



CERTIFICATE OF ANALYSIS

REPORTED TO	Osoyoos, Town of PO Box 3010 OSOYOOS, BC V0H 1V0	WORK ORDER	22A3099
ATTENTION	Jared Brounstein	RECEIVED / TEMP REPORTED	2022-01-26 17:00 / 10.6°C 2022-02-02 12:59
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.

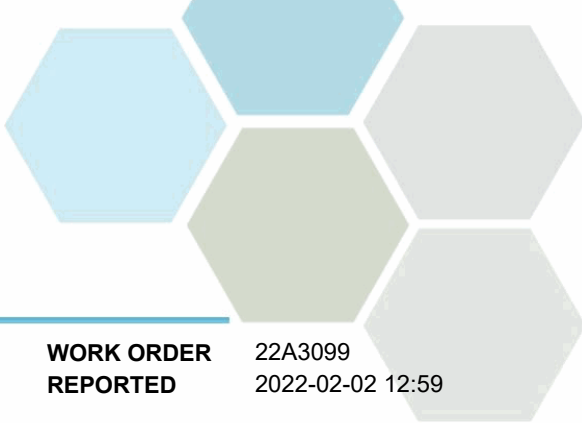
If you have any questions or concerns, please contact me at bwhitehead@caro.ca

Authorized By:

Brent Whitehead
Client Service Team Lead

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TEST RESULTS

REPORTED TO PROJECT Osoyoos, Town of
General Potability

WORK ORDER REPORTED 22A3099
2022-02-02 12:59

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
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Well #3 Town System (22A3099-01) | Matrix: Water | Sampled: 2022-01-25 11:30

Anions

Chloride	17.7	AO ≤ 250	0.10 mg/L	2022-01-27	
Fluoride	0.41	MAC = 1.5	0.10 mg/L	2022-01-27	
Nitrate (as N)	3.55	MAC = 10	0.010 mg/L	2022-01-27	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2022-01-27	
Sulfate	55.8	AO ≤ 500	1.0 mg/L	2022-01-27	

Calculated Parameters

Hardness, Total (as CaCO3)	308	None Required	0.500 mg/L	N/A	
Solids, Total Dissolved	407	AO ≤ 500	1.00 mg/L	N/A	

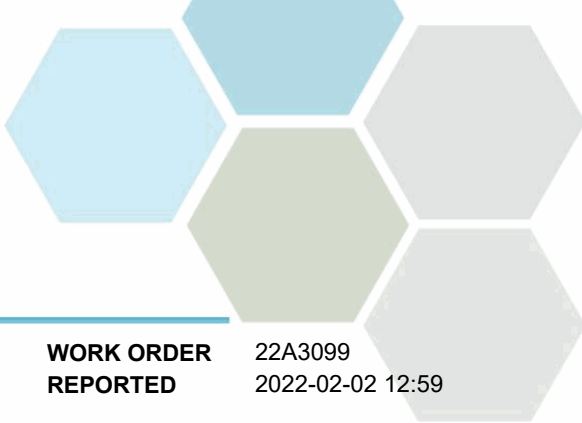
General Parameters

Alkalinity, Total (as CaCO3)	288	N/A	1.0 mg/L	2022-01-27	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0 mg/L	2022-01-27	
Alkalinity, Bicarbonate (as CaCO3)	288	N/A	1.0 mg/L	2022-01-27	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0 mg/L	2022-01-27	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0 mg/L	2022-01-27	
Conductivity (EC)	678	N/A	2.0 µS/cm	2022-01-27	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020 mg/L	2022-01-27	
pH	7.46	7.0-10.5	0.10 pH units	2022-01-27	HT2
Turbidity	< 0.10	OG < 1	0.10 NTU	2022-01-27	

