CERTIFICATE OF ANALYSIS

REPORTED TO	Alan Forshaw (Cherryville Water Stewards) - -, - -
SITE INFO	
CARO WO#	25E3073
RECEIVED / TEMP	2025-05-22 15:57 / 6.8°C
REPORTED	2025-06-03

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.

Report Highlights:

The results in this report apply to the samples analyzed in accordance with your submission.

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

Laboratory Recommendations:

For assistance reading your report, please visit
https://www.caro.ca/wp-content/uploads/2020/07/How-to-read-your-report-1.pdf
For information about bacteria in water results, please visit
https://www.caro.ca/you-need-to-know-about-bacteria-in-water-analytical-report/
If you have any additional questions or concerns, please contact us at TeamCaro@caro.ca.

Authorized By:

Team CARO
Client Service Representative

TEST RESULTS

REPORTED TO Alan Forshaw (Cherryville Water Stewards)
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Parameter	Result	RL	Units	Analyzed	Note
Sample Name: Cherry Creek @ Hall | Matrix: Water | Sampled: 2025-05-21 17:45					FILT, PRESa
Anions					
Nitrate+Nitrite (as N)	**0.0850**	0.0050	mg/L	2025-05-27	
Calculated Parameters					
Nitrogen, Total	**0.0850**	0.0500	mg/L	N/A	
General Parameters					
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2025-05-29	
Conductivity (EC)	**166**	2.0	µS/cm	2025-05-26	
Nitrogen, Total Kjeldahl	< 0.050	0.050	mg/L	2025-05-30	
pH	**7.73**	0.10	pH units	2025-05-26	HT2
Phosphorus, Total Dissolved	**0.0114**	0.0050	mg/L	2025-06-02	
Solids, Total Dissolved	**100**	15	mg/L	2025-05-27	
Turbidity	**1.62**	0.10	NTU	2025-05-24	
Sample Name: 1/2 mile creek/Spring | Matrix: Water | Sampled: 2025-05-21 17:33					FILT, PRESa
Anions					
Nitrate+Nitrite (as N)	< 0.0050	0.0050	mg/L	2025-05-27	
Calculated Parameters					
Nitrogen, Total	< 0.0500	0.0500	mg/L	N/A	
General Parameters					
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2025-05-29	
Conductivity (EC)	**351**	2.0	µS/cm	2025-05-26	
Nitrogen, Total Kjeldahl	< 0.050	0.050	mg/L	2025-05-30	
pH	**8.22**	0.10	pH units	2025-05-26	HT2
Phosphorus, Total Dissolved	**0.0131**	0.0050	mg/L	2025-06-02	
Solids, Total Dissolved	**220**	15	mg/L	2025-05-27	
Turbidity	**0.44**	0.10	NTU	2025-05-24	
Sample Name: Shuswap River @BC HydroSite | Matrix: Water | Sampled: 2025-05-21 17:04					FILT, PRES
Anions					
Nitrate+Nitrite (as N)	**0.0878**	0.0050	mg/L	2025-05-27	
Calculated Parameters					
Nitrogen, Total	**0.489**	0.0500	mg/L	N/A	
General Parameters					
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2025-05-29	
Conductivity (EC)	**88.9**	2.0	µS/cm	2025-05-26	
Nitrogen, Total Kjeldahl	**0.401**	0.050	mg/L	2025-05-30	

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Parameter	Result	RL	Units	Analyzed	Note
Sample Name: Shuswap River @BC HydroSite | Matrix: Water | Sampled: 2025-05-21 17:04, Continued					FILT, PRES
General Parameters, Continued					
pH	**7.70**	0.10	pH units	2025-05-26	HT2
Phosphorus, Total Dissolved	**0.0229**	0.0050	mg/L	2025-06-02	
Solids, Total Dissolved	**42**	15	mg/L	2025-05-27	
Turbidity	**2.10**	0.10	NTU	2025-05-24	

Note Descriptions:

FILT	The sample has been filtered for DP in the laboratory. Results may not reflect conditions at the time of sampling.
HT2	The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.
PRES	Sample has been preserved for DP, NH3, TKN in the laboratory and the holding time has been extended.
PRESa	Sample has been preserved for DP, TKN, NH3 in the laboratory and the holding time has been extended.

