



2020-05-25 08:47 / 10°C

### **CERTIFICATE OF ANALYSIS**

**REPORTED TO** Cherry Ridge Management

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.

158 North Fork Road Cherryville, BC V0E 2G3

**ATTENTION** Melanie Staker **WORK ORDER** 0051955

**PO NUMBER** 

2020-06-01 15:48 **PROJECT** Creek Monitoring **REPORTED** 

40837.5581 **PROJECT INFO COC 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

We've Got Chemistry

It's simple. We figure the more you enjoy with our working engaged team members; likely you are to give us continued opportunities to support you.

Ahead of the Curve

research, regulation and instrumentation, analytical centre for the knowledge you BEFORE you need it, so you can stay up to date and in the know.

Through fun and knowledge, the more are your technical

**RECEIVED / TEMP** 

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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REPORTED TOCherry Ridge ManagementWORK ORDER0051955PROJECTCreek MonitoringREPORTED2020-06-01 15:48

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifie			
North Fork Cherry Creek (0051955-01)   Matrix: Water   Sampled: 2020-05-24 11:15									
Calculated Parameters									
Hardness, Total (as CaCO3)	47.5	None Required	0.100	mg/L	N/A				
Dissolved Metals									
Aluminum, dissolved	20.7	N/A	1.0	μg/L	2020-05-30				
General Parameters									
Conductivity (EC)	107	N/A	2.0	μS/cm	2020-05-28				
Nitrogen, Total Kjeldahl	0.143	N/A	0.050	·	2020-05-29				
рН	7.26	7.0-10.5		pH units	2020-05-28	HT2			
Phosphorus, Total (as P)	0.0651	N/A	0.0020		2020-05-28				
Phosphorus, Total Dissolved	0.0065	N/A	0.0020		2020-05-28				
Turbidity	13.2	OG < 1		NTU	2020-05-25				
Microbiological Parameters									
Coliforms, Total	72.3	N/A	1.0	MPN/100 mL	2020-05-25				
E. coli	1.0	N/A	1.0	MPN/100 mL	2020-05-25				
Total Metals									
Aluminum, total	679	OG < 100	2.0	μg/L	2020-05-30				
Antimony, total	< 0.050	MAC = 6	0.050		2020-05-30				
Arsenic, total	0.439	MAC = 10	0.050	μg/L	2020-05-30				
Barium, total	18.2	MAC = 2000	0.10	μg/L	2020-05-30				
Beryllium, total	0.025	N/A	0.010	μg/L	2020-05-30				
Bismuth, total	< 0.010	N/A	0.010	μg/L	2020-05-30				
Boron, total	3.0	MAC = 5000	2.0	μg/L	2020-05-30				
Cadmium, total	0.0538	MAC = 5	0.0020	μg/L	2020-05-30				
Calcium, total	15700	N/A	40	μg/L	2020-05-30				
Chromium, total	2.62	MAC = 50	0.10	μg/L	2020-05-30				
Cobalt, total	0.583	N/A	0.0050	μg/L	2020-05-30				
Copper, total	2.59	MAC = 2000	0.20	μg/L	2020-05-30				
Iron, total	1020	AO ≤ 300	2.0	μg/L	2020-05-30				
Lead, total	0.350	MAC = 5	0.050	μg/L	2020-05-30				
Lithium, total	1.22	N/A	0.050	μg/L	2020-05-30				
Magnesium, total	2010	N/A	5.0	μg/L	2020-05-30				
Manganese, total	26.5	MAC = 120	0.050	μg/L	2020-05-30				
Molybdenum, total	0.985	N/A	0.010	μg/L	2020-05-30				
Nickel, total	2.50	N/A	0.040	μg/L	2020-05-30				
Phosphorus, total	38	N/A	10	μg/L	2020-05-30				
Potassium, total	904	N/A	10	μg/L	2020-05-30				
Selenium, total	0.81	MAC = 50	0.10	μg/L	2020-05-30				
Silicon, total	4970	N/A	100	μg/L	2020-05-30				
Silver, total	< 0.010	N/A	0.010	μg/L	2020-05-30				



REPORTED TO	Cherry Ridge Management	<b>WORK ORDER</b>	0051955
PROJECT	Creek Monitoring	REPORTED	2020-06-01 15:48

