	0	12.094
4/1/2024 7:30	5.598	51.072	0.02	7.228	294.59	11.23	0	12.094
4/1/2024 7:20	5.613	51.3	0.02	7.22	292.88	11.198	0	12.118
4/1/2024 7:10	5.634	51.399	0.02	7.211	292.61	11.191	0	12.094
4/1/2024 7:00	5.638	51.414	0.02	7.21	294.94	11.191	0	12.118
4/1/2024 6:50	5.658	51.257	0.02	7.216	294.25	11.185	0	12.022
4/1/2024 6:40	5.667	51.516	0.02	7.214	294.27	11.179	0	12.094
4/1/2024 6:30	5.677	51.613	0.02	7.195	295	11.18	0	12.094
4/1/2024 6:20	5.705	51.725	0.02	7.195	295.13	11.16	0	12.094
4/1/2024 6:10	5.708	51.718	0.02	7.199	295.19	11.17	0	12.094
4/1/2024 6:00	5.737	51.648	0.02	7.21	296.9	11.159	0	12.022
4/1/2024 5:50	5.739	51.523	0.02	7.242	294.18	11.168	0	12.094
4/1/2024 5:40	5.739	51.597	0.02	7.205	295.18	11.163	0	12.118
4/1/2024 5:30	5.752	51.975	0.02	7.224	292.76	11.154	0	12.094
4/1/2024 5:20	5.768	52.126	0.02	7.213	292.16	11.157	0	12.094
4/1/2024 5:10	5.764	52.136	0.02	7.227	291.13	11.158	0	12.094
4/1/2024 5:00	5.784	52.059	0.02	7.218	293.45	11.158	0	12.094
4/1/2024 4:50	5.786	51.867	0.02	7.213	293.52	11.175	0	12.094
4/1/2024 4:40	5.807	51.56	0.02	7.255	291.59	11.163	0	12.094
4/1/2024 4:30	5.808	51.833	0.02	7.22	292.65	11.171	0	12.094
4/1/2024 4:20	5.804	52.292	0.02	7.238	290.9	11.165	0	12.094
4/1/2024 4:10	5.827	52.188	0.02	7.262	289.09	11.155	0	12.094
4/1/2024 4:00	5.854	52.82	0.02	7.248	291.17	11.144	0	12.094
4/1/2024 3:50	5.856	52.915	0.02	7.242	291.03	11.145	0	12.118
4/1/2024 3:40	5.856	53.196	0.02	7.262	288.8	11.14	0	12.022
4/1/2024 3:30	5.878	53.71	0.02	7.265	287.45	11.131	0	12.118
4/1/2024 3:20	5.883	54.079	0.02	7.27	286.53	11.124	0	12.118
4/1/2024 3:10	5.884	53.851	0.02	7.207	289.85	11.133	0	12.022
4/1/2024 3:00	5.907	54.081	0.02	7.232	290.1	11.127	0	12.118
4/1/2024 2:50	5.93	54.956	0.02	7.21	291.1	11.107	0	12.118
4/1/2024 2:40	5.942	55.111	0.02	7.199	292.47	11.108	0	12.118
4/1/2024 2:30	5.946	55.803	0.02	7.211	291.8	11.093	0	12.118
4/1/2024 2:20	5.944	55.091	0.02	7.23	291.34	11.101	0	12.118
4/1/2024 2:10	5.932	54.251	0.02	7.23	292.7	11.124	0	12.118
4/1/2024 2:00	5.92	52.925	0.02	7.254	293.55	11.164	0	12.022
4/1/2024 1:50	5.94	52.889	0.02	7.255	292.45	11.145	0	12.118
4/1/2024 1:40	5.972	53.561	0.02	7.247	292.02	11.13	0	12.118
4/1/2024 1:30	5.988	53.874	0.02	7.227	292.48	11.124	0	12.118
4/1/2024 1:20	5.99	54.593	0.02	7.217	292.21	11.111	0	12.118
4/1/2024 1:10	5.987	53.681	0.02	7.27	290	11.121	0	12.094
4/1/2024 1:00	5.956	51.778	0.02	7.24	294.14	11.162	0	12.118
4/1/2024 0:50	5.966	51.505	0.02	7.236	293.88	11.164	0	12.118
4/1/2024 0:40	5.997	51.831	0.02	7.234	293.28	11.145	0	12.118
4/1/2024 0:30	6.032	52.411	0.02	7.202	293.38	11.13	0	12.118
4/1/2024 0:20	6.043	53.296	0.02	7.188	294.18	11.113	0	12.118
4/1/2024 0:10	6.072	53.708	0.02	7.218	292.57	11.091	0	12.118