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
Conductivity in Water	SM 2510 B (2021)	Conductivity Meter	✓	Kelowna
Nitrate+Nitrite in Water	SM 4500-NO3- F (2019)	Automated Colorimetry (Cadmium Reduction)	✓	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 Dissolved in Water	SM 4500-P B.5* (2011) / SM 4500-P F (2021)	Persulfate Digestion / Automated Colorimetry (Ascorbic Acid)	✓	Kelowna
Solids, Total Dissolved in Water	Solids in Water, Filtered / SM 2540 C* (2020)	Solids in Water, Filtered / Gravimetry (Dried at 103-105C)	✓	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:

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
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
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

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General Comments:

For assistance reading your report, please visit
https://www.caro.ca/wp-content/uploads/2020/07/How-to-read-your-report-1.pdf

For information about bacteria in water results, please visit
https://www.caro.ca/you-need-to-know-about-bacteria-in-water-analytical-report/

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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

Please note any regulatory guidelines applied to this report are added as a convenience to the client, at their request, to help provide some initial context to analytical results obtained. Although CARO makes every effort to ensure accuracy of the associated regulatory guideline(s) applied, the guidelines applied cannot be assumed to be correct due to a variety of factors and as such CARO Analytical Services assumes no liability or responsibility for the use of those guidelines to make any decisions. The original source of the regulation should be verified and a review of the guideline(s) should be validated as correct in order to make any decisions arising from the comparison of the analytical data obtained to the relevant regulatory guideline for one's particular circumstances. Further, CARO Analytical Services assumes no liability or responsibility for any loss attributed from the use of these guidelines in any way.

APPENDIX 2: QUALITY CONTROL RESULTS

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The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B5E4364										
Blank (B5E4364-BLK1)				Prepared: 2025-05-27, Analyzed: 2025-05-27						
Nitrate+Nitrite (as N)	< 0.0050	0.0050	mg/L							
Blank (B5E4364-BLK2)				Prepared: 2025-05-27, Analyzed: 2025-05-27						
Nitrate+Nitrite (as N)	< 0.0050	0.0050	mg/L							
LCS (B5E4364-BS1)				Prepared: 2025-05-27, Analyzed: 2025-05-27						
Nitrate+Nitrite (as N)	0.521	0.0050	mg/L	0.500		104	91-108			
LCS (B5E4364-BS2)				Prepared: 2025-05-27, Analyzed: 2025-05-27						
Nitrate+Nitrite (as N)	0.515	0.0050	mg/L	0.500		103	91-108			
General Parameters, Batch B5E4142										
Blank (B5E4142-BLK1)				Prepared: 2025-05-24, Analyzed: 2025-05-24						
Turbidity	< 0.10	0.10	NTU							
Blank (B5E4142-BLK2)				Prepared: 2025-05-24, Analyzed: 2025-05-24						
Turbidity	< 0.10	0.10	NTU							
Blank (B5E4142-BLK3)				Prepared: 2025-05-24, Analyzed: 2025-05-24						
Turbidity	< 0.10	0.10	NTU							
Blank (B5E4142-BLK4)				Prepared: 2025-05-24, Analyzed: 2025-05-24						
Turbidity	< 0.10	0.10	NTU							
LCS (B5E4142-BS1)				Prepared: 2025-05-24, Analyzed: 2025-05-24						
Turbidity	15.7	0.10	NTU	15.8		99	90-110			
LCS (B5E4142-BS2)				Prepared: 2025-05-24, Analyzed: 2025-05-24						
Turbidity	15.6	0.10	NTU	15.8		99	90-110			
LCS (B5E4142-BS3)				Prepared: 2025-05-24, Analyzed: 2025-05-24						
Turbidity	15.6	0.10	NTU	15.8		99	90-110			
LCS (B5E4142-BS4)				Prepared: 2025-05-24, Analyzed: 2025-05-24						
Turbidity	15.6	0.10	NTU	15.8		99	90-110			

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B5E4358										
Blank (B5E4358-BLK1)				Prepared: 2025-05-26, Analyzed: 2025-05-26						
Conductivity (EC)	< 2.0	2.0	µS/cm							
Blank (B5E4358-BLK2)				Prepared: 2025-05-26, Analyzed: 2025-05-26						
Conductivity (EC)	< 2.0	2.0	µS/cm							
Blank (B5E4358-BLK3)				Prepared: 2025-05-26, Analyzed: 2025-05-26						
Conductivity (EC)	< 2.0	2.0	µS/cm							
LCS (B5E4358-BS2)				Prepared: 2025-05-26, Analyzed: 2025-05-26						
Conductivity (EC)	1420	2.0	µS/cm	1410		101	95-105			
LCS (B5E4358-BS4)				Prepared: 2025-05-26, Analyzed: 2025-05-26						
Conductivity (EC)	1430	2.0	µS/cm	1410		101	95-105			
LCS (B5E4358-BS6)				Prepared: 2025-05-26, Analyzed: 2025-05-26						
Conductivity (EC)	1420	2.0	µS/cm	1410		101	95-105			
Reference (B5E4358-SRM1)				Prepared: 2025-05-26, Analyzed: 2025-05-26						
pH	7.02	0.10	pH units	7.01		100	98-102			
Reference (B5E4358-SRM2)				Prepared: 2025-05-26, Analyzed: 2025-05-26						
pH	7.02	0.10	pH units	7.01		100	98-102			
Reference (B5E4358-SRM3)				Prepared: 2025-05-26, Analyzed: 2025-05-26						
pH	7.02	0.10	pH units	7.01		100	98-102			
General Parameters, Batch B5E4509										
Blank (B5E4509-BLK1)				Prepared: 2025-05-27, Analyzed: 2025-05-27						
Solids, Total Dissolved	< 15	15	mg/L							
LCS (B5E4509-BS1)				Prepared: 2025-05-27, Analyzed: 2025-05-27						
Solids, Total Dissolved	240	15	mg/L	240		100	85-115			
General Parameters, Batch B5E4679										
Blank (B5E4679-BLK1)				Prepared: 2025-05-28, Analyzed: 2025-05-30						
Nitrogen, Total Kjeldahl	< 0.050	0.050	mg/L							
Blank (B5E4679-BLK2)				Prepared: 2025-05-28, Analyzed: 2025-05-30						
Nitrogen, Total Kjeldahl	< 0.050	0.050	mg/L							
LCS (B5E4679-BS1)				Prepared: 2025-05-28, Analyzed: 2025-05-30						
Nitrogen, Total Kjeldahl	1.03	0.050	mg/L	1.00		103	85-115			
LCS (B5E4679-BS2)				Prepared: 2025-05-28, Analyzed: 2025-05-30						
Nitrogen, Total Kjeldahl	1.04	0.050	mg/L	1.00		104	85-115			
General Parameters, Batch B5E4757										
Blank (B5E4757-BLK1)				Prepared: 2025-05-29, Analyzed: 2025-05-29						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							BLK
Blank (B5E4757-BLK2)				Prepared: 2025-05-29, Analyzed: 2025-05-29						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							BLK

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B5E4757, Continued										
Blank (B5E4757-BLK3)				Prepared: 2025-05-29, Analyzed: 2025-05-29						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							BLK
Blank (B5E4757-BLK5)				Prepared: 2025-05-29, Analyzed: 2025-05-29						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							BLK
LCS (B5E4757-BS1)				Prepared: 2025-05-29, Analyzed: 2025-05-29						
Ammonia, Total (as N)	0.982	0.050	mg/L	1.00		98	85-115			
LCS (B5E4757-BS2)				Prepared: 2025-05-29, Analyzed: 2025-05-29						
Ammonia, Total (as N)	1.01	0.050	mg/L	1.00		101	85-115			
LCS (B5E4757-BS3)				Prepared: 2025-05-29, Analyzed: 2025-05-29						
Ammonia, Total (as N)	0.966	0.050	mg/L	1.00		97	85-115			
LCS (B5E4757-BS5)				Prepared: 2025-05-29, Analyzed: 2025-05-29						
Ammonia, Total (as N)	0.975	0.050	mg/L	1.00		98	85-115			
General Parameters, Batch B5F1787										
Blank (B5F1787-BLK3)				Prepared: 2025-06-02, Analyzed: 2025-06-02						
Phosphorus, Total Dissolved	< 0.0050	0.0050	mg/L							
Blank (B5F1787-BLK4)				Prepared: 2025-06-02, Analyzed: 2025-06-02						
Phosphorus, Total Dissolved	< 0.0050	0.0050	mg/L							
Blank (B5F1787-BLK5)				Prepared: 2025-06-02, Analyzed: 2025-06-02						
Phosphorus, Total Dissolved	< 0.0050	0.0050	mg/L							
LCS (B5F1787-BS3)				Prepared: 2025-06-02, Analyzed: 2025-06-02						
Phosphorus, Total Dissolved	0.0894	0.0050	mg/L	0.100		89	85-115			
LCS (B5F1787-BS4)				Prepared: 2025-06-02, Analyzed: 2025-06-02						
Phosphorus, Total Dissolved	0.0940	0.0050	mg/L	0.100		94	85-115			
LCS (B5F1787-BS5)				Prepared: 2025-06-02, Analyzed: 2025-06-02						
Phosphorus, Total Dissolved	0.0877	0.0050	mg/L	0.100		88	85-115			

QC Qualifiers:

BLK Analyte concentration in the Method Blank is above the Reporting Limit (RL).