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
North Fork Cherry Creek (0051955-01)	Matrix: Water   Sai	mpled: 2020-05-24 1	1:15, Contir	nued		F1, F2, FILT, PRES
Total Metals, Continued						
Sodium, total	829	AO ≤ 200000	20	μg/L	2020-05-30	
Strontium, total	84.5	7000		μg/L	2020-05-30	
Sulfur, total	1600	N/A	1000	μg/L	2020-05-30	
Tellurium, total	< 0.050	N/A	0.050	μg/L	2020-05-30	
Thallium, total	0.0107	N/A	0.0040	μg/L	2020-05-30	
Thorium, total	0.076	N/A	0.010	μg/L	2020-05-30	
Tin, total	0.055	N/A	0.050	μg/L	2020-05-30	
Titanium, total	43.1	N/A	0.20	μg/L	2020-05-30	
Tungsten, total	< 0.20	N/A	0.20	μg/L	2020-05-30	
Uranium, total	0.194	MAC = 20	0.0010	μg/L	2020-05-30	
Vanadium, total	2.51	N/A	0.20	μg/L	2020-05-30	
Zinc, total	4.8	AO ≤ 5000	1.0	μg/L	2020-05-30	
Zirconium, total	0.092	N/A	0.020	μg/L	2020-05-30	
onerry Greek at Hall (0031333-02)   Ma	pio					FILT, PRES
Cherry Creek at Hall (0051955-02)   Ma	- Campio					
	0.97	AO ≤ 250	0.10	mg/L	2020-05-26	
Anions			0.10 0.010		2020-05-26 2020-05-26	•
<b>Anions</b> Chloride	0.97	AO ≤ 250		mg/L		
Anions Chloride Nitrate (as N)	0.97 0.074	AO ≤ 250 MAC = 10	0.010 0.010	mg/L	2020-05-26	
Anions Chloride Nitrate (as N) Nitrite (as N) Sulfate	0.97 0.074 < 0.010	AO ≤ 250 MAC = 10 MAC = 1	0.010 0.010	mg/L mg/L	2020-05-26 2020-05-26	
Anions Chloride Nitrate (as N) Nitrite (as N) Sulfate	0.97 0.074 < 0.010	AO ≤ 250 MAC = 10 MAC = 1 AO ≤ 500	0.010 0.010 1.0	mg/L mg/L mg/L	2020-05-26 2020-05-26	•
Anions Chloride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters	0.97 0.074 < 0.010 7.4	AO ≤ 250 MAC = 10 MAC = 1	0.010 0.010	mg/L mg/L mg/L	2020-05-26 2020-05-26 2020-05-26	•
Anions Chloride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3)	0.97 0.074 < 0.010 7.4	AO ≤ 250  MAC = 10  MAC = 1  AO ≤ 500  None Required	0.010 0.010 1.0	mg/L mg/L mg/L mg/L	2020-05-26 2020-05-26 2020-05-26 N/A	
Anions Chloride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Nitrate+Nitrite (as N) Nitrogen, Total	0.97 0.074 < 0.010 7.4 77.7 0.0740	AO ≤ 250  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A	0.010 0.010 1.0 0.100 0.0100	mg/L mg/L mg/L mg/L	2020-05-26 2020-05-26 2020-05-26 N/A N/A	•
Anions Chloride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Nitrate+Nitrite (as N) Nitrogen, Total	0.97 0.074 < 0.010 7.4 77.7 0.0740	AO ≤ 250  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A	0.010 0.010 1.0 0.100 0.0100 0.0500	mg/L mg/L mg/L mg/L	2020-05-26 2020-05-26 2020-05-26 N/A N/A	
Anions Chloride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Nitrate+Nitrite (as N) Nitrogen, Total Dissolved Metals Aluminum, dissolved	0.97 0.074 < 0.010 7.4 77.7 0.0740 0.334	AO ≤ 250  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  N/A	0.010 0.010 1.0 0.100 0.0100 0.0500	mg/L mg/L mg/L mg/L mg/L mg/L	2020-05-26 2020-05-26 2020-05-26 N/A N/A N/A	•
Anions Chloride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Nitrate+Nitrite (as N) Nitrogen, Total Dissolved Metals Aluminum, dissolved	0.97 0.074 < 0.010 7.4 77.7 0.0740 0.334	AO ≤ 250  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  N/A	0.010 0.010 1.0 0.100 0.0100 0.0500	mg/L mg/L mg/L mg/L mg/L mg/L	2020-05-26 2020-05-26 2020-05-26 N/A N/A N/A	•
Anions Chloride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Nitrate+Nitrite (as N) Nitrogen, Total Dissolved Metals Aluminum, dissolved General Parameters	0.97 0.074 < 0.010 7.4 77.7 0.0740 0.334	AO ≤ 250  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  N/A	0.010 0.010 1.0 0.100 0.0100 0.0500	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	2020-05-26 2020-05-26 2020-05-26 N/A N/A N/A 2020-05-30	