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

Woodfibre Site Batch Sample Analysis

Woodfibre Site Batch Sample Lab Documentation

Woodfibre Site WTP Discharge Field Notes and Logs

Appendix D: Woodfibre Site Receiving Environment Documentation

Woodfibre Site Receiving Environment Sample Analysis

TRITON Environmental Consultants	Sample ID	Reviewed and signed off by:			Miranda Lewis PAg, MSc	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					VA24A6796-002	VA24A6796-001					
	Date Sampled					1-Apr-24	1-Apr-24					
	Time Sampled					09:49	09:10					
Analyte	Units	BCAWWQG-FAL-LT [1,2]	BCAWWQG-FAL-ST [1,2]	BCAWWQG-MAL-ST [1]	BCAWWQG-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	7.06	7.36		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, hourly rate of change <0.5°C [4]	Max +/- from BKG 1°C, hourly rate of change <0.5°C [4]	-	7.2	7.3		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: BCR 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: BCR US value +/- 1 = guideline range	
Conductivity (field)	µS/cm	-	-	-	-	18	62					
Turbidity (field)	NTU	Varies with background, see note Lowest value for guideline is 3 NTU	Varies with background, see note Lowest value for guideline is 9 NTU	Varies with background, see note Lowest value for guideline is 9 NTU	Varies with background, see note Lowest value for guideline is 3 NTU	0.24	0.99		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: BCR US value + 8 = BCR 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: BCR US value + 5 = BCR DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: BCR US value + (BCR US value*0.1) = BCR DS guideline	Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of BCR US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using BCR 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: BCR US value + 8 = BCR 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: BCR US value + 5 = BCR DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: BCR US value + (BCR US value*0.1) = BCR DS guideline	Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of BCR US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using BCR US concentration at the time of sampling.
Dissolved Oxygen (field)	mg/L	Varies with life stage, see note	Varies with life stage, see note	Varies with life stage, see note	Varies with life stage, see note	11.18	11.31		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 CaCO3) (total)	mg/L	-	-	-	-	4.88	22.8					
Total Dissolved Solids	mg/L	-	-	-	-	14	37					
Total Suspended Solids	mg/L	Varies with background, see note Lowest value for guideline is 6mg/L	Varies with background, see note Lowest value for guideline is 26mg/L	Varies with background, see note Lowest value for guideline is 26mg/L	Varies with background, see note Lowest value for guideline is 6mg/L	< 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: BCR US value + 25 = BCR 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: BCR US value + 10 = BCR DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: BCR US value + (BCR US value*0.1) = BCR 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 BCR US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using BCR 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: BCR US value + 25 = BCR 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: BCR US value + 10 = BCR DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: BCR US value + (BCR US value*0.1) = BCR 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 BCR US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using BCR US concentration at the time of sampling.
Dissolved Organic Carbon (DOC)	mg/L	-	-	-	-	1.61	1.67			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	Categorical	-	-	-	4.1	26.4	The upstream and downstream locations have moderate sensitivity to acid inputs (i.e. moderate buffering capcity).		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 H2S)	mg/L	0.002	-	-	-	< 0.0015	< 0.0015			Working guideline		
Total Sulfide (as H2S)	mg/L	-	-	-	-	< 0.0016	< 0.0016					
Anions and Nutrients												
Ammonia	mg/L ammonia-N	Varies with pH and temperature. See note.	Varies with pH and temperature. See note.	Varies with pH, temperature and salinity. See note.	Varies with pH, temperature and salinity. See note.	< 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	150	600	> 110% of background	< 90% of background	0.50	0.55				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	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	3	32.8	-	3.7	0.0077	0.215					
Nitrite (as N)	mg/L	Varies with chloride. See note.	Varies with chloride. See note.	-	-	< 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	-	-	-	-	0.032	0.239					
Total Phosphorous	mg/L	0.005 to 0.015	-	-	-	0.0042	0.0065			Guideline is for lakes, refer to BCWQ guideline for nutrients and algae for more information. Guideline does not apply to site.		
Sulfate (as SO4)	mg/L	Varies with hardness. See note.	-	-	-	1.60	2.69			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	-	-	-	***0.0702***	0.0810	**The Upstream location has a total hardness below the range of the BCWQ guideline calculation. The lowest applicable hardness value of 10 mg/L has been used in place to calculate the guideline. As a result, the Upstream location exceeds BCWQ long-term guideline.** LT guideline not applicable at this time (no continous discharge) [3] Link		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)		
Antimony (Sb)-Total	mg/L	0.074	0.25	-	-	< 0.00010	< 0.00010					
Arsenic (As)-Total	mg/L	0.005	-	-	0.0125	< 0.00010	< 0.00010					Interim guideline status
Barium (Ba)-Total	mg/L	1	-	-	-	0.00228	0.00542			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	< 0.010					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	0.0000059	0.0000079					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	1.66	8.28					
Cesium (Cs)-Total	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Chromium (Cr) - Total	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Chromium (Cr(III))-Total	mg/L	0.0089	-	-	0.056	< 0.00050	< 0.00050			Working guideline status		Working guideline status
Chromium (Cr(VI))-Total	mg/L	0.001	-	-	0.0015	< 0.00050	< 0.00050			Working guideline status		Working guideline status
Cobalt (Co)-Total	mg/L	0.004	0.11	-	-	< 0.00010	< 0.00010					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002	0.00068	0.00071					
Iron (Fe)-Total	mg/L	-	1	-	-	0.024	0.093					
Lead (Pb)-Total	mg/L	Varies with hardness. See Note.	Varies with hardness. See Note.	0.14	0.002	< 0.000050	0.000102		Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline is 0.003 where hardness ≤8mg/L. Guideline uses equation EXP[1.273*on(hardness)-1.460] where hardness is 8-360 mg/L. Lowest value for guideline is 0.003 mg/L.	Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline equation EXP[1.273*on(hardness)-4.704] applies to samples with hardness 8-360 mg/L.		
Lithium (Li)-Total	mg/L	-	-	-	-	< 0.0010	< 0.0010					
Magnesium (Mg)-Total	mg/L	-	-	-	-	0.179	0.519					
Manganese (Mn)-Total	mg/L	Varies with hardness	Varies with hardness	-	-	0.00109	0.00450		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.	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.		
Mercury (Hg)-Total	mg/L	Varies with methyl mercury	-	-	-	< 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	7.6	46	-	-	0.000319	0.000639					
Nickel (Ni)-Total	mg/L	Varies with hardness	-	-	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	-	-	-	-	0.140	0.304					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00023	0.00049					
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 guidleiens for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guidleiens and sampling guidance.		Guideline for marine aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidleiens for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guidleiens and sampling guidance.
Silicon (Si)-Total	mg/L	-	-	-	-	3.74	3.94					
Silver (Ag)-Total	mg/L	Varies with hardness, see note	Varies with hardness, see note	0.003	0.0015	< 0.000010	< 0.000010		Varies with hardness Guideline ranges: Hardness ≤ 100: 0.0001 Hardness > 100: 0.003	Varies with hardness Guideline ranges: Hardness ≤ 100: 0.00005 Hardness > 100: 0.0015		Guideline applies to open coast and estuaries. Guideline is applicable to the EGP site.
Sodium (Na)-Total	mg/L	-	-	-	-	1.18	1.44					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.00880	0.0268					
Sulfur (S)-Total	mg/L	-	-	-	-	< 0.50	0.80					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Total	mg/L	0.0008	-	-	-	< 0.000010	< 0.000010			30-day average, site-specific objective for the lower Columbia River, BC. Guideline is for reference only and does not apply to tnhe EGP site.		
Thorium (Th)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Tin (Sn)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Titanium (Ti)-Total	mg/L	-	-	-	-	0.00062	0.00140					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Total	mg/L	0.0085	-	-	-	0.000089	0.000104			Working guideline status		
Vanadium (V)-Total	mg/L	-	-	-	0.050	< 0.00050	< 0.00050					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	0.010	< 0.0030	< 0.0030					
Zirconium (Zr)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0587	0.0499					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.00209	0.00504					
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	Varies with hardness, see note	-	-	0.0000053	0.0000057		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.	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.		
Calcium (Ca)-Dissolved	mg/L	Categorical, see note	-	-	-	1.66	8.29	Upstream location has high sensitivity to acid inputs (i.e. low buffering capacity), and the downstream location has moderate sensitivity to acid inputs (i.e. medium 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 varies with other parameters, see note	-	-	***0.00045***	***0.00055***	**Upstream and downstream locations exceed the long-term detailed model BCWG for FAL.** LT guideline not applicable [3]	Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date	Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date		
Iron (Fe)-Dissolved	mg/L	-	0.35	-	-	0.012	0.018					
Lead (Pb)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	< 0.0010	< 0.0010					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.172	0.494					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00056	0.00217					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.000271	0.000591					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.050	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	0.118	0.263					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00020	0.00041					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	3.75	3.85					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	1.17	1.44					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.00876	0.0265					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	< 0.50	0.70					
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	< 0.00010					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.000084	0.000099					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Zinc (Zn)-Dissolved	mg/L	Varies with pH, DOC, hardness	Varies with DOC and hardness	-	-	0.0011	0.0019		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)	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.		
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 BCAWWQG Short and Long-Term Guideline**	***Exceeds BCAWWQG Long term Guideline***	**Exceeds BCAWWQG Short term Guideline**	**Exceeds BCAWWQG MAL Short term Guideline**	***Exceeds BCAWWQG MAL Long term Guideline***							
Color Key:				**Exceeds BCAWWQG MAL Short and Long-term Guidelines**	**Exceeds both BCAWWQG FAL and MAL Guidelines**							

