



July 4, 2022

Dear Sir/Madam:

**RE: Erickson Water Service Water Quality**

The Erickson Water service operates in compliance with safe drinking water legislation and continues to provide potable water to its customers.

Since 1929, the Erickson Water Service has drawn water from Arrow Creek authorized under water licenses issued from the Province of BC. Prior to serving Erickson and the Town of Creston customers, at the Arrow Creek Water Treatment Plant, the water is first processed with coarse screening, settling, fine screening, membrane ultrafiltration, UV disinfection, and residual chlorination. The filtration process on its own provides 4-log bacteria and virus removal. In addition, a System Control and Data Acquisition (SCADA) unit allows for remote plant monitoring and operation.

Certified water utility operators take weekly bacteriological samples from 5 separate sites located in the Erickson water service area. If any results show the presence of bacteria they are acted upon immediately in consultation and collaboration with Interior Health. Attached is the latest bacteriological sample May 30, 2022 test results. Attached also is the latest May 24, 2022, full comprehensive chemical and metal test results.

Should you require additional information, please do not hesitate to contact the undersigned.

Kind regards,

A handwritten signature in black ink, appearing to read "Jason McDiarmid".

Jason McDiarmid  
Utility Service Manager

JM/jm

cc: Allan Richardson, Utilities Supervisor – Erickson

Atch: Passmore Total Coliforms & E. coli Certificate of Analysis, May 30, 2022  
Caro Analytical Services Certificate of Analysis, May 24, 2022

4240 Passmore Upper Road, Winlaw BC, V0G2J0  
250-226-7339  
test@passmorelaboratory.ca  
passmorelaboratory.ca

Client RDCK Erickson Water Service  
Attention Al Richardson

CERTIFICATE OF ANALYSIS

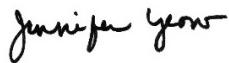
<u>Analyses</u>	<u>Method Description</u>	<u>Reference</u>
Total Coliforms	Membrane Filtration on LES Endo medium	APHA 9222B
E. coli	MF Partition on NA-MUG medium	APHA 9222I

Tests were performed in accordance with methods outlined in the "Standard Methods for the Examination of Water and Wastewater", 23rd Edition, 2017 published by the American Public Health Association.

Passmore Laboratory Ltd. complies with methods and certification through the Province of British Columbia Enhanced Water Quality Assurance (EWQA) Program and the Clinical Microbiology Proficiency Testing (CMPT) Program. Other analytical results on this report not listed above are not within the scope of the EWQA. Passmore Laboratory assumes no responsibility for any loss or damage resulting from error or omission in the conduct of testing. Liability is limited to the cost of the analysis.

Processed by: Mechelle Babic

Jennifer Yeow,  
Lab Manager



Please call or Email for with any questions, feedback, or more information

**ANALYTICAL RESULTS**

Sample ID	Erickson Office			Sample #	1	
Date/Time Sampled	2022-05-30	8:15 AM	Matrix	TW	Temperature on Receipt	14

Date/Time on Test 2022-05-31 2:50 PM

<u>Analyses</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>
Coliforms, Total	less than 1	CFU/100mL	1
Verified E.coli	less than 1	CFU/100mL	1

Sample ID	Erickson Reservoir			Sample #	2	
Date/Time Sampled	2022-05-30	8:35 AM	Matrix	TW	Temperature on Receipt	13

Date/Time on Test 2022-05-31 2:55 PM

<u>Analyses</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>
Coliforms, Total	less than 1	CFU/100mL	1
Verified E.coli	less than 1	CFU/100mL	1

Sample ID	PRV 2			Sample #	3	
Date/Time Sampled	2022-05-30	8:50 AM	Matrix	TW	Temperature on Receipt	14

Date/Time on Test 2022-05-31 3:00 PM

<u>Analyses</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>
Coliforms, Total	less than 1	CFU/100mL	1
Verified E.coli	less than 1	CFU/100mL	1

Sample ID	PRV 3			Sample #	4	
Date/Time Sampled	2022-05-30	8:55 AM	Matrix	TW	Temperature on Receipt	13

Date/Time on Test 2022-05-31 3:05 PM

<u>Analyses</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>
Coliforms, Total	less than 1	CFU/100mL	1
Verified E.coli	less than 1	CFU/100mL	1

Sample ID	Ja-co Industries			Sample #	5	
Date/Time Sampled	2022-05-30	10:20 AM	Matrix	TW	Temperature on Receipt	13

Date/Time on Test 2022-05-31 3:10 PM

<u>Analyses</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>
Coliforms, Total	less than 1	CFU/100mL	1
Verified E.coli	less than 1	CFU/100mL	1

**ANALYTICAL RESULTS**

Sample ID	2737 Erickson Rd	Sample #	6
Date/Time Sampled	2022-05-30 9:05 AM	Matrix	TW
		Temperature on Receipt	15

Date/Time on Test 2022-05-31 3:15 PM

<u>Analyses</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>
Coliforms, Total	less than 1	CFU/100mL	1
Verified E.coli	less than 1	CFU/100mL	1

Sample ID	2233 Connel Rd	Sample #	7
Date/Time Sampled	2022-05-30 9:15 AM	Matrix	TW
		Temperature on Receipt	13

Date/Time on Test 2022-05-31 3:20 PM

<u>Analyses</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>
Coliforms, Total	less than 1	CFU/100mL	1
Verified E.coli	less than 1	CFU/100mL	1

**Glossary of Terms**

Less than 1	Less than the Reportable Detection Limit, except under circumstances where the detection limit is higher due to interferences, insufficient sample volume, or dilutions.
APHA	American Public Health Association
CFU/100mL	Colony Forming Units per 100 milliliters
Matrix	SW = Surface water, TW =Treated water, DW= Distribution water, UGW = Untreated Ground water, RW = Raw water
RDL	Reportable Detection Limit

**References**



## CERTIFICATE OF ANALYSIS

<b>REPORTED TO</b>	Regional District of Central Kootenay - Nelson Box 590 - 202 Lakeside Drive Nelson, BC V1L 5R4	<b>WORK ORDER</b>	22E3635
<b>ATTENTION</b>	RDCK- Nelson	<b>RECEIVED / TEMP REPORTED</b>	2022-05-26 15:50 / 19.7°C
<b>PO NUMBER</b>	RDCK- Nelson	<b>REPORTED</b>	2022-06-06 14:50
<b>PROJECT</b>	Analytical Testing	<b>COC NUMBER</b>	B37914
<b>PROJECT INFO</b>	Arrow Intake		

### 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.

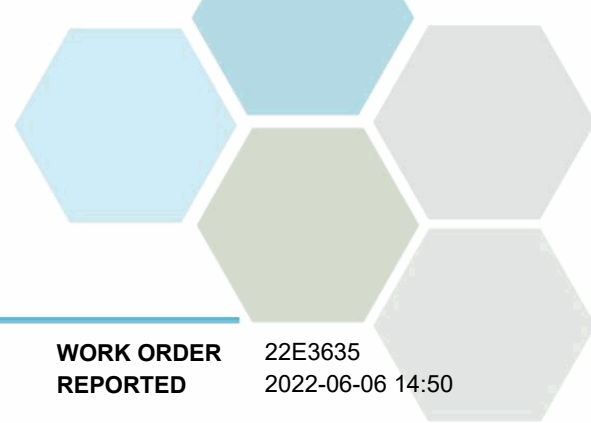
If you have any questions or concerns, please contact me at [bwhitehead@caro.ca](mailto:bwhitehead@caro.ca)

#### Authorized By:

Brent Whitehead  
Account Manager

1-888-311-8846 | [www.caro.ca](http://www.caro.ca)

#110 4011 Viking Way Richmond, BC V6V 2K9 | #102 3677 Highway 97N Kelowna, BC V1X 5C3 | 17225 109 Avenue Edmonton, AB T5S 1H7 | #108 4475 Wayburne Drive Burnaby, BC V5G 4X4



# TEST RESULTS

**REPORTED TO PROJECT** Regional District of Central Kootenay - Nelson  
Analytical Testing

**WORK ORDER REPORTED** 22E3635  
2022-06-06 14:50

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
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**PRV 3 (22E3635-01) | Matrix: Water | Sampled: 2022-05-24 09:15**

**Anions**

Chloride	2.50	AO ≤ 250	0.10 mg/L	2022-05-27	
Fluoride	< 0.10	MAC = 1.5	0.10 mg/L	2022-05-27	
Nitrate (as N)	< 0.010	MAC = 10	0.010 mg/L	2022-05-27	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2022-05-27	
Sulfate	2.1	AO ≤ 500	1.0 mg/L	2022-05-27	

**Calculated Parameters**

Total Trihalomethanes	0.0303	MAC = 0.1	0.00400 mg/L	N/A	
Hardness, Total (as CaCO3)	18.9	None Required	0.500 mg/L	N/A	
Langelier Index	-2.5	N/A	-5.0	2022-06-03	
Solids, Total Dissolved	31.8	AO ≤ 500	1.00 mg/L	N/A	

**General Parameters**

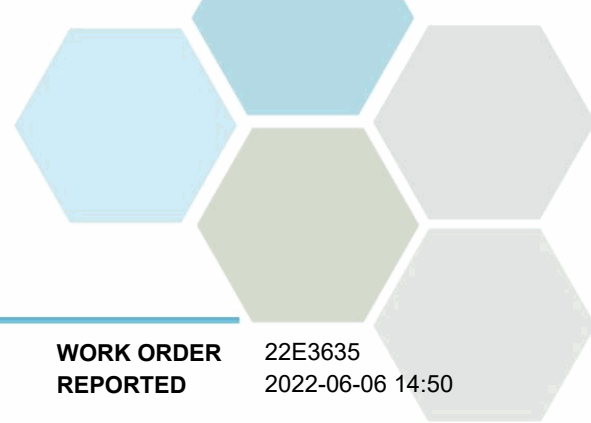
Alkalinity, Total (as CaCO3)	29.0	N/A	1.0 mg/L	2022-05-31	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0 mg/L	2022-05-31	
Alkalinity, Bicarbonate (as CaCO3)	29.0	N/A	1.0 mg/L	2022-05-31	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0 mg/L	2022-05-31	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0 mg/L	2022-05-31	
Colour, True	< 5.0	AO ≤ 15	5.0 CU	2022-05-27	
Conductivity (EC)	52.4	N/A	2.0 µS/cm	2022-05-31	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020 mg/L	2022-05-31	
pH	6.80	7.0-10.5	0.10 pH units	2022-05-31	HT2
Temperature, at pH	23.1	N/A	°C	2022-05-31	HT2
Turbidity	< 0.10	OG < 1	0.10 NTU	2022-05-27	HT1

**Haloacetic Acids**

Monochloroacetic Acid	< 0.0020	N/A	0.0020 mg/L	2022-06-02	
Monobromoacetic Acid	< 0.0020	N/A	0.0020 mg/L	2022-06-02	
Dichloroacetic Acid	0.0141	N/A	0.0020 mg/L	2022-06-02	
Trichloroacetic Acid	0.0191	N/A	0.0020 mg/L	2022-06-02	
Dibromoacetic Acid	< 0.0020	N/A	0.0020 mg/L	2022-06-02	
Total Haloacetic Acids (HAA5)	0.0332	MAC = 0.08	0.00200 mg/L	N/A	
Surrogate: 2-Bromopropionic Acid	101		70-130 %	2022-06-02	

**Total Metals**

Aluminum, total	0.0097	OG < 0.1	0.0050 mg/L	2022-05-30	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2022-05-30	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050 mg/L	2022-05-30	
Barium, total	0.0109	MAC = 2	0.0050 mg/L	2022-05-30	
Boron, total	< 0.0500	MAC = 5	0.0500 mg/L	2022-05-30	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010 mg/L	2022-05-30	
Calcium, total	5.14	None Required	0.20 mg/L	2022-05-30	
Chromium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2022-05-30	
Cobalt, total	< 0.00010	N/A	0.00010 mg/L	2022-05-30	



## TEST RESULTS

**REPORTED TO PROJECT** Regional District of Central Kootenay - Nelson Analytical Testing

**WORK ORDER REPORTED** 22E3635  
2022-06-06 14:50

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
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**PRV 3 (22E3635-01) | Matrix: Water | Sampled: 2022-05-24 09:15, Continued**

**Total Metals, Continued**

Copper, total	0.00184	MAC = 2	0.00040	mg/L	2022-05-30	
Iron, total	0.017	AO ≤ 0.3	0.010	mg/L	2022-05-30	
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2022-05-30	
Magnesium, total	1.47	None Required	0.010	mg/L	2022-05-30	
Manganese, total	0.00072	MAC = 0.12	0.00020	mg/L	2022-05-30	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2022-06-01	
Molybdenum, total	< 0.00010	N/A	0.00010	mg/L	2022-05-30	
Nickel, total	< 0.00040	N/A	0.00040	mg/L	2022-05-30	
Potassium, total	0.25	N/A	0.10	mg/L	2022-05-30	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2022-05-30	
Sodium, total	2.71	AO ≤ 200	0.10	mg/L	2022-05-30	
Strontium, total	0.0169	MAC = 7	0.0010	mg/L	2022-05-30	
Uranium, total	0.000035	MAC = 0.02	0.000020	mg/L	2022-05-30	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2022-05-30	

**Volatile Organic Compounds (VOC)**

Bromodichloromethane	< 0.0010	N/A	0.0010	mg/L	2022-05-30	
Bromoform	< 0.0010	N/A	0.0010	mg/L	2022-05-30	
Chloroform	0.0303	N/A	0.0010	mg/L	2022-05-30	
Dibromochloromethane	< 0.0010	N/A	0.0010	mg/L	2022-05-30	
Surrogate: Toluene-d8	102		70-130	%	2022-05-30	
Surrogate: 4-Bromofluorobenzene	104		70-130	%	2022-05-30	

**Arrow Intake (Raw) (22E3635-02) | Matrix: Water | Sampled: 2022-05-24 10:00**

**Anions**

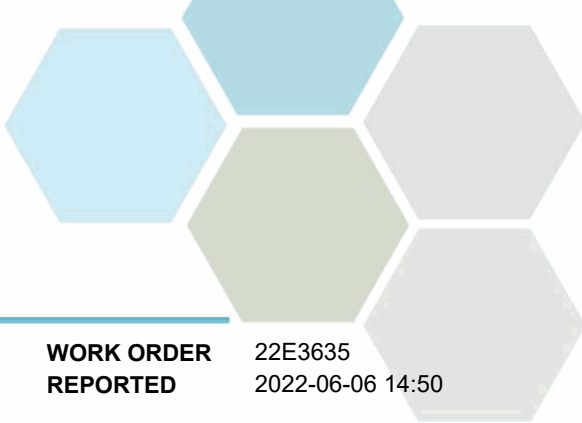
Chloride	0.10	AO ≤ 250	0.10	mg/L	2022-05-27	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2022-05-27	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2022-05-27	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2022-05-27	
Sulfate	2.1	AO ≤ 500	1.0	mg/L	2022-05-27	

**Calculated Parameters**

Hardness, Total (as CaCO3)	18.4	None Required	0.500	mg/L	N/A	
Langelier Index	-2.7	N/A	-5.0		2022-06-03	
Solids, Total Dissolved	24.9	AO ≤ 500	1.00	mg/L	N/A	

**General Parameters**

Alkalinity, Total (as CaCO3)	25.0	N/A	1.0	mg/L	2022-05-31	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-05-31	
Alkalinity, Bicarbonate (as CaCO3)	25.0	N/A	1.0	mg/L	2022-05-31	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-05-31	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-05-31	
Colour, True	7.1	AO ≤ 15	5.0	CU	2022-05-27	



# TEST RESULTS

**REPORTED TO PROJECT** Regional District of Central Kootenay - Nelson Analytical Testing

**WORK ORDER REPORTED** 22E3635  
2022-06-06 14:50

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
<b>Arrow Intake (Raw) (22E3635-02)   Matrix: Water   Sampled: 2022-05-24 10:00, Continued</b>					
<i>General Parameters, Continued</i>					
Conductivity (EC)	41.7	N/A	2.0 µS/cm	2022-05-31	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020 mg/L	2022-05-31	
pH	6.58	7.0-10.5	0.10 pH units	2022-05-31	HT2
Temperature, at pH	23.2	N/A	°C	2022-05-31	HT2
Turbidity	0.50	OG < 1	0.10 NTU	2022-05-27	HT1

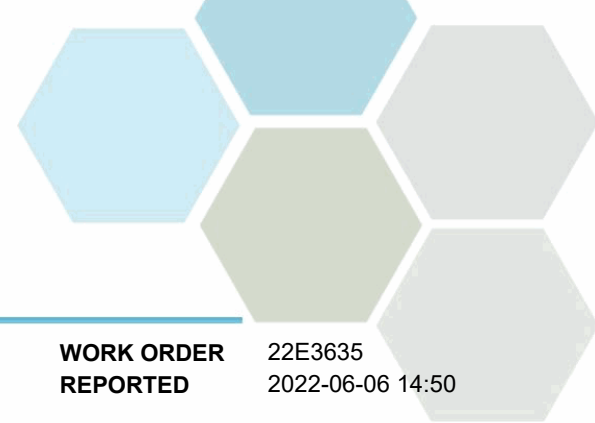
**Total Metals**

Aluminum, total	0.0193	OG < 0.1	0.0050 mg/L	2022-05-30	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2022-05-30	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050 mg/L	2022-05-30	
Barium, total	0.0100	MAC = 2	0.0050 mg/L	2022-05-30	
Boron, total	< 0.0500	MAC = 5	0.0500 mg/L	2022-05-30	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010 mg/L	2022-05-30	
Calcium, total	5.01	None Required	0.20 mg/L	2022-05-30	
Chromium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2022-05-30	
Cobalt, total	< 0.00010	N/A	0.00010 mg/L	2022-05-30	
Copper, total	0.00084	MAC = 2	0.00040 mg/L	2022-05-30	
Iron, total	0.015	AO ≤ 0.3	0.010 mg/L	2022-05-30	
Lead, total	< 0.00020	MAC = 0.005	0.00020 mg/L	2022-05-30	
Magnesium, total	1.42	None Required	0.010 mg/L	2022-05-30	
Manganese, total	0.00071	MAC = 0.12	0.00020 mg/L	2022-05-30	
Mercury, total	< 0.000010	MAC = 0.001	0.000010 mg/L	2022-06-01	
Molybdenum, total	< 0.00010	N/A	0.00010 mg/L	2022-05-30	
Nickel, total	< 0.00040	N/A	0.00040 mg/L	2022-05-30	
Potassium, total	0.24	N/A	0.10 mg/L	2022-05-30	
Selenium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2022-05-30	
Sodium, total	0.86	AO ≤ 200	0.10 mg/L	2022-05-30	
Strontium, total	0.0158	MAC = 7	0.0010 mg/L	2022-05-30	
Uranium, total	0.000041	MAC = 0.02	0.000020 mg/L	2022-05-30	
Zinc, total	< 0.0040	AO ≤ 5	0.0040 mg/L	2022-05-30	

**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

**REPORTED TO PROJECT** Regional District of Central Kootenay - Nelson  
Analytical Testing

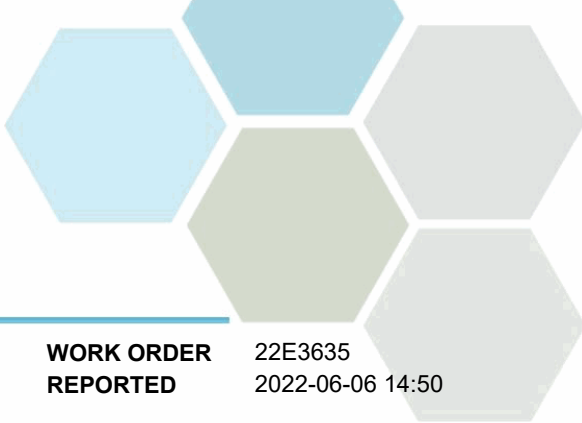
**WORK ORDER REPORTED** 22E3635  
2022-06-06 14:50

Analysis Description	Method Ref.	Technique	Accredited	Location
Alkalinity in Water	SM 2320 B* (2017)	Titration with H2SO4	✓	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	✓	Kelowna
Colour, True in Water	SM 2120 C (2017)	Spectrophotometry (456 nm)	✓	Kelowna
Conductivity in Water	SM 2510 B (2017)	Conductivity Meter	✓	Kelowna
Cyanide, SAD in Water	ASTM D7511-12	Flow Injection with In-Line UV Digestion and Amperometry	✓	Kelowna
Haloacetic Acids in Water	EPA 552.3*	Liquid-Liquid Microextraction, Derivatization and GC-ECD	✓	Richmond
Hardness in Water	SM 2340 B* (2017)	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Est)	✓	N/A
Langelier Index in Water	SM 2330 B (2017)	Calculation		N/A
Mercury, total in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	✓	Richmond
pH in Water	SM 4500-H+ B (2017)	Electrometry	✓	Kelowna
Solids, Total Dissolved in Water	SM 1030 E (2017)	SM 1030 E (2011)		N/A
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Trihalomethanes in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	✓	Richmond
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
°C	Degrees Celcius
AO	Aesthetic Objective
CU	Colour Units (referenced against a platinum cobalt standard)
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
pH units	pH < 7 = acidic, pH > 7 = basic
µS/cm	Microsiemens per centimetre
ASTM	ASTM International Test Methods
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association



## APPENDIX 1: SUPPORTING INFORMATION

**REPORTED TO PROJECT** Regional District of Central Kootenay - Nelson  
Analytical Testing

**WORK ORDER REPORTED** 22E3635  
2022-06-06 14:50

**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 or once samples expire, whichever comes first. Longer hold is possible if 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: [bwhitehead@caro.ca](mailto:bwhitehead@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.*