



CERTIFICATE OF ANALYSIS

REPORTED TO	Beaver Falls Waterworks District Box 138 Montrose, BC V0G 1P0	WORK ORDER	23A0977
ATTENTION	Shirley Fletcher	RECEIVED / TEMP REPORTED	2023-01-11 08:40 / 2.3°C 2023-01-18 10:33
PO NUMBER		COC NUMBER	No Number
PROJECT	General Potability		
PROJECT INFO			

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>

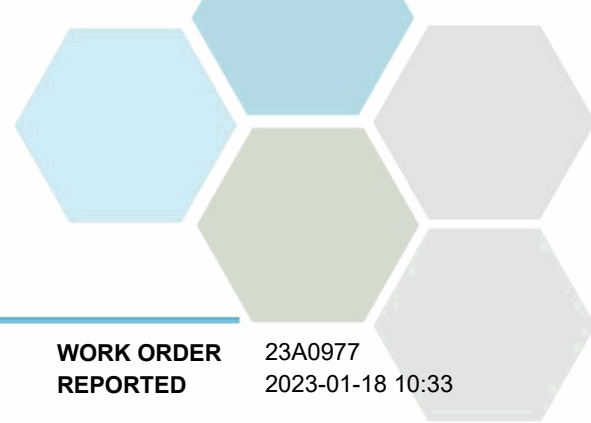
If you have any questions or concerns, please contact me at TeamCaro@caro.ca

Authorized By:

Team CARO
Client Service Representative

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TEST RESULTS

REPORTED TO PROJECT Beaver Falls Waterworks District
General Potability

WORK ORDER REPORTED 23A0977
2023-01-18 10:33

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
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Well 2 (23A0977-01) | Matrix: Water | Sampled: 2023-01-10 13:00

Anions

Chloride	18.7	AO ≤ 250	0.10 mg/L	2023-01-13	
Fluoride	< 0.10	MAC = 1.5	0.10 mg/L	2023-01-13	
Nitrate (as N)	1.19	MAC = 10	0.010 mg/L	2023-01-13	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2023-01-13	
Sulfate	21.1	AO ≤ 500	1.0 mg/L	2023-01-13	

BCMOE Aggregate Hydrocarbons

VHw (6-10)	< 107	N/A	100 µg/L	2023-01-16	RA3
VPHw	< 107	N/A	107 µg/L	N/A	

Calculated Parameters

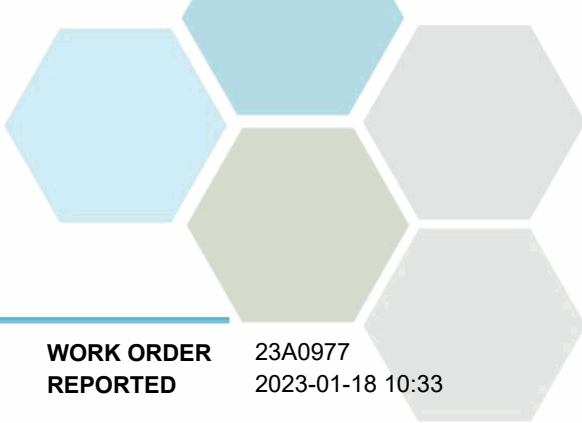
Hardness, Total (as CaCO3)	129	None Required	0.500 mg/L	N/A	
Solids, Total Dissolved	177	AO ≤ 500	1.00 mg/L	N/A	

General Parameters

Alkalinity, Total (as CaCO3)	113	N/A	1.0 mg/L	2023-01-12	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-01-12	
Alkalinity, Bicarbonate (as CaCO3)	113	N/A	1.0 mg/L	2023-01-12	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-01-12	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-01-12	
Conductivity (EC)	296	N/A	2.0 µS/cm	2023-01-12	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020 mg/L	2023-01-13	
pH	7.26	7.0-10.5	0.10 pH units	2023-01-12	HT2
Turbidity	0.14	OG < 1	0.10 NTU	2023-01-13	

