CERTIFICATE OF ANALYSIS

REPORTED TO	Campbell Scientific Canada Corp. 1030 Sugar Lake Rd Cherryville, BC V0E 2G2		
ATTENTION	Claude Labine	**WORK ORDER**	0050209
PO NUMBER		**RECEIVED / TEMP**	2020-05-04 11:17 / 6°C
PROJECT	Cherryville Water Stewart	**REPORTED**	2020-05-08 09:18
PROJECT INFO		**COC NUMBER**	B74302

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 17025:2005 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.

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

Authorized By:

Team CARO
Client Service Representative

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Campbell Scientific Canada Corp.	**WORK ORDER**	0050209
PROJECT	Cherryville Water Stewart	**REPORTED**	2020-05-08 09:18

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
Shuswap River @ Km 14 Above Sugar Lake (0050209-01) | Matrix: Water | Sampled: 2020-05-04 07:00						
Microbiological Parameters						
Coliforms, Total	**105**	N/A	1.0	MPN/100 mL	2020-05-05	
Coliforms, Fecal	**20.1**	N/A	1.0	MPN/100 mL	2020-05-05	
E. coli	**19.5**	N/A	1.0	MPN/100 mL	2020-05-05	
Shuswap River @ Sihlis Rd (0050209-02) | Matrix: Water | Sampled: 2020-05-04 07:00						
Anions						
Chloride	**0.11**	AO ≤ 250	0.10	mg/L	2020-05-05	
Nitrate (as N)	**0.068**	MAC = 10	0.010	mg/L	2020-05-05	
General Parameters						
Alkalinity, Total (as CaCO3)	**38.7**	N/A	1.0	mg/L	2020-05-06	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2020-05-06	
Alkalinity, Bicarbonate (as CaCO3)	**38.7**	N/A	1.0	mg/L	2020-05-06	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2020-05-06	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2020-05-06	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2020-05-07	
Conductivity (EC)	**70.5**	N/A	2.0	µS/cm	2020-05-06	
pH	**7.09**	7.0-10.5	0.10	pH units	2020-05-06	HT2
Turbidity	**0.50**	OG < 1	0.10	NTU	2020-05-05	
Microbiological Parameters						
Coliforms, Total	**25.9**	N/A	1.0	MPN/100 mL	2020-05-05	
Coliforms, Fecal	**2.0**	N/A	1.0	MPN/100 mL	2020-05-05	
E. coli	**2.0**	N/A	1.0	MPN/100 mL	2020-05-05	
Reiter Creek @ Shuswap River (0050209-03) | Matrix: Water | Sampled: 2020-05-04 07:00						PRES
Anions						
Chloride	**0.13**	AO ≤ 250	0.10	mg/L	2020-05-05	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2020-05-05	
General Parameters						
Alkalinity, Total (as CaCO3)	**63.5**	N/A	1.0	mg/L	2020-05-06	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2020-05-06	
Alkalinity, Bicarbonate (as CaCO3)	**63.5**	N/A	1.0	mg/L	2020-05-06	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2020-05-06	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2020-05-06	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2020-05-07	
Conductivity (EC)	**93.3**	N/A	2.0	µS/cm	2020-05-06	
pH	**6.99**	7.0-10.5	0.10	pH units	2020-05-06	HT2
Turbidity	**4.09**	OG < 1	0.10	NTU	2020-05-05	

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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
Reiter Creek @ Shuswap River (0050209-03) | Matrix: Water | Sampled: 2020-05-04 07:00, Continued						PRES
Microbiological Parameters						
Coliforms, Total	**41.0**	N/A	1.0	MPN/100 mL	2020-05-05	
Coliforms, Fecal	< 1.0	N/A	1.0	MPN/100 mL	2020-05-05	
E. coli	< 1.0	N/A	1.0	MPN/100 mL	2020-05-05	
Cherry Creek @ Sugar Lake Road (0050209-04) | Matrix: Water | Sampled: 2020-05-04 07:00						PRES
Anions						
Chloride	**0.75**	AO ≤ 250	0.10	mg/L	2020-05-05	
Nitrate (as N)	**0.059**	MAC = 10	0.010	mg/L	2020-05-05	
General Parameters						
Alkalinity, Total (as CaCO3)	**97.9**	N/A	1.0	mg/L	2020-05-06	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2020-05-06	
Alkalinity, Bicarbonate (as CaCO3)	**97.9**	N/A	1.0	mg/L	2020-05-06	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2020-05-06	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2020-05-06	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2020-05-07	
Conductivity (EC)	**172**	N/A	2.0	µS/cm	2020-05-06	
pH	**7.92**	7.0-10.5	0.10	pH units	2020-05-06	HT2
Turbidity	**15.6**	OG < 1	0.10	NTU	2020-05-05	
Microbiological Parameters						
Coliforms, Total	**98.7**	N/A	1.0	MPN/100 mL	2020-05-05	
Coliforms, Fecal	**12.0**	N/A	1.0	MPN/100 mL	2020-05-05	
E. coli	**8.6**	N/A	1.0	MPN/100 mL	2020-05-05	
Ferry Creek @ Shuswap River (0050209-05) | Matrix: Water | Sampled: 2020-05-04 07:00						
Microbiological Parameters						
Coliforms, Total	**95.9**	N/A	1.0	MPN/100 mL	2020-05-05	
Coliforms, Fecal	**2.5**	N/A	1.0	MPN/100 mL	2020-05-05	
E. coli	**2.5**	N/A	1.0	MPN/100 mL	2020-05-05	
Shuswap River @ BC Hydro Launch (0050209-06) | Matrix: Water | Sampled: 2020-05-04 07:00						
Microbiological Parameters						
Coliforms, Total	**92.7**	N/A	1.0	MPN/100 mL	2020-05-05	
Coliforms, Fecal	**7.5**	N/A	1.0	MPN/100 mL	2020-05-05	
E. coli	**7.5**	N/A	1.0	MPN/100 mL	2020-05-05	

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Sample Qualifiers:

HT2	The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.
PRES	Sample has been preserved for NH3 in the laboratory and the holding time has been extended.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Campbell Scientific Canada Corp.	**WORK ORDER**	0050209
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Analysis Description	Method Ref.	Technique	Location
Alkalinity in Water	SM 2320 B* (2017)	Titration with H2SO4	Kelowna
Ammonia, Total in Water	SM 4500-NH3 G* (2017)	Automated Colorimetry (Phenate)	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	Kelowna
Coliforms, Fecal in Water	NA / SM 9223 (2017)	Quanti-Tray / Enzyme Substrate Endo Agar	Kelowna
Coliforms, Total in Water	NA / SM 9223 (2017)	Quanti-Tray / Enzyme Substrate Endo Agar	Kelowna
Conductivity in Water	SM 2510 B (2017)	Conductivity Meter	Kelowna
E. coli in Water	NA / SM 9223 (2017)	Quanti-Tray / Enzyme Substrate Endo Agar	Kelowna
pH in Water	SM 4500-H+ B (2017)	Electrometry	Kelowna
Turbidity in Water	SM 2130 B (2017)	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
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, Feb 2017)

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

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing. The quality control (QC) data is available upon request

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