



CERTIFICATE OF ANALYSIS

REPORTED TO Revelstoke, City of
1200 East Victoria Road, Box 170
Revelstoke, BC V0E 2S0

ATTENTION Doug Pendergast

PO NUMBER

PROJECT General Potability

PROJECT INFO

WORK ORDER 0091012

RECEIVED / TEMP 2020-09-10 11:51 / 12°C

REPORTED 2020-09-18 17:26

COC NUMBER 49898

Introduction:

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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.

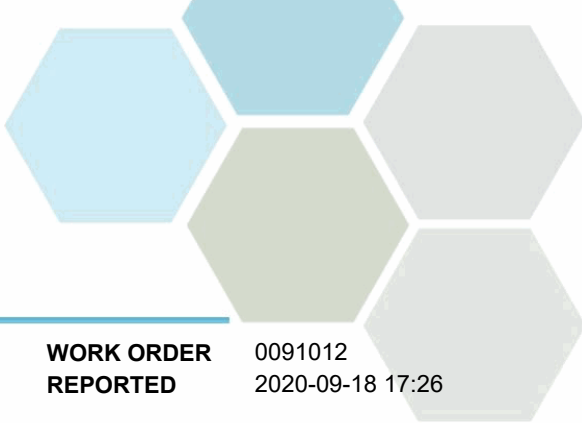
If you have any questions or concerns, please contact me at teamcaro@caro.ca

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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Greely Creek (0091012-01) | Matrix: Water | Sampled: 2020-09-09 07:50

Anions

Chloride	< 0.10	AO ≤ 250	0.10	mg/L	2020-09-10	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2020-09-10	
Nitrate (as N)	0.038	MAC = 10	0.010	mg/L	2020-09-10	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2020-09-10	
Sulfate	13.8	AO ≤ 500	1.0	mg/L	2020-09-10	

Calculated Parameters

Hardness, Total (as CaCO3)	49.8	None Required	0.500	mg/L	N/A	
Langelier Index	-0.9	N/A	-5.0		2020-09-18	
Solids, Total Dissolved	58.8	AO ≤ 500	1.00	mg/L	N/A	

General Parameters

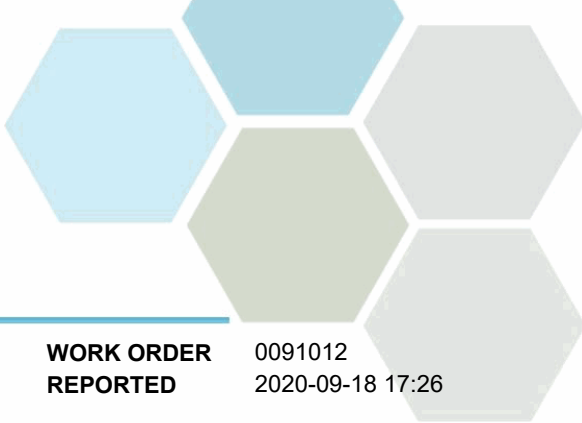
Alkalinity, Total (as CaCO3)	38.7	N/A	1.0	mg/L	2020-09-11	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2020-09-11	
Alkalinity, Bicarbonate (as CaCO3)	38.7	N/A	1.0	mg/L	2020-09-11	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2020-09-11	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2020-09-11	
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2020-09-12	
Conductivity (EC)	101	N/A	2.0	µS/cm	2020-09-11	
Cyanide, Total	< 0.0050	MAC = 0.2	0.0020	mg/L	2020-09-14	
pH	7.75	7.0-10.5	0.10	pH units	2020-09-11	HT2
Temperature, at pH	22.4	N/A		°C	2020-09-11	HT2
Turbidity	0.20	OG < 1	0.10	NTU	2020-09-10	

Microbiological Parameters

Coliforms, Total	44	MAC = 0	1	CFU/100 mL	2020-09-10	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2020-09-10	HT3