Total Metals

Aluminum, total	< 0.0050	OG < 0.1	0.0050 mg/L	2022-02-01	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2022-02-01	
Arsenic, total	0.00134	MAC = 0.01	0.00050 mg/L	2022-02-01	
Barium, total	0.0867	MAC = 2	0.0050 mg/L	2022-02-01	
Boron, total	0.0613	MAC = 5	0.0500 mg/L	2022-02-01	
Cadmium, total	0.000034	MAC = 0.005	0.000010 mg/L	2022-02-01	
Calcium, total	84.1	None Required	0.20 mg/L	2022-02-01	
Chromium, total	0.00097	MAC = 0.05	0.00050 mg/L	2022-02-01	
Copper, total	0.0115	MAC = 2	0.00040 mg/L	2022-02-01	
Iron, total	< 0.010	AO ≤ 0.3	0.010 mg/L	2022-02-01	
Lead, total	0.00029	MAC = 0.005	0.00020 mg/L	2022-02-01	
Magnesium, total	23.9	None Required	0.010 mg/L	2022-02-01	
Manganese, total	0.0392	MAC = 0.12	0.00020 mg/L	2022-02-01	
Potassium, total	6.78	N/A	0.10 mg/L	2022-02-01	
Selenium, total	0.00139	MAC = 0.05	0.00050 mg/L	2022-02-01	
Sodium, total	27.3	AO ≤ 200	0.10 mg/L	2022-02-01	
Strontium, total	0.947	MAC = 7	0.0010 mg/L	2022-02-01	
Uranium, total	0.0116	MAC = 0.02	0.000020 mg/L	2022-02-01	
Zinc, total	0.0090	AO ≤ 5	0.0040 mg/L	2022-02-01	

Well #6 (22A3099-02) | Matrix: Water | Sampled: 2022-01-25 12:10



TEST RESULTS

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2022-02-02 12:59

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
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Well #6 (22A3099-02) | Matrix: Water | Sampled: 2022-01-25 12:10, Continued

Anions

Chloride	23.7	AO ≤ 250	0.10 mg/L	2022-01-27	
Fluoride	0.38	MAC = 1.5	0.10 mg/L	2022-01-27	
Nitrate (as N)	3.63	MAC = 10	0.010 mg/L	2022-01-27	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2022-01-27	
Sulfate	64.1	AO ≤ 500	1.0 mg/L	2022-01-27	

Calculated Parameters

Hardness, Total (as CaCO3)	325	None Required	0.500 mg/L	N/A	
Solids, Total Dissolved	444	AO ≤ 500	1.00 mg/L	N/A	

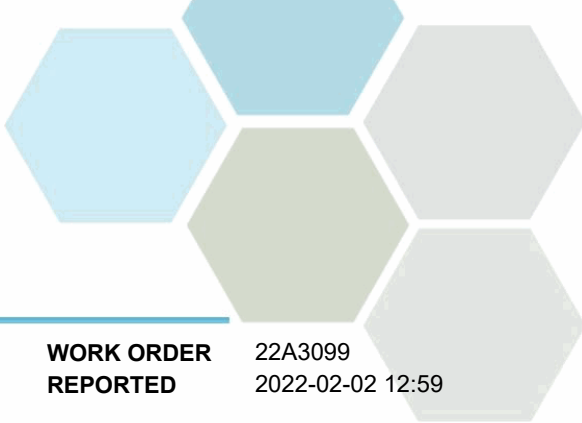
General Parameters

Alkalinity, Total (as CaCO3)	305	N/A	1.0 mg/L	2022-01-27	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0 mg/L	2022-01-27	
Alkalinity, Bicarbonate (as CaCO3)	305	N/A	1.0 mg/L	2022-01-27	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0 mg/L	2022-01-27	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0 mg/L	2022-01-27	
Conductivity (EC)	736	N/A	2.0 µS/cm	2022-01-27	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020 mg/L	2022-01-27	
pH	7.56	7.0-10.5	0.10 pH units	2022-01-27	HT2
Turbidity	0.14	OG < 1	0.10 NTU	2022-01-27	

