

CERTIFICATE OF ANALYSIS

REPORTED TO Campbell Scientific Canada Corp.
1030 Sugar Lake Rd
Cherryville, BC V0E 2G2

ATTENTION Claude Labine.

PO NUMBER

PROJECT Cherryville Water Stewart

PROJECT INFO

WORK ORDER 24K1964

RECEIVED / TEMP 2024-11-18 09:03 / 4.6°C

REPORTED 2024-11-25 11:11

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>

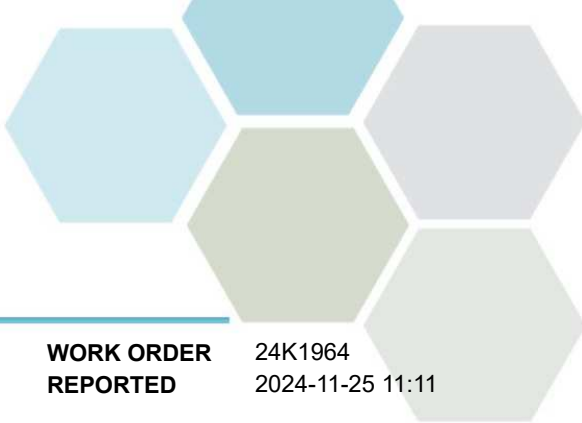
If you have any questions or concerns, please contact me at TeamCaro@caro.ca

Authorized By:

Team CARO
Client Service Representative

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TEST RESULTS

REPORTED TO PROJECT Campbell Scientific Canada Corp.
Cherryville Water Stewart

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2024-11-25 11:11

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
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Shuswap River @ Sihlis Road (24K1964-01) | Matrix: Water | Sampled: 2024-11-17 13:42

Anions

Chloride	0.12	AO ≤ 250	0.10 mg/L	2024-11-19	
Nitrate (as N)	0.045	MAC = 10	0.010 mg/L	2024-11-19	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2024-11-19	
Sulfate	3.7	AO ≤ 500	1.0 mg/L	2024-11-19	

Calculated Parameters

Nitrate+Nitrite (as N)	0.0450	N/A	0.0100 mg/L	N/A	
Nitrogen, Total	0.176	N/A	0.0500 mg/L	N/A	

General Parameters

Ammonia, Total (as N)	0.080	None Required	0.050 mg/L	2024-11-21	
Conductivity (EC)	80.7	N/A	2.0 µS/cm	2024-11-19	
Nitrogen, Total Kjeldahl	0.131	N/A	0.050 mg/L	2024-11-21	
pH	7.59	7.0-10.5	0.10 pH units	2024-11-19	HT2
Phosphorus, Total (as P)	0.0103	N/A	0.0050 mg/L	2024-11-20	
Turbidity	0.71	OG < 1	0.10 NTU	2024-11-18	

Microbiological Parameters

Coliforms, Total (Q-Tray)	130	MAC = 0	1 MPN/100 mL	2024-11-18	
E. coli (Q-Tray)	< 1	MAC = 0	1 MPN/100 mL	2024-11-18	
Enterococcus	< 1.0	N/A	1.0 MPN/100 mL	2024-11-18	

Reiter Creek @ Shuswap River (24K1964-02) | Matrix: Water | Sampled: 2024-11-17 13:38

Anions

Chloride	0.26	AO ≤ 250	0.10 mg/L	2024-11-19	
Nitrate (as N)	< 0.010	MAC = 10	0.010 mg/L	2024-11-19	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2024-11-19	
Sulfate	6.8	AO ≤ 500	1.0 mg/L	2024-11-19	

Calculated Parameters

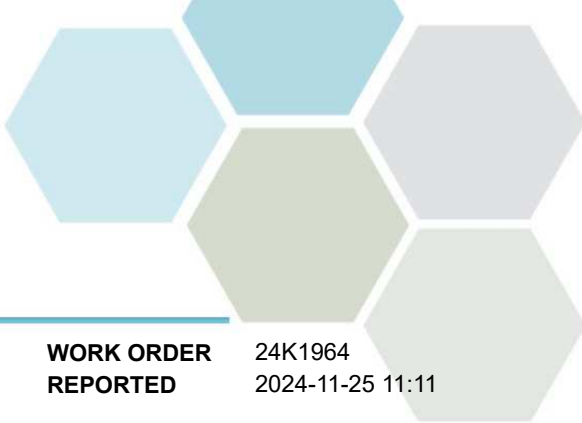
Nitrate+Nitrite (as N)	< 0.0100	N/A	0.0100 mg/L	N/A	
Nitrogen, Total	0.155	N/A	0.0500 mg/L	N/A	