Anions Chloride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Nitrate+Nitrite (as N) Nitrogen, Total Dissolved Metals Aluminum, dissolved General Parameters Conductivity (EC)	0.97 0.074 < 0.010 7.4 77.7 0.0740 0.334 18.5	AO ≤ 250  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  N/A  N/A	0.010 0.010 1.0 0.100 0.0100 0.0500 1.0	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	2020-05-26 2020-05-26 2020-05-26 N/A N/A N/A 2020-05-30	
Anions Chloride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Nitrate+Nitrite (as N) Nitrogen, Total Dissolved Metals Aluminum, dissolved General Parameters Conductivity (EC) Nitrogen, Total Kjeldahl	0.97 0.074 < 0.010 7.4 77.7 0.0740 0.334 18.5	AO ≤ 250  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  N/A  N/A  N/A	0.010 0.010 1.0 0.100 0.0100 0.0500 1.0	mg/L mg/L mg/L mg/L mg/L mg/L  mg/L  µg/L  µS/cm mg/L  pH units	2020-05-26 2020-05-26 2020-05-26 N/A N/A N/A 2020-05-30 2020-05-28 2020-05-29	PRES
Anions Chloride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Nitrate+Nitrite (as N) Nitrogen, Total Dissolved Metals Aluminum, dissolved General Parameters Conductivity (EC) Nitrogen, Total Kjeldahl pH	0.97 0.074 < 0.010 7.4 77.7 0.0740 0.334 18.5 154 0.260 7.48	AO ≤ 250  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/	0.010 0.010 1.0 0.100 0.0100 0.0500 1.0 2.0 0.050 0.10	mg/L mg/L mg/L mg/L mg/L mg/L  mg/L  µg/L  µS/cm mg/L  pH units mg/L	2020-05-26 2020-05-26 2020-05-26 N/A N/A N/A 2020-05-30 2020-05-28 2020-05-29 2020-05-28	PRES
Anions  Chloride  Nitrate (as N)  Nitrite (as N)  Sulfate  Calculated Parameters  Hardness, Total (as CaCO3)  Nitrate+Nitrite (as N)  Nitrogen, Total  Dissolved Metals  Aluminum, dissolved  General Parameters  Conductivity (EC)  Nitrogen, Total Kjeldahl  pH  Phosphorus, Total (as P)	0.97 0.074 < 0.010 7.4 77.7 0.0740 0.334 18.5 154 0.260 7.48 0.163	AO ≤ 250  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/	0.010 0.010 1.0 0.100 0.0100 0.0500 1.0 2.0 0.050 0.10 0.0020 0.0020	mg/L mg/L mg/L mg/L mg/L mg/L  mg/L  µg/L  µS/cm mg/L  pH units mg/L	2020-05-26 2020-05-26 2020-05-26 N/A N/A N/A 2020-05-30 2020-05-28 2020-05-28 2020-05-28 2020-05-28	PRES
Anions Chloride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Hardness, Total (as CaCO3) Nitrate+Nitrite (as N) Nitrogen, Total Dissolved Metals Aluminum, dissolved General Parameters Conductivity (EC) Nitrogen, Total Kjeldahl pH Phosphorus, Total (as P) Phosphorus, Total Dissolved	0.97 0.074 < 0.010 7.4 77.7 0.0740 0.334 18.5 154 0.260 7.48 0.163 0.0071	AO ≤ 250  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/	0.010 0.010 1.0 0.100 0.0100 0.0500 1.0 2.0 0.050 0.10 0.0020 0.0020	mg/L mg/L mg/L mg/L mg/L mg/L  mg/L  µg/L  µS/cm mg/L  pH units mg/L  mg/L	2020-05-26 2020-05-26 2020-05-26 N/A N/A N/A 2020-05-30 2020-05-28 2020-05-29 2020-05-28 2020-05-28 2020-05-28 2020-05-28	PRES
Anions  Chloride  Nitrate (as N)  Nitrite (as N)  Sulfate  Calculated Parameters  Hardness, Total (as CaCO3)  Nitrate+Nitrite (as N)  Nitrogen, Total  Dissolved Metals  Aluminum, dissolved  General Parameters  Conductivity (EC)  Nitrogen, Total Kjeldahl  pH  Phosphorus, Total (as P)  Phosphorus, Total Dissolved  Turbidity	0.97 0.074 < 0.010 7.4 77.7 0.0740 0.334 18.5 154 0.260 7.48 0.163 0.0071	AO ≤ 250  MAC = 10  MAC = 1  AO ≤ 500  None Required  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/	0.010 0.010 1.0 0.100 0.0100 0.0500 1.0 2.0 0.050 0.10 0.0020 0.0020 0.10	mg/L mg/L mg/L mg/L mg/L mg/L  mg/L  µg/L  µS/cm mg/L  pH units mg/L  mg/L	2020-05-26 2020-05-26 2020-05-26 N/A N/A N/A 2020-05-30 2020-05-28 2020-05-29 2020-05-28 2020-05-28 2020-05-28 2020-05-28	PRES



