

CERTIFICATE OF ANALYSIS

REPORTED TO Interior Health Authority - Penticton
3090 Skaha Lake Rd
Penticton, BC V2A 7H2

ATTENTION Rob Birtles

PO NUMBER

PROJECT Comprehensive 2021 for Rob Birtles

PROJECT INFO

WORK ORDER 22B1434

RECEIVED / TEMP 2022-02-09 09:05 / 7.3°C

REPORTED 2022-02-16 14:03

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/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.

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

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TEST RESULTS

REPORTED TO PROJECT Interior Health Authority - Penticton
Comprehensive 2021 for Rob Birtles

WORK ORDER REPORTED 22B1434
2022-02-16 14:03

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
0611959; Pumphouse (22B1434-01) Matrix: Water Sampled: 2022-02-08 09:50					
Anions					
Chloride	6.93	AO ≤ 250	0.10 mg/L	2022-02-11	
Fluoride	< 0.10	MAC = 1.5	0.10 mg/L	2022-02-11	
Nitrate (as N)	0.081	MAC = 10	0.010 mg/L	2022-02-11	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2022-02-11	
Sulfate	29.5	AO ≤ 500	1.0 mg/L	2022-02-11	
Calculated Parameters					
Hardness, Total (as CaCO ₃)	72.1	None Required	0.500 mg/L	N/A	
Langelier Index	-0.6	N/A	-5.0	2022-02-16	
Solids, Total Dissolved	106	AO ≤ 500	1.00 mg/L	N/A	
General Parameters					
Alkalinity, Total (as CaCO ₃)	49.1	N/A	1.0 mg/L	2022-02-11	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	N/A	1.0 mg/L	2022-02-11	
Alkalinity, Bicarbonate (as CaCO ₃)	49.1	N/A	1.0 mg/L	2022-02-11	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	N/A	1.0 mg/L	2022-02-11	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	N/A	1.0 mg/L	2022-02-11	
Colour, True	< 5.0	AO ≤ 15	5.0 CU	2022-02-11	
Conductivity (EC)	195	N/A	2.0 µS/cm	2022-02-11	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020 mg/L	2022-02-11	
pH	7.79	7.0-10.5	0.10 pH units	2022-02-11	HT2
Temperature, at pH	24.2	N/A	°C	2022-02-11	HT2
Turbidity	0.44	OG < 1	0.10 NTU	2022-02-11	
Total Metals					
Aluminum, total	0.0131	OG < 0.1	0.0050 mg/L	2022-02-13	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2022-02-13	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050 mg/L	2022-02-13	
Barium, total	0.0141	MAC = 2	0.0050 mg/L	2022-02-13	
Boron, total	< 0.0500	MAC = 5	0.0500 mg/L	2022-02-13	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010 mg/L	2022-02-13	
Calcium, total	18.6	None Required	0.20 mg/L	2022-02-13	
Chromium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2022-02-13	
Cobalt, total	< 0.00010	N/A	0.00010 mg/L	2022-02-13	
Copper, total	0.00373	MAC = 2	0.00040 mg/L	2022-02-13	
Iron, total	0.037	AO ≤ 0.3	0.010 mg/L	2022-02-13	
Lead, total	< 0.00020	MAC = 0.005	0.00020 mg/L	2022-02-13	
Magnesium, total	6.22	None Required	0.010 mg/L	2022-02-13	
Manganese, total	0.00350	MAC = 0.12	0.00020 mg/L	2022-02-13	
Mercury, total	< 0.000010	MAC = 0.001	0.000010 mg/L	2022-02-16	
Molybdenum, total	0.00116	N/A	0.00010 mg/L	2022-02-13	
Nickel, total	0.00072	N/A	0.00040 mg/L	2022-02-13	
Potassium, total	1.02	N/A	0.10 mg/L	2022-02-13	
Selenium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2022-02-13	

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0611959; Pumphouse (22B1434-01) | Matrix: Water | Sampled: 2022-02-08 09:50, Continued

Total Metals, Continued

Sodium, total	13.1	AO $\leq$ 200	0.10	mg/L	2022-02-13	
Strontium, total	0.125	MAC = 7	0.0010	mg/L	2022-02-13	
Uranium, total	0.00363	MAC = 0.02	0.000020	mg/L	2022-02-13	
Zinc, total	0.0095	AO $\leq$ 5	0.0040	mg/L	2022-02-13	

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 Interior Health Authority - Penticton
Comprehensive 2021 for Rob Birtles

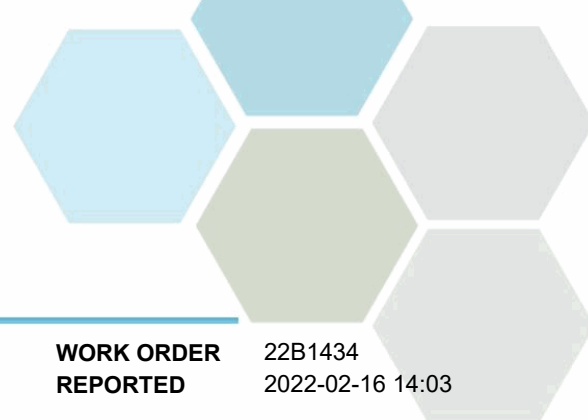
WORK ORDER REPORTED 22B1434
2022-02-16 14:03

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
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
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
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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