Total Metals

Aluminum, total	0.0208	OG < 0.1	0.0050 mg/L	2022-02-02	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2022-02-02	
Arsenic, total	0.00474	MAC = 0.01	0.00050 mg/L	2022-02-02	
Barium, total	0.0758	MAC = 2	0.0050 mg/L	2022-02-02	
Boron, total	< 0.0500	MAC = 5	0.0500 mg/L	2022-02-02	
Cadmium, total	0.000042	MAC = 0.005	0.000010 mg/L	2022-02-02	
Calcium, total	76.4	None Required	0.20 mg/L	2022-02-02	
Chromium, total	0.00095	MAC = 0.05	0.00050 mg/L	2022-02-02	
Copper, total	0.0390	MAC = 2	0.00040 mg/L	2022-02-02	
Iron, total	< 0.010	AO ≤ 0.3	0.010 mg/L	2022-02-02	
Lead, total	0.00403	MAC = 0.005	0.00020 mg/L	2022-02-02	
Magnesium, total	32.5	None Required	0.010 mg/L	2022-02-02	
Manganese, total	0.106	MAC = 0.12	0.00020 mg/L	2022-02-02	
Potassium, total	6.73	N/A	0.10 mg/L	2022-02-02	
Selenium, total	0.00085	MAC = 0.05	0.00050 mg/L	2022-02-02	
Sodium, total	38.5	AO ≤ 200	0.10 mg/L	2022-02-02	
Strontium, total	0.908	MAC = 7	0.0010 mg/L	2022-02-02	
Uranium, total	0.00874	MAC = 0.02	0.000020 mg/L	2022-02-02	
Zinc, total	0.136	AO ≤ 5	0.0040 mg/L	2022-02-02	

Well #1 (22A3099-03) | Matrix: Water | Sampled: 2022-01-25 13:15



TEST RESULTS

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2022-02-02 12:59

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Well #1 (22A3099-03) | Matrix: Water | Sampled: 2022-01-25 13:15, Continued

Anions

Chloride	41.2	AO ≤ 250	0.10 mg/L	2022-01-27	
Fluoride	0.27	MAC = 1.5	0.10 mg/L	2022-01-27	
Nitrate (as N)	6.06	MAC = 10	0.010 mg/L	2022-01-27	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2022-01-27	
Sulfate	75.2	AO ≤ 500	1.0 mg/L	2022-01-27	

Calculated Parameters

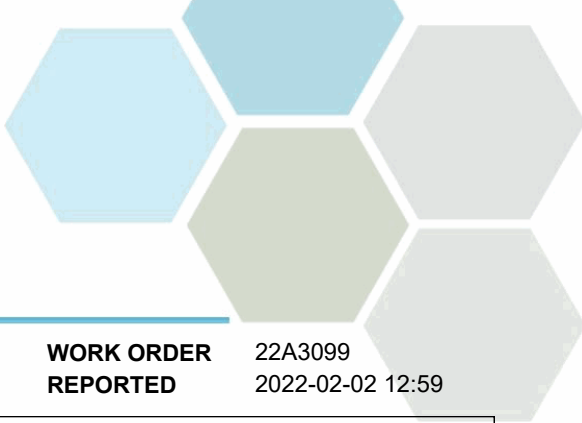
Hardness, Total (as CaCO3)	312	None Required	0.500 mg/L	N/A	
Solids, Total Dissolved	449	AO ≤ 500	1.00 mg/L	N/A	

General Parameters

Alkalinity, Total (as CaCO3)	245	N/A	1.0 mg/L	2022-01-27	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0 mg/L	2022-01-27	
Alkalinity, Bicarbonate (as CaCO3)	245	N/A	1.0 mg/L	2022-01-27	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0 mg/L	2022-01-27	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0 mg/L	2022-01-27	
Conductivity (EC)	759	N/A	2.0 µS/cm	2022-01-27	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020 mg/L	2022-01-27	
pH	7.47	7.0-10.5	0.10 pH units	2022-01-27	HT2
Turbidity	< 0.10	OG < 1	0.10 NTU	2022-01-27	