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

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

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

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

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

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

Parameters Used to Calculate Guidelines

Analyte	Units	BCAWWQG-FAL-LT [1,2]	BCAWWQG-FAL-ST [1,2]	BCAWWQG-MAL-ST [1]	BCAWWQG-MAL-LT [1,2]	Values	
						BCR US1	BCR DS1
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations				7.06	7.36
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations				7.2	7.3
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations				0.24	0.99
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				4.88	22.8
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations				1.61	1.67
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations				4.1	26.4
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations				0.5	0.55

Woodfibre Site Receiving Environment Lab Documentation

ALS Canada Ltd.

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CERTIFICATE OF ANALYSIS

Work Order	: **VA24A6796**	Page	: 1 of 6
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project		Date Samples Received	: 01-Apr-2024 16:30
PO	: 11964-Task 20-Phase 3C-4C	Date Analysis Commenced	: 02-Apr-2024
C-O-C number	: ----	Issue Date	: 09-Apr-2024 15:48
Sampler	: ----		
Site	: ----		
Quote number	: VA23-TRIT100-003		
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*
Anshim Anshim	Lab Assistant	Metals, Burnaby, British Columbia
Ghazaleh Khanmirzaei	Analyst	Metals, Burnaby, British Columbia
Kaitlyn Gardner	Account Manager Assistant	Administration, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Sam Silveira	Analyst	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia

General Comments

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

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

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

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

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

LOR: Limit of Reporting (detection limit).

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

<: less than.

>: greater than.

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

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

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

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG DS 1	WLNG US 1	----	----	----
					Client sampling date / time	01-Apr-2024 09:10	01-Apr-2024 09:49	----	----	----
						VA24A6796-001	VA24A6796-002	--------	--------	--------
						Result	Result	----	----	----
Field Tests										
Conductivity, field	----	EF001/VA	0.10	µS/cm		62.000	18.000	----	----	----
pH, field	----	EF001/VA	0.10	pH units		7.36	7.06	----	----	----
Temperature, field	----	EF001/VA	0.10	°C		7.30	7.20	----	----	----
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L		22.7	4.85	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L		22.8	4.88	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		37	14	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		<3.0	<3.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		26.4	4.1	----	----	----
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		0.55	0.50	----	----	----
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		0.215	0.0077	----	----	----
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		0.239	0.032	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.0065	0.0042	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		2.69	1.60	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L		1.67	1.61	----	----	----
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L		<0.0015	<0.0015	----	----	----
Sulfide, un-ionized (as H2S), from total	7783-06-4	EC395/VA	0.0015	mg/L		<0.0015	<0.0015	----	----	----
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L		<0.0016	<0.0016	----	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L		0.0810	0.0702	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG DS 1	WLNG US 1	----	----	----
					Client sampling date / time	01-Apr-2024 09:10	01-Apr-2024 09:49	----	----	----
						VA24A6796-001	VA24A6796-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.00542	0.00228	----	----	----
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L		<0.000100	<0.000100	----	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L		<0.010	<0.010	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		0.0000079	0.0000059	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		8.28	1.66	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00071	0.00068	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.093	0.024	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000102	<0.000050	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		0.519	0.179	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.00450	0.00109	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.000639	0.000319	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		0.304	0.140	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00049	0.00023	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		3.94	3.74	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		1.44	1.18	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0268	0.00880	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		0.80	<0.50	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG DS 1	WLNG US 1	----	----	----
					Client sampling date / time	01-Apr-2024 09:10	01-Apr-2024 09:49	----	----	----
						VA24A6796-001	VA24A6796-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		0.00140	0.00062	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.000104	0.000089	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		<0.0030	<0.0030	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0499	0.0587	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00504	0.00209	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L		<0.000100	<0.000100	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		<0.010	<0.010	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		0.0000057	0.0000053	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		8.29	1.66	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		0.00055	0.00045	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.018	0.012	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		0.494	0.172	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00217	0.00056	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.000591	0.000271	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG DS 1	WLNG US 1	----	----	----
					Client sampling date / time	01-Apr-2024 09:10	01-Apr-2024 09:49	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24A6796-001	VA24A6796-002	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		0.263	0.118	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00041	0.00020	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		3.85	3.75	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		1.44	1.17	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0265	0.00876	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		0.70	<0.50	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		<0.000010	<0.000010	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		<0.00030	<0.00030	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.000099	0.000084	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0019	0.0011	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-		Field	Field	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Field	Field	----	----	----
Speciated Metals										
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----