**REPORTED TO** Cherry Ridge Management

PROJECT Creek Monitoring

WORK ORDER

0051955

REPORTED

2020-06-01 15:48

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifie
Cherry Creek at Hall (0051955-02	2)   Matrix: Water   Sample	d: 2020-05-24 11:57	, Continued			F1, F2, FILT, PRES
Total Metals						
Aluminum, total	2250	OG < 100	2.0	μg/L	2020-05-30	
Antimony, total	0.181	MAC = 6	0.050		2020-05-30	
Arsenic, total	2.00	MAC = 10	0.050	μg/L	2020-05-30	
Barium, total	40.2	MAC = 2000	0.10	μg/L	2020-05-30	
Beryllium, total	0.074	N/A	0.010	μg/L	2020-05-30	
Bismuth, total	0.031	N/A	0.010		2020-05-30	
Boron, total	2.6	MAC = 5000	2.0	μg/L	2020-05-30	
Cadmium, total	0.162	MAC = 5	0.0020	μg/L	2020-05-30	
Calcium, total	23400	N/A	40		2020-05-30	
Chromium, total	6.45	MAC = 50	0.10		2020-05-30	
Cobalt, total	1.97	N/A	0.0050		2020-05-30	
Copper, total	7.34	MAC = 2000	0.20		2020-05-30	
Iron, total	3700	AO ≤ 300	2.0		2020-05-30	
Lead, total	1.51	MAC = 5	0.050		2020-05-30	
Lithium, total	3.54	N/A	0.050		2020-05-30	
Magnesium, total	4680	N/A	5.0	μg/L	2020-05-30	
Manganese, total	98.5	MAC = 120	0.050		2020-05-30	
Molybdenum, total	1.09	N/A	0.010		2020-05-30	
Nickel, total	6.23	N/A	0.040		2020-05-30	
Phosphorus, total	137	N/A	10		2020-05-30	
Potassium, total	1210	N/A	10		2020-05-30	
Selenium, total	1.13	MAC = 50	0.10		2020-05-30	
Silicon, total		N/A	100		2020-05-30	
Silver, total	7720	N/A				
<u> </u>	0.040	AO ≤ 200000	0.010		2020-05-30	
Sodium, total	1580		20		2020-05-30	
Strontium, total	149	7000		µg/L	2020-05-30	
Sulfur, total	2400	N/A	1000		2020-05-30	
Tellurium, total	< 0.050	N/A	0.050		2020-05-30	
Thallium, total	0.0346	N/A	0.0040		2020-05-30	
Thorium, total	0.214	N/A	0.010		2020-05-30	
Tin, total	0.091	N/A	0.050		2020-05-30	
Titanium, total	122	N/A	0.20		2020-05-30	
Tungsten, total	< 0.20	N/A	0.20		2020-05-30	
Uranium, total	0.390	MAC = 20	0.0010	· -	2020-05-30	
Vanadium, total	6.67	N/A		μg/L	2020-05-30	
Zinc, total	14.5	AO ≤ 5000		μg/L	2020-05-30	
Zirconium, total	0.194	N/A	0.020	μg/L	2020-05-30	

Shuswap River Picnic Site (0051955-03) | Matrix: Water | Sampled: 2020-05-24 10:20

F1, F2, FILT, PRES



REPORTED TO	Cherry Ridge Management	<b>WORK ORDER</b>	0051955
PROJECT	Creek Monitoring	REPORTED	2020-06-01 15:48