Total Metals

Aluminum, total	0.0097	OG < 0.1	0.0050	mg/L	2020-09-17	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2020-09-17	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050	mg/L	2020-09-17	
Barium, total	0.0105	MAC = 2	0.0050	mg/L	2020-09-17	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2020-09-17	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010	mg/L	2020-09-17	
Calcium, total	16.8	None Required	0.20	mg/L	2020-09-17	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2020-09-17	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2020-09-17	
Copper, total	< 0.00040	MAC = 2	0.00040	mg/L	2020-09-17	
Iron, total	0.012	AO ≤ 0.3	0.010	mg/L	2020-09-17	
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2020-09-17	
Magnesium, total	1.91	None Required	0.010	mg/L	2020-09-17	
Manganese, total	0.00088	MAC = 0.12	0.00020	mg/L	2020-09-17	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2020-09-16	



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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
Greely Creek (0091012-01) Matrix: Water Sampled: 2020-09-09 07:50, Continued						
<i>Total Metals, Continued</i>						
Molybdenum, total	0.00086	N/A	0.00010	mg/L	2020-09-17	
Nickel, total	0.00091	N/A	0.00040	mg/L	2020-09-17	
Potassium, total	1.29	N/A	0.10	mg/L	2020-09-17	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2020-09-17	
Sodium, total	1.16	AO ≤ 200	0.10	mg/L	2020-09-17	
Strontium, total	0.0460	7	0.0010	mg/L	2020-09-17	
Uranium, total	0.000270	MAC = 0.02	0.000020	mg/L	2020-09-17	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2020-09-17	

Gold Course Well (0091012-02) | Matrix: Water | Sampled: 2020-09-09 09:00

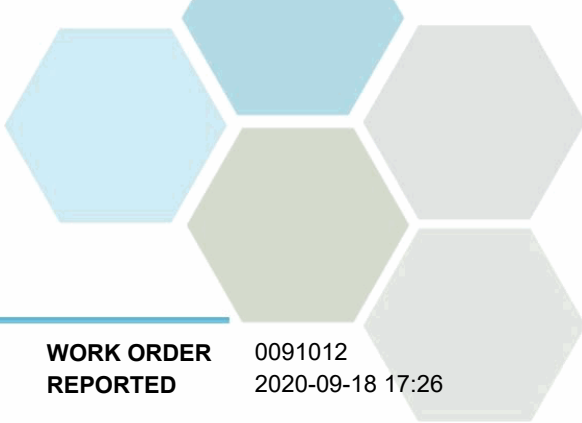
<i>Anions</i>						
Chloride	14.2	AO ≤ 250	0.10	mg/L	2020-09-10	
Fluoride	0.72	MAC = 1.5	0.10	mg/L	2020-09-10	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2020-09-10	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2020-09-10	
Sulfate	27.8	AO ≤ 500	1.0	mg/L	2020-09-10	

<i>Calculated Parameters</i>						
Hardness, Total (as CaCO3)	121	None Required	0.500	mg/L	N/A	
Langelier Index	0.6	N/A	-5.0		2020-09-18	
Solids, Total Dissolved	194	AO ≤ 500	1.00	mg/L	N/A	

<i>General Parameters</i>						
Alkalinity, Total (as CaCO3)	120	N/A	1.0	mg/L	2020-09-11	
Alkalinity, Phenolphthalein (as CaCO3)	1.5	N/A	1.0	mg/L	2020-09-11	
Alkalinity, Bicarbonate (as CaCO3)	117	N/A	1.0	mg/L	2020-09-11	
Alkalinity, Carbonate (as CaCO3)	3.1	N/A	1.0	mg/L	2020-09-11	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2020-09-11	
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2020-09-12	
Conductivity (EC)	304	N/A	2.0	µS/cm	2020-09-11	
Cyanide, Total	< 0.0050	MAC = 0.2	0.0020	mg/L	2020-09-14	
pH	8.36	7.0-10.5	0.10	pH units	2020-09-11	HT2
Temperature, at pH	22.1	N/A		°C	2020-09-11	HT2
Turbidity	0.37	OG < 1	0.10	NTU	2020-09-10	

<i>Microbiological Parameters</i>						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2020-09-10	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2020-09-10	