Total Metals

Aluminum, total	< 0.0050	OG < 0.1	0.0050 mg/L	2023-01-16	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2023-01-16	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050 mg/L	2023-01-16	
Barium, total	0.0267	MAC = 2	0.0050 mg/L	2023-01-16	
Boron, total	< 0.0500	MAC = 5	0.0500 mg/L	2023-01-16	
Cadmium, total	0.000020	MAC = 0.005	0.000010 mg/L	2023-01-16	
Calcium, total	42.8	None Required	0.20 mg/L	2023-01-16	
Chromium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2023-01-16	
Copper, total	0.0972	MAC = 2	0.00040 mg/L	2023-01-16	
Iron, total	0.073	AO ≤ 0.3	0.010 mg/L	2023-01-16	
Lead, total	0.00934	MAC = 0.005	0.00020 mg/L	2023-01-16	
Magnesium, total	5.25	None Required	0.010 mg/L	2023-01-16	
Manganese, total	0.00094	MAC = 0.12	0.00020 mg/L	2023-01-16	
Potassium, total	1.99	N/A	0.10 mg/L	2023-01-16	
Selenium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2023-01-16	
Sodium, total	13.0	AO ≤ 200	0.10 mg/L	2023-01-16	
Strontium, total	0.182	MAC = 7	0.0010 mg/L	2023-01-16	
Uranium, total	0.000315	MAC = 0.02	0.000020 mg/L	2023-01-16	



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Well 2 (23A0977-01) | Matrix: Water | Sampled: 2023-01-10 13:00, Continued

Total Metals, Continued

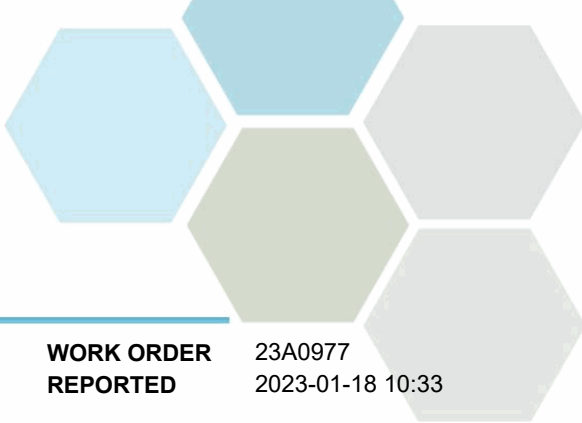
Zinc, total	0.0078	AO ≤ 5	0.0040	mg/L	2023-01-16	
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Volatile Organic Compounds (VOC)

Benzene	< 0.5	MAC = 5	0.5	µg/L	2023-01-16	
Ethylbenzene	< 1.0	AO ≤ 1.6	1.0	µg/L	2023-01-16	
Methyl tert-butyl ether	< 1.0	AO ≤ 15	1.0	µg/L	2023-01-16	
Styrene	< 1.0	N/A	1.0	µg/L	2023-01-16	
Toluene	< 1.0	MAC = 60	1.0	µg/L	2023-01-16	
Xylenes (total)	< 2.0	AO ≤ 20	2.0	µg/L	2023-01-16	
Surrogate: Toluene-d8	120		70-130	%	2023-01-16	
Surrogate: 4-Bromofluorobenzene	106		70-130	%	2023-01-16	

Sample Qualifiers:

- HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.
- RA3 The Reporting Limit has been raised due to comparable level detected in the blank(s).



APPENDIX 1: SUPPORTING INFORMATION

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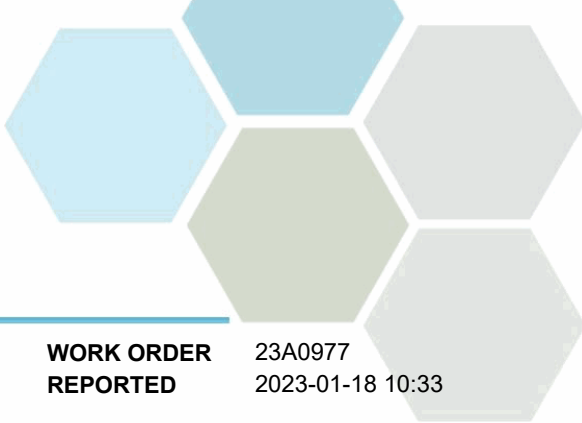
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Analysis Description	Method Ref.	Technique	Accredited	Location
Alkalinity in Water	SM 2320 B* (2021)	Titration with H2SO4	✓	Kelowna
Anions in Water	SM 4110 B (2020)	Ion Chromatography	✓	Kelowna
BTEX in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	✓	Richmond
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
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
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna
VH in Water	EPA 5030B / BCMOE VHW	Purge&Trap / Gas Chromatography (GC-FID)	✓	Richmond
VPHw in Water	BCMOE VPH	Calculation: VH - (Benzene + Toluene + Ethylbenzene + Xylenes + Styrene)		N/A

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
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
pH units	pH < 7 = acidic, pH > 7 = basic
µg/L	Micrograms per litre
µS/cm	Microsiemens per centimetre
ASTM	ASTM International Test Methods
BCMOE	British Columbia Environmental Laboratory Manual, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association



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General Comments:

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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

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