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifie
Shuswap River Picnic Site (0051955	-03)   Matrix: Water   S	ampled: 2020-05-24	10:20, Con	tinued		F1, F2, FILT, PRES
Anions						
Chloride	0.57	AO ≤ 250	0.10	mg/L	2020-05-26	
Nitrate (as N)	0.070	MAC = 10	0.010	mg/L	2020-05-26	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2020-05-26	
Sulfate	4.4	AO ≤ 500	1.0	mg/L	2020-05-26	
Calculated Parameters						
Hardness, Total (as CaCO3)	41.6	None Required	0.100	mg/L	N/A	
Nitrate+Nitrite (as N)	0.0698	N/A	0.0100		N/A	
Nitrogen, Total	0.317	N/A	0.0500	mg/L	N/A	
Dissolved Metals						
Aluminum, dissolved	18.3	N/A	1.0	μg/L	2020-05-30	
General Parameters						
Conductivity (EC)	96.0	N/A	2.0	μS/cm	2020-05-28	
Nitrogen, Total Kjeldahl	0.247	N/A	0.050	·	2020-05-29	
pH	7.09	7.0-10.5		pH units	2020-05-28	HT2
Phosphorus, Total (as P)	0.0728	N/A	0.0020	•	2020-05-28	
Phosphorus, Total Dissolved	0.0047	N/A	0.0020		2020-05-28	
Turbidity	14.0	OG < 1		NTU	2020-05-25	
Microbiological Parameters						
Coliforms, Total	1200	N/A	1.0	MPN/100 mL	2020-05-25	
E. coli	23.8	N/A	1.0	MPN/100 mL	2020-05-25	
Total Metals						
Aluminum, total	571	OG < 100	2.0	μg/L	2020-05-30	
Antimony, total	0.071	MAC = 6	0.050		2020-05-30	
Arsenic, total	0.530	MAC = 10	0.050	· -	2020-05-30	
Barium, total	15.7	MAC = 2000	0.10	μg/L	2020-05-30	
Beryllium, total	0.023	N/A	0.010		2020-05-30	
Bismuth, total	< 0.010	N/A	0.010		2020-05-30	
Boron, total	2.2	MAC = 5000	2.0	μg/L	2020-05-30	
Cadmium, total	0.0469	MAC = 5	0.0020		2020-05-30	
Calcium, total	13400	N/A	40	μg/L	2020-05-30	
Chromium, total	1.65	MAC = 50		μg/L	2020-05-30	
Cobalt, total	0.497	N/A	0.0050		2020-05-30	
Copper, total	2.41	MAC = 2000		μg/L	2020-05-30	
Iron, total	939	AO ≤ 300		μg/L	2020-05-30	
Lead, total	0.386	MAC = 5	0.050		2020-05-30	
Lithium, total	1.16	N/A	0.050		2020-05-30	
Magnesium, total	1960	N/A		μg/L	2020-05-30	
Manganese, total	32.0	MAC = 120	0.050		2020-05-30	
	0	out Results. Obviou				Page 5 of



REPORTED TO	Cherry Ridge Management	<b>WORK ORDER</b>	0051955
PROJECT	Creek Monitoring	REPORTED	2020-06-01 15:48

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
Shuswap River Picnic Site (0051	955-03)   Matrix: Water   S	ampled: 2020-05-24	10:20, Cont	tinued		F1, F2, FILT, PRES
Total Metals, Continued						
Molybdenum, total	0.632	N/A	0.010	μg/L	2020-05-30	
Nickel, total	1.72	N/A	0.040	μg/L	2020-05-30	
Phosphorus, total	34	N/A	10	μg/L	2020-05-30	
Potassium, total	998	N/A	10	μg/L	2020-05-30	
Selenium, total	0.42	MAC = 50	0.10	μg/L	2020-05-30	
Silicon, total	4430	N/A	100	μg/L	2020-05-30	
Silver, total	< 0.010	N/A	0.010	μg/L	2020-05-30	
Sodium, total	1200	AO ≤ 200000	20	μg/L	2020-05-30	
Strontium, total	65.8	7000	0.10	μg/L	2020-05-30	
Sulfur, total	1200	N/A	1000	μg/L	2020-05-30	
Tellurium, total	< 0.050	N/A	0.050	μg/L	2020-05-30	
Thallium, total	0.0078	N/A	0.0040	μg/L	2020-05-30	
Thorium, total	0.060	N/A	0.010	μg/L	2020-05-30	
Tin, total	< 0.050	N/A	0.050	μg/L	2020-05-30	
Titanium, total	29.0	N/A	0.20	μg/L	2020-05-30	
Tungsten, total	< 0.20	N/A	0.20		2020-05-30	
Uranium, total	0.373	MAC = 20	0.0010		2020-05-30	
Vanadium, total	1.46	N/A	0.20	μg/L	2020-05-30	
Zinc, total	5.5	AO ≤ 5000	1.0	μg/L	2020-05-30	
Zirconium, total	0.113	N/A	0.020	μg/L	2020-05-30	