<i>Total Metals</i>						
Aluminum, total	< 0.0050	OG < 0.1	0.0050	mg/L	2020-09-17	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2020-09-17	
Arsenic, total	0.00184	MAC = 0.01	0.00050	mg/L	2020-09-17	



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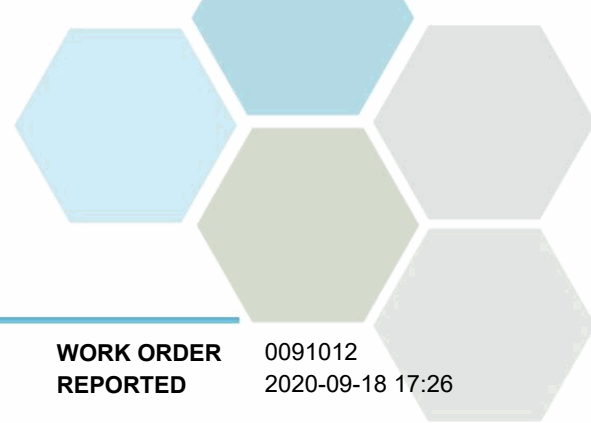
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Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
Gold Course Well (0091012-02) Matrix: Water Sampled: 2020-09-09 09:00, Continued					
<i>Total Metals, Continued</i>					
Barium, total	0.0879	MAC = 2	0.0050 mg/L	2020-09-17	
Boron, total	< 0.0500	MAC = 5	0.0500 mg/L	2020-09-17	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010 mg/L	2020-09-17	
Calcium, total	40.9	None Required	0.20 mg/L	2020-09-17	
Chromium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2020-09-17	
Cobalt, total	< 0.00010	N/A	0.00010 mg/L	2020-09-17	
Copper, total	0.0170	MAC = 2	0.00040 mg/L	2020-09-17	
Iron, total	0.114	AO ≤ 0.3	0.010 mg/L	2020-09-17	
Lead, total	0.00138	MAC = 0.005	0.00020 mg/L	2020-09-17	
Magnesium, total	4.64	None Required	0.010 mg/L	2020-09-17	
Manganese, total	0.0478	MAC = 0.12	0.00020 mg/L	2020-09-17	
Mercury, total	< 0.000010	MAC = 0.001	0.000010 mg/L	2020-09-16	
Molybdenum, total	0.00563	N/A	0.00010 mg/L	2020-09-17	
Nickel, total	0.00161	N/A	0.00040 mg/L	2020-09-17	
Potassium, total	2.94	N/A	0.10 mg/L	2020-09-17	
Selenium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2020-09-17	
Sodium, total	30.4	AO ≤ 200	0.10 mg/L	2020-09-17	
Strontium, total	0.217	7	0.0010 mg/L	2020-09-17	
Uranium, total	0.000343	MAC = 0.02	0.000020 mg/L	2020-09-17	
Zinc, total	0.0216	AO ≤ 5	0.0040 mg/L	2020-09-17	

Sample Qualifiers:

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.



APPENDIX 1: SUPPORTING INFORMATION

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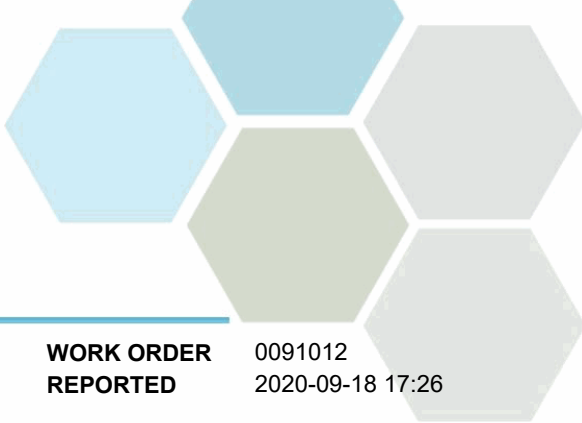
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Analysis Description	Method Ref.	Technique	Accredited	Location
Alkalinity in Water	SM 2320 B* (2017)	Titration with H2SO4	✓	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	✓	Kelowna
Coliforms, Total in Water	SM 9222* (2017)	Membrane Filtration / 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
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

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