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

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

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24A6796**	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	: 01-Apr-2024 16:30
PO	: 11964-Task 20-Phase 3C-4C	Issue Date	: 09-Apr-2024 15:49
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: VA23-TRIT100-003		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG DS 1	E298	01-Apr-2024	05-Apr-2024	28 days	4 days	✓	06-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG US 1	E298	01-Apr-2024	05-Apr-2024	28 days	4 days	✓	06-Apr-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG DS 1	E235.Br-L	01-Apr-2024	04-Apr-2024	28 days	3 days	✓	04-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG US 1	E235.Br-L	01-Apr-2024	04-Apr-2024	28 days	3 days	✓	04-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG DS 1	E235.Cl	01-Apr-2024	04-Apr-2024	28 days	3 days	✓	04-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG US 1	E235.Cl	01-Apr-2024	04-Apr-2024	28 days	3 days	✓	04-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG DS 1	E235.F	01-Apr-2024	04-Apr-2024	28 days	3 days	✓	04-Apr-2024	28 days	3 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
WLNG US 1	E235.F	01-Apr-2024	04-Apr-2024	28 days	3 days	✓	04-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
WLNG DS 1	E235.NO3-L	01-Apr-2024	04-Apr-2024	3 days	3 days	✓	04-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
WLNG US 1	E235.NO3-L	01-Apr-2024	04-Apr-2024	3 days	3 days	✓	04-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
WLNG DS 1	E235.NO2-L	01-Apr-2024	04-Apr-2024	3 days	3 days	✓	04-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
WLNG US 1	E235.NO2-L	01-Apr-2024	04-Apr-2024	3 days	3 days	✓	04-Apr-2024	3 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
WLNG DS 1	E235.SO4	01-Apr-2024	04-Apr-2024	28 days	3 days	✓	04-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
WLNG US 1	E235.SO4	01-Apr-2024	04-Apr-2024	28 days	3 days	✓	04-Apr-2024	28 days	3 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
WLNG DS 1	E366	01-Apr-2024	05-Apr-2024	28 days	4 days	✓	08-Apr-2024	28 days	7 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
WLNG US 1	E366	01-Apr-2024	05-Apr-2024	28 days	4 days	✓	08-Apr-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	01-Apr-2024	05-Apr-2024	28 days	4 days	✓	08-Apr-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WLNG US 1	E372-U	01-Apr-2024	05-Apr-2024	28 days	4 days	✓	08-Apr-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
WLNG DS 1	E509	01-Apr-2024	03-Apr-2024	28 days	2 days	✓	03-Apr-2024	28 days	2 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
WLNG US 1	E509	01-Apr-2024	03-Apr-2024	28 days	2 days	✓	03-Apr-2024	28 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
WLNG DS 1	E421	01-Apr-2024	02-Apr-2024	180 days	1 days	✓	03-Apr-2024	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
WLNG US 1	E421	01-Apr-2024	02-Apr-2024	180 days	1 days	✓	03-Apr-2024	180 days	2 days	✓
Field Tests : Field pH,EC,Salinity,Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
WLNG DS 1	EF001	01-Apr-2024	----	----	----		05-Apr-2024	----	4 days	
Field Tests : Field pH,EC,Salinity,Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
WLNG US 1	EF001	01-Apr-2024	----	----	----		05-Apr-2024	----	4 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
WLNG DS 1	E358-L	01-Apr-2024	05-Apr-2024	28 days	4 days	✓	05-Apr-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)										
WLNG US 1	E358-L	01-Apr-2024	05-Apr-2024	28 days	4 days	✓	05-Apr-2024	28 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG DS 1	E290	01-Apr-2024	04-Apr-2024	14 days	3 days	✓	04-Apr-2024	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG US 1	E290	01-Apr-2024	04-Apr-2024	14 days	3 days	✓	04-Apr-2024	14 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
WLNG DS 1	E162	01-Apr-2024	----	----	----		06-Apr-2024	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
WLNG US 1	E162	01-Apr-2024	----	----	----		06-Apr-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
WLNG DS 1	E160	01-Apr-2024	----	----	----		06-Apr-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
WLNG US 1	E160	01-Apr-2024	----	----	----		06-Apr-2024	7 days	5 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
WLNG DS 1	E532	01-Apr-2024	----	----	----		04-Apr-2024	28 days	3 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
WLNG US 1	E532	01-Apr-2024	----	----	----		04-Apr-2024	28 days	3 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
WLNG DS 1	E508	01-Apr-2024	03-Apr-2024	28 days	2 days	✓	03-Apr-2024	28 days	2 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
WLNG US 1	E508	01-Apr-2024	03-Apr-2024	28 days	2 days	✓	03-Apr-2024	28 days	2 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
WLNG DS 1	E420	01-Apr-2024	03-Apr-2024	180 days	2 days	✓	04-Apr-2024	180 days	3 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
WLNG US 1	E420	01-Apr-2024	03-Apr-2024	180 days	2 days	✓	04-Apr-2024	180 days	3 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG DS 1	E395	01-Apr-2024	----	----	----		08-Apr-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG US 1	E395	01-Apr-2024	----	----	----		08-Apr-2024	7 days	7 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1390012	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	1392164	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1390018	1	10	10.0	5.0	✓
Chloride in Water by IC	E235.Cl	1390014	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1388555	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1386764	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1392166	1	7	14.2	5.0	✓
Fluoride in Water by IC	E235.F	1390017	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1390015	1	18	5.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1390016	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1390013	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	1393355	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1390009	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1389734	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1386758	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1392167	1	10	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1392163	1	7	14.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1394829	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1393335	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1390012	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	1392164	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1390018	1	10	10.0	5.0	✓
Chloride in Water by IC	E235.Cl	1390014	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1388555	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1386764	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1392166	1	7	14.2	5.0	✓
Fluoride in Water by IC	E235.F	1390017	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1390015	1	18	5.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1390016	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1390013	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	1393355	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1390009	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1389734	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1386758	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1392167	1	10	10.0	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1392163	1	7	14.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1394829	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1393335	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1390012	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	1392164	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1390018	1	10	10.0	5.0	✓
Chloride in Water by IC	E235.Cl	1390014	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1388555	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1386764	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1392166	1	7	14.2	5.0	✓
Fluoride in Water by IC	E235.F	1390017	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1390015	1	18	5.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1390016	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1390013	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	1393355	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1390009	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1389734	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1386758	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1392167	1	10	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1392163	1	7	14.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1394829	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1393335	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1392164	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1390018	1	10	10.0	5.0	✓
Chloride in Water by IC	E235.Cl	1390014	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1388555	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1386764	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1392166	1	7	14.2	5.0	✓
Fluoride in Water by IC	E235.F	1390017	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1390015	1	18	5.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1390016	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1390013	1	16	6.2	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1390009	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1389734	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1386758	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1392167	1	10	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1392163	1	7	14.2	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Total Sulfide by Colourimetry (Automated Flow)	E395	1394829	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.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Un-ionized Total Hydrogen Sulfide (calculated)	EC395 ALS Environmental - Vancouver	Water	APHA 4500 -S H	Un-ionized sulfide is calculated using results from total sulfide analysis, pH, temperature, and ionic strength of the sample. Calculation of un-ionized sulfide using total sulfide concentrations may be biased high due to particulate forms of sulfide measured during total sulfide testing.
Total Trivalent Chromium (Cr III) by Calculation	EC535 ALS Environmental - Vancouver	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
Field pH,EC,Salinity,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,Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3 or Chloramine measurements provided by client and recorded on ALS report may affect the validity of results.