### Ferry Creek (0051955-04) | Matrix: Water | Sampled: 2020-05-24 10:45

F1, F2, FILT, PRES

Anions					
Chloride	0.24	AO ≤ 250	0.10	mg/L	2020-05-26
Nitrate (as N)	0.013	MAC = 10	0.010	mg/L	2020-05-26
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2020-05-26
Sulfate	5.3	AO ≤ 500	1.0	mg/L	2020-05-26
Calculated Parameters					
Hardness, Total (as CaCO3)	36.5	None Required	0.100	mg/L	N/A
Nitrate+Nitrite (as N)	0.0128	N/A	0.0100	mg/L	N/A
Nitrogen, Total	0.285	N/A	0.0500	mg/L	N/A
Dissolved Metals					
Aluminum, dissolved	57.5	N/A	1.0	μg/L	2020-05-30
General Parameters					
Conductivity (EC)	86.5	N/A	2.0	μS/cm	2020-05-28
Nitrogen, Total Kjeldahl	0.272	N/A	0.050	mg/L	2020-05-29



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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifie
Ferry Creek (0051955-04)   Matrix: Wat	er   Sampled: 2020-0	05-24 10:45, Continu	ıed			F1, F2, FILT, PRES
General Parameters, Continued						
pH	7.04	7.0-10.5	0.10	pH units	2020-05-28	HT2
Phosphorus, Total (as P)	0.0555	N/A	0.0020	-	2020-05-28	
Phosphorus, Total Dissolved	0.0119	N/A	0.0020		2020-05-28	
Turbidity	5.80	OG < 1	0.10	NTU	2020-05-25	
Microbiological Parameters						
Coliforms, Total	249	N/A	1.0	MPN/100 mL	2020-05-25	
E. coli	1.0	N/A	1.0	MPN/100 mL	2020-05-25	
Total Metals						
Aluminum, total	428	OG < 100	2.0	μg/L	2020-05-30	
Antimony, total	< 0.050	MAC = 6	0.050		2020-05-30	
Arsenic, total	0.382	MAC = 10	0.050		2020-05-30	
Barium, total	10.9	MAC = 2000		μg/L	2020-05-30	
Beryllium, total	0.026	N/A	0.010		2020-05-30	
Bismuth, total	< 0.010	N/A	0.010		2020-05-30	
Boron, total	2.1	MAC = 5000		μg/L	2020-05-30	
Cadmium, total	0.0121	MAC = 5	0.0020	· -	2020-05-30	
Calcium, total	10400	N/A		μg/L	2020-05-30	
Chromium, total	0.89	MAC = 50		μg/L	2020-05-30	
Cobalt, total	0.290	N/A	0.0050		2020-05-30	
Copper, total	1.23	MAC = 2000	0.0030		2020-05-30	
Iron, total	645	AO ≤ 300		μg/L	2020-05-30	
Lead, total	0.165	MAC = 5	0.050		2020-05-30	
Lithium, total	1.16	N/A	0.050		2020-05-30	
Magnesium, total	2560	N/A		μg/L	2020-05-30	
Manganese, total	20.1	MAC = 120	0.050	· -	2020-05-30	
Molybdenum, total	0.383	N/A	0.030		2020-05-30	
Nickel, total	0.858	N/A	0.040		2020-05-30	
Phosphorus, total	31	N/A		μg/L	2020-05-30	
Potassium, total	834	N/A		μg/L	2020-05-30	
Selenium, total	0.21	MAC = 50		μg/L μg/L	2020-05-30	
Silicon, total	6510	N/A		μg/L	2020-05-30	
Silver, total	< 0.010	N/A	0.010		2020-05-30	
Sodium, total	1870	AO ≤ 200000		μg/L	2020-05-30	
Strontium, total	71.9	7000		μg/L	2020-05-30	
Sulfur, total	1600	N/A		μg/L μg/L	2020-05-30	
Tellurium, total	< 0.050	N/A	0.050	· -	2020-05-30	
Thallium, total	< 0.0040	N/A	0.0040	· -	2020-05-30	
Thorium, total	0.055	N/A	0.0040		2020-05-30	
Tin, total	< 0.050	N/A N/A	0.010	· -	2020-05-30	
Titanium, total	< 0.050 <b>24.7</b>	N/A N/A		μg/L μg/L	2020-05-30	