General Parameters

Ammonia, Total (as N)	< 0.050	None Required	0.050 mg/L	2024-11-21	
Conductivity (EC)	171	N/A	2.0 µS/cm	2024-11-19	
Nitrogen, Total Kjeldahl	0.155	N/A	0.050 mg/L	2024-11-21	
pH	8.03	7.0-10.5	0.10 pH units	2024-11-19	HT2
Phosphorus, Total (as P)	0.0084	N/A	0.0050 mg/L	2024-11-20	
Turbidity	1.38	OG < 1	0.10 NTU	2024-11-18	

Microbiological Parameters

Coliforms, Total (Q-Tray)	73	MAC = 0	1 MPN/100 mL	2024-11-18	
E. coli (Q-Tray)	1	MAC = 0	1 MPN/100 mL	2024-11-18	



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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
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Reiter Creek @ Shuswap River (24K1964-02) | Matrix: Water | Sampled: 2024-11-17 13:38, Continued

Microbiological Parameters, Continued

Enterococcus	3.1	N/A	1.0	MPN/100 mL	2024-11-18	
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Cherry Creek @ Shuswap River (24K1964-03) | Matrix: Water | Sampled: 2024-11-17 14:03

Anions

Chloride	0.97	AO ≤ 250	0.10	mg/L	2024-11-19	
Nitrate (as N)	0.028	MAC = 10	0.010	mg/L	2024-11-19	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-11-19	
Sulfate	13.5	AO ≤ 500	1.0	mg/L	2024-11-19	

Calculated Parameters

Nitrate+Nitrite (as N)	0.0277	N/A	0.0100	mg/L	N/A	
Nitrogen, Total	0.132	N/A	0.0500	mg/L	N/A	

General Parameters

Ammonia, Total (as N)	0.066	None Required	0.050	mg/L	2024-11-21	
Conductivity (EC)	211	N/A	2.0	µS/cm	2024-11-19	
Nitrogen, Total Kjeldahl	0.104	N/A	0.050	mg/L	2024-11-21	
pH	8.15	7.0-10.5	0.10	pH units	2024-11-19	HT2
Phosphorus, Total (as P)	0.0101	N/A	0.0050	mg/L	2024-11-20	
Turbidity	1.41	OG < 1	0.10	NTU	2024-11-18	

Microbiological Parameters

Coliforms, Total (Q-Tray)	60	MAC = 0	1	MPN/100 mL	2024-11-18	
E. coli (Q-Tray)	14	MAC = 0	1	MPN/100 mL	2024-11-18	
Enterococcus	1.0	N/A	1.0	MPN/100 mL	2024-11-18	

Ferry Creek @ Shuswap River (24K1964-04) | Matrix: Water | Sampled: 2024-11-17 14:16

Anions

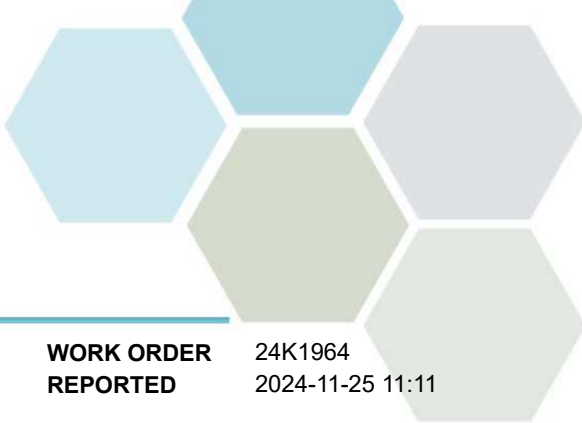
Chloride	1.01	AO ≤ 250	0.10	mg/L	2024-11-19	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-11-19	HT1
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-11-19	HT1
Sulfate	30.7	AO ≤ 500	1.0	mg/L	2024-11-19	

Calculated Parameters

Nitrate+Nitrite (as N)	< 0.0100	N/A	0.0100	mg/L	N/A	
Nitrogen, Total	0.125	N/A	0.0500	mg/L	N/A	

General Parameters

Ammonia, Total (as N)	0.060	None Required	0.050	mg/L	2024-11-21	
Conductivity (EC)	315	N/A	2.0	µS/cm	2024-11-19	
Nitrogen, Total Kjeldahl	0.125	N/A	0.050	mg/L	2024-11-21	
pH	8.29	7.0-10.5	0.10	pH units	2024-11-19	HT2