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

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

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **VA24A6796**	Page	: 1 of 18
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project		Date Samples Received	: 01-Apr-2024 16:30
PO		Date Analysis Commenced	: 02-Apr-2024
C-O-C number	: ----	Issue Date	: 09-Apr-2024 15:48
Sampler	: ---- 604 631 2213		
Site	: ----		
Quote number	: VA23-TRIT100-003		
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*
Anshim Anshim	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Ghazaleh Khanmirzaei	Analyst	Vancouver Metals, Burnaby, British Columbia
Kaitlyn Gardner	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
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Owen Cheng		Vancouver Metals, Burnaby, British Columbia
Sam Silveira	Analyst	Vancouver Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1390012)											
KS2401114-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	399	398	0.125%	20%	----
Physical Tests (QC Lot: 1393335)											
FJ2400937-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1393355)											
FJ2400937-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	1400	1270	9.75%	20%	----
Anions and Nutrients (QC Lot: 1390013)											
VA24A6796-001	WLNG DS 1	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	2.69	2.69	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1390014)											
VA24A6796-001	WLNG DS 1	Chloride	16887-00-6	E235.Cl	0.50	mg/L	0.55	0.54	0.006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1390015)											
VA24A6796-001	WLNG DS 1	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.215	0.215	0.245%	20%	----
Anions and Nutrients (QC Lot: 1390016)											
VA24A6796-001	WLNG DS 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: 1390017)											
VA24A6796-001	WLNG DS 1	Fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1390018)											
VA24A6796-001	WLNG DS 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: 1392163)											
VA24A6671-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.109	0.108	0.617%	20%	----
Anions and Nutrients (QC Lot: 1392164)											
FJ2400928-014	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1392167)											
VA24A6796-001	WLNG DS 1	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.239	0.241	0.002	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1392166)											
VA24A6796-001	WLNG DS 1	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.67	1.67	0.002	Diff <2x LOR	----
Total Sulfides (QC Lot: 1394829)											
CG2403946-003	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: 1386758)											
VA24A6791-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0208	0.0189	0.0019	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: 1386758) - continued											
VA24A6791-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00022	0.00023	0.000008	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0131	0.0128	2.27%	20%	----
		Beryllium, total	7440-41-7	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	22.5	22.1	1.69%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.010	<0.010	0.0006	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	2.78	2.74	1.51%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00352	0.00369	4.62%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000233	0.000217	0.000016	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	0.123	0.122	0.002	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	0.000169	0.000149	0.000020	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	3.55	3.46	2.58%	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	2.40	2.27	5.62%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.111	0.107	3.34%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	10.9	10.4	4.70%	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	0.00034	0.00004	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000344	0.000351	2.06%	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: 1386758) - continued											
VA24A6791-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1389734)											
VA24A6796-001	WLNG DS 1	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1386764)											
FJ2400898-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0029	0.0031	0.0002	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.181	0.172	5.34%	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	0.0000098	0.0000065	0.0000033	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	53.3	52.4	1.84%	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	<0.00020	<0.00020	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.021	0.022	0.0007	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0089	0.0087	0.0002	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	21.7	22.3	2.76%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00351	0.00361	2.83%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000459	0.000466	0.000006	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.606	0.606	0.0713%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00027	0.00031	0.00004	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.00295	0.00289	2.06%	20%	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.95	1.98	1.50%	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	16.7	16.9	1.54%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.263	0.266	1.20%	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: 1386764) - continued											
FJ2400898-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	32.2	32.1	0.285%	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	0.000798	0.000822	3.02%	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: 1388555)											
VA24A6741-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0050 µg/L	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1390009)											
VA24A6655-001	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: 1390012)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1393335)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1393355)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1390013)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1390014)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1390015)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1390016)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1390017)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1390018)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1392163)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1392164)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1392167)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Organic / Inorganic Carbon (QCLot: 1392166)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1394829)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1386758)						
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: 1386758) - 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: 1389734)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1386764)						
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: 1386764) - 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: 1388555)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1390009)						
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	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1390012)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	111	85.0	115	----
Physical Tests (QCLot: 1393335)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	94.0	85.0	115	----
Physical Tests (QCLot: 1393355)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	99.2	85.0	115	----
Anions and Nutrients (QCLot: 1390013)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1390014)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1390015)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 1390016)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.7	90.0	110	----
Anions and Nutrients (QCLot: 1390017)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	93.9	90.0	110	----
Anions and Nutrients (QCLot: 1390018)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1392163)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1392164)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1392167)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	100	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1392166)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	98.2	80.0	120	----
Total Sulfides (QCLot: 1394829)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	102	80.0	120	----
Total Metals (QCLot: 1386758)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1386758) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	96.4	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	105	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	104	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	107	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	97.1	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	98.1	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	97.2	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	100	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	100	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	102	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	98.7	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	97.2	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	103	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	100	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	97.9	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	101	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	99.1	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	109	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	106	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	105	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	111	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	97.5	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	99.5	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	97.7	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	105	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	102	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	93.8	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	100	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	100	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	101	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1386758) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	99.0	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	98.8	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Total Metals (QCLot: 1389734)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	107	80.0	120	----