Total Metals

Aluminum, total	< 0.0050	OG < 0.1	0.0050 mg/L	2022-02-02	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2022-02-02	
Arsenic, total	0.00454	MAC = 0.01	0.00050 mg/L	2022-02-02	
Barium, total	0.0598	MAC = 2	0.0050 mg/L	2022-02-02	
Boron, total	0.0513	MAC = 5	0.0500 mg/L	2022-02-02	
Cadmium, total	0.000034	MAC = 0.005	0.000010 mg/L	2022-02-02	
Calcium, total	91.9	None Required	0.20 mg/L	2022-02-02	
Chromium, total	0.00073	MAC = 0.05	0.00050 mg/L	2022-02-02	
Copper, total	0.0212	MAC = 2	0.00040 mg/L	2022-02-02	
Iron, total	< 0.010	AO ≤ 0.3	0.010 mg/L	2022-02-02	
Lead, total	0.00047	MAC = 0.005	0.00020 mg/L	2022-02-02	
Magnesium, total	19.9	None Required	0.010 mg/L	2022-02-02	
Manganese, total	0.00083	MAC = 0.12	0.00020 mg/L	2022-02-02	
Potassium, total	6.38	N/A	0.10 mg/L	2022-02-02	
Selenium, total	0.00084	MAC = 0.05	0.00050 mg/L	2022-02-02	
Sodium, total	38.6	AO ≤ 200	0.10 mg/L	2022-02-02	
Strontium, total	0.785	MAC = 7	0.0010 mg/L	2022-02-02	
Uranium, total	0.00739	MAC = 0.02	0.000020 mg/L	2022-02-02	
Zinc, total	0.0165	AO ≤ 5	0.0040 mg/L	2022-02-02	



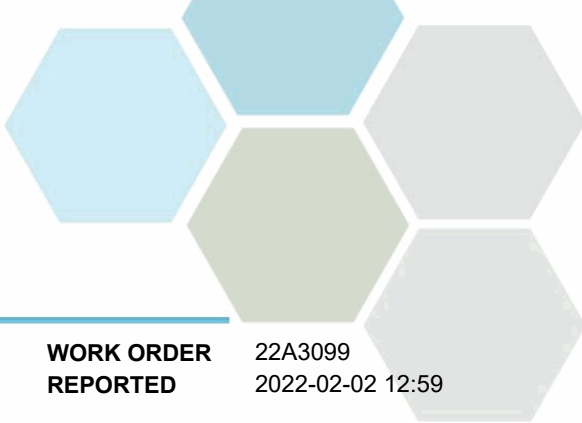
TEST RESULTS

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REPORTED 2022-02-02 12:59

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 Osoyoos, Town of
General Potability

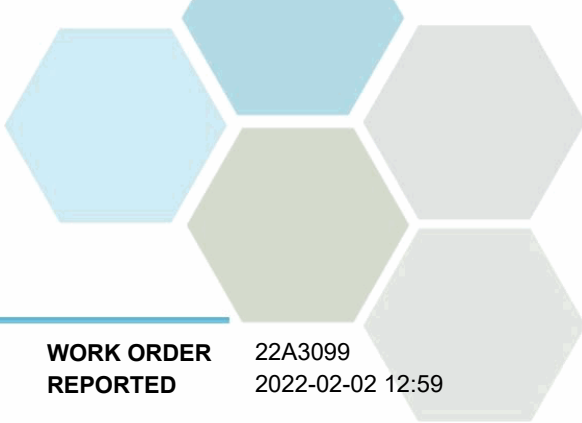
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Analysis Description	Method Ref.	Technique	Accredited	Location
Alkalinity in Water	SM 2320 B* (2017)	Titration with H2SO4	✓	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	✓	Kelowna
Conductivity in Water	SM 2510 B (2017)	Conductivity Meter	✓	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
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
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
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: bwhitehead@caro.ca

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