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Analyte		Result	Guideline	RL	Units	Analyzed	Qualifier
Ferry Creek (005	1955-04)   Matrix: Water   Sam	pled: 2020-	05-24 10:45, Contin	ued			F1, F2, FILT, PRES
Total Metals, Conti	inued						
Tungsten, total		< 0.20	N/A	0.20	μg/L	2020-05-30	
Uranium, total		0.286	MAC = 20	0.0010		2020-05-30	
Vanadium, total		1.98	N/A	0.20	μg/L	2020-05-30	
Zinc, total		2.9	AO ≤ 5000	1.0	μg/L	2020-05-30	
Zirconium, total		0.518	N/A	0.020	μg/L	2020-05-30	
1/2 Mile Creek (0	051955-05)   Matrix: Water   Sa	ampled: 202	20-05-24 12:23				F1, F2, FILT, PRES
Anions							
Chloride		0.28	AO ≤ 250	0.10	mg/L	2020-05-26	
Nitrate (as N)		< 0.010	MAC = 10	0.010	mg/L	2020-05-26	
Nitrite (as N)		< 0.010	MAC = 1	0.010	mg/L	2020-05-26	
Sulfate		19.3	AO ≤ 500	1.0	mg/L	2020-05-26	
Calculated Parame	eters						
Hardness, Total (a	as CaCO3)	140	None Required	0.100	mg/L	N/A	
Nitrate+Nitrite (as	N)	< 0.0100	N/A	0.0100	mg/L	N/A	
Nitrogen, Total		0.0740	N/A	0.0500	mg/L	N/A	
Dissolved Metals							
Aluminum, dissolv	ved	2.2	N/A	1.0	μg/L	2020-05-30	
General Parameter	rs						
Conductivity (EC)		300	N/A	2.0	μS/cm	2020-05-28	
Nitrogen, Total Kje	eldahl	0.074	N/A	0.050	mg/L	2020-05-29	
pН		7.59	7.0-10.5	0.10	pH units	2020-05-28	HT2
Phosphorus, Tota	I (as P)	0.0105	N/A	0.0020	mg/L	2020-05-28	
Phosphorus, Tota	l Dissolved	0.0059	N/A	0.0020	mg/L	2020-05-28	
Turbidity		0.58	OG < 1	0.10	NTU	2020-05-25	
Microbiological Pa	nrameters						
Coliforms, Total		101	N/A	1.0	MPN/100 mL	2020-05-25	
E. coli		< 1.0	N/A	1.0	MPN/100 mL	2020-05-25	
Total Metals							
Aluminum, total		12.9	OG < 100	2.0	μg/L	2020-05-30	
Antimony, total		0.146	MAC = 6	0.050	μg/L	2020-05-30	
Arsenic, total		0.879	MAC = 10	0.050		2020-05-30	
Barium, total		11.8	MAC = 2000		μg/L	2020-05-30	
Beryllium, total		< 0.010	N/A	0.010	· -	2020-05-30	
Bismuth, total		< 0.010	N/A	0.010	μg/L	2020-05-30	



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Guideline **RL** Units **Analyte** Result Analyzed Qualifier

/2 Mile Creek (0051955-05)   Matri	x: Water   Sampled: 202	20-05-24 12:23, Con	tinued			F1, F2, FILT, PRES
otal Metals, Continued						
Boron, total	2.6	MAC = 5000	2.0	μg/L	2020-05-30	
Cadmium, total	0.0065	MAC = 5	0.0020	μg/L	2020-05-30	
Calcium, total	46700	N/A	40	μg/L	2020-05-30	
Chromium, total	0.24	MAC = 50	0.10	μg/L	2020-05-30	
Cobalt, total	0.0291	N/A	0.0050	μg/L	2020-05-30	
Copper, total	0.49	MAC = 2000	0.20	μg/L	2020-05-30	
Iron, total	17.6	AO ≤ 300	2.0	μg/L	2020-05-30	
Lead, total	< 0.050	MAC = 5	0.050	μg/L	2020-05-30	
Lithium, total	0.957	N/A	0.050	μg/L	2020-05-30	
Magnesium, total	5670	N/A	5.0	μg/L	2020-05-30	
Manganese, total	0.770	MAC = 120	0.050	μg/L	2020-05-30	
Molybdenum, total	0.889	N/A	0.010	μg/L	2020-05-30	
Nickel, total	0.114	N/A	0.040	μg/L	2020-05-30	
Phosphorus, total	< 10	N/A	10	μg/L	2020-05-30	
Potassium, total	1000	N/A	10	μg/L	2020-05-30	
Selenium, total	0.78	MAC = 50	0.10	μg/L	2020-05-30	
Silicon, total	5890	N/A	100	μg/L	2020-05-30	
Silver, total	< 0.010	N/A	0.010	μg/L	2020-05-30	
Sodium, total	2170	AO ≤ 200000	20	μg/L	2020-05-30	
Strontium, total	243	7000	0.10	μg/L	2020-05-30	
Sulfur, total	6800	N/A	1000	μg/L	2020-05-30	
Tellurium, total	< 0.050	N/A	0.050	μg/L	2020-05-30	
Thallium, total	< 0.0040	N/A	0.0040	μg/L	2020-05-30	
Thorium, total	< 0.010	N/A	0.010	μg/L	2020-05-30	
Tin, total	< 0.050	N/A	0.050	μg/L	2020-05-30	
Titanium, total	0.48	N/A	0.20	μg/L	2020-05-30	
Tungsten, total	< 0.20	N/A	0.20	μg/L	2020-05-30	
Uranium, total	0.276	MAC = 20	0.0010	μg/L	2020-05-30	
Vanadium, total	< 0.20	N/A	0.20	μg/L	2020-05-30	
Zinc, total	1.0	AO ≤ 5000	1.0	μg/L	2020-05-30	
Zirconium, total	0.023	N/A	0.020	μg/L	2020-05-30	

#### Sample Qualifiers:

- The sample was not field-filtered and was therefore filtered through a 0.45 µm membrane in the laboratory and preserved with HNO3 prior to analysis for dissolved metals.
- F2 The sample was not field-preserved with HNO3 and was therefore preserved in the laboratory and held for at least 16 hours prior to analysis for total metals.
- **FILT** The sample has been filtered for DP in the laboratory. Results may not reflect conditions at the time of sampling.
- HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is
- **PRES** Sample has been preserved for DP in the laboratory and the holding time has been extended.



## **APPENDIX 1: SUPPORTING INFORMATION**

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Analysis Description	Method Ref.	Technique	Location
Anions in Water	SM 4110 B (2017)	Ion Chromatography	Kelowna
Coliforms, Total in Water	NA / SM 9223 (2017)	Quanti-Tray / Enzyme Substrate Endo Agar	Kelowna
Conductivity in Water	SM 2510 B (2017)	Conductivity Meter	Kelowna
Dissolved Metals in Water	EPA 200.8 / EPA 6020B	0.45 µm Filtration / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond
E. coli in Water	NA / SM 9223 (2017)	Quanti-Tray / Enzyme Substrate Endo Agar	Kelowna
Hardness in Water	SM 2340 B* (2017)	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Est)	N/A
Nitrogen, Total Kjeldahl in Water	SM 4500-Norg D* (2017)	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	SM 4500-H+ B (2017)	Electrometry	Kelowna
Phosphorus, Total Dissolved in Water	SM 4500-P B.5* (2011) / SM 4500-P F (2017)	Persulfate Digestion / Automated Colorimetry (Ascorbic Acid)	Kelowna
Phosphorus, Total in Water	SM 4500-P B.5* (2011) / SM 4500-P F (2017)	Persulfate Digestion / Automated Colorimetry (Ascorbic Acid)	Kelowna
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

### 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

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

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

μg/L Micrograms per litre

 $\mu$ S/cm Microsiemens per centimetre

EPA United States Environmental Protection Agency Test Methods

SM Standard Methods for the Examination of Water and Wastewater, American Public Health Association

#### **Guidelines Referenced in this Report:**

Guidelines for Canadian Drinking Water Quality (Health Canada, Feb 2017)

Note: In some cases, the values displayed on the report represent the lowest guideline and are to be verified by the end user



## **APPENDIX 1: SUPPORTING INFORMATION**

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#### **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 unless otherwise 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 <u>not</u> 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