Dissolved Metals (QCLot: 1386764)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	99.2	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	99.2	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	100	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	92.3	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	92.4	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	99.9	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	102	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	98.8	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	98.9	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	95.5	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	99.7	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	101	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	97.4	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	103	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	98.2	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	97.4	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	91.6	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	96.8	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	108	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	94.4	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	97.5	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	99.2	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	86.4	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1386764) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	108	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	99.1	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	98.3	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.1	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	97.6	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	102	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	99.6	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	99.8	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	92.6	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	109	80.0	120	----
Speciated Metals (QCLot: 1390009)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.25 mg/L	104	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: 1390013)										
VA24A6796-002	WLNG US 1	Sulfate (as SO4)	14808-79-8	E235.SO4	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1390014)										
VA24A6796-002	WLNG US 1	Chloride	16887-00-6	E235.Cl	100 mg/L	100 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1390015)										
VA24A6796-002	WLNG US 1	Nitrate (as N)	14797-55-8	E235.NO3-L	2.50 mg/L	2.5 mg/L	99.9	75.0	125	----
Anions and Nutrients (QCLot: 1390016)										
VA24A6796-002	WLNG US 1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.495 mg/L	0.5 mg/L	99.0	75.0	125	----
Anions and Nutrients (QCLot: 1390017)										
VA24A6796-002	WLNG US 1	Fluoride	16984-48-8	E235.F	0.918 mg/L	1 mg/L	91.8	75.0	125	----
Anions and Nutrients (QCLot: 1390018)										
VA24A6796-002	WLNG US 1	Bromide	24959-67-9	E235.Br-L	0.520 mg/L	0.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1392163)										
VA24A6798-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0516 mg/L	0.05 mg/L	103	70.0	130	----
Anions and Nutrients (QCLot: 1392164)										
VA24A6741-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 1392167)										
VA24A6796-002	WLNG US 1	Nitrogen, total	7727-37-9	E366	0.400 mg/L	0.4 mg/L	100.0	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1392166)										
VA24A6796-002	WLNG US 1	Carbon, dissolved organic [DOC]	----	E358-L	5.10 mg/L	5 mg/L	102	70.0	130	----
Total Sulfides (QCLot: 1394829)										
CG2403955-004	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.211 mg/L	0.2 mg/L	106	75.0	125	----
Total Metals (QCLot: 1386758)										
VA24A6791-002	Anonymous	Aluminum, total	7429-90-5	E420	0.177 mg/L	0.2 mg/L	88.4	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
		Barium, total	7440-39-3	E420	0.0198 mg/L	0.02 mg/L	98.9	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0374 mg/L	0.04 mg/L	93.6	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00979 mg/L	0.01 mg/L	97.9	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1386758) - continued										
VA24A6791-002	Anonymous	Boron, total	7440-42-8	E420	0.094 mg/L	0.1 mg/L	94.3	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00395 mg/L	0.004 mg/L	98.8	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00985 mg/L	0.01 mg/L	98.5	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0379 mg/L	0.04 mg/L	94.7	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Copper, total	7440-50-8	E420	0.0188 mg/L	0.02 mg/L	94.1	70.0	130	----
		Iron, total	7439-89-6	E420	1.84 mg/L	2 mg/L	92.1	70.0	130	----
		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	0.0887 mg/L	0.1 mg/L	88.7	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0190 mg/L	0.02 mg/L	95.2	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0198 mg/L	0.02 mg/L	99.0	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0382 mg/L	0.04 mg/L	95.5	70.0	130	----
		Phosphorus, total	7723-14-0	E420	9.43 mg/L	10 mg/L	94.3	70.0	130	----
		Potassium, total	7440-09-7	E420	3.98 mg/L	4 mg/L	99.5	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0399 mg/L	0.04 mg/L	99.8	70.0	130	----
		Silicon, total	7440-21-3	E420	9.72 mg/L	10 mg/L	97.2	70.0	130	----
		Silver, total	7440-22-4	E420	0.00396 mg/L	0.004 mg/L	99.0	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	20.0 mg/L	20 mg/L	99.9	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00383 mg/L	0.004 mg/L	95.9	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0194 mg/L	0.02 mg/L	96.9	70.0	130	----
		Tin, total	7440-31-5	E420	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0394 mg/L	0.04 mg/L	98.6	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00381 mg/L	0.004 mg/L	95.3	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0941 mg/L	0.1 mg/L	94.1	70.0	130	----
		Zinc, total	7440-66-6	E420	0.365 mg/L	0.4 mg/L	91.2	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0411 mg/L	0.04 mg/L	103	70.0	130	----
Total Metals (QCLot: 1389734)										
VA24A6796-002	WLNG US 1	Mercury, total	7439-97-6	E508	0.000112 mg/L	0.0001 mg/L	112	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: 1386764)										
FJ2400898-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.196 mg/L	0.2 mg/L	97.8	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	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0394 mg/L	0.04 mg/L	98.5	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00857 mg/L	0.01 mg/L	85.7	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.091 mg/L	0.1 mg/L	91.1	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00400 mg/L	0.004 mg/L	100.0	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.0102 mg/L	0.01 mg/L	102	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0389 mg/L	0.04 mg/L	97.3	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0191 mg/L	0.02 mg/L	95.5	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0184 mg/L	0.02 mg/L	91.9	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.96 mg/L	2 mg/L	98.1	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0183 mg/L	0.02 mg/L	91.4	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0922 mg/L	0.1 mg/L	92.2	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0190 mg/L	0.02 mg/L	95.3	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0376 mg/L	0.04 mg/L	94.0	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	10.1 mg/L	10 mg/L	101	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.78 mg/L	4 mg/L	94.6	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0199 mg/L	0.02 mg/L	99.3	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0394 mg/L	0.04 mg/L	98.4	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.75 mg/L	10 mg/L	97.5	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00389 mg/L	0.004 mg/L	97.3	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0423 mg/L	0.04 mg/L	106	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00356 mg/L	0.004 mg/L	89.1	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0179 mg/L	0.02 mg/L	89.6	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0395 mg/L	0.04 mg/L	98.7	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0186 mg/L	0.02 mg/L	93.2	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00374 mg/L	0.004 mg/L	93.4	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1386764) - continued										
FJ2400898-002	Anonymous	Vanadium, dissolved	7440-62-2	E421	0.0985 mg/L	0.1 mg/L	98.5	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.384 mg/L	0.4 mg/L	96.1	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0389 mg/L	0.04 mg/L	97.2	70.0	130	----
Dissolved Metals (QCLot: 1388555)										
VA24A6749-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.000108 mg/L	0.0001 mg/L	108	70.0	130	----
Speciated Metals (QCLot: 1390009)										
VA24A6655-002	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.266 mg/L	0.25 mg/L	106	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:	V6E 4M3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: ☑ ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2
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] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