TEST RESULTS

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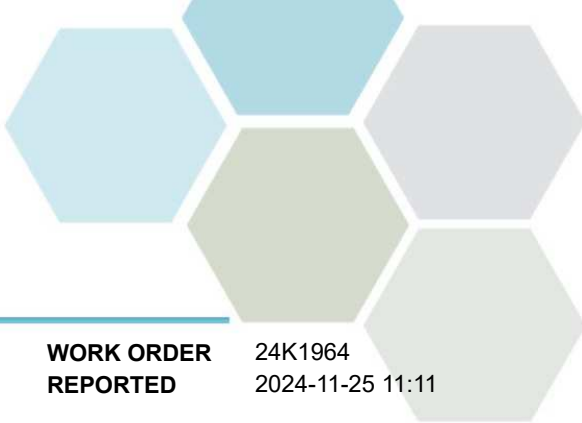
Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
Ferry Creek @ Shuswap River (24K1964-04) Matrix: Water Sampled: 2024-11-17 14:16, Continued					
<i>General Parameters, Continued</i>					
Phosphorus, Total (as P)	0.0152	N/A	0.0050 mg/L	2024-11-20	
Turbidity	0.38	OG < 1	0.10 NTU	2024-11-18	
<i>Microbiological Parameters</i>					
Coliforms, Total (Q-Tray)	> 2420	MAC = 0	1 MPN/100 mL	2024-11-18	
E. coli (Q-Tray)	< 1	MAC = 0	1 MPN/100 mL	2024-11-18	
Enterococcus	37	N/A	1.0 MPN/100 mL	2024-11-18	

Shuswap River @ BC Hydro site (24K1964-05) | Matrix: Water | Sampled: 2024-11-17 14:34

<i>Anions</i>					
Chloride	0.29	AO ≤ 250	0.10 mg/L	2024-11-19	
Nitrate (as N)	0.041	MAC = 10	0.010 mg/L	2024-11-19	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2024-11-19	
Sulfate	5.2	AO ≤ 500	1.0 mg/L	2024-11-19	
<i>Calculated Parameters</i>					
Nitrate+Nitrite (as N)	0.0409	N/A	0.0100 mg/L	N/A	
Nitrogen, Total	0.126	N/A	0.0500 mg/L	N/A	
<i>General Parameters</i>					
Ammonia, Total (as N)	0.064	None Required	0.050 mg/L	2024-11-21	
Conductivity (EC)	94.1	N/A	2.0 µS/cm	2024-11-19	
Nitrogen, Total Kjeldahl	0.085	N/A	0.050 mg/L	2024-11-21	
pH	7.91	7.0-10.5	0.10 pH units	2024-11-19	HT2
Phosphorus, Total (as P)	0.0111	N/A	0.0050 mg/L	2024-11-20	
Turbidity	0.75	OG < 1	0.10 NTU	2024-11-18	
<i>Microbiological Parameters</i>					
Coliforms, Total (Q-Tray)	210	MAC = 0	1 MPN/100 mL	2024-11-18	
E. coli (Q-Tray)	10	MAC = 0	1 MPN/100 mL	2024-11-18	
Enterococcus	< 1.0	N/A	1.0 MPN/100 mL	2024-11-18	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.
 HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.



APPENDIX 1: SUPPORTING INFORMATION

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Analysis Description	Method Ref.	Technique	Accredited	Location
Ammonia, Total in Water	SM 4500-NH3 G* (2021)	Automated Colorimetry (Phenate)	✓	Kelowna
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
E. coli in Water	SM 9223 (2016)	Quanti-Tray / Enzyme Substrate Endo Agar	✓	Kelowna
Enterococcus in Water	SM 9230 D (2022)	Quanti-Tray / Fluorogenic Substrate Enterococcus Test		Kelowna
Nitrogen, Total Kjeldahl in Water	SM 4500-Norg D* (2021)	Block Digestion and Flow Injection Analysis	✓	Kelowna
pH in Water	SM 4500-H+ B (2021)	Electrometry	✓	Kelowna
Phosphorus, Total in Water	SM 4500-P B.5* (2011) / SM 4500-P F (2021)	Persulfate Digestion / Automated Colorimetry (Ascorbic Acid)	✓	Kelowna
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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

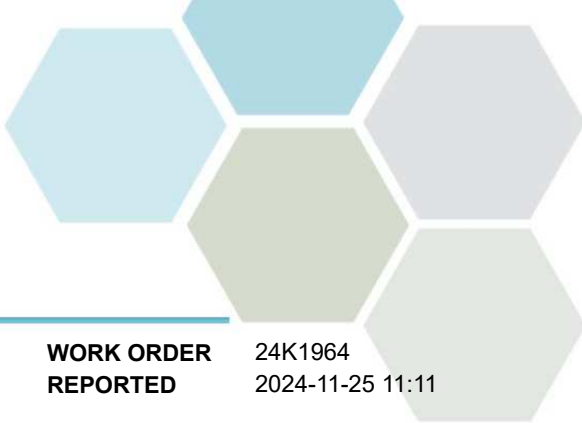
Glossary of Terms:

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
>	Greater than the specified Result
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
MPN/100 mL	Most Probable Number per 100 millilitres
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
pH units	pH < 7 = acidic, pH > 7 = basic
µS/cm	Microsiemens per centimetre
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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