CERTIFICATE OF ANALYSIS

REPORTED TO	Cherry Ridge Management 158 North Fork Road Cherryville, BC V0E 2G3		
ATTENTION	Melanie Staker	**WORK ORDER**	23K2198
PO NUMBER	Cherry Ridge Management Creek Monitoring	**RECEIVED / TEMP**	2023-11-20 08:53 / 3.1°C
PROJECT	Creek Monitoring	**REPORTED**	2023-11-25 10:28
PROJECT INFO		**COC NUMBER**	No Number

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO/IEC 17025:2017 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

By engaging our services, you are agreeing to CARO Analytical Service's Standard Terms and Conditions outlined here: https://www.caro.ca/terms-conditions

If you have any questions or concerns, please contact me at TeamCaro@caro.ca

Authorized By:

Team CARO
Client Service Representative

TEST RESULTS

REPORTED TO	Cherry Ridge Management	**WORK ORDER**	23K2198
PROJECT	Creek Monitoring	**REPORTED**	2023-11-25 10:28

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
North Fork Cherry Creek (23K2198-01) | Matrix: Water | Sampled: 2023-11-19 11:20						F1, F3, FILT, PRES
Anions						
Chloride	**0.16**	AO ≤ 250	0.10	mg/L	2023-11-21	
Nitrate (as N)	**0.035**	MAC = 10	0.010	mg/L	2023-11-21	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2023-11-21	
Sulfate	**13.5**	AO ≤ 500	1.0	mg/L	2023-11-21	
Calculated Parameters						
Nitrate+Nitrite (as N)	**0.0352**	N/A	0.0100	mg/L	N/A	
Nitrogen, Total	**0.106**	N/A	0.0500	mg/L	N/A	
Dissolved Metals						F1
Aluminum, dissolved	< 0.0050	N/A	0.0050	mg/L	2023-11-24	
General Parameters						
Conductivity (EC)	**198**	N/A	2.0	µS/cm	2023-11-21	
Nitrogen, Total Kjeldahl	**0.071**	N/A	0.050	mg/L	2023-11-23	
Phosphorus, Total (as P)	< 0.0050	N/A	0.0050	mg/L	2023-11-22	
Phosphorus, Total Dissolved	< 0.0050	N/A	0.0050	mg/L	2023-11-22	
Microbiological Parameters						
Coliforms, Total (Q-Tray)	**55**	MAC = 0	1	MPN/100 mL	2023-11-20	
E. coli (Q-Tray)	**2**	MAC = 0	1	MPN/100 mL	2023-11-20	
Half Mile Creek (23K2198-02) | Matrix: Water | Sampled: 2023-11-19 12:15						F1, F3, FILT, PRES
Anions						
Chloride	**0.29**	AO ≤ 250	0.10	mg/L	2023-11-21	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2023-11-21	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2023-11-21	
Sulfate	**41.1**	AO ≤ 500	1.0	mg/L	2023-11-21	
Calculated Parameters						
Nitrate+Nitrite (as N)	< 0.0100	N/A	0.0100	mg/L	N/A	
Nitrogen, Total	**0.0510**	N/A	0.0500	mg/L	N/A	
Dissolved Metals						F1
Aluminum, dissolved	< 0.0050	N/A	0.0050	mg/L	2023-11-24	
General Parameters						
Conductivity (EC)	**400**	N/A	2.0	µS/cm	2023-11-21	
Nitrogen, Total Kjeldahl	**0.051**	N/A	0.050	mg/L	2023-11-23	
Phosphorus, Total (as P)	< 0.0050	N/A	0.0050	mg/L	2023-11-22	
Phosphorus, Total Dissolved	< 0.0050	N/A	0.0050	mg/L	2023-11-22	

TEST RESULTS

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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
Half Mile Creek (23K2198-02) | Matrix: Water | Sampled: 2023-11-19 12:15, Continued						F1, F3, FILT, PRES
Microbiological Parameters						
Coliforms, Total (Q-Tray)	29	MAC = 0	1	MPN/100 mL	2023-11-20	
E. coli (Q-Tray)	< 1	MAC = 0	1	MPN/100 mL	2023-11-20	
Cherry Creek at Hall (23K2198-03) | Matrix: Water | Sampled: 2023-11-19 11:50						F1, F3, FILT, PRES
Anions						
Chloride	**2.67**	AO ≤ 250	0.10	mg/L	2023-11-21	
Nitrate (as N)	**0.035**	MAC = 10	0.010	mg/L	2023-11-21	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2023-11-21	
Sulfate	**20.1**	AO ≤ 500	1.0	mg/L	2023-11-21	
Calculated Parameters						
Nitrate+Nitrite (as N)	**0.0353**	N/A	0.0100	mg/L	N/A	
Nitrogen, Total	**0.144**	N/A	0.0500	mg/L	N/A	
Dissolved Metals						F1
Aluminum, dissolved	< 0.0050	N/A	0.0050	mg/L	2023-11-24	
General Parameters						
Conductivity (EC)	**275**	N/A	2.0	µS/cm	2023-11-21	
Nitrogen, Total Kjeldahl	**0.109**	N/A	0.050	mg/L	2023-11-23	
Phosphorus, Total (as P)	**0.0062**	N/A	0.0050	mg/L	2023-11-22	
Phosphorus, Total Dissolved	< 0.0050	N/A	0.0050	mg/L	2023-11-22	
Microbiological Parameters						
Coliforms, Total (Q-Tray)	96	MAC = 0	1	MPN/100 mL	2023-11-20	
E. coli (Q-Tray)	< 1	MAC = 0	1	MPN/100 mL	2023-11-20	
Shuswap River Picnic Site (23K2198-04) | Matrix: Water | Sampled: 2023-11-19 10:20						F1, F3, FILT, PRES
Anions						
Chloride	**0.41**	AO ≤ 250	0.10	mg/L	2023-11-21	
Nitrate (as N)	**0.041**	MAC = 10	0.010	mg/L	2023-11-21	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2023-11-21	
Sulfate	**6.7**	AO ≤ 500	1.0	mg/L	2023-11-21	
Calculated Parameters						
Nitrate+Nitrite (as N)	**0.0410**	N/A	0.0100	mg/L	N/A	
Nitrogen, Total	**0.147**	N/A	0.0500	mg/L	N/A	

CARO ANALYTICAL SERVICES

TEST RESULTS

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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
Shuswap River Picnic Site (23K2198-04) | Matrix: Water | Sampled: 2023-11-19 10:20, Continued						F1, F3, FILT, PRES
Dissolved Metals						F1
Aluminum, dissolved	< 0.0050	N/A	0.0050	mg/L	2023-11-24	
General Parameters						
Conductivity (EC)	**106**	N/A	2.0	µS/cm	2023-11-21	
Nitrogen, Total Kjeldahl	**0.106**	N/A	0.050	mg/L	2023-11-23	
Phosphorus, Total (as P)	< 0.0050	N/A	0.0050	mg/L	2023-11-22	
Phosphorus, Total Dissolved	< 0.0050	N/A	0.0050	mg/L	2023-11-22	
Microbiological Parameters						
Coliforms, Total (Q-Tray)	261	MAC = 0	1	MPN/100 mL	2023-11-20	
E. coli (Q-Tray)	1	MAC = 0	1	MPN/100 mL	2023-11-20	
Ferry Creek (23K2198-05) | Matrix: Water | Sampled: 2023-11-19 10:50						F1, F3, FILT, PRES
Anions						
Chloride	**1.05**	AO ≤ 250	0.10	mg/L	2023-11-21	
Nitrate (as N)	**0.026**	MAC = 10	0.010	mg/L	2023-11-21	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2023-11-21	
Sulfate	**36.2**	AO ≤ 500	1.0	mg/L	2023-11-21	
Calculated Parameters						
Nitrate+Nitrite (as N)	**0.0259**	N/A	0.0100	mg/L	N/A	
Nitrogen, Total	**0.126**	N/A	0.0500	mg/L	N/A	
Dissolved Metals						F1
Aluminum, dissolved	< 0.0050	N/A	0.0050	mg/L	2023-11-24	
General Parameters						
Conductivity (EC)	**367**	N/A	2.0	µS/cm	2023-11-21	
Nitrogen, Total Kjeldahl	**0.100**	N/A	0.050	mg/L	2023-11-23	
Phosphorus, Total (as P)	**0.0085**	N/A	0.0050	mg/L	2023-11-22	
Phosphorus, Total Dissolved	**0.0071**	N/A	0.0050	mg/L	2023-11-22	
Microbiological Parameters						
Coliforms, Total (Q-Tray)	133	MAC = 0	1	MPN/100 mL	2023-11-20	
E. coli (Q-Tray)	< 1	MAC = 0	1	MPN/100 mL	2023-11-20	

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Sample Qualifiers:

F1	The sample was not field-filtered and was therefore filtered through a 0.45 µm membrane in the laboratory and preserved with HNO3 prior to analysis for dissolved metals.
F3	Results may be biased low due to sub-sampling from general container.
FILT	The sample has been filtered for TDP in the laboratory. Results may not reflect conditions at the time of sampling.
PRES	Sample has been preserved for TDP, TP, TKN in the laboratory and the holding time has been extended.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Cherry Ridge Management	**WORK ORDER**	23K2198
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Analysis Description	Method Ref.	Technique	Accredited	Location
Anions in Water	SM 4110 B (2020)	Ion Chromatography	✓	Kelowna
Coliforms, Total in Water	SM 9223 (2016)	Quanti-Tray / Enzyme Substrate Endo Agar	✓	Kelowna
Conductivity in Water	SM 2510 B (2021)	Conductivity Meter	✓	Kelowna
Dissolved Metals in Water	EPA 200.8 / EPA 6020B	0.45 µm Filtration / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
E. coli in Water	SM 9223 (2016)	Quanti-Tray / Enzyme Substrate Endo Agar	✓	Kelowna
Nitrogen, Total Kjeldahl in Water	SM 4500-Norg D* (2021)	Block Digestion and Flow Injection Analysis	✓	Kelowna
Phosphorus, Total Dissolved in Water	SM 4500-P B.5* (2011) / SM 4500-P F (2021)	Persulfate Digestion / Automated Colorimetry (Ascorbic Acid)	✓	Kelowna
Phosphorus, Total in Water	SM 4500-P B.5* (2011) / SM 4500-P F (2021)	Persulfate Digestion / Automated Colorimetry (Ascorbic Acid)	✓	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
MPN/100 mL	Most Probable Number per 100 millilitres
µS/cm	Microsiemens per centimetre
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

Guidelines Referenced in this Report:

Guidelines for Canadian Drinking Water Quality (Health Canada, September 2022)

Note: In some cases, the values displayed on the report represent the lowest guideline and are to be verified by the end user

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General Comments:

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Results in **Bold** indicate values that are above CARO's method reporting limits. Any results that are above regulatory limits are highlighted **red**. Please note that results will only be highlighted red if the regulatory limits are included on the CARO report. Any Bold and/or highlighted results do not take into account method uncertainty. If you would like method uncertainty or regulatory limits to be included on your report, please contact your Account Manager:TeamCaro@caro.ca

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