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

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

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

Project Information

ALS Account # / Quote #:	VA23-TRIT100-003
Job #:	11964
PO / AFE:	11964 - Task 20 - Phase 3C-4C
LSD:	
ALS Lab Work Order # (lab use only):	VA24A6796

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	
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 (as H2S), Un ionized Sulfide	Anions scan (Br, Cl, F, NO2, NO3, SO4)	General parameters (alkalinity)	DOC					SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
						F					P	P			F/P							
	WLNG DS 1	01-Apr-24	09:10	Water	R	R	R	R	R	R	R	R	R	R	R						N	9
	pH: 7.36 cond: 62 mS/cm temp: 7.3°C																					
	WLNG US 1	01-Apr-24	09:49	Water	R	R	R	R	R	R	R	R	R	R	R						N	9
	pH: 7.06 cond: 18 mS/cm temp: 7.2°C																					
	Duplicate N/A			Water	R	R	R	R	R	R	R	R	R	R	R						N	9
	Field Blank N/A			Water	R	R	R	R	R	R	R	R	R	R	R						N	9
	Trip Blank N/A			Water	R	R			R	R	R	R	R	R							N	6

Environmental Division
Vancouver
Work Order Reference
VA24A6796

Telephone : +1 604 253 4188

down list below

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 / Specif

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			
				9			

SHIPMENT RELEASE (client use)

April 1, 2024 Time: 16:20

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: RJ Date: Apr-1 Time: 1630

TIONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY

SEPT 2017 FRONT

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

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

Woodfibre Site Receiving Environment Field Notes and Logs

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-4-1-Blanchard-9705C

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	04/01/2024	**Location:**	WLNG
Triton QP:	Sam Blanchard	**Latitude/Longitude:**	49.6683 -123.247958
Temperature(c):	Low 8 High 13	**Permit:**	PE 110136
Weather Conditions:	Clear	**Ground Conditions:**	Dry

Observations

Time: 09:29:45 **Flow Volume (visual):** moderate

Notes:

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

Samples Collected - Parameters

Total Metals + Mercury	Yes	**General Parameters (Alkalinity)**	Yes	**Other Sample:** Total Chromium, Conductivity 62 us/cm
Dissolved Metals + Mercury	Yes	**Total Sulfide, Unionized Sulfide**	Yes	
TSS	Yes	**Anions**	Yes	
TDS	Yes	**VOC/VPH**	N/A	**QA Samples:** No Total Chromium, Conductivity 62 us/cm
Nutrients	Yes	**EPH, PAH, LEPH/HEPH**	N/A	
DOC	Yes	**Trout LC50**	N/A	

