



CERTIFICATE OF ANALYSIS

REPORTED TO Beaver Falls Waterworks District
Box 138
Montrose, BC V0G 1P0

ATTENTION Shirley Fletcher

PO NUMBER
PROJECT Drinking Water

PROJECT INFO

WORK ORDER 0040580

RECEIVED / TEMP 2020-04-08 08:45 / 7°C
REPORTED 2020-04-17 16:50

COC NUMBER No Number

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.

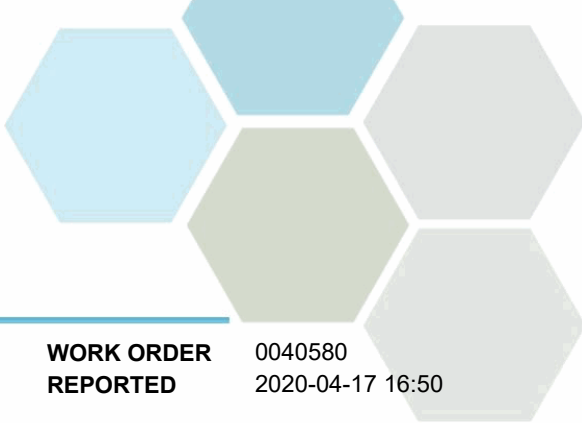
If you have any questions or concerns, please contact me at teamcaro@caro.ca

Authorized By:

Team CARO
Client Service Representative

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TEST RESULTS

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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
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Well 2 (0040580-01) | Matrix: Water | Sampled: 2020-04-07 13:00

Anions

Chloride	22.6	AO ≤ 250	0.10	mg/L	2020-04-08	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2020-04-08	
Nitrate (as N)	1.64	MAC = 10	0.010	mg/L	2020-04-08	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2020-04-08	
Sulfate	18.4	AO ≤ 500	1.0	mg/L	2020-04-08	

Calculated Parameters

Hardness, Total (as CaCO3)	129	None Required	0.500	mg/L	N/A	
Langelier Index	-0.05	N/A	-5.0		2020-04-17	
Solids, Total Dissolved	169	AO ≤ 500	1.00	mg/L	N/A	

General Parameters

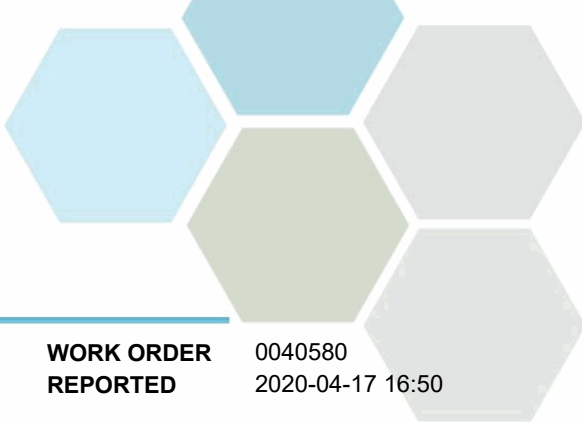
Alkalinity, Total (as CaCO3)	95.2	N/A	1.0	mg/L	2020-04-09	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2020-04-09	
Alkalinity, Bicarbonate (as CaCO3)	95.2	N/A	1.0	mg/L	2020-04-09	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2020-04-09	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2020-04-09	
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2020-04-09	
Conductivity (EC)	312	N/A	2.0	µS/cm	2020-04-09	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020	mg/L	2020-04-14	
pH	7.81	7.0-10.5	0.10	pH units	2020-04-09	HT2
Temperature, at pH	21.3	N/A		°C	2020-04-09	HT2
Turbidity	0.18	OG < 1	0.10	NTU	2020-04-08	

Microbiological Parameters

Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2020-04-08	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2020-04-08	

Total Metals

Aluminum, total	< 0.0050	OG < 0.1	0.0050	mg/L	2020-04-12	
Antimony, total	0.00025	MAC = 0.006	0.00020	mg/L	2020-04-12	
Arsenic, total	0.00059	MAC = 0.01	0.00050	mg/L	2020-04-12	
Barium, total	0.0301	MAC = 2	0.0050	mg/L	2020-04-12	
Boron, total	0.0461	MAC = 5	0.0050	mg/L	2020-04-12	
Cadmium, total	0.000017	MAC = 0.005	0.000010	mg/L	2020-04-12	
Calcium, total	42.2	None Required	0.20	mg/L	2020-04-12	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2020-04-12	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2020-04-12	
Copper, total	0.00213	MAC = 2	0.00040	mg/L	2020-04-12	
Iron, total	0.013	AO ≤ 0.3	0.010	mg/L	2020-04-12	
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2020-04-12	
Magnesium, total	5.82	None Required	0.010	mg/L	2020-04-12	
Manganese, total	0.00050	MAC = 0.12	0.00020	mg/L	2020-04-12	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2020-04-14	



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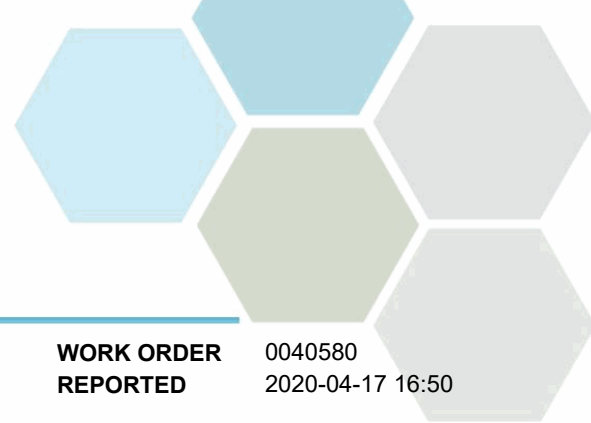
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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
Well 2 (0040580-01) Matrix: Water Sampled: 2020-04-07 13:00, Continued						
<i>Total Metals, Continued</i>						
Molybdenum, total	0.00054	N/A	0.00010	mg/L	2020-04-12	
Nickel, total	< 0.00040	N/A	0.00040	mg/L	2020-04-12	
Potassium, total	1.99	N/A	0.10	mg/L	2020-04-12	
Selenium, total	0.00060	MAC = 0.05	0.00050	mg/L	2020-04-12	
Sodium, total	12.6	AO ≤ 200	0.10	mg/L	2020-04-12	
Strontium, total	0.206	7	0.0010	mg/L	2020-04-12	
Uranium, total	0.000393	MAC = 0.02	0.000020	mg/L	2020-04-12	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2020-04-12	

<i>Volatile Organic Compounds (VOC)</i>						CT8
Benzene	< 0.5	MAC = 5	0.5	µg/L	2020-04-15	
Ethylbenzene	< 1.0	AO ≤ 1.6	1.0	µg/L	2020-04-15	
Methyl tert-butyl ether	< 1.0	AO ≤ 15	1.0	µg/L	2020-04-15	
Styrene	< 1.0	N/A	1.0	µg/L	2020-04-15	
Toluene	< 1.0	AO ≤ 24	1.0	µg/L	2020-04-15	
Xylenes (total)	< 2.0	AO ≤ 20	2.0	µg/L	2020-04-15	
Surrogate: Toluene-d8	92		70-130	%	2020-04-15	
Surrogate: 4-Bromofluorobenzene	97		70-130	%	2020-04-15	

Sample Qualifiers:

- CT8 Headspace in sample container is greater than 5% volume - VOC results may be compromised
- HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.



APPENDIX 1: SUPPORTING INFORMATION

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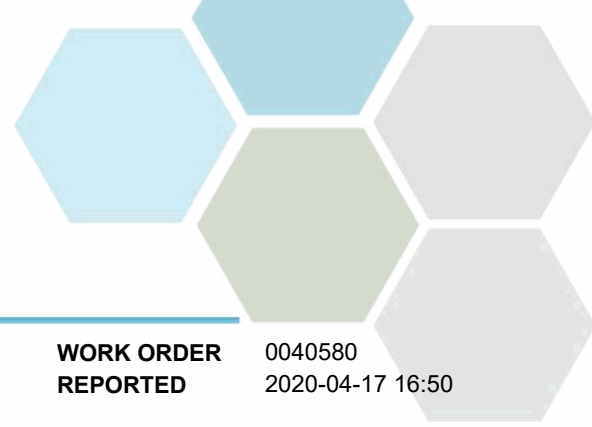
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Analysis Description	Method Ref.	Technique	Location
Alkalinity in Water	SM 2320 B* (2017)	Titration with H2SO4	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	Kelowna
BTEX in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	Richmond
Coliforms, Total in Water	SM 9222* (2017)	Membrane Filtration / Chromocult Agar	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
E. coli in Water	SM 9222* (2017)	Membrane Filtration / Chromocult Agar	Kelowna
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
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
CFU/100 mL	Colony Forming Units per 100 millilitres
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
µg/L	Micrograms per litre
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



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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