



July 23, 2024

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 July 9, 2024 test results. Attached also is the latest January 24, 2023, 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 blue ink, appearing to read "Chris Gainham".

Chris Gainham  
Utility Service Manager

cc: Allan Richardson, Utilities Supervisor – Erickson

Atch: Passmore Total Coliforms & E. coli Certificate of Analysis, July 9, 2024  
Caro Analytical Services Certificate of Analysis, Jan 24, 2023



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: Melina Plotz

Mechelle Babic,  
Lab Manager

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

**ANALYTICAL RESULTS**

Sample ID	Erickson Reservoir			Sample #	1	
Date/Time Sampled	2024-07-09	8:15 AM	Matrix	TW	Temperature on Receipt	20

Date/Time on Test 2024-07-10 12:25 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	#2 prv			Sample #	2	
Date/Time Sampled	2024-07-09	8:25 AM	Matrix	TW	Temperature on Receipt	20

Date/Time on Test 2024-07-10 12:28 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	#3 prv			Sample #	3	
Date/Time Sampled	2024-07-09	8:30 AM	Matrix	TW	Temperature on Receipt	20

Date/Time on Test 2024-07-10 12:31 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	Scotties RV park			Sample #	4	
Date/Time Sampled	2024-07-09	8:40 AM	Matrix	TW	Temperature on Receipt	21

Date/Time on Test 2024-07-10 12:34 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	2024-07-09	9:50 AM	Matrix	TW	Temperature on Receipt	20

Date/Time on Test 2024-07-10 12:37 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

---

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>	23A2525
<b>ATTENTION</b>	RDCK- Nelson		<b>RECEIVED / TEMP REPORTED</b>	2023-01-25 16:30 / 5.6°C 2023-02-02 10:38
<b>PO NUMBER</b>	RDCK- Nelson		<b>COC NUMBER</b>	B37921
<b>PROJECT</b>	General Potability			
<b>PROJECT INFO</b>	Erickson Water Source			

**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 [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  
General Potability

**WORK ORDER REPORTED** 23A2525  
2023-02-02 10:38

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
---------	--------	-----------	----	-------	----------	-----------

**Erickson Reservoir (23A2525-01) | Matrix: Water | Sampled: 2023-01-24 08:15**

**Calculated Parameters**

Total Trihalomethanes	0.0140	MAC = 0.1	0.00400	mg/L	N/A	
-----------------------	--------	-----------	---------	------	-----	--

**Haloacetic Acids**

Monochloroacetic Acid	< 0.0020	N/A	0.0020	mg/L	2023-02-02	
Monobromoacetic Acid	< 0.0020	N/A	0.0020	mg/L	2023-02-02	
Dichloroacetic Acid	0.0037	N/A	0.0020	mg/L	2023-02-02	
Trichloroacetic Acid	0.0046	N/A	0.0020	mg/L	2023-02-02	
Dibromoacetic Acid	< 0.0020	N/A	0.0020	mg/L	2023-02-02	
Total Haloacetic Acids (HAA5)	0.00834	MAC = 0.08	0.00200	mg/L	N/A	
Surrogate: 2-Bromopropionic Acid	104		70-130	%	2023-02-02	

**Volatile Organic Compounds (VOC)**

Bromodichloromethane	< 0.0010	N/A	0.0010	mg/L	2023-01-31	
Bromoform	< 0.0010	N/A	0.0010	mg/L	2023-01-31	
Chloroform	0.0140	N/A	0.0010	mg/L	2023-01-31	
Dibromochloromethane	< 0.0010	N/A	0.0010	mg/L	2023-01-31	
Surrogate: Toluene-d8	91		70-130	%	2023-01-31	
Surrogate: 4-Bromofluorobenzene	82		70-130	%	2023-01-31	

**Arrow Creek Raw Water (23A2525-02) | Matrix: Water | Sampled: 2023-01-24 08:30**

**Anions**

Chloride	0.13	AO ≤ 250	0.10	mg/L	2023-01-26	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2023-01-26	
Nitrate (as N)	0.013	MAC = 10	0.010	mg/L	2023-01-26	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2023-01-26	
Sulfate	6.5	AO ≤ 500	1.0	mg/L	2023-01-26	

**Calculated Parameters**

Hardness, Total (as CaCO3)	40.0	None Required	0.500	mg/L	N/A	
Solids, Total Dissolved	50.5	AO ≤ 500	1.00	mg/L	N/A	

**General Parameters**

Alkalinity, Total (as CaCO3)	45.6	N/A	1.0	mg/L	2023-01-28	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2023-01-28	
Alkalinity, Bicarbonate (as CaCO3)	45.6	N/A	1.0	mg/L	2023-01-28	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2023-01-28	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2023-01-28	
Conductivity (EC)	86.5	N/A	2.0	µS/cm	2023-01-28	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020	mg/L	2023-01-31	
pH	6.59	7.0-10.5	0.10	pH units	2023-01-28	HT2
Turbidity	< 0.10	OG < 1	0.10	NTU	2023-01-27	

**Microbiological Parameters**



# TEST RESULTS

**REPORTED TO PROJECT** Regional District of Central Kootenay - Nelson  
General Potability

**WORK ORDER REPORTED** 23A2525  
2023-02-02 10:38

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
---------	--------	-----------	----	-------	----------	-----------

**Arrow Creek Raw Water (23A2525-02) | Matrix: Water | Sampled: 2023-01-24 08:30, Continued**

*Microbiological Parameters, Continued*

Coliforms, Total (Q-Tray)	<b>10</b>	MAC = 0	1	MPN/100 mL	2023-01-25	
E. coli (Q-Tray)	< 1	MAC = 0	1	MPN/100 mL	2023-01-25	

*Total Metals*

Aluminum, total	<b>0.0050</b>	OG < 0.1	0.0050	mg/L	2023-01-29	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2023-01-29	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050	mg/L	2023-01-29	
Barium, total	<b>0.0183</b>	MAC = 2	0.0050	mg/L	2023-01-29	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2023-01-29	
Cadmium, total	< 0.000010	MAC = 0.007	0.000010	mg/L	2023-01-29	
Calcium, total	<b>11.1</b>	None Required	0.20	mg/L	2023-01-29	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2023-01-29	
Copper, total	< 0.00040	MAC = 2	0.00040	mg/L	2023-01-29	
Iron, total	< 0.010	AO ≤ 0.3	0.010	mg/L	2023-01-29	
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2023-01-29	
Magnesium, total	<b>2.98</b>	None Required	0.010	mg/L	2023-01-29	
Manganese, total	<b>0.00050</b>	MAC = 0.12	0.00020	mg/L	2023-01-29	
Potassium, total	<b>0.43</b>	N/A	0.10	mg/L	2023-01-29	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2023-01-29	
Sodium, total	<b>1.37</b>	AO ≤ 200	0.10	mg/L	2023-01-29	
Strontium, total	<b>0.0354</b>	MAC = 7	0.0010	mg/L	2023-01-29	
Uranium, total	<b>0.000136</b>	MAC = 0.02	0.000020	mg/L	2023-01-29	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2023-01-29	

**Sample Qualifiers:**

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  
General Potability

**WORK ORDER REPORTED** 23A2525  
2023-02-02 10:38

Analysis Description	Method Ref.	Technique	Accredited	Location
Alkalinity in Water	SM 2320 B* (2021)	Titration with H2SO4	✓	Kelowna
Anions in Water	SM 4110 B (2020)	Ion Chromatography	✓	Kelowna
Coliforms, Total in Water	NA / SM 9223 (2016)	Quanti-Tray / Enzyme Substrate Endo Agar	✓	Kelowna
Conductivity in Water	SM 2510 B (2021)	Conductivity Meter	✓	Kelowna
Cyanide, SAD in Water	ASTM D7511-12	Flow Injection with In-Line UV Digestion and Amperometry	✓	Kelowna
E. coli in Water	NA / SM 9223 (2016)	Quanti-Tray / Enzyme Substrate Endo Agar	✓	Kelowna
Haloacetic Acids in Water	EPA 552.3*	Liquid-Liquid Microextraction, Derivatization and GC-ECD	✓	Richmond
Hardness in Water	SM 2340 B* (2021)	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Est)	✓	N/A
pH in Water	SM 4500-H+ B (2021)	Electrometry	✓	Kelowna
Solids, Total Dissolved in Water	SM 1030 E (2021)	SM 1030 E		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 (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
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
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  
General Potability

**WORK ORDER REPORTED** 23A2525  
2023-02-02 10:38

**General Comments:**

The results in this report apply to the received 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.*