Logger Maintenance

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

Describe Logger Maintenance

Photos

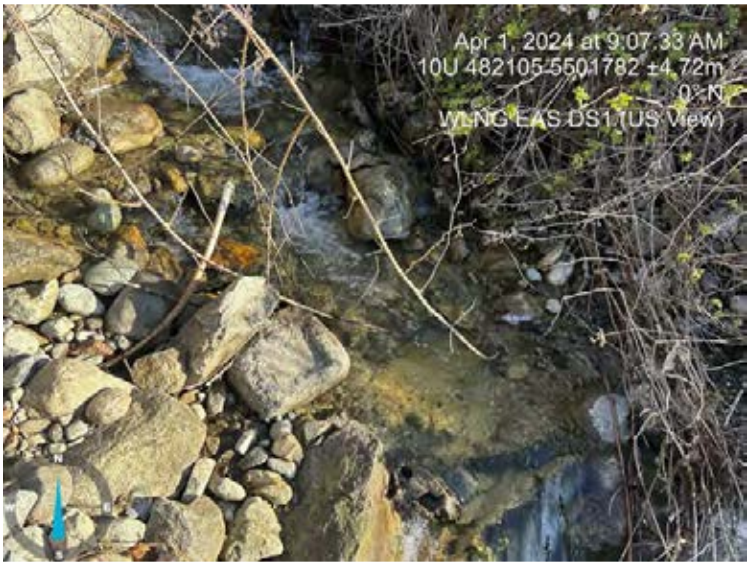

Photo: 1

Location: EAS DS1

Description: US View

Photo: 2

Location: EAS DS1

Description: DS View

Photos

Photo: 3

Location: EAS DS1

Description: Across View

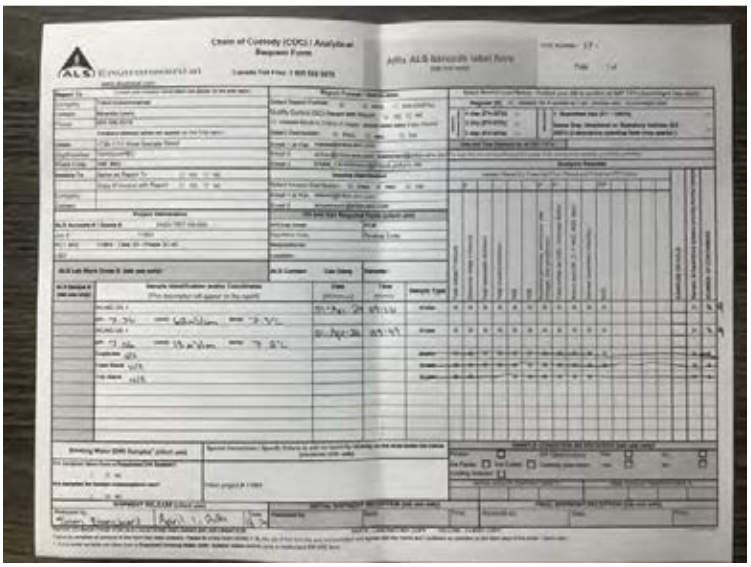

Photo: 4

Location: EAS DS1

Description: Lab COC

Sign Off

Report Prepared By: Sam Blanchard

Report Reviewer: Miranda Lewis

Name:

Designation:

Designation Number:

Report Reviewed: Yes

Professional(s) of Record: N/A

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-4-1-Blanchard-AC237

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	04/01/2024	**Location:**	WLNG
Triton QP:	Sam Blanchard	**Latitude/Longitude:**	49.669455 -123.25087
Temperature(c):	Low 8 High 13	**Permit:**	PE 110136
Weather Conditions:	Clear	**Ground Conditions:**	Dry

Observations

Time: 09:50:01 **Flow Volume (visual):** moderate

Notes:

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

Samples Collected - Parameters

Total Metals + Mercury	Yes	**General Parameters (Alkalinity)**	Yes	**Other Sample:** Total Chromium, Conductivity 18 uS/cm
Dissolved Metals + Mercury	Yes	**Total Sulfide, Unionized Sulfide**	Yes	
TSS	Yes	**Anions**	Yes	
TDS	Yes	**VOC/VPH**	N/A	**QA Samples:** No Total Chromium, Conductivity 18 uS/cm
Nutrients	Yes	**EPH, PAH, LEPH/HEPH**	N/A	
DOC	Yes	**Trout LC50**	N/A	

Logger Maintenance

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

Describe Logger Maintenance

Wiped probes, cleaned out vegetation in casing

Photos

Photo: 1

Location: EAS US1

Description: US View

Photo: 2

Location: EAS US1

Description: DS View

Photos

Photo: 3

Location: EAS US1

Description: Across View

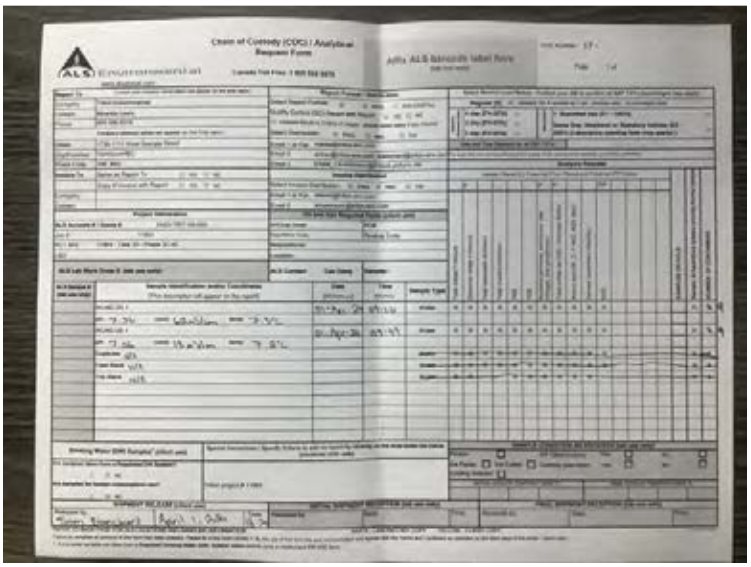

Photo: 4

Location: EAS US1

Description: Lab COC

Sign Off

Report Prepared By: Test

Report Reviewer: Miranda Lewis

Name:

Designation:

Designation Number:

Report Reviewed: Yes

Professional(s